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Debating Innovation

Perspectives and Paradoxes of an Idealized Concept

Edited by
Alf Rehn
Anders Örtenblad

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Palgrave Debates in Business and Management

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This series will take a refreshing and creative approach to business management research, consisting of a number of edited collections that showcase a current academic debate. Each title will examine one specific topic and shall include a number of chapters from authors around the world, presenting their differing points of view on the question in hand. The intention of this series is to take stock of controversial and complicated topics of debate within business and management, and to clearly present the variety of positions within it.

Alf Rehn • Anders Örtenblad
Editors

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Part I

Innovation: Where We Are and How We Got Here

1

Introduction

Alf Rehn and Anders Örtenblad

INNOVATION, WHAT INNOVATION?

Innovation, it's a hell of a drug. Or, put in somewhat more diplomatic terms: Innovation, what a rush! Be it in business, politics, or academia, calls for innovation are rife and incessant, meant to entice us, energize us, extricate us out of the doldrums of everyday life. Innovation reshapes the world, breaks barriers, redefines everything it touches. Well, at least in the plentiful adverts and in the promises of the innovation evangelists. Innovation has become the *panacea* for all our problems, the goal of goals, the aim of all activities.

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That said, it is not always entirely clear what innovation *is*. We can all rattle off a list of innovations, not to mention innovators, but ask for a definition and things get a lot trickier. Not to mention fuzzier. Sure, there is no lack of definitions, but many if not most are very general, and some even circular. Some refer to change, others to value, others to acceptance. All are however adamant that innovation, be it what it may, is a good and desirable thing. Innovation saves nations, solves problems, uplifts people, and generates things; value, profits, jobs, change. In fact, some people close the circuit and simply proclaim that as long as good things emerge, innovation was the cause. This kind of contemporary update to the teleological argument has however led the field of innovation studies, broadly understood, into something of a muddle. With innovation defined so broadly as to encompass almost all kinds of positive outcomes of organized activity, the concept has also become both vague and difficult to debate in any deeper fashion.

Revolutionary technology? It's an innovation. Barely understandable improvement to a process? It's an innovation as well. Innovation has become something of an all-purpose marker of progress, something that can be invoked whenever one feels that positive vibes are needed, wanted, or deserved. Corporations are prepared to spend untold sums to ensure that they have direct access to this fountain of corporate youth, and nation states are pushing for immense research and development funds to push themselves to a more fortuitous position on the "Most Innovative Nations" list. It is used to uplift certain workers, and to scare certain others. It is used to convince, to cajole, to market, to motivate, and to mollify. We all know it to be important, and a good thing, and altogether desirable. As we said, innovation—what a rush!

We are of course being somewhat flippant, but the generality and the socio-moral certainties that define much of the current innovation discourse were key motivating factors in our wishing to edit this volume. Where many other innovation books keep repeating all the wonderful things that either innovation in general or some specific form of innovation can create, we wanted to bring in a more nuanced view, one where critiques of innovation were also given place. What we didn't want, however, was a set of chapters that all attacked innovation, each one in their way. While there obviously should be space in the literature for such

engagements as well, we were curious as to what would happen if one seriously started debating innovation, pro and con, for and against.

An early idea and outline for this book was thus one where we would have a mass of innovation categories, and then a chapter arguing for its benefits and importance, and another one questioning the same. We envisioned incremental, radical, transformative, and systemic innovation, each with their own chapters for and against. We thought about product, service, and process innovation, each again with a chapter pro and a chapter con. We envision taking forms of innovation such as disruptive and open and organizational, all with nicely symmetrical chapters either hailing or challenging them. You get the drift. While we still think this could have been a rather charming book, it turned out that there aren't that many people who are prepared to write a chapter against, for example, radical innovation, or even a chapter for incremental such. Further, we came to the realization that such a book would in fact end up rehashing arguments that have already been made in a thousand innovation books, including textbooks.

This book still retains part of these ideas, and we are very happy to have a number of nicely paired chapters that present different takes on a key innovation issue or concept. In addition to this we have here gathered a couple of more general critiques of innovation, as a counterweight to the unreflected pro-innovation bias that dominates the literature, as well as a series of creative and/or critical perspectives on the field written in order to suggest new lines of inquiry. The critical tenor in some of these should however not be understood as wanting to present a blanket criticism of innovation, but rather as a way to engage with innovation in a broader, more objective fashion. Our job as researchers and scholars, even in a field such as innovation, is not to be evangelists and marketeers for a concept, but rather agents who wish to understand a complex phenomenon in as broad a manner as possible. It is thus important to point out that the chapters that are written in a more critical vein should be read as engagements, not as final words. All of our authors are well aware of the potential and the value that lies in innovation, even when they are writing specific criticisms against certain interpretations of the concept and the phenomenon. Yet, in order to have a robust debate, it is at times important to take on a proposition or a position that might not be one's full

view of the phenomenon, in order to inquire into the broader possibilities of the same. Thus we have in this book innovation speakers who criticize the practice of innovation keynotes, researchers in open innovation who engage with the dark side of innovation, and thinkers who spend a considerable amount of time thinking about a cat and its relationship with creativity and innovation. They do so not in order to ban innovation keynotes, forbid open innovation, or to demand that the field of innovation studies from now on focuses primarily on companion species, but in order to debate innovation, in a broad and productive manner. They do so not to diminish innovation, but to broaden our discussion regarding the same.

INNOVATION AS HYPEROBJECT

Here, it might be helpful to mention a novel philosophical concept, one originally deployed in ecological studies, namely that of the "hyperobject." In 2013, Timothy Bloxam Morton wrote the book *Hyperobjects: Philosophy and Ecology After the End of the World* (Morton 2013), in which they developed a notion they had introduced in earlier work (see Morton 2010). In the former work, they were interested in objects and/or concepts that were so massive and so distributed in time and space that it becomes impossible to understand them specifically as themselves, rendering them only thinkable through their symptoms or local manifestations. They originally used the term to understand a phenomenon like global warming, which is difficult to "see" and think about precisely because it is so all-encompassing. We can see the "footprint" of the hyperobject, but never really the hyperobject in and of itself, as it is created by a number of complex relations between heterogenous objects. In addition, hyperobjects are "viscous," in that they attach themselves to other objects, material and discursive, even to the point where trying to resist a hyperobject makes you evermore stuck to the same.

The astute reader will by now have picked up on the fact that we are gesturing toward the fact that innovation might be a hyperobject as well. In fact, it lives up quite well to the criteria that Morton established. It is massively distributed in time and space, to the point where most things

can be seen as innovation depending on which spatiotemporal position you choose to occupy. It clearly transcends specificity, in that things as far apart as a completely new product and a slightly different manner of selling the same are both referred to with the same term. It is massive, and seemingly ever-expanding, while at the same time only viable in the specific manifestations it appears to us at. Here, it is important to note that Morton's argument was ontological, not nihilistic. We live in a world populated by objects that are simply to massive, too far beyond our capacity for perception, that a more humble ontology becomes necessary (N.B. Morton is connected to the emerging field of object-oriented ontology). This certainly holds for innovation.

As Martin (2016) points out in his "Twenty challenges for innovation studies," a key problem for innovation studies has been the tendency to look only where it is easiest (and most profitable) to do so. This is very much in line with an old joke, one that has been told since at least the 1920s, in which a drunk man is searching under a streetlight for an object (keys or some money, depending on which version you'll hear), and is interrupted by a policeman:

> "–What are you doing?"
> "–I'm looking for my keys/bill/wallet!"
> "–Did you lose them here?"
> "–No, I lost them down the road!"
> "–Then why don't you look there?"
> "–The light's much better here!"

In a similar manner, Martin takes innovation studies to task for mainly studying the things that have been easy to study, ignoring the "dark innovation" (Martin 2016) that exists outside of the contemporary streetlights. To this comes the question of studying the dark sides of innovation (see, e.g., Coad et al. 2021; Sveiby et al. 2012), those parts that are not merely marginalized for being more difficult to find, but those actively shunned for not fitting in with the existing paradigm.

What is needed then, and what has been the driver of this book, is less clarity about innovation, in the simplistic sense of the word, and more challenges and debate. Our aim with this book was never to produce a

final word, but to show that a hyperobject such as innovation needs to be engaged with not in a streamlined manner, with singular epistemologies, but on the contrary by highlighting the many perspectives and parleys and paradoxes that are a natural outcome of any engagement with a hyperobject. We are here not presenting the end to a debate, nor even the beginning of such an end, but calling out an end to simplistic and limited ways of trying to come to grips with something as grand, as strange, as interobjective, and as viscous as innovation is.

We are not here to close the book on innovation, but rather to open the same. We are not here to fight over demarcations, as we are fully aware that the phenomenon we are interested in will always already make quick work of any attempt to establish such. We are here to allow the hyperobject to be a hyperobject, grandiose and unknowable, present and absent, hypermodern and eldritch, all at the same time. We are here for the debates, not the declarations. We are happy to stand in the shadows of paradox, rather than pretending that our epistemological flashlights are magic. We are here to do what many innovation scholars resist and spend their careers fighting against—answering the call to take innovation seriously, as the strange hyperobject it is.

THE REST OF THIS BOOK

After this first introductory chapter, we will continue the book in three parts, and 20 chapters in all, including this one and an afterword. Part I deals with some broader, contextual observations regarding innovation and how we got where we are, and contains this introductory chapter and two additional ones. Chapter 2, entitled "*Innovation, Labor Displacement, and the Role of the State: The Classical Economists' Perspective,*" by Samuel Hollander contextualizes the way in which we tend to talk about the relationships between innovation and labor in classical economics, and highlights that from the very start, innovation has been a more complex phenomenon than our often simplistic discourse around it would suggest. Chapter 3, by Thomas Taro Lennerfors and Kiyoshi Murata, is called "*Innovation Ethics*" and deals with the ethical implications and the moral debates that the concept generates. This is an important chapter

for the whole of the book, as it shows the need for reflecting about a concept that is often treated as always already good.

Part II of this book is the part that we initially had envisioned, a series of chapters debating for an against innovation. We start this by some general critiques of innovation. Chapter 4, "*Creative Continuation—An Alternative Perspective on Innovation and Society*" by Jon P. Knudsen, argues that our love of innovation has made us myopic when it comes to alternative forms of development, including the "creative continuation" alluded to in the title. Chapter 5, by Alf Rehn, is entitled "*Image, Imperatives, and Ideology in the Innovation Industry*" and engaged with how notions and representations of innovation become part of a broader ideological apparatus that aims to naturalize discourses around innovation and to marginalize more critical voices.

Moving on to direct pros and cons, we start with debating business model innovation. Thomas Clauss starts with Chap. 6, the cheekily entitled "*In Search for the Holy Grail in Management Research: A Review of the Benefits of Business Model Innovation,*" which makes a strong case for this hotly debated form of innovating. This is countered by La Ode Sabaruddin and Fathiro Hutama Reksa Putra, who in Chap. 7 lay out "*A Critique of Business Model Innovation.*" Our intent is not to claim that either of these chapters is the correct one, but leave it to the reader to decide what in each contribution that is convincing and/or productive for the debate. The same goes for all the following chapters in this Part II.

Chapter 8 is by Luis Rubalcaba and Ernesto Solano, who present "*The Pros of Social Innovation,*" arguing for the need for more attention to the social sphere and impactful innovation. This is countered by Nidhi Srinivas, who in Chap. 9 deconstructs common notions of the phenomenon in order to argue "*Against Social Innovation.*" While sensitive to the need for a social dimension, he shows how the best intentions can sometimes skew an assumedly good thing.

We move on from here to a discussion regarding service innovation, with Faridah Djellal, Camal Gallouj, and Faïz Gallouj, who in Chap. 10, "*For Service Innovation: Some Arguments in Favor of Services and Innovation in Services,*" discuss the importance of services in our contemporary economy, and why innovation in this sphere is just as important as that in more commonly discussed ones. This is questioned, not least from a

sustainability perspective, in Chap. 11, where Lars Witell, Per Carlborg, and Hannah Snyder write under the heading "*Against Service Innovation: Why Service Innovation Is Not Sustainable.*"

We close off this part of the book with two commentaries on open innovation. In Chap. 12, "*For Open Innovation,*" Lykke Margot Ricard and Sergio Jofre highlight the benefits of and potential in opening up innovation processes and establishing more transparent structures for the same. Pia Hurmelinna-Laukkanen, Ioana Stefan, and Jialei Yang, who are also proponents of open innovation, counter this in their Chap. 13, where they rhetorically ask "*What Could Possibly Go Wrong? Reflections on Potential Challenges of Open Innovation.*" This concludes Part II.

Part III exists in part to tease out some trajectories for where we might go from here in innovation and innovation studies, but also exists as a way to showcase alternative and creative readings of innovation and practices related to the same. We start with Chap. 14, "*What Does It Take? Feminist Readings of Innovation Studies,*" where Sine N. Just and Sara Dahlman discuss the lack of gender-awareness in much of innovation research. A similar but different take is then presented by Abhinav Chaturvedi, who in Chap. 15 discusses "*Non-Western Perspectives on Innovation,*" to highlight the often Eurocentric assumptions in the field.

In Chap. 16, written by Astrid Huopalainen, we engage with how a key social theory concept such as materiality as well as an emergent technology like AI can affect and enrich innovation (with artistic practice as the empirical field), in a chapter entitled "*Innovation, AI, and Materiality: Learning From the Arts.*" This is followed by Chap. 17, "*Peace Piece: On the Machiavellian Moment in Organizational Innovation*" by Karl Palmås and Stefan Molnar, which stands both as a critique of disruptive innovation and as a showcase of how science and technology studies as well as musicology can be used to push innovation studies into new forms of questioning.

In the antepenultimate chapter, Damian O'Doherty takes innovation studies into another new and surprising field, discussing "*The Animal Spirits of Innovation: On Companion Species, Creativity, and Olly the Airport Cat*" (Chap. 18 in this volume). By taking animals seriously as a field of engagement, he shows that there is still much to explore in the field of innovation, something extended in Chap. 19. Here, Alf Rehn

writes "*The Future(s) of Innovation,*" emphasizing both the great risks, the great potential, and the great unknown when it comes to the question as to innovation, and in extension the world, will develop over the years and decades to come.

Finally, we end with Chap. 20, which is an Afterword by the same editors who have written this introduction. There is much to be found between here and there, so, without further ado, onto the debates!

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2

Innovation, Labor Displacement, and the Role of the State: The Classical Economists' Perspective

Samuel Hollander

INTRODUCTION

The question: "What is to be done?" in response to the prospect of massive job losses engendered by innovatory investment is not peculiar to the twenty-first century. Consider Karl Marx's remarkable pronouncement that "a development of productive forces which would diminish the absolute number of labourers … would cause a revolution," Marx taking for granted that the capitalist class would intervene, through the state, to assure against such an outcome (Marx [1894]1962 III, p. 258). This chapter demonstrates that several contemporaries of Marx belonging to the so-called classical school of economists—Jeremy Bentham, T. R. Malthus, and J. S. Mill—recognized the potential damage to labor of "machinery" when introduced suddenly and on a large scale in stationary or slowly growing economies—both unemployment and reabsorption of displaced workers at reduced wages—and looked to the state for the solution, including in Mill's case intervention to "moderate" the

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adoption of new technology. Adam Smith did not advance a formal case for state intervention of this order yet may be shown to have invited such an approach. David Ricardo, on the other hand, firmly rejected the "discouragement" by the state of the use of machinery, notwithstanding his recognition of adverse effects on labor in some circumstances, on the grounds that intervention by one nation alone would worsen the situation, suggesting for our day international cooperation to agree upon common standards. In brief, our review of the classical literature regarding the state's responsibility in mitigating the adverse effects of innovation on labor's interests will be found to have potential practical relevance in our own day.

ADAM SMITH

Adam Smith paid little attention to technological unemployment arising from labor-saving technical change, although machine breaking was occurring in his day, but focused rather on the output-expanding effects of innovation: "In manufactures the same number of hands, assisted with the best machinery, will work up a much greater quantity of goods than with more imperfect instruments of trade" (Smith [1776]1937, p. 271). This stance may reflect the close relation he perceived between use of fixed capital embodying innovative methods and *specialization* within the plant: "as the operations of each workman are gradually reduced to a greater degree of simplicity, a variety of new machines come to be invented for facilitating and abridging these operations" (p. 260), the interdependence of the workforce implying that no individual specialist worker is dispensable. In effect, the concern is to permit output expansion by reducing labor bottlenecks so that the entire workforce is required to assure the higher production level, an objective reflecting Smith's view of the contemporary British economy as experiencing almost universal prosperity "owing to the peculiarly happy circumstances of the country" (p. 201).

Apart from innovatory devices *complementing* rather than displacing labor, attention is also accorded technical change entailing simplifications in process which economize the use of machinery. Here labor

displacement does arise, specifically of *maintenance* labor, although Smith expresses confidence in their reemployment in operating functions supported by the capital now made available (Smith [1776]1937, p. 272). Here again he takes for granted that there will be profitable outlets for the increased flow of production, a presumption supported by the easy absorption of demobilized servicemen at the close of the Seven Year's War in 1763 and the negligible effects of freer imports on employment and pay even when the change is suddenly introduced (p. 436). Yet Smith allowed that where the scale of the hitherto protected industries "have been so far extended as to employ a great multitude of hands," "humanity" may "*require that the freedom of trade should be restored only by slow gradations, and with a good deal of reserve and circumspection*" *to* avoid severe unemployment and "the disorder which this would occasion" (pp. 435–436; emphasis added). In principle, the same argument might be applied to the introduction of labor-displacing innovation especially in a slow-growth environment.

For all that, there is certainly no evidence of blanket hostility toward "machinery." Smith justified state encouragement of business arrangements favoring "experiments" and also temporary monopoly protection for risky trading ventures on a par with industrial patents, implying *support* for innovatory investment and for what we call "start-up" enterprises:

> it is the easiest and most natural way in which the state can recompense them for hazarding a dangerous and expensive experiment, of which the publick is afterwards to reap the benefit. A temporary monopoly of this kind may be vindicated upon the same principles upon which a like monopoly of a new machine is granted to its inventor, and that of a new book to its author. (Smith [1776]1937, p. 712)

There is more of the same, including a case for government aid to overcome bottlenecks in the supply of specific skills "on the first introduction of any art" (p. 790).

Smith was also concerned that simplifying the specialist tasks on the plant floor, upon which depended some categories of invention and innovation, rendered the laborer "as stupid and ignorant as it is possible for a human creature to become," one consequence of which is that the

plant operative as potential source of improved technology becomes increasingly less significant in knowledge production relative to the inventor and machine-maker, pointing to a bifurcation of the social structure and growing income inequality (Smith [1776]1937, pp. 734–735). Furthermore, labor mobility is imperiled since the worker becomes "incapable of exerting his strength with vigour and perseverance, in any other employment than that to which he has been bred" (p. 735). But this would be the case "unless government takes some pains to prevent it," alluding preeminently to subsidization of elementary education to include vocational training in "the principles of geometry and mechanics" (pp. 737–738).

DAVID RICARDO

In a celebrated *volte face*—perhaps the most famous in the history of economics—Ricardo admitted the possibility of labor-displacing technological change. His chapter "On machinery," added in the 3rd edition of 1821, outlines a case of "conversion" of capital hitherto expended in wage payments to investment in "machinery" embodying new technology, a transfer that may be profitable—yielding the same or slightly higher net profit—though the machine yields a lower total output than the original volume, so that not only is labor displaced but there is limited scope for reemployment:

> as the power of supporting a population, and employing labour, depends always on the gross produce of a nation, and not on its net produce, there will necessarily be a diminution in the demand for labour, population will become redundant, and the situation of the labouring classes will be that of distress and misery. (Ricardo [1821]1951, p. 390)

Consequently, "the opinion entertained by the labouring class, that the employment of machinery is frequently detrimental to their interests, is not founded on prejudice and error"—as he himself had once believed—"but is conformable to the correct principles of political economy" (Ricardo [1821]1951, p. 392). Ricardo neatly encapsulated the

distributive implications of his analysis in terms that will be familiar to those engaged with the modern Robot literature: "If machinery could do all the work that labour now does, there would be no demand for labour. Nobody would be entitled to consume any thing who was not a capitalist, and who could not buy or hire a machine" (Ricardo 1952a, pp. 399–400).

Ricardo's estimate that the employment of machinery is "*frequently* detrimental" to labor's interests is confirmed by a further assertion "that the substitution of machinery for human labour, is *often* very injurious to the interests of the class of labourers" (Ricardo [1821]1951, p. 388; emphasis added). Yet a summary statement clouds the issue: "All I wish to prove, is, that the discovery and use of machinery *may be* … injurious to the labouring class" (p. 390; emphasis added), and Ricardo here cautions against

> the inference that machinery should not be encouraged. To elucidate the principle, I have been supposing, that improved machinery is *suddenly* discovered, and extensively used; but the truth is, that these discoveries are gradual, and rather operate in determining the employment of the capital which is saved and accumulated, than in diverting capital from its actual employment. (Ricardo [1821]1951, p. 395; emphasis in original)

But even in the latter case any initial fall in demand for labor might be compensated by *new* savings that is "from the stimulus to savings from revenue, which … an abundant net produce will afford" eliminating any excess labor supply (Ricardo [1821]1951, p. 392).

We seem to have an implicit concession that where innovations are introduced rapidly and on a large scale, and where accumulation out of increased profits (possibly generated by the new technology itself) does not suffice to compensate, Ricardo might have felt obliged to conclude that machinery should be in some manner discouraged. But this would be premature. The chapter "On machinery" itself affirms that "employment of machinery could never be safely discouraged in a State, for if a capital is not allowed to get the greatest net revenue that the use of machinery will afford here, it will be carried abroad," thereby worsening the employment problem, and it concludes with an exercise in

international-trade theory demonstrating the adverse impact on the terms of trade should one country alone desist from adopting a cost-cutting innovation: "this disadvantageous exchange would be the consequence of your own act," whereas trading partners not rejecting the use of machinery "wisely appropriated" its services (Ricardo [1821]1951, pp. 396–397). Similarly, Ricardo warned in Parliament that although "the extensive use of machinery, by throwing a large portion of labour into the market, while, on the other hand, there might not be a corresponding increase of demand for it, must, in some degree, operate prejudicially to the working classes … he would not tolerate any law to prevent the use of machinery" considering the loss of export markets to foreign competitors not similarly constrained: "The question was,—if they gave up a system which enabled them to undersell in the foreign market, would other nations refrain from pursuing it? Certainly not. They were therefore bound, for their own interest, to continue it" (Ricardo 1952b, p. 303).

Here then we have the archetypal case against any attempt to "moderate" the adoption of new technology. But what policy options were open for Ricardo in the worst case? Public works expenditures by the state he ruled out on what was later called "Treasury View" grounds and applied against such programs to ease post-war unemployment, for such measures would only divert "funds from other employments which would be equally if not more productive to the community" (Ricardo 1952c, p. 116). Would the same stance be applied to unemployment generated by machinery? Apparently so, since in the report of the speech rejecting any "law to prevent the use of machinery" all we find is the unhelpful suggestion that "the people had the remedy in their own hands. A little foresight, a little prudence … a little of that caution which the better educated felt it necessary to use, would enable them to improve their situation" (Ricardo 1952b, p. 303). Ricardo apparently had no serious suggestions to make.

JEREMY BENTHAM

Jeremy Bentham, in sharp contrast to Ricardo, favored the provision of "Employment for Pauper Manufacturers," or the unemployed, during periods of temporary stagnation of trade: "I propose public works to be set on foot in the neighborhood of manufacturing towns: to be carried on by none but manufacturers out of employment" (Stark 1952, vol. 1, p. 13). The same obligation is applied to technological unemployment, Bentham declaring that "opposition to machinery is well founded if no care be taken to provide immediate employment for the discharged hands" (Stark 1952, vol. 3, pp. 332–333). For "the introduction of machinery or improvement in the machinery in use" will, assuming no increase in total "pecuniary capital," entail a siphoning off of capital leaving less available to support operating labor (very much in line with Ricardo's "machinery" problem). Bentham also sought to encourage the working classes to save for various exigencies—including "failure of employment provision" or lay-offs—as by the issue of suitably attractive Exchequer Circulating Annuities (Stark 1952, vol. 2, pp. 50, 363n). Subject to provision for those rendered unemployed, Bentham was no opponent of machinery. To the contrary, as was the case with Smith, he made sophisticated recommendations for state intervention to *encourage*

> inventive industry and superior workmanship, by licenses conferring … faculty of obtaining patents for inventions without the present expence, on security given for allowing government an annual consideration in the way of annuity or share of profits. (Stark 1952, vol. 3, p. 542)

THOMAS ROBERT MALTHUS

Malthus expressed his confidence that—ruling out aggregate-demand deficiency, his hallmark in the famous debates with Ricardo—there was no reason to fear the adoption of machinery. For

> [t]he interest of individual capitalists uniformly prompts them to the saving of labor, in whatever business they are engaged; and both theory and

> experience combine to shew that their successful efforts in this direction, by increasing the powers of production, afford the means of increasing, in the greatest practicable degree, the amount and value of the gross produce, provided always that such a distribution and consumption of the increased supply of commodities takes place as constantly to increase their exchangeable value. (Malthus 1820, pp. 425–426)

This condition would not be satisfied "if the substitution of fixed capital were to take place very rapidly, and 'before' an adequate market could be found for the more abundant supplies derived from it and for the new products of the labor that had been thrown out of employment" (Malthus 1820, p. 265). But a *gradual* process, the reader is assured, is the norm, and beyond this Malthus implicitly adopted the line familiarized by Adam Smith that machinery is generally introduced *in response to growing demand* as a means of remedying labor bottlenecks, for "inventions to save labor seldom take place to any considerable extent, except when there is a decided demand for them…. Inventions, which substitute machinery for manual exertions, being the result of the ingenuity of man, and called forth by his wants, will, as might be expected, seldom greatly exceed [added in 2nd (1836) edition: seldom exceed] those wants" (Malthus 1820, pp. 401–402, [1836]1964, p. 351).

I now raise the same question as with Ricardo: What would Malthus have proposed were "the substitution of fixed capital … to take place very rapidly," and—in his case—before an adequate market could be found for the more abundant supplies derived from it"? We cannot be sure, but we do know that Malthus countenanced tax-financed public works to absorb the unemployed during the post-Napoleonic depression, like Bentham rejecting the "Treasury View" to which Ricardo subscribed (Malthus 1820, pp. 511–512). But public works would alone not resolve those problems requiring *long-term* adjustment of population (Malthus 1826, pp. 406–407), in which case public works schemes must be accompanied not only by programs encouraging "prudence and foresight" on the part of labor, but by government-supported emigration (Malthus 1826, p. 62). Similar considerations might have been taken into account in dealing with long-term technological displacements of labor although Malthus did not spell this out. Even so, it is clear that Malthus had

somewhat more to offer than Ricardo who limited himself solely to asserting that the solution to long-term excess labor supply, with technological displacement in mind, lay entirely in the hands of the laboring classes themselves.

JOHN STUART MILL

In the famous chapter "Of the stationary state" Mill explained his strategy to be that of focusing on the main policy objective of assuring improved *per capita* wages by deprecating the mere expansion of aggregate output attributed to the "old school" of political economists. In a stationary state, Mill proposed, technical progress would result in advantage to the majority rather than merely to the middle classes: "a stationary condition of capital and population implies no stationary state of human improvement…. Even the industrial arts might be as earnestly and as successfully cultivated, with this sole difference, that instead of serving no purpose but the increase of wealth, industrial improvements would produce their legitimate effect, that of abridging labour" (Mill [1848]1965, p. 756), referring to a potential for greater leisure on a broad scale. As things stood, mechanical inventions

> have enabled a greater population to live the same life of drudgery and imprisonment, and an increased number of manufacturers and others to make fortunes…. Only when, in addition to just institutions, the increase of mankind shall be under the deliberate guidance of judicious foresight, can the conquests made from the powers of nature by the intellect and energy of scientific discoverers, become the common property of the species, and the means of improving the universal lot. (Mill [1848]1965, p. 757)

Stationariness would itself encourage population control since, where there is no "indefinite prospect of employment for increased numbers," it becomes evident that "a new hand could not obtain employment but by displacing, or succeeding to, one already employed" (Mill [1848]1965, p. 753).

Yet Mill's position is not so easy to establish. In the first place, Mill was fully aware that accumulation and population were currently proceeding apace rendering his case for a stationary state academic. Indeed, in the Britain of his day steady average real wages and a constant return to capital were (he believed) achieved even without population control because of the extremely high contemporary rate of capital accumulation—in part as we shall see enabled by new technology—so that the justification for his indictment of the growth ideal falls into doubt. But second, stationariness might prove dangerous from a wide variety of perspectives, including overall productivity improvement and labor-displacing technology. Thus Mill's affirmation that stationariness would not impede scientific advance, and by implication its application to industry, neglects a counteracting tendency linking a progressive manufacturing sector to *expansion*, the extension of joint-stock and other forms of complex organization, which permit scale economies, perceived as determined by the progress of wealth and as reinforcing such progress (Mill [1848]1965, p. 140). Mill even envisaged a relationship between scale (subject to altered industrial organization) and *innovation*. For he saw self-interest as a positive driving force only in the more mundane industrial task of assuring small gains and savings, but as militating against truly innovatory ventures. He placed his faith rather in hired management, of above-average competence, a solution available only to large-scale enterprises.

As for *labor-displacing technology*, technical advance entailing capital-absorbing innovations ("capital conversion" or "machinery") imply a negative effect on labor demand, the alpha and omega of Ricardo's chapter "On machinery" (see above), for

> all increase of fixed capital, when taking place at the expense of circulating capital, *must be, at least temporarily, prejudicial to the interests of the labourers*. This is true, not of machinery alone, but of all improvements by which capital is sunk; that is, rendered permanently incapable of being applied to the maintenance and remuneration of labour. (Mill [1848]1965, pp. 93–94; emphasis added)

Unemployment as such due to capital conversion was not Mill's only concern; as with Ricardo, it was "injury" to labor even allowing for

reabsorption at reduced wages, for the objective was to assure the employment of "as many labourers as before, *and pay them as highly*" (Mill [1848]1965, p. 95; emphasis added).

Fortunately, such problems would be "temporary" because—again, precisely as Ricardo had maintained—the extent and speed of adoption were envisaged as slow relative to net accumulation, the new technology itself tending to encourage both the "ability" and "motive" to save, so that

> at the slow pace at which improvements are usually introduced, a great part of the capital which the improvement ultimately absorbs, is drawn from the increased profits and increased savings which it has itself called forth. (Mill [1848]1965, p. 98)

It is in fact

> [t]his tendency of improvements in production to cause increased accumulation, and thereby ultimately to increase the gross produce, *even if temporarily diminishing it*… which is the conclusive answer to the objections against machinery; and the proof thence arising of the ultimate benefit to labourers of mechanical inventions even in the existing state of society. (Mill [1848]1965, pp. 98–99; emphasis added)

Even temporary disadvantages are downplayed:

> I do not believe that as things are actually transacted, improvements in production are often, if ever injurious, *even temporarily*, to the labouring classes in the aggregate. They would be so if they took place suddenly to a great amount, because much of the capital sunk must necessarily in that case be provided from funds already employed as circulating capital. But improvements are always introduced very gradually, and are seldom or never made by withdrawing circulating capital from actual production, but are made by the employment of the annual increase. (Mill [1848]1965, p. 97; emphasis added)

Mill was therefore optimistic, maintaining (like Ricardo and Malthus) that the adverse effect of new technology on employment involved "a case

abstractedly possible [rather] than one which is frequently realized in fact" (Mill [1848]1965, p. 134).

Mill expands on this argument when he explores various implications of the unusually high rate of accumulation then ruling: "Since even the emigration of capital, or its unproductive expenditure, or its absolute waste do not … if confined within any moderate limits, at all diminish the aggregate amount of wages fund"—the actual and potential increase in capital being so great—"still less can the mere conversion of a like sum into fixed capital, which continues to be productive, have that effect. It merely draws off at one orifice what was already flowing out at another; or if not, the greater vacant space left in the reservoir does but cause a greater quantity to flow in" (Mill [1848]1965, pp. 749–750). Now these optimistic prognostications would be irrelevant

> in a country where capital accumulates slowly, [when] the introduction of machinery, permanent improvements in the land, and the like, might be, *for the time* extremely injurious; since the capital so employed might be directly taken from the wages fund, the subsistence of the people and the employment of labour curtailed, and the gross annual produce of the country actually diminished. (Mill [1848]1965, p. 749; emphasis added)

The problem is that in a stationary state the weighting favors *labor displacement* undermining Mill's objections to the "old school" and its love affair with accumulation.

Mill's cogitations regarding the advantages of a *stationary state*, we have said, lose much of their relevance considering the admitted dangers of the introduction of machinery for employment in a static or slowly growing economy. Nevertheless, while continued accumulation might be necessary to assure against technological unemployment, there is no gainsaying Mill's profound dislike of the behavior patterns characterizing frenzied growth and, I should add, the implied threat to amenity. Mill might perhaps have found acceptable a compromise entailing *moderate* growth. In any event, there remains his overriding concern for high real wages, to emphasize which he adopted a strategy of condemning mere growth as an unqualified ideal unconcerned with benefit to the working classes.

But there is this alternative possibility that Mill's elaborations in his chapter "Of the stationary state" of the putative advantages of stationariness were intended to apply less to the capitalist system than to an arrangement involving profit sharing or, better still, cooperation. For it is unclear whether a condition of zero net accumulation, where productivity increases are entirely to the advantage of labor leaving the return on capital unaffected at its minimum to assure against expansion, is at all possible within capitalist arrangement since the profit rate is bound to increase encouraging net accumulation. On such grounds it is sometimes suggested that the stationary state for Mill implied co-operative, rather than capitalist, arrangement where incentives exist for the adoption of productivity-increasing technology even in the absence of ordinary profit calculation. And in fact Mill's chapter "On the probable futurity of the labouring classes" argues for technical progress and rising productivity provided institutional organization is such as to assure that "what is a benefit to the whole shall be a benefit to each individual composing it," that is assuming arrangements whereby the gains are yielded "without dividing the producers into two parties with hostile interests" (Mill [1848]1965, p. 768). There remains however a serious problem for Mill, namely a concern that cooperation *may not assure a rate of technological progress equivalent to that under capitalism* so that its success would depend in part on the stimulus provided by competition from private ventures.

I now introduce Mill's explicit caution, immediately after presenting his "conclusive answer to the objections against machinery," that his support "does not discharge governments from the obligation of alleviating, and if possible preventing, the evils of which this source of ultimate benefit is or may be productive to an existing generation":

> If the sinking or fixing of capital in machinery or useful works were ever to proceed at such a pace as to impair materially the funds for the maintenance of labour, *it would be incumbent on legislators to take measures for moderating its rapidity*. (Mill [1848]1965, p. 99; emphasis added)

We have here—to my knowledge for the first time in the classical literature—an *explicit* justification for intervention to slow down the use of "machinery" under some circumstances, although we have found implicit

allowances to this effect by Smith. Unfortunately, Mill does not spell out how the proposed intervention would be affected in an open private-enterprise economy, the problem which Ricardo found intractable.

To be noted carefully is a further allowance that even when technical change impinges negatively only on particular classes of workers—which is "almost always" the case—there cannot be a more legitimate object of the legislator's care than the interests of those who are thus sacrificed to the gains of their fellow-citizens and of posterity" (Mill [1848]1965, p. 99). The matter unfortunately is left open-ended, but that Mill would have countenanced support in retraining is almost certain considering his preoccupation with education. Brief allusion is made in the public-finance context to "compensation for those adversely affected by reforms" (Mill [1848]1965, p. 866) and perhaps this notion was considered relevant for those adversely affected by technical change.

There are other indications of State responsibility for employment, even though the context does not necessarily relate to technological displacement of labor. Consider first a full-employment pledge given by the provisional French government in February 1848—the "obligation on society to find work and wages for all persons willing and able to work, who cannot find employment for themselves"—discussed by Mill in his "Vindication of the French Revolution of February 1848" (Mill [1849]1985, p. 348). Subject to one qualification relating to population control, Mill favored *le droit au travail*—a form of public works—as "the most manifest of moral truths, the most imperative of political obligations" (Mill [1848]1965, p. 349). The French scheme was incomparably preferable to the English parochial poor-relief system in place before the 1834 reform, for it acted on the *overall* labor market, obliging the State

> where there was notoriously a deficiency of employment … to disburse sufficient funds to create the amount of productive employment which was wanting.… It relieved no individual from the responsibility of finding an employer, and proving his willingness to exert himself. What it undertook was that there should always be employment to be found. It is needless to enlarge on the incomparably less injurious influence of this intervention of the government in favour of the labourers collectively, than of the intervention of the parish to find employment individually for every able-bodied

> man who has not honesty or activity to seek and find it himself. (Mill [1849]1985, p. 348)

In the French arrangement, "the power of dismissal as regards individual labourers, would then remain; the government only undertaking to create additional employment when there was a deficiency, and reserving, like other employers, the choice of its own workpeople" (Mill [1849]1985, pp. 357–358).

We call attention now to the fact that several of Mill's renditions imply "full employment" as the norm and the proposed make-work interventions to concern only emergency deviations therefrom, raising the question of his stance should the problem of technological unemployment prove to be of a secular nature. In "Claims of labour," for example, Mill allowed for "schemes destined specially to give … employment" but on condition that "there be a reasonable prospect of their being at some future time self-supporting," which seems to imply *full use of resources as the norm* (Mill [1845]1967, p. 387). The answer to our question seems to be that it is precisely when the problem of labor displacement is of a long-term nature that Mill called upon the state to moderate the rate of adoption of new technology.

Further measures which might perhaps be relevant to the case of technological unemployment include state schemes of Foreign Colonization, Mill intending the resultant reduction of the domestic population—reminiscent of Malthus's proposals—and Home Colonization which would withdraw labor from the market by devoting "all common land, hereafter brought into cultivation, to raising a class of small proprietors"; the very prospect of acquiring a small property "would probably become, as on the Continent, an inducement to prudence and economy pervading the whole labouring population" (Mill [1848]1965, pp. 376–377). Mill supplements his proposal, amounting to the encouragement of peasant proprietorship, by recommending the supply of capital by the parish or the state, should this be necessary, to tide over new occupants until self-supporting.

Nonetheless, the wider diffusion of property in land among peasant and small-landed proprietors rather than the system of hired labor, however desirable from the perspectives of population control, failed to take

advantage of scale economies (Mill [1848]1965, p. 377). Accordingly, Mill did not recommend the introduction of such systems into a country enjoying prudence in matters of population and *institutional assurances against a severely skewed income distribution* so that the benefits of high average productivity are broadly enjoyed (Mill [1848]1965, p. 768). The case for technical progress and rising productivity thus assumes arrangements generating maximum efficiency from which labor benefited, preeminently for Mill by way of institutional reform entailing *profit sharing* and *cooperation* to supplement capitalist arrangement.

Mill addresses a further concern relating to agriculture. Great care was required to take account of the effects on employment of hastily replacing even an unproductive *metayer* system by that of "money rents and capitalist farmers": "The enlargement of farms, and the introduction of what are called agricultural improvements, usually diminish the number of laborers employed on the land; and unless the growth of capital in trade and manufactures affords an opening for the displaced population"—notice once again the implicit objection to stationariness—"or unless there are reclaimable wastes on which they can be located, competition will so reduce wages, that they will probably be worse off as day-labourers than they were as metayers" (Mill [1848]1965, p. 311). All this is clearly pertinent to technological displacement of labor more specifically, confirming Mill's *conditional* approval of "machinery" and in particular the role accorded the state in mitigating its damaging effects on labor.

SUMMARY AND CONCLUSION

Table 2.1 summarizes the outcome of this chapter regarding the classicists' evaluation of the potentially damaging impact of innovation on labor's welfare and the role to be accorded the state in its mitigation.

Several of the concerns expressed by the classical economists, and their proposals to address them, re-emerge in our own day. As in the widely reported study by Mathew Lawrence for the Institute for Public Policy Research (Lawrence 2018), these include increased inequality as a result of automation (a concern of Smith) and proposals to counter outcomes of innovatory investment adverse to labor by spreading capital

Table 2.1 Innovation and the role of the state: the classicists' view

		Smith	Ricardo	Bentham	Malthus	Mill
Concerned with the impact on manpower quality, social bifurcation, and inequality		X				
Concerned with the impact on employment and earnings in slow-growth environment		X [implicit]	X	X	X	X
Accords the state responsibility for:	Deceleration of innovatory investment	X [implicit]				X
	Compensation of displaced labor					X
	Emigration and foreign colonization				X	X
	Home colonization					X
	Finance of education to enhance labor mobility	X [implicit]				X
	Public works			X	X	X
Social reform: Profit sharing, cooperation						X

ownership, primarily by way of cooperation and profit sharing (Mill). But what of the fear expressed explicitly by Ricardo, Bentham, Malthus, and Mill that in periods of slow or zero growth the danger of technological displacement of labor is aggravated and implied by Smith's warnings regarding trade liberalization on a major scale? This matter must be addressed urgently in the light of current pressures to decelerate growth on grounds of amenity (space and pollution) and global warming. Mill called upon the state in the event of slow growth to "moderate" the rapidity of innovatory investment, again in line with Smith's suggestion in the context of trade liberalization. Now, there is a great difference between trade liberalization to be undertaken incrementally and with adequate warning and intervention to decelerate the rate of adoption of new

techniques. For trade legislation was old hat as were the mechanisms of enforcement, whereas the contemplated project would require the novelty of specification by the central government of the acceptable rate of labor displacement with penalties upon firms for non-compliance. And beyond this, there remained Ricardo's concern that restrictive measures adopted by one nation alone threatened to aggravate the employment situation by encouraging capital export, loss of foreign markets, and worsened terms of trade. The Ricardo dilemma suggests immediately international cooperation along the lines of the common regulations by the European Union which seek to assure a level playing ground among trading nations, an option Ricardo himself, of course, would have considered unimaginable.

Also deserving our consideration are Mill's proposals for compensation of those adversely affected by technological displacement, and for state-funded educational investment to encourage labor mobility, the latter consistent with Smith's concerns regarding the effects of trade liberalization. The demographic concerns of the classicals, as expressed in the recommendation by both Malthus and Mill for state funding of emigration and various colonization projects, may still be of some relevance, subject always to other, possibly conflicting, social objectives. Should this be the case international cooperation becomes all the more pertinent.

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3

Innovation Ethics

Thomas Taro Lennerfors and Kiyoshi Murata

INTRODUCTION

Innovation, no matter if classified as technological, organizational, or social, constitutes a novelty which brings about change that affects a variety of human and non-human stakeholders. Any innovation can cause criticism and/or protests because it more or less brings a dimension of the rejection of existing values, including ethical ones, and thus harms the position of those who benefit from vested interests related to them. Although we will acknowledge the broad nature of innovation, this chapter predominantly focuses on technological innovation, and how it affects

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both relationships between people and relationships between people and non-human actors, such as organizations, machine systems, and the environment. The reason for the focus is that, as we will see, the ethical aspects of innovation are often discussed within the domain of technological innovation (Bourban and Rochel 2021). By focusing on the ethics of technological innovation, we will highlight some concerns related to such innovation which serves as an introduction for a more forward-looking and broader agenda of innovation ethics, based on a particular notion of ethics.

Academics, policymakers, and the general public have different connotations to the concept of innovation. On the one hand, we might have innovation optimists, who have a pro-innovation bias. It has been argued that much innovation literature is presupposing that innovation is good and therefore that resistance to innovation is seen as problematic (cf. Fornstedt 2021). The connotations of innovation have changed significantly during history (see Godin 2020), where the view of innovation has shifted from a more negative, anti-traditional, and anti-social understanding to a much more positive view where innovation is seen as creating new and socially significant values that revolutionize individual lives, communities, and the world, contributing to resolving difficult problems and advancing the progress of humankind. Within the innovation literature, there are also explicitly critical voices who maintain that the dark sides of innovation should not go unnoticed (e.g., Coad et al. 2021; Godin 2020). The pro-innovation bias is visible in related fields such as creativity, mentioned and critiqued by Wang and Murnighan (2015) who argue that creativity needs to be discussed from an ethical point of view. Regarding entrepreneurship, the current predominant understanding is also positive, where entrepreneurship is argued to lead to economic, social, and environmental prosperity (Fors and Lennerfors 2019). At the same time, entrepreneurship is often described as rule-breaking, or breaking with the current way of doing things, which is discussed from an ethical viewpoint by Brenkert (2009). To sum up, this chapter moves within a literature that takes a quite positive view of the concept of innovation. Given that our chapter concerns innovation ethics (particularly within different technological domains), it implies that we do not see the ethical status of innovations as by default positive (nor negative).

Technological innovation will be discussed from the viewpoint of ethics, which broadly and inconclusively describes how one ought to live and act, and what is good and evil. We do not support a view of ethics as the superficial attempts of tech companies to self-regulate and appear ethical (ethics washing), nor as a narrowing of ethics to be such kind of shallow actions, and throwing out the baby with the bathwater (ethics bashing) (Bietti 2020). This chapter rather sees ethics as critical thinking about the central values that various forms of innovation promote and downplay (Lennerfors 2019) and focuses on the variety of value conflicts that emerge through innovation, and how to act when faced with such value conflicts. Ethics, in our account, thus includes but goes beyond concerns relating to particular values such as gender equality and environmental sustainability. Ethics is not seen as only appearing at different pivotal, grandiose events, for example when someone decides to develop a technology, but is omnipresent and an ongoing process. Furthermore, the focus on critical thinking does not mean that we neglect the embodied, emotional, relational aspects of ethics, but although we acknowledge this as crucial within ethics, also such ethical impulses should not be seen as unproblematic and directly acted upon but should be subject to critical thinking. The focus on critical thinking furthermore does not imply that we assume that the ethical subject can distance herself completely from the situation to think freely, but rather that the subject can with increasing practice and craftsperson-ship draw on concepts and experiences to reflect upon and act in the situation into which she is immersed. At the same time, we do not assume that the subject will always manage to critically reflect and reach some kind of ethical excellence, but we assume a heroic, post-heroic notion of the subject, in other words, one who tries to act ethically in the face of the infinite demands of ethics, but often fails.

If one does not assume a thoroughly positive notion of innovation, nor a thoroughly negative one, one would expect there to be a lively discussion about innovation ethics in the academic literature. However, as Bourban and Rochel (2021) argue, innovation ethics is not an established field, although there are discussions using adjacent concepts. For example, Responsible Research and Innovation (RRI) is a practice and research field which has emerged as a response to potential negative aspects of science and innovation. However, Bourban and Rochel (2021) argue that

Responsible Research and Innovation often focus on the ethical aspects of technological innovation in a for-profit context. Furthermore, Bourban and Rochel (2021) point out that there is a plurality of discussions about innovation ethics in different fields and subfields, for example, in ethics or philosophy of technology, design, as well as in different engineering fields. Bourban and Rochel's agenda is to create innovation ethics as a field, connecting a variety of ethical discussions about new technology, with a clearer emphasis on normative ethics. This chapter is aligned with their general effort and intends to construct an own view of what an agenda of innovation ethics could be in the light of the conception of ethics that has been described in this introductory section.

We will go about with this aim in the following way: First, we present the need for an ethics of technological innovation that takes its base in how technology is imbricated with social practices and therefore influences perceptions or actions. We then describe different ways in which this can be implemented when developing new technology, basically focusing on two major strands of literature, which somewhat bluntly could be put as thinking and dialoguing. In this section, we also pay some particular attention to Responsible Research and Innovation which has gained significant spread and popularity. In the following section, we discuss how the contextual factor of competition constitutes a major barrier to innovation ethics as it is practiced from the viewpoint of the methods described in the former section. In a final section, we broaden the discussion and create an agenda for innovation ethics debates.

WHY AN ETHICS OF TECHNOLOGICAL INNOVATION?

We are now living not in a natural environment but in a technology-mediated environment (Imamichi 2009), where various technologies embedded in economic and social systems and daily living settings, often imperceptibly, shape our actions and judgments. In other words, as expressed by Verbeek (2011), technologies shape what we do and how we experience the world and participate in our ways of doing ethics. Referring

to Ihde's (1990) concept of technological intentionality, he argues that technology transforms what we perceive through *amplification* and *reduction*. It amplifies some aspects of reality and reduces others. Through its embedded norms, scripts, or affordances, technology shapes action. Some actions are *invited*, while others are *inhibited* by the very physical characteristics of the technology. Lessig (1999) indicated that technological architecture is one of the four modalities of regulating human behavior in cyberspace, though the same has already been true in real space. Recent discussions on socio-materiality (Leonardi 2009; Orlikowski 2007) take the perspective that any technology is societal in the sense that it is developed, interpreted, and deployed through social processes and simultaneously any social activity is enabled by some sort of technological stuff. Technology does not exist in the world of objective reality, but emerges in a certain societal context. Technology is not independent from human beings and society. They are intertwined or imbricated (Verbeek 2011).

The view of technology and society as imbricated provides us with a good lens to understand the nature of ethical, social, and cultural issues of technology. Although it might seem obvious that our society is mediated by technology, in debates, technology is distanced from society and claimed to solve a variety of social and environmental ills. Hornborg (2001) has called this "technological fetishism," meaning a too intense focus on only the productivity or usefulness of a particular technological artifact or technological system, while the different contextual factors—economic, political, societal, cultural—are also contributing to the viability or problems of the technology. There is no one who is totally independent from technology deployed in one's environment. Simultaneously, we—as individuals or organizations—can actively change or even transform our environment through the development, deployment, and/or use of technologies. Consequently, innovation in technology is one of the most influential factors in our society and we need to consider the ethical and social implications of that innovation. The imbrication of humans, non-human beings, and technologies, within social practices, means that one needs to discuss the ethics of technology.

This way to frame the ethics of technology is useful to understand innovation ethics. Through innovation, whether it concerns technological, organizational, or social, we introduce novelty that causes changes in

established ways of doing things. Innovators in different phases of the innovation process are therefore, through innovation, making choices and distinctions in the world and should reflect upon this impact. It is here important to state that many technologies are open-ended. With the availability of multipurpose science technologies like electronic and atomic technologies in mind, Imamichi (2009) pointed out the importance and necessity of speculating about ethics related to technologies, centered on responsibility as a virtue. Though organizations including companies and governments have powerful means—science technologies—in their control, the locus of responsibility regarding the ways of using technologies remains unclear, letting organizations' nosism untamed. For Imamichi, ethics must be broadened so that it includes *ethica ad rem* (ethics toward things) (Imamichi 2009). The availability of such science technologies has significantly been expanded, thanks to the rapid and tremendous progress of various technological innovations. We can make numerous examples of them including quantum technology, artificial intelligence (AI), robotics, genome-editing technology, synthetic biology, precision agriculture, chemical recycling technology, and nanotechnology. If *the why* of innovation ethics has now been established, how is one expected to go about promoting ethics in innovation processes?

APPROACHES TO TECHNOLOGICAL INNOVATION ETHICS

The different approaches for promoting ethics of technological innovation can be seen as ranging from autonomous to deliberative, from approaches that concern thinking for yourself, to approaches focused on discussing with others. In this section we also discuss Responsible Research and Innovation which is an EU initiative to promote (research and) innovation ethics and has gained significant spread and popularity. We sum up the section, by returning to our own view of ethics.

Autonomous approaches

Within practical domains of ethics, such as engineering ethics, a large number of frameworks for ethical decision-making have been developed, for example, drawing on design methodologies, heuristics, and structured problem solving (Lennerfors et al. 2020; Maner 2002). These are often step-by-step frameworks that go from problem formulation, information gathering, formulation of alternatives, assessment of alternatives, and then a judgment, decision, action, and reflection. Although such frameworks might imply that there is a bias toward grand decisions made rarely, our approach to ethics makes these kinds of frameworks valuable in day-to-day, also minor, decisions which might be required due to an actor facing conflicting interests, affects, and values related to innovation.

van de Poel and Royakkers (2011) have developed a model for ethical technology development which consists of five steps. First, the formulation of goals, design criteria, and requirements and their operationalization. Second, the choice of alternatives to be investigated during a design process and the selection among those alternatives at a later stage in the process. In a technology development process, there are inevitably several alternatives to pursue and all alternatives may not be considered during a design process. To exclude alternatives early on in the design process might have ethical consequences. Third, the assessment of trade-offs between design criteria and decisions regarding the acceptability of particular trade-offs. When we consider various design alternatives, there will inevitably be trade-offs between various values. Some of those values concern ethics; perhaps a conflict between safety and environmental issues. These trade-offs need to be reflected upon and the acceptability of them needs to be explained and argued. Fourth, the assessment of risks and secondary effects and decisions regarding the acceptability of these. This step concerns the indirect effects of the technology. Fifth, the assessment of scripts and political and social visions that are (implicitly) inherent in a design and decisions regarding the desirability of these scripts. In this step, one needs to take a macro level view on the technology under development. Finally, one needs to assess and weigh different impacts on values as well as the likelihood of this impact, for example, whether one

should maximize expected positive value or avoid the negative through a principle of precaution.

The five-step model by van de Poel and Royakkers is a way to support designers to think openly about design alternatives, values at stake, and the short- and long-term impact of the technology. It takes the designer's agency and power as a starting point and emphasizes the thinking process of the designer. Other approaches also exist such as the ethical technology assessment (eTA) proposed by Palm and Hansson (2006). eTA is a proposed method that intends to identify adverse effects of technological innovation at an early stage, by means of a continuous dialogue with technology developers, scaffolded by a set of value concerns: Dissemination and use of information, Control, influence, and power, Impact on social contact patterns, Privacy, Sustainability, Human reproduction, Gender, minorities, and justice, International relations, and Impact on human values (Palm and Hansson 2006). In this checklist approach, the values are in focus, while the framework by van de Poel and Royakkers is more centered on the process of making assessments.

Deliberative approaches

Although there is nothing that hinders the involvement of stakeholders into the mentioned models of technology assessment, there are other models, which focus more on deliberation with stakeholders. For example, Constructive Technology Assessment (CTA) is a method which is based on the view that one cannot find what is an ethically and socially acceptable technology without taking stakeholders' perspectives into account. Most of the tools that are summarized by CTA are therefore aiming at collaboration with a large set of stakeholders, going beyond immediate users of the technology. Such collaborative means are aimed at creating anticipation, reflexivity, and learning.

Another model that focuses on deliberation is *guidance ethics* (Verbeek and Tijink 2020), which aims to provide an ongoing discussion about technology development and technology use. It focuses on ethics from within, rather than on what the authors see as an external tone of assessment. Furthermore, in line with CTA, it is a bottom-up ethics, which

focuses on the views of stakeholders, rather than only on expert assessment. Furthermore, it claims to be about the positive—concerned with what we want—rather than on the reduction of the negative—what we do not want.

Although dialogical approaches are seemingly democratic and inclusive, not all dialogues are ethically unproblematic. Blok (2014) argues that by relying theoretically on a notion of dialogue as harmony, we cannot fully grasp the realities of the conversational situation. Rather, by focusing on difference, we can see the role of the dialogue as deconstructing the self in our dialogical responsiveness to others. Rather than focusing on the dialogical situation as one in which we should convince the other, it is staged as the forum where we are responsive to the demands of the other. From the point of view of philosophy of difference, the purpose of the dialogue is not to express oneself, but to be critical toward oneself; that the parties are not given, but emerge within the dialogue; and that the starting point of the dialogue is "in the continuous enactment or performance of the dialogue" (Blok 2014, p. 184). One should not underestimate the concerns even if dialogue and inclusiveness are promoted superficially.

Responsible research and innovation

Responsible Research and Innovation is a broad initiative, which intends research and innovation to do good to the society into which it is implemented, and broadly promotes all of the Sustainable Development Goals (SDGs). The initiative shows that ethical issues related to innovation are gaining the interest on high political levels, but the concept of Responsible Research and Innovation has also been critiqued for its vagueness.

The public emergence of Responsible Research and Innovation in EU policy discourse was in May 2011 (Owen et al. 2012). Responsible Research and Innovation has been investigated with a focus on innovation in science and technology by the European Commission's Science with and for Society projects, in which inclusion and openness are emphasized, within the framework of the EU Horizon 2020, following the Science and Society-FP6 (2002–2006) and Science in Society-FP7

(2007–2013) projects (*Directorate-General for Research and Innovation* 2020). The Science with and for Society projects aim at developing a European model of Responsible Research and Innovation based on the principle of inclusiveness, involving all actors (researchers, civil society organizations, industry, and policymakers) at an early stage, allowing innovation to be developed in a co-building mode that ensures co-responsibility (Owen et al. 2012). The six pillars, or keys, of Responsible Research and Innovation, as well as of Science in Society, are ethics, public engagement, gender equality, science education, open science, and governance (Archibugi et al. 2014) reflecting its open and inclusive characteristics. In addition, Stilgoe et al. (2013) showed that the four main dimensions of Responsible Research and Innovation are anticipation, reflexivity, inclusion, and responsiveness (Jakobsen et al. 2019).

Reflecting the change from Science in Society to Science with and for Society or the movement into a world of open innovation and user innovation, Carlos Moedas, who served as European Commissioner for Research, Science and Innovation from 2014 to 2019, said that "We need open innovation to capitalize on the results of European research and innovation" (*Directorate-General for Research and Innovation* 2016). Whereas it is natural that Responsible Research and Innovation projects funded by the EU emphasize the prosperity of EU member nations and the respect for European values, this can limit the effectiveness of project results as policy recommendations for Responsible Research and Innovation given the global reach of science and technology. Actually, reflecting on the outcomes of the previous Responsible Research and Innovation research projects, the Horizon 2020 Responsible Research and Innovation Networked Globally (RRING) Project conducted from May 2018 to April 2021 pointed out that the promotion of a European approach to Responsible Research and Innovation through a global network was met with resistance as the grand challenges faced by each country differed by geography, combined with cultural and other issues, and any attempt to "converge" Responsible Research and Innovation globally toward the European model in a top-down technocratic manner is not the correct approach (*RRING Project* 2021).

On the other hand, based on the recognition that there are many responsibilities which have already been defined in research and

innovation but are not coordinated and aligned to cover the larger societal challenges, Stahl (2013, p. 708) positioned Responsible Research and Innovation as a meta-responsibility:

> RRI is a higher level responsibility or meta-responsibility that aims to shape, maintain, develop, coordinate and align existing and novel research and innovation-related processes, actors and responsibilities with a view to ensuring desirable and acceptable research outcomes.

This idea can provide us with a useful clue as to overcoming difficulties in addressing Responsible Research and Innovation at a global level. If we succeed in developing a globally acceptable and practical conception of it as meta-responsibility, it works as a sound basis for deliberative democracy to globally ensure responsibility for research and innovation. In these respects, we should take a positive, forward-looking view on responsibility concerning due care and responsiveness (Pellé and Reber 2015).

In this section, we have discussed approaches to innovation ethics based on critical thinking and deliberation with stakeholders. The ethical subject related to innovation needs to take different values and different input from stakeholders into account in the innovation process. Such choices will inevitably promote some values and it will be impossible to cater to all values or please all stakeholders. Our approach to ethics presented in the introduction fits well with parts of these approaches, as it concerns critical thinking about different ethical values, for example, values pointed out by stakeholders. But our approach avoids reification into a list of given values and maintains that critical thinking about ethics must be processual and iterative. Furthermore, perhaps to a greater extent than the surveyed approaches, we see that the ethical subject develops skill in ethics, almost as a craftsperson, and makes choices in the face of the impossible demands of ethics. We will now discuss the difficulties of implementing ethics, either the approaches listed, or our own approach, in a multi-cultural, competitive world.

CHALLENGES IN ETHICAL INNOVATION IN TECHNOLOGY IN A MULTI-CULTURAL, COMPETITIVE WORLD

All the above initiatives are well-intended but as has been clear, and already mentioned regarding Responsible Research and Innovation, they need to be considered within the broader context in which they are introduced. In this section, we discuss some barriers to considering innovation ethics, namely competitive tendencies in the private sector as well as between countries.

Innovation in the private sector

There is no doubt that those who play a leading role in innovation in technology are for-profit organizations. The engagement in technological innovation in the public sector cannot be successful without the support from private sector companies which possess relevant knowledge, skills, and resources. For-profit organizations usually behave according to the logic of business, which is described using terms such as cost, profit, and market competition and is not necessarily compatible with the logic of society related to ethics and social values at least as a practical matter. The engagement in technological innovation in the private sector usually faces a competitive situation, where companies may prioritize outdoing the competition in innovation rather than attempt to proactively address ethical and social issues related to innovation. The attempt may not be justified based on the logic of business, because it costs money and time, the success or failure of innovation in technology is the decisive factor of corporate competitiveness and profitability and it is difficult to correctly predict what ethical or social issue will occur as a result of technological innovation. The inclusive approach to or multistakeholder governance of innovation may not function well in business organizations. In fact, there are many companies which maintain the attitude of "innovative first, consider the consequences afterwards". Of course, a company can hold out the ideal of ethics by design or sustainability by design. However, no

matter how conscientious a company is, they would never forgive the situation where their rivals, which do not intend to fulfill any ethical obligation in the process of innovation, pull ahead of them in innovation success. Instead, it is no wonder that they assign the highest priority to achieving innovation and postpone the responses to ethical and environmental issues.

On the other hand, business organizations have recently been required to be sensitive on ethical and social issues more than ever. They are now required to show their ethicality and integrity through proactively dealing with a range of frameworks, such as technology's ethical, legal, and social implications (ELSI), environmental, social, and governance (ESG) issues, and the Sustainable Development Goals in addition to complying with laws and regulations, following business ethics and taking corporate social responsibility (CSR). Whereas these requirements can be understood as the requisites for establishing corporate citizenship, many business people consider companies should fulfill the requirements—or responsibilities in negative senses—to appropriately manage the reputation of them and ensure profitability. Ethics, far estranged from our approach, tends to be regarded not as an end but as a tool to secure corporate profitability in the context of business by business people. On the other hand, policymakers and social activists such as environmental activists may wish to use such concepts as instruments to control corporate activities.

International competition for innovative technologies

Innovative technology is strategic in the sense that it can be a decisive factor of a nation's, as well as a company's, competitiveness. Therefore, it is not surprising that a technological innovation project is accompanied by a political and economic ax to grind. This complicates the situation surrounding scientific research, technology development and use, and relevant regulations.

Because a competitive advantage gained and/or sustained by companies based within a country or a region contributes to its economic development, regulations imposed on research and innovation in technology

are not necessarily enacted based on the logic of society. It may make more sense that those regulations which are valid across borders, in particular, are products of international political and economic games; the realistic pictures of them should be understood in the context of competition between countries and regions; and the ethicality of ethical technology policies governmental organizations develop and publish is just superficial. Actually, Japan's Social Principles of Human-Centric AI (*Council for Social Principles of Human-centric AI* 2019) seems to intend to gain and sustain the competitive advantageous position of Japan or Japanese industries through taking the policy initiative in research and innovation in AI. Similarly, the European Commission's Responsible Research and Innovation projects seem to pursue or maximize the Brussels effect (Bradford 2020), presuming ethics is a political and economic instrument. The most serious ethical problem in the context of innovation in technology may be that only the instrumental value of ethics—to gain and maintain a competitive advantage—is acknowledged both in the private and public sectors. We are now in urgent need of finding a way of preventing the instrumentalization of ethics, sustainability, and human values.

Another aspect of international competition for innovation in technology is the battle over values or cultures among nations. For example, European researchers, policymakers, and organizations such as the European Commission often emphasize the importance of gender equality for Responsible Research and Innovation insisting that all relevant actors should engage in the processes of the responsible development and implementation of technologies (*Directorate-General for Research and Innovation* 2012, 2016; Geoghegan-Quinn 2012). However, it may be hard for Japanese people, including business people, researchers, and policymakers, to understand the insistence. In the report from the RRING project, it appears that many Japanese tend to consider that capable people should engage in tasks of research and innovation regardless of gender and maintain that gender equality policies such as affirmative or positive action—assigning the equal number of male and female staff to those tasks—are little more than window dressing, disrespect the staff, and can frustrate the tasks (*RRING Project* 2021). The Japanese

respondents consequently hold that such policies are unacceptable from the viewpoint of professional ethics.

DISCUSSION: AN AGENDA FOR INNOVATION ETHICS

In this piece, we have discussed the need for an ethics of technological innovation, presented methods to do so, and some barriers to innovation ethics based on competition between companies and countries. In this part we will point forward and, based on our conception of ethics, indicate some agenda items for innovation ethics research and practice.

Innovation ethics must promote critical thinking and avoid reification of values

As has been surveyed in this text, innovation ethics often becomes instrumentalized into a checklist, or a set of given values, but to stay true to our conception of ethics as critical thinking there will always be a demand from values that have been excluded from such checklists. However, one also needs to pay attention to the risk of being too open and not specifying which values are at stake, which often leads to that innovation ethics becomes hollow and toothless. Innovation ethics always needs to be reflexive about what is called "ethical" and "responsible" related to innovation and needs to be culturally sensitive and not present values stemming from a particular region as universally ethical. Even obviously positive terms such as mission-oriented innovation needs to be scrutinized.

Innovation ethics needs to also focus on care and maintenance of existing values

Innovation ethics sets the innovation at the center stage, but one also needs to consider the other side of innovation. From the gaze of innovation, innovators as well as users actively choose to *not* go about following

the way things are at the moment. Innovation ethics therefore should also throw light on the various ethical goods of different socio-cultural contexts before the particular innovation. Innovation therefore tends to stand in contrast to care and maintenance of what exists at the present, and this also needs to be included in an innovation ethics to be able to engage in critical thinking about what is at stake when innovating.

Innovation ethics is processual and iterative, and cannot be just invention ethics

In most of the frameworks surveyed and within discussions about innovation ethics, the phases of research and development of technology and putting it into a product/service are seen as the most important for technological innovation to be ethical—and this is what we mean by the focus on invention ethics. However, invention ethics runs the risk of underestimating responsibility in the rest of the technology lifecycle, and how innovators and others can be involved in innovation processes beyond design. We need to consider not only the values embedded in the process of developing innovative technologies, but the values emerging from or proposed by technologies during use as well as the rest of the lifecycle. Innovation ethics should also concern long-term ethical impacts of innovation and how societies monitor the ethics of innovations that are being implemented in society. Given the unpredictability of the innovation process, ethical reflection needs to be iterative and processual, not only in the early stages.

Innovation ethics needs to be open to innovation in a variety of contexts

As Bourban and Rochel (2021) argue, much of the focus on responsible innovation has been on commercial innovations stemming from public research institutions or the private industry. As we have seen so far, perhaps in such a competitive context it is likely that ethical issues will be downplayed, and innovation ethics becomes pointless. Given the

concentration of particularly technological innovation efforts among the for-profit, commercial sector, in any case one needs to discuss ethics and the forces hindering and promoting it. There are important power issues to reflect upon concerning what kinds of innovations get promoted in society, and the ideologies and interests that are behind them. Although we see hope in the approaches we have surveyed also in the private sector, one should not forget to broaden the scope of innovation to take into account also non-technological innovations and those innovations stemming from other sectors. A sound innovation ethics therefore consists of also directing the spotlight away from the private sector and international competition and discusses innovation ethics outside these dominant sectors of society.

Innovation ethics acknowledges the infinite demands of ethics, but still is action-oriented

In some of the surveyed frameworks, a quite strong moral subject is presumed, who can have knowledge and foresee consequences, or presuppose the potential of a collective creation of such intelligence through dialogue. Rather, we acknowledge the infinite demands of ethics and that it is unlikely that one will find solutions that promote all values and please all stakeholders. However, with our view of a heroic, post-heroic ethical subject, we also see innovation ethics as trying to be courageous and do one's best despite the insurmountable changes that are presented. Refraining from action in the face of these infinite demands is also not desirable.

CONCLUSIONS

In this chapter, we followed the current discourse on innovation ethics, focusing on the ethics of technological innovation in the for-profit sector. We then problematized the focus by pointing out the issue of competition and then constructed a potential way forward for innovation ethics. Innovation ethics:

- *must promote critical thinking and avoid reification of values.*
- *needs to also focus on care and maintenance of existing values.*
- *is processual and iterative and cannot be just invention ethics.*
- *needs to be open to innovation in a variety of contexts.*
- *acknowledges the infinite demands of ethics, but still is action-oriented.*

For researchers, our piece can hopefully contribute to stimulating a discussion about innovation ethics, going beyond current discussions of innovation ethics in different subfields. For practitioners, our approach to innovation ethics can problematize the ways in which ethics is discursively constructed in public and present an alternative where innovations need to be critically reflected upon and where innovations need to be seen as having good or bad consequences for the values that our society is expected to promote. We also argue that students in innovation studies, management of innovation, industrial management, as well as business and engineering degrees should be exposed to innovation ethics, to problematize an uncritically positive view about innovation, as well as students in non-technical degrees, some of whom might have a slightly more critical approach to technological progress. It is unlikely that progress toward a better society could be made without technological as well as other innovations, and an ability to think about a broader range of ethical implications can be valuable to bridge understandings among different parts of society and to create a joint exchange of meaning about what a desirable society is and what role innovation can play to advance it.

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Part II

Some General Critiques of Innovation

4

Creative Continuation: An Alternative Perspective on Innovation and Society

Jon P. Knudsen

INTRODUCTION

In our Western tradition we tend to cherish deep changes, those that make us take big steps forward. In that sense the fascination for radical innovations resonates with a long history of linear thinking and attempts at squaring of circles, as if the early post-WWII ideologies of technological push, trickle down, and flattening of cultural spaces (Porter 2000) have zombie-like returned to become the most valid of intellectual and political currencies available for buying us into the future (Sennett 1992, 2006). Even to thinkers who are critical toward mainstream theories of innovation and economic growth, the belief in ruptures and leaps prevails. Yet another fad in this vein is the (re-)birth of missions as a guiding principle for the need to take these big steps, not only to follow up putting a man on the moon by sending another one to Mars, but, more

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importantly, to care for our common future (Mazzucato 2021). Further specification of this need is often made by referring to the 17 goals for sustainable development as listed by the United Nations (*United Nations* 2015), to which the concerned inhabitant of this planet and especially the intellectual segment of its populations is supposed to repeat: Yes, we can!

But one thing is to acknowledge that radical changes and innovations often fail, and especially so when they are set to solve what is commonly referred to as "wicked problems" (Crowley and Head 2017), problems that are so multiple in origin and consequences that they cannot be addressed by recipe-like solutions, another thing is to face that attempts at big leaps forward often have the most catastrophic consequences for societies exposed to them. We do not have to repeat the historical debates on colonialism, neo-colonialism, or the famous Chinese big leap forward to make the point. Recent cases of Western missions designed to remake Iraq, Libya, and Afghanistan to brighter futures suffice to prove our continuous and paradigmatic fascination with the concept of radical change and the subsequent blindness to the downsides of its missionary agency.

There is a long string of literature on the dark side of innovations theming how societies often tend to deteriorate institutionally and economically in the wake of such radical changes. Karl Polanyi's ([1944]2001) pathbreaking analysis of the genesis of British capitalism and its concomitant creation of the then wealthiest nation of the world alongside unprecedent misery for large sections of its population still serves as a classical reference. In most of the existing literature on innovation the capacity for social change is seen as an important prerequisite for its practice. This goes for the literature that addresses innovation pertaining to society at large, and it is even more important as an underlying condition for understanding innovation within the economy. The Schumpeterian notion of creative destruction may be taken as its ultimate postulate (Schumpeter 1934). For new practices, processes, and products to emerge and prevail, older varieties must be destroyed and replaced (Tzeng 2009). While the nature and time-order of these processes may be discussed (Perelman 1995) the mechanisms of their backwash effects still operate with important consequences as institutional instability and political turmoil.

On the other side we find perspectives on innovation that highlight the small and piecemeal adjustments made to existing practices, processes, and products under the umbrella of incrementalism. Even societies and agents uncapable of radical changes and total reorientation may innovate but then in more prosaic ways, either as necessary adaption to strong external exigencies or as inner drives stemming from economic, social, and cultural dynamics in place. Hence, the literary canon of innovation predominantly elaborates on the theme of radical innovations and creative destruction so typical for societies capable of making the big leaps, contrasted with those societies that mistakenly are perceived as lagging in unambitious incrementalism (Godin and Vinck 2017).

In this chapter I want to go further and lift to the forefront an alternative perspective on innovation that questions the appropriateness of the creative destruction legacy to understand present innovational practices as well as policy needs. I do this by launching the concept of *creative continuation*. The point made is that cultures at different aggregate levels often seem to harbor qualities for renewal and change that do not require destruction, but rather presuppose that these inherent qualities are activated in the continuous remaking of the societies in question. Far from being discarded, existing social structures and practices are seen as assets for future development. I further argue that applying such an alternative perspective may add to the understanding of why some countries and regions appear to be more economically successful than their textbook-derived institutional capacities and innovational scorecard would predict. I will substantiate the discussion by drawing on existing studies of innovation processes in West Norway and in the Basque Country and by a reinterpretation of the classical literature on the Third Italy (Dei Ottati 2018; Piore and Sabel 1984). The concept of *creative continuation* can then be a key to the understanding of how societies can grow and thrive by putting to use their immanent resources for economic and institutional development rather than through copying general and socio-technical recipes for innovation.

The theoretical anchoring of the discussion is derived from the writings of the French historian Emmanuel Todd (Todd 1990, 1997, 2019). Todd's basic framework for analyzing socio-cultural prerequisites for (economic) development builds on the idea that macro and micro social

practices mirror each other so that rationales of behavior realign structure and agency. In doing so, he falls in line with the understanding of culture as socially anchored software of the mind (Hofstede 1991), as well as adding to the argument put forward by Hall and Soskice (2001, p. 7) that actors tend to gravitate toward equilibria where their actions receive institutional support. Todd's model has several advantages. Its accounts for how rationales in individual behavior and structural arrangements combine. It can be applied to indicators on different geographic levels. And when tested empirically it is valued for its proven ability to explain empirical socio-economic variations at national and sub-national levels (Duranton et al. 2009).

EXTENDED FAMILIES AND INNOVATION

Todd's favored units of analysis are families as they are differently structured, geographically and historically. Families frame the basic socialization of individuals in any society. In addition, data on families are generally available both for long time series and for various geographical levels. This makes them suitable for being coupled to longitudinal or comparative data on economic development and performance. I will here explain how understanding variation in family systems connects to the question of coming to terms with differing takes on innovation.

In his writings on economic development and innovation, Todd (1990, pp. 145–153, 1997, 2019, pp. x–xx, 131–138) does not distinguish between different types of innovation along the usual radical—incremental dimension. He recognizes differences in capitalist forms as specified according to his anthropologically based system (Duranton et al. 2009; Todd 1997). Concerning innovation, his main preoccupation is to explain the underlying, anthropological conditions that make societies based on extended families so different from their Anglo-Saxon counterparts, where the logics of the two-generational absolute nuclear family—flexibility and mobility—prevail. Thus, innovation in its allegedly pure form is tied to the ethos and practices of individuality. The general tendency in much of the literature that deals with innovation is to label the anglophone parts of the world as the most innovative. Behind this

assumption, we find an interpretation of the flexible, lateral, and anti-authoritarian traits in nuclear family-based societies as being conducive to trust evolving as a general value instead of being delimited to applying as a mere in-group logic pertaining to clans or various forms of extended families (Tabellini 2010). In his most recent discussion on potentials for innovation, Todd (2019, p. xiii) lists countries and regions as they deviate negatively from this Anglo-American optimum, as do other authors in their interpretations on the effects on innovation of various value systems in the global scene (Cox and Khan 2017; Williams and McGuire 2010).

When bringing family types into the discussion, we should distinguish between two basic types of extended families: the stem family and the communitarian family. *The stem family* model is a three-generational structure consisting of a family unit where the historical farmstead is passed on through a single heir, usually by primogeniture (Fauve-Chamoux and Ochiai 2009). This system is hegemonic in countries like Germany, Sweden, Switzerland, South Korea, and Japan and regionally dominant in many other (European) countries. Where it appears, the model also tends to guide the structuring of family firms outside of the agrarian sector. In its most extreme form, it serves as a blueprint for the Japanese corporation built on vertical loyalty and performative excellence (Bhappu 2000). In the literary canon referred to as Variety of Capitalism (VoC) stem family societies are covered by the label of coordinated market economies (CME) as opposed to the absolute nuclear-based liberal market economies (LME) (Hall and Soskice 2001). The corresponding political ideologies replicating the stem family values are Christian democracy and social democracy, both offering bulwark—at least historically—against liberalism in its pure form.

While being tied to the traditional ownership of farmsteads, the ideal of the stem family pattern, wherever it appears, tends to be seen as a desired norm for the society at large (Berkner 1972; Sogner 2009). Furthermore, it is retained as an organizational ethos even when the society in question becomes industrialized and urbanized (Douglass 1988). The ideal travels with the rural-urban migrants to their new locations (Charles et al. 2008; Janssens 1986). Hence, societies where the three-generational stem family, especially in its rural form, has almost disappeared continue to operate according to its logics, being production-based,

and relying on its kin-derived networks, calculating economic results in a generational perspective. The mechanisms at operation are piecemeal adjustments and incremental innovations to cope with changing demands from surrounding markets and globalizing institutions wherever they challenge the stem family rationales.

The communitarian family type is characterized as an organizational model almost antithetical to the logics of innovation (Todd 1990, pp. 329–367). As a historical model it consists of a three-generational family where the children—mostly the sons—when marrying establish their households on the premises of their parents to form the three-generational structure, historically framed in a métayage-like rural setting. The sons are regarded as equals under the authority of their father. When passed on, the original property is normally partitioned among the heirs. This family type is typically found in China, Russia, and in many other countries formerly belonging to the communist realm. It appears as regionally dominant in some parts of Southern and Western Europe, and most notably so in the historically Etruscan part of Italy, which today is almost congruent with the region labeled the Third Italy (Piore and Sabel 1984). It has an empirical affinity wherever it appears with communism as a preferred political expression of its values, authority, and equality. In the following two sections, the logics connecting family systems to economic behavior, and more specifically to innovation, will be elaborated for the three regional cases chosen. The Basque and the Norwegian cases are used to illustrate specific types of stem family societies. The Italian case is picked for its remarkable ability to capitalize on some qualities of the communitarian family type.

THE BASQUE COUNTRY AND WEST NORWAY

The Basque Country is referred to as the three provinces of Álava, Biscay, and Gipuzkoa as they form the Basque Autonomous Community on the Spanish side of the Franco-Spanish border. This region has about 2.18 million inhabitants (2020) (*EUSTAT* 2021). It is the richest of the Spanish regions with a regional GDP comparable to that of Sweden (*EUSTAT* 2019). The region has a varied economy centered on strong

manufacturing industries and a globally oriented banking sector. West Norway comprises the three counties of Rogaland, Vestland, and Møre og Romsdal with a population of about 1.39 million (2020) (*SSB* 2021). It is a region with a diverse economic structure, harboring the national oil capital of Stavanger, and the country's second largest city, Bergen. Recently, innovational performances related to the region outside these two cities have been especially highlighted, as pointed to in the following.

Both regions exemplify economies that have developed according to their own systemic prerequisites. They are both peripheries in nation-states and as such part of a European geography of regional dissent (Todd 1990, p. 282). They are both dominated by the stem family system as basic logics of social integration as opposed to their respective capital regions, which are marked by various forms of nuclear family types, egalitarian nuclear in the Spanish case, and absolute nuclear in the Norwegian case (Todd 1990, p. 62). Their regional opposition takes both cultural and political forms. In the Basque case this implies a twentieth century history of civil wars (Jáuregui 2006), while in Norway, much of the political conflict was channeled into the politico-institutional system following a constitutional crisis in the early 1880s (Holmøyvik 2018).

Spain is a country that harbors regions with strong regional identities. These regions vary in social structure, political culture, and economic performances. Three of the regions, Catalonia, the Basque Country, and Galicia, distinguish themselves as being dominated by the stem family configuration in contrast to the rest of the country (Douglass 1988; Todd 1990). Two of these regions, Catalonia and the Basque Country, are also the richest and most industrialized regions in Spain (Santisteban 2006). The Basque Country has a long history of being an industrial locomotive in Spain. During the last decades the region has been able to shift away from declining industries to cope with changing exigencies from global demands. It has done so by activating network resources inherent in the specific Basque institutional configuration which operates across sectoral divides, meaning that logics of cooperative behavior apply to civil society and the economy alike, though taking different practical forms.

The Basque case is often lifted to the forefront as an example of how traditions and a distinct culture can be used as assets in transforming the economy, seeking a balance between continuity and novelty, by Kevin

Morgan (2016) labeled as a specific type of collective entrepreneurship model. It then makes sense to talk about a model of innovation that precisely presupposes a social structure that is neither atomistic nor liberalist, but that makes use of its networking abilities derived from quite different demographic and ideological reservoirs to successfully tap into the global economy. In doing so, the society in question is furthermore liable to reproduce its networking capacities to tailor the policy agencies and knowledge institutions in place to support its business community (Gómez Uranga and Etxebarria 2000), not least the SME part of it (Larrea and Estensoro 2021; Narvaiza et al. 2017). One of the features to be noted with these types of networking economies is their ability to capitalize on the horizontal dimension of their structures and to downplay the vertical. As such, lateral connectivity is favored over authority, regardless of geographical scale.

In the West Norway case we observe this laterality as a distinct form of inherited freeholder equality pertaining to a rural context where most farmsteads are small-scale, but independently owned. The absence of a landed aristocracy attenuates the strong vertical imperatives in the stem family ideals to pave the way for horizontal networking as a preferred mode of pursuing interests whether these are cultural, political, or economic. The further consequence of this is that agency is opened for whoever proves able to take up leadership by charisma, by personal merit, or by other ascribed virtues. This contrasts the more vertical and quasi-feudal stem family type predominantly found in the Northeast and Northern parts of the country (Knudsen 2018).

This way of modernizing from within based on the inherent qualities in the social structure has increasingly been recognized as one of the fundamental factors by a remarkable innovation catchup in the coastal parts of rural and semirural West Norway (Asheim and Grillitsch 2015; Fløysand and Sjøholt 2007; Strand and Leydesdorff 2013). But this has not always been so. During the earlier parts of the twentieth century, national industrial leaders, trade union leaders, and political leaders were generally reluctant to accept the small-scale and locally based industrial structure of rural West Norway as a contribution to the creation of national wealth. This “French” way of pursuing small-scale business development was criticized for having a limited potential of creating

value added compared to the "British" large-scale Taylorist industrial path (Wicken 2004). The recent revaluation of judgments about industrial strategies is derived from various sources. First, the industrial restructuring taking place from the mid-1970s and onward proved to have hit many of the presumably modernized industrial regions harder than anticipated, whereas some of the equally presumed lagging regions demonstrated unforeseen resilience (Amdam and Bjarnar 2015). Second, new insights were gained about the ability harbored by some of the networking industries and regions to stretch their networks to foreign global hubs of excellence. This had the effect of spurring further economic growth in the industrial bases of origin (Fitjar and Rodríguez-Pose 2011). Third, there was a spillover between sectors in some of these networking contexts through politicians, civil society, and business communities speaking the same language, thus being able to cooperate across spheres to adopt policy regimes such as RIS 3 (Knudsen et al. 2020). This feature resembles what could also be observed in the Basque case.

THE THIRD ITALY

Contrary to the cases of the Basque Country and West Norway, the notion of the Third Italy is more imprecise. Normally, the provinces of Tuscany, Umbria, and Emilia-Romagna are counted in, to which are then added without further specification "and nearby provinces" (Castree et al. 2013, p. 514). The Third Italy is often more precisely defined by its special nexus of family businesses and up-market penetration of produce stemming from handicrafts and industrial niches specializing in machinery and various luxury items than by its precise geographic coordinates (Piore and Sabel 1984). As such, it offered a scheme for how regional wealth could be created in a post-Fordist context of variation and downscaling, deemed outdated by orthodox economists.

Thus, the case of the Third Italy as spearheading late twentieth century innovation and economic growth is almost legendary. Piore and Sabel (1984), partly informed by earlier research, argued that a new socio-industrial configuration based on regionally located and networked small- and medium-sized firms was entering the global scene as a model

labeled flexible specialization, reviving the Marshallian category of industrial districts (Marshall 1890). The core of the region in question has a historically derived structure of extended families which have served as hinges for economic networking for centuries (Bamfield [1987]2015). However, this family type is characterized as egalitarian and communitarian by Todd (1990, pp. 329–346), which analytically links it to regions of poor economic performances wherever it is found. The main reason for this is its strong vertical institutional ties to a defined leader and its insistence on lateral equality in a bonding network structure subordinated to this leader. In sum, these features dispose for values as far from the Anglo-American innovation optimum as possible (Todd 2019, p. xiii).

In this respect, the Italian case is the black swan of the communitarian family type. But this deviation from the expected seems to have been overlooked by Todd (1990, pp. 329–367, 2019) in his discussion of the region. Bamfield ([1987]2015) claims that the special type of sharecropping typically found within the extended families in the region disposes for a smooth transition to other forms of small businesses bringing the logics underpinning this form of agricultural practice onto establishing non-agricultural firms. Isaksen (2011, p. 295) cites this fact along with other non-demographic factors to explain the genesis of this specific type of industrial district. In much of the literature on the innovative capacities of the region, the networking abilities of the region are lifted to the forefront. However, the normal take on networks in communitarian families will be that they are bonding rather than bridging following the tradition from the writings of Granovetter and Putnam (see Florida 2005, pp. 8–11). The opposite argument, built on Italian data, is presented by Prandini (2014), though his argument concerns general social relations and integration and not specifically innovation in a more limited sense. In the case of the Third Italy, it seems fair to characterize its networking capacities as bridging to explain its positioning in the late twentieth century global economy (Piore and Sabel 1984).

In recent years, two trends can be observed regarding the discussion on the model status of the Third Italy. The first is the observation of its struggling with maintaining its former role as spearheading industrial adaptation and renewal (Bianchi 1998; Dei Ottati 2018). The second is its

possible model effect on similar processes of economic growth taking place in other corners of the world where the egalitarian communitarian family prevails, notably in China (Christerson and Lever-Tracy 1997). The first question is about the time-/space-specificity of institutional arrangements in general, theming James Coleman postulate that all theories in the social sciences are but sometimes-true-theories (Coleman 1964, p. 517). The second question is more specific as it delves into the mechanisms and potentials of communitarian forms of social integration. The consequences of the Third Italy eventually not being a black swan is enormous given the large segments of the global economy being dominated by communitarian demographic forms, otherwise judged poorly endowed for innovative behavior.

DISCUSSION

To sum up, there are some common denominators that can be observed from the empirical snapshots presented above:

(1) Non-disruptive innovative behavior benefits from strong networking practices inherent in the social structures in place.
(2) Cooperative traditions are important, and so are various forms of tacit knowledge for reproducing knowledge alongside a demonstrated capacity for absorbing new knowledge from without when needed.
(3) Lateral modifications of the stem and communitarian family systems have occurred with the consequence of leveling away the bonding or lock-in tendencies of the strong verticality normally identified with these family types.
(4) There is a proven ability to stretch the networks beyond the local or regional context.

To condense it even further, we can subsume the four points above as variations of what Johnsen and Ennals (2012) in a seminal study called *collaborative advantage*, a follow-up on the neoclassical term of comparative advantage and the Porterian notion of competitive advantage (Porter

1990). The empirical cases referred to in this chapter are all peripheries within their respective countries. As such, their cultural and political markers display this peripherality. However, in economic terms these regions are well-performing, within several industries they are at the global forefront. Institutionally, they rely on their regional traditions and seem to be aware of the capacities found in these traditions for future development.

The regional cases pointed at here, West Norway and the Basque Country, substantiate that even on the level below the (nation) state, putting institutional resources to use for creating economic and social well-being without recurring to de-culturalized recipes for radical change will make a difference. In addition, there is at least one case of a successful regional economy, the Third Italy, that seems to have relied on the structures of the communitarian family system to develop. While the Italian case could have been referred to as a black swan, the plethora of well-performing economies based on the stem family cannot be written off as anomalies. Therefore, we should search for qualities in all types of societies, qualities that may be built on for developing tools to achieve. By doing this, I argue the case for creative continuation as an alternative way to seeking welfare and well-being to the one-dimensional imperative of radical innovations.

By formulating it as a choice between two clear-cut options, I do of course simplify. Over the years, various strains of literature have attempted to attenuate these simple categories by pointing to social practices blending various aspects of innovational takes and procedures. Examples could be given as the often-repeated critique of "one size fits all-models" (Tödtling and Trippl 2005), the presentation of the CCI model of innovation as a third way between STI and DUI practices (Isaksen and Karlsen 2013), and finally the fascination for "paths" as a concept for theorizing variety (Asheim et al. 2019; Tödtling and Trippl 2012). All these approaches may be understood as having meso-range theoretical ambition, meaning that they offer nuances to an overarching bifurcated theoretical framework, rather than challenging it systemically. From a more overarching perspective, the political science literature is filled with different models for dealing with the systemic challenges between various institutional heritages and the constant quest for innovation (Hall and

Soskice 2001; Streeck and Thelen 2005). The problem is not the lack of alternatives to the present fascination for a one-dimensional take on innovation, the problem is the enduring hegemonic position of the one-dimensional way of thinking.

The present turn to missions in the economic (and political) discourse only serves to rewrap the message. Mazzucato (2016), citing Polanyi's ([1944]2001) pathbreaking analysis of the genesis of British capitalism, underlines that all economic systems are embedded in social structures. But she then refrains from offering a key to the further understanding of the anatomy and the following conditionalities and propensities of these structures. Tödtling and Trippl (2005) in their now classical paper stated that any uniform take on innovation would fail to deliver, as one size will not fit all. And Polanyi ([1944]2001, p. 147) himself seemed to fall prey to his eloquence having discovered that "…[l]aissez-faire was planned…" to elegantly continue "…planning was not." Seen in hindsight, he was toying with the two competing modernist paradigms of the mid-twentieth century, market versus planning. And, admittedly, both were planned. It now seems appropriate to ask why Mazzucato's preoccupation with embeddedness has not led her to take a U-turn and ask for more change-oriented policies to be tuned to place-based prerequisites, as one of the recognized problems with innovation policies in general—as to her mission-oriented economy—seems to be their lack of compliance with context (Brown 2021).

Innovation is high on the political agendas, from the global to the local scenes. To those preoccupied with forging or promoting innovation policies, the analysis presented here has two important implications. First, it points to the importance of looking into a given region's socio-cultural potential for innovation as a first step in any attempt at policy formation, as building on existing cultures and practices will most often be a legitimate and cheap way to establish working policy regimes. Second, these suggestions may imply the installation of less disruptive and more socially attentive policies than offered through (international) expert recommendations, often favoring economically and politically costly disruptive policy measures.

CONCLUSION

To sum up, innovation has become an omni-present notion in modern societies. To erase it from economic, political, or social discourses will be futile. What we *should* opt for is to acknowledge that the term covers a wider variety of practices than usually referred to. In this chapter I have argued for the virtues of *creative continuation* as a more socially acceptable way of pursuing social change than that of socio-technically coined models of radical or disruptive innovation. Social structures are inherited and (re-)shaped throughout history. Whether they match with the exigences of present needs for innovation or not may basically be contingent. The case of the Third Italy shows how a certain place-based framing of economic production at a given moment in time suddenly meets with a demand function in the world market to create wealth in the region affected. But this is like a window opening, and one that as easily can be closed when the institutional match seizes to yield. This is what happened in the Italian case. This is also what happened to Japan. The extreme form of stem family loyalty copied onto its exporting industries was highly useful for establishing lean-based supply chains to serve the world markets with high quality goods. When this was achieved and the systemic achievements had become global state of the art, the institutional set-up was rather help-less in searching for new ways to innovate. The until then successful Japanese economy stagnated. There is a time and place for everything. The virtues identified in the above cases may also be sometimes true—framing windows of opportunity. If there is a universal message, it is not about these specific cases and their details—we often mistakenly reify cases as transferable best practice—but the fact that they were able to innovate from putting their own resources and capabilities to use in a context of institutional fit in an ever-changing global economic system. The problem arises when the various context-specific innovation models are brought out of their context and promoted as socio-technical policy solutions able to perform in any socio-cultural setting. Ironically, when writing this, the perceived superior innovation models of the liberal market economies (US and UK) are themselves struggling to keep their economies in hegemonic positions on the global scene. Even more ironically, this fact doesn't even seem to have affected the theology of radical innovation.

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5

Image, Imperatives, and Ideology in the Innovation Industry

Alf Rehn

INTRODUCTION

It is nigh on impossible to deny that the notion, concept, and discursive device of "innovation" have become very powerful in contemporary society. Today, companies have to present themselves as being innovative and having innovation as a core value, simply so as not to be punished in the stock market and pilloried in media. Political parties, movements, and other actors need to showcase their fealty to innovation in order to be seen as serious in their engagement with the economy and so as not to be seen as hidebound and belonging to another, passed era. Institutes of education, from kindergartens to the groves of academe, need to establish themselves as both nurturers of innovators and innovators in their own right, lest they be seen as traditionalist and thus on the path toward decline and death. In fact, there are few if any fields that are not touched

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by this innovation imperative, this need to establish oneself as being on the side of (innovation) angels by repeating the idea that innovation is the highest form of human achievement, a meta-accomplishment that defines what it means to be human.

That said, there is little research done on exactly how this "conceptual colonization" (Rehn 2018) works, and what is driving it. This chapter suggests that a key force in establishing the contemporary innovation imperative is a phenomenon I have come to call the *innovation industry*, defined as the network of authors, pundits, consultants, event managers, and similar who have the commodification and dissemination of ideological statements regarding innovation as their primary occupation. Reported here is a study of this loosely coupled global network, of which I have been part of for close to two decades, which argues that the production of innovation knowledge needs to be understood as part genre, part autopoietic affirmation, and part performance. Drawing on both cultural studies, auto-ethnography, and critical theory, I will attempt to highlight the manner in which the innovation imperative (and the attendant ideology of the same) is produced and reproduced as part invocation, part exhortation, and part repetition.

THE INNOVATION INDUSTRY: AN INTRODUCTION

In this chapter, I am thus less interested in innovation as the *Ding an Sich* and more interested in the multitude of manners in which one can talk and make claims about the same. As innovation has taken pride of place in the more general conversation about management and business success, this has created a large and dynamic market for a broad range of statements, claims, and engagements regarding innovation, including but not limited to:

– popular books about innovation
– articles about innovation
– conferences about innovation

– workshops about innovation
– seminars about innovation
– various innovation consultancy engagements
– educational programs, of various length, on innovation
– social media posts about innovation, and so on

In none of these, with the possible exception of a very few workshops and consulting engagements, actual innovation is the key aim or content. On the contrary, much of this revolves around narrating innovation—telling and retelling stories about innovation. Central to this is the notion that in order for innovation to occur, it needs to be invoked and that a core part of this is to tell stories about how other people have managed to innovate, and to try to distill these stories into a few, easy-to-follow exhortations that one then assumes will enable real innovation at a later date.

As it is far easier to tell tales about innovation that has already occurred, and as there provenly is a large market for this kind of storytelling and edutainment, the market has responded by ensuring that there is a plethora of innovation speakers, innovation consultants, and authors of innovation books. In fact, it might even be more apposite to say that the market has responded to the desire for innovation narratives and the ease with which these can be produced by creating an entire ecosystem of innovation content. Innovation consultants package their experiences in innovation books, and these help event managers set up innovation conferences with the aforementioned consultants as speakers. These are often used to market innovation programs and consulting engagements, not to mention serving as a way to generate social media content for spreading word about the consultants, the books, and the next conference. Taken together, this forms what I have taken to calling the innovation industry.

This industry is loosely coupled, but also contains a remarkable amount of autopoiesis—innovation authors going on markedly similar speaking tours (spoken of as "the circuit"), blurbing each other's books, and being represented and engaged by the same people. Two centrally placed innovation thinkers are more likely than not to have bumped into each other at various events, been asked to give positive PR to each other's books, and know many of the same agents and event planners. There is also quite

a high likelihood that they use very similar cases and examples in addition to their own.

This is due to the fact that the innovation industry is not in the market to innovate or even to enable innovation. Rather, this is an industry that deals in *commodification.* The aim of the innovation industry is to bring in tales of innovation (e.g., a story about how a specific technology or product was developed and brought to market) and turn this into content that can then be delivered through books, keynote speeches, or a tweet. The fact that the underlying phenomenon is innovation is more or less incidental. What matters is not the end result, but the commodity (a book, a keynote, a consulting engagement). In fact, there are even offshoots of this that fully embraces this commodification, with my own personal example of this being the web-shop startupvitamins.com, from where you do not need to buy anything as arduous as a book or course, but where the exhortations of the innovation industry are packaged as posters, t-shirts, coffee mugs, and so on. Here you can buy socks that carry the statement "Innovate Or Die" for 20 USD, pair these with a 35 USD sweatshirt with the slogan "Think Bigger," and top it off with a 29,99 USD water bottle emblazoned with "Experiment." Thus attired, you assumedly no longer need to innovate, as your entire being communicates innovation as commodity.

The innovation industry is of course not alone in these kinds of practices, and we might instead state that it best be understood as a subset of the broader industry for "management thinking" and motivational speaking/materials, but it is also a subset that is forming much of the discourse around what we are calling a key societal driver and potential solution to society's wicked problems. Motivational speaking might be pablum and placebo, yet when it tricks people into believing their problems can be solved simply by "trusting the vision" or "manifesting your destiny," the impact this has tends to be on the individual and personal level. As, for example, innovation speaking makes claims about being able to invoke innovation by way of a few simple tricks, the potential damage from such imperatives is far greater.

Consider the notion of "disruptive innovation." Originally the PhD thesis subject of the middle-aged Clayton Christensen, later turned into a somewhat popular HBR article (Bower and Christensen 1995) and

then a mega-successful business book (Christensen 1997), the concept went from academic idea to corporate buzzword in very short order. Christensen did his fair bit to commercialize it, founding a consultancy around it and following up with books evermore tangentially connected to the original insight, but it was the innovation industry that truly made it. In a very short while, every innovation thinker worth their salt presented their own takes on disruptive innovation, sometimes following Christensen's ideas around it, sometimes not. Blogs with names that worked in "disruptor" or "disruptive" started popping up, while many innovation speakers inserted them in their bios. Conferences did the same, and book titles were rewritten to incorporate the buzzword.

Had this been the end of it, one could have understood it as a very superficial thing. A term becomes a fad and is then rapidly appropriated by a number of agents and used in a number of semiotic settings. It might have cheapened language and emptied narratives of meaning, but this is not in and of itself a major problem. What did become a major issue, as, for example, Jill Lepore (2014) pointed out, was that this mimetic isomorphism (see DiMaggio and Powell 1983) spread to the corporate world, with actual real-world effects. Corporations and CEOs started speaking of themselves as disrupters and pushed the people in their organizations to deliver on the vague promise that lay in the term. Christensen himself started producing a series of books (see, e.g., Christensen and Eyring 2011; Christensen et al. 2008, 2011, 2019, and so on) that utilized the same concept in novel settings, with the decrease in marginal utility that tends to accompany such practices. The people with whom he collaborated, either through his consultancy or the aforementioned books, further commodified both the concept and its progenitor—by attaching his name to theirs, several popular innovation speakers built their business on their connection to Christensen. Disruptive innovation was thus an idea that was first developed in academia, turned into a book, which was turned into a consultancy and a preponderance of keynotes, which led to new studies that could be turned into a new book. Each step made disruptive innovation more and more of a brand and an image, one that could be copied and reiterated the world over. As a side note, the "Always Challenge The Old Ways" coffee mug from Startup Vitamins can be yours for only 16 USD.

Along the way, however, something else happened. Lepore (2014) pointed out the academic weakness in the concept, noting that many of the original cases used to argue for it had methodological or other weaknesses (such as not being the successes they were hailed as). She noted but paid less attention to the fact that the influence of the concept, and Christensen's successful marketing of the same, was vast outside of his own books and consultancy. Organizations the world over adapted to the notion of disruptive innovation by setting up their own initiatives, assigning people roles such as "innovation evangelists" or "Chief Disruption Officer" (although it seems that this role was far more prevalent in innovation articles and keynotes than ever in actual top management teams), and prominently mentioning disruption in their strategies. Collecting hard data on the overall success/failure of these initiatives and engagement is nigh on impossible, but the radical drop in them would indicate that for many disruption has already seen its heyday. While the getting was good, however, tremendous amounts of time and money were spent chasing the disruptive dream, at the cost of other, potentially more productive engagements. The well-packaged, commodified term, eagerly pushed by the many agents of the innovation industry (including Christensen himself) played out as a kind of conceptual colonization that pushed out other understandings of the word. What we now have to ask ourselves is how this was so eagerly consumed.

"INNOVATE OR DIE!": ON IMPERATIVE ASSUMPTIONS IN INNOVATION THINKING

It is unlikely that there is a more important notion in trying to understand the role that innovation—as a semiotic marker, as a discursive and narrative device, and as a perceived and represented phenomena—plays in today's society than that of the "innovation imperative." This term, while not yet in general use, refers to the fact that in both the academic literature, popular culture, and the broader societal discussion, innovation is presented as always already something that is both essential, a moral good, and a necessity. The innovation imperative is a term for the

tendency in our conversations to continuously affirm and reaffirm a set of basic "truths" about innovation, and by this instill the absolute belief that innovation is not something that can be questioned or ignored, but instead a thing that one must engage with, in a positive and appreciative manner. Nation states are told that their future is defined by just how innovative they can be, and just how prepared they are to support innovation, in whatever way that may be. Corporations are told that they have to innovate if they are to remain competitive, and that the punishment for not heeding to this imperative is inevitable degradation and death. CEOs are reminded that their key task is to ensure innovativity in their organizations, and employees are reminded that constant innovation, in all things, is a necessity for them to keep their jobs. I could go on.

We have become so used to these kinds of exhortations where any and all forms of success, and in particular long-term such, are directly connected to innovation that we rarely question them in any real sense. That said, these are not always claims that hold under critical scrutiny, despite their rhetorical power. While one cannot deny that many of the Western countries have developed massively thanks to innovation, neither should one deny that, for example, the rise of China had less to do with innovativeness than it had to do with a vast army of cheap and flexible labor. Similarly, while the Vatican (which, despite its size, is a nation state) is not known for its forward-looking and innovative ways, it still remains a power that even affects global geopolitics.

Corporations do often require innovation in order to remain competitive, this is true and has been proven in a number of studies. That said, the claim that innovation or continuous innovation would be a matter of life or death for all organizations is provably false. Consider Kongō Gumi, the Japanese construction company. It was established in AD 578 and remains active today, doing much the same thing that it has done for over 1400 years—building Buddhist temples with traditional techniques. Or, if you prefer another craft, consider Affligem brewery. Founded by monks in 1074, it still brews beer according to the original recipe, and while it uses modern technology, these were not brought in as an innovation, but as a normal adaptation to by then tried and trusted technologies. In fact, one can point to a large number of companies that in the vernacular of innovation studies would be considered "laggards" (see Rogers 1962), but

who still manage to do well for themselves—hotels, restaurants, small manufacturing companies, various service industries, and so on. Yet the notion of innovation being an imperative remains. Why?

A key element for understanding this lies in a most understudied group in the greater innovation nexus—the audience for innovation narratives and similar. It should be obvious that there could be no innovation industry were it not for the fact that innovation books find willing buyers and innovation keynotes engaged audiences. Granted, these audiences are at times what we might call "mediated audiences," such as when an innovation book is bought for everyone working in a specific organization, or when top management decides to bring an innovation speaker into a kick-off. Still, even in such cases decision-makers tend to be attentive to both existing interest in their organizations and the feedback gathered. When all is said and done, the innovation industry would not and could not exist were it not for enough interest from audiences for their messaging, and these audiences can in fact be the kind of "active audiences" (see Hall 1973; Morley 1993) that have long been studied in media theory. An active audience is here understood as something more than an audience that merely received a certain message or narrative, but who instead actively take part in interpreting or constructing the same.

An example might be fruitful here. I am, in addition to being a professor of innovation, design, and management, also a relatively popular speaker, particularly on the topics of creativity and innovation. I have over the last two decades given many academic lectures, presentations, and keynotes on these issues, but to this comes the fact that I have given more than 1000 keynotes for professional audiences, at both internal events for employees and management, and external events with more mixed audiences. The sizes of audiences have varied widely, from as few as a dozen to more than 20,000 people, with a few hundred to a thousand people being the most common audience size. My task at these events tends to be threefold. One, while clients rarely use such terms, part of the expectation for a speaker is to deliver "management entertainment," namely statements and stories about management issues that are delivered in a way that amuse and entertain the audience. This can mean jokes and stories that engender laughter, but also more wry remarks and witticisms, as well as material that is more dramatic or "feel-good" in scope. In

other words, packaging and delivery matter. Two, clients expect something that they at least feel to be "practical," that is, things that at least tentatively can be deployed in practice. This doesn't necessarily mean that one needs to give direct, actionable advice, but can also be achieved by discussing what kind of matters should be kept in mind in certain situations, or even giving metaphorical advice ("Who in your organization is like Person-In-Anecdote-Just-Told, and are you supporting them?"). The third task is something of a meta-task, namely to give the audience terminology, metaphors, and anecdotes with which to discuss similar issues in their own organizations. These three levels all point to a different level of active audience engagement.

In my experience, the first level (entertainment) is the least active. People do engage by laughing and applauding and can at times make references back to the joke or the story. When I talk to audiences after a keynote, they may thank me for having presented innovation in an amusing manner or gotten them to laugh about their creative shortcomings, but the activity stops there. There is, to use Hall's (1973) terminology, not that much to decode here. The second level (practice) is, maybe somewhat surprisingly, not much more active. Again, audiences may react in a positive way here, but this does not necessarily lead to anything more than an acknowledgement of a piece of advice being potentially helpful or meaningful. Again, seeing as most people do not make direct innovation decisions in their day-to-day life, the "practical" elements remain highly abstract to most people; exhortations one can agree on, but practical in theory rather than in practice. It is on the third, discursive level where the real engagement emerges. What I've learnt as an innovation speaker is that the highest level of audience engagement happens on a level where they can say "You just said what I've always been thinking, but couldn't put in words," a sentence I by now have heard innumerable times. With a few, basic rhetorical tricks, such as condemning innovation clichés (in a manner that might itself be turning into a cliché), I can make people feel as if they are "ahead of the curve" and to thus feel like innovators, even when they're yet to innovate. Audience activity in this sphere can thus be seen as seeing instances such as an innovation keynote as a possibility to craft one's identity, seeking affirmation in what is seen as a legitimate agent of innovation (my title, which is "professor of

innovation, design, and management" bestows me with almost immediate legitimacy in this regard).

The importance here lies in the fact that imperatives only work if there is a predisposition to follow such, particularly if more forcible regimes of power aren't available. In a totalitarian dictatorship one might of course simply force the populace to accept the innovation imperative, by decree and supported by threats of violence, but in most contexts innovation isn't this forcefully supported. Instead we might say that it is established by relentless repetition, and in part this is achieved by allowing the term to be subjected to what I have elsewhere referred to as "epistemological emptying" (Rehn 2018). What this means is that the tendency in the innovation industry to allow more and more things to be referred to with the moniker "innovation" isn't an accident, but rather a strategy. By not engaging critically with the way in which our society keeps calling any- and everything innovation, not only does the field then manage to appear more and more important, it also makes the innovation imperative easier to uphold. It should not be difficult to see how this is achieved: First, refer to a few, universally accepted positive developments (antibiotics, mobile phones, the Internet) as innovations. Second, extend this assignation to involve more and more things. Third, use the bolstered legitimacy to claim that innovation is no longer a minor issue, but a major one. Four, repeat incessantly. As innovation is turned into a term that can describe or associated with most things that are seen as positive or good, and the lack thereof associated with torpor, decay, conservatism, and bankruptcies, most people will simply accept this as the state of affairs and thus become primed/programmed to react in a positive manner to a repetition of the innovation imperative.

Succinctly put, this means that the innovation industry and the innovation imperative are both part of something larger, something that can be queried not only for understanding the manner in which innovation is discussed in our age, but also to why critical engagements with innovation are necessary—and that larger phenomenon is *innovation as an ideology*.

THE INNOVATION IDEOLOGY

The term ideology is rarely used in innovation research, and many of the innovation scholars I have queried about this fact seem to have a rather rudimentary understanding of what the term means in social theory (see, e.g., Eagleton [1991]2007; Žižek 1989). Succinctly put, ideology is the name for a system of concepts which states unassailable truths about what in the world should be seen as normal and/or natural, and what should not. It is perhaps best known in its more narrow, political form (we rapidly recognize that socialism and capitalism are worldviews that, regardless of whether we agree with them or not, form competing systems of thought), but much everyday thinking is at heart ideological, as continual skepticism and querying can be quite a fatiguing way to go through life. We adopt ideologies because they make life easier and then trust other agents, such as researchers, to challenge that which needs to be challenged. Thus most of us would agree that democracy is the best political system, by and large, and relatively few doubt the general efficiency of the market economy, even if we may be aware that criticism regarding both exists. The reason for this is self-evident and has been part of the critical apparatus since at least Marx (see, e.g., Jakubowski [1936]1976). Our systems, including systems of education, politics, and media, or what Marx would have called "the superstructure" continuously repeat the "truth" of these, establishing them as normal or at the very least the best of several bad systems. Note that I am not here making an argument regarding the efficiency or desirability (or lack thereof) of either system, merely pointing to how concepts become valorized, normalized, and naturalized. We are taught that market economy creates value, jobs, and well-being. We are taught that it is the functioning system and tales about the absurdity of competing systems. After a while, it all seems natural and necessary so that even if someone was to critique it (see, e.g., Rehn 2019), this feels mostly like a thought experiment.

With concepts such as democracy and the market economy, these are of course very general, and things that in a very real way we feel engaged in and part of. Innovation is a murkier thing. We have of course engaged with innovations, but the amount of people who feel that they have been

an active part of innovation is still limited. In order to establish the kind of ideological surety around it, with a currently limited but increasing attention to it in schools, another medium for enhancing the message was needed. The innovation industry, described above, is to my mind this medium. The manner in which innovation thinkers and speakers commodify the concept is perhaps more alike propaganda (see Stanley 2015) than education, but the end result is quite similar. The point of the endless books, conferences, workshops, etc. is in the end not to ensure that more innovation comes to be, but rather to valorize, normalize, and naturalize the concept. Over time, as the conceptual colonization ensures that all assumedly good things in the organized world—learning, change, creativity, imagination, renewal, and so on—are somehow connected to innovation, the very idea to critique this Great Good Thing starts looking like a perversion, like something unnatural. This again makes the innovation imperative something that audiences of innovation messaging do not only accept, but actively desire.

One of the things that I've always found most strange about the innovation industry is the sado-masochistic subtext to it. Innovation "gurus" (which I too, despite feeling quite uncomfortable with the assignation, have been called) spend quite a lot of time berating their audiences implicitly or by proxy for failing to react quickly enough, for not taking enough risks, for failing to challenge enough things, and so on. The truly strange thing is that audiences take these criticisms in their stride and often actively urge speakers to go to even greater lengths in this. As I personally feel this direct model too patronizing, I tend to include myself in the masochism and have spent inordinate amounts of time standing on stages berating our communal failure as humans to break with tradition, open up our minds, and push our creativity. The more I do this, the greater the response in the audience. When I screech in nigh-hysterics about my hatred of innovation clichés and our incapacity to go beyond them, the audience has at times given me standing ovations.

The dramaturgy here should be quite obvious. An ideology needs both constant repetition of its message and an easy to recognize set of heroes (Thomas Alva Edison, Steve Jobs, Elon Musk, etc.), but it also requires villains and what in Stalinism and Maoism was known as "self-criticism" (see, e.g., Riegel 2000). Ideologies tend to have a utopian tint or

tendency, and part of engaging with an ideology lies in manifesting that one hasn't quite been good enough. This is why innovation books tend to overflow with the most extreme of successes, and why exorbitant wealth is often used as a proxy for the innovativeness of a specific individual. Elon Musk creates novel things and is in addition extremely rich, therefore Elon Musk is a great innovator. While the statement might look childish when presented in this manner, this is the subtext to much of what is written. It is also why my self-flagellation on the stages of innovation conferences is so popular. It makes me something akin to either a fire-and-brimstone preacher, crying for repentance from the flock, or a sacrificial lamb who debases himself as a stand-in for our collective failure (the connection to Derrida's reading of Plato is obvious, but I will here pass it by).

Thus the innovation ideology needs the innovation industry, not necessarily to carry any specific messages or learnings about innovation, but to establish the narrative and dramaturgical logic of the same. Not entirely unlike the itinerant preachers that have always been part and parcel of Christianity, the innovation industry today circulates the globe, preaching the one true gospel. In a detail to delightful too leave out, it should be noted that a majority of the most important innovation speakers are from the U.S., and speak of "the speaking circuit", in an almost perfect mirroring of how early US clergy, particularly from the Methodist Episcopal Church, often were "circuit riders," taking the message across the then sparsely inhabited U.S. on a "preaching circuit." By way of staged retellings of a truth assumed to be pure and normal and natural, both the circuit riders and their contemporary brethren make sure that the hoi polloi know their place and the imperatives that are to be followed. Like in so many other kinds of ideological tellings, the drama is not incidental.

INNOVATION THEATER: THE STAGING AND PERFORMANCE OF COMMODIFIED NOVELTY

The serial entrepreneur Steve Blank has coined the phrase "innovation theater" (see, e.g., Blank 2019) to discuss the tendency in many organizations to avoid real engagements with innovation by staging elaborate semiotic showcases instead. His particular definition of innovation theater focuses on activities in which innovation, as a semiotic marker, is performed in a very overt fashion, such as "hackathons, design thinking classes, innovation workshops," and his claim is that while these might be important for the culture, they rarely result in anything concrete. He also claims that this is supplanted by "organization theater" (with, e.g., consultant-led reorganizations) and "process theater" (attempts to move away from bureaucracy and other process barriers to renewal). While I am indebted to Blank for coining the phrase, I believe he under-utilizes the same, and that the term could be fruitfully extended, both empirically and conceptually.

What I would claim is at play here is broader than the overt cases of innovation theater, such as when a traditional company runs a creativity workshop once a year and never otherwise engage with creativity techniques. Rather, what Blank managed to point to, if not theoretically extend, is the manner in which innovation is *staged* and *performed* in contemporary organizations and society. The first of these issues would query what the setting, scenography, and context of innovation performances would be, whereas the latter would look more toward what specific performative actions (material or discursive) are undertaken to ensure that the audience is convinced of the legitimacy of the performance.

Again taking an example from my own work with the innovation industry, I can attest to the fact that both these aspects are carefully planned at, for example, innovation conferences. The staging of course starts with naming. By using words or neologisms that clearly signal a deference to the innovation ideology—examples might be "disrupt," "outthink," "spark," and "future"—the stage is set. The actual stage may

carry similar semiotic markers, or it might not, depending on the conference. Bigger conferences do tend to go for things such as showing show- or pre-reels with imagery chosen to communicate an innovative spirit, with IT or science imagery being particularly prevalent. At times, images of innovators from history are used, but as, for example, using imagery of Steve Jobs has become something of a joke in the innovation industry, this has waned and is by now seen as somewhat gauche. Presentations of the innovation performances are also part of the staging, where every speaker tends to be afforded a set of epithets chosen to communicate their legitimacy. Academics such as myself are always introduced with titles, and sometimes with notes on publications, whereas non-academics are presented as "thought leaders," "experts," "entrepreneurs," or similar. Here, the staging and the performance start to bleed into each other, as the former acts as legitimating the latter.

The above is of course primarily the staging of innovation talks, and staging, for example, a hackathon or an innovation lab can be quite different. However, the semiotics can also be surprisingly similar. When companies create specific innovation or creativity spaces (something that could be extended to a chapter unto itself), many of the same staging techniques are used. The space will often get a name to make it stand apart from the rest of the organization, furthering the notion that innovation is something that is separate from business as usual. It will also be furnished in a studied effort to make it different. Whereas conference spaces cannot always ensure this difference in the audience seats, it will emphasize difference on the stage, at times with comical effects (I have shared stages with both industrial robots, sculptures made out of packing crates, and with live acrobats—the latter can be bewildering for both speaker and audience). Innovation spaces are more malleable and will normally have both radical (often mismatched) furniture and the ever-present array of whiteboards and multi-color piles of PostIt®-notes, just like presentations or covers of books about creativity and innovation are quite likely to have images of thought-bubbles, light bulbs, and similar "zany" iconographies. Such semiotic markers of innovation, by now almost universally accepted (cf. Wilf 2016), exist as a shorthand for communicating that an innovation performance is expected to take place.

The performances themselves also follow this pattern. Whereas these performances (be they packaged as books, articles, keynote speeches, or workshops) are supposed to be content-driven, this is curtailed by a dual dynamic. Owing to the interdependencies in the innovation industry, agents therein need to be very careful not to upset the existing status quo. Criticizing other agents is done only very rarely, and even then in a considered and careful manner, as one never knows when one might share a stage with them. No longer living agents, such as, for example, the aforementioned Clayton Christensen and Steve Jobs, are mentioned reverentially and in a manner reminiscent of hagiography. The at times glaring vacuity of the field is not mentioned at all, in either books or live performances. Herein the second dynamic also comes into play. Audiences have normally paid for the performances, with specific expectations. This becomes most pronounced at major innovation keynotes. In such, a speaker may well have been paid an exorbitant amount of money, which for the very top names can go up to and even above 100,000 USD (this being a quoted figure for Clayton Christensen, although I have personal knowledge about cases where this was not enough to make him accept a speech). At such prices, the event organizer is expecting a "sure thing," that is, a well-presented speech on innovation that is neither too difficult or boring for the audience, but nor so original or different as to confuse the same. As a result, even at the lower fee-points, speakers learn to stick to tried and tested material and frequently copy from each other or use material that has gained more general legitimacy in society. Thus both speakers and authors (and, remember, they are often one and the same) rehash and repeat the same examples, anecdotes, and sayings, in part as a kind of internal affirmation, in part as a way to enhance the ideology through repetition and thus signal both permanence and legitimacy to the audience. Examples of this includes, but isn't limited to: stock examples (the invention of the PostIt®, the case of Southwest Airlines, the birth of the iPhone, etc.), quotes and misquotes from stock characters (Picasso, Einstein, Drucker, etc.), stock character stories (the aforementioned triumvirate of Edison-Jobs-Musk and so on), and, of course, clichés and stock phrases ("think outside the box," "culture eats strategy for breakfast," "think bigger," "move fast and break things," among many others). This has led to what might be perceived as a paradox, but which instead

is highly logical. Books on creativity and innovation, despite their impressive numbers, also notable because they tend to be neither creative nor innovative, but rather the opposite. To some, this might seem like an issue or an oversight, but it is in fact part of the very nature of the innovation industry that produces them.

The innovation industry does not exist to support material innovation, and if it happens to do so, this should be seen as an externality, a happy incidental. The innovation performances it deals in are there to strengthen the innovation ideology, often by sheer repetition. In this, it becomes difficult to discern genuine innovation thinking from innovation propaganda, as both work with the same discursive processes and materials and often end up being fellow travelers, either accidentally or cynically. Note that I am not making any claims about maliciousness here. I know many of the agents of the innovation industry, and only a few of them are cynical hustlers. Most believe in what they preach and are unaware of just how close they are to being evangelists and/or propagandists. My aim here is not to speak ill of any one person, including Clayton Christensen. Instead I am trying to argue for a critique of innovation, its hype, and its discourse; a critique which would be capable of seeing the manner in which a good idea can become caught up in commodification, performance, and ideology. This not to damn the field, but to elevate it, mold it into something greater than the same old imperatives shouted from stages, repeated in books, and emblazoned on socks and sweatshirts.

THE INNOVATION IDEOLOGY INDUSTRIALLY PERFORMED, A MODEL

In order to enable a more robust innovation critique, let me end by outlining the mechanisms behind and summarizing what I've tried to show in this chapter, namely how the concept of innovation becomes commodified, reiterated, emptied of meaning, and made part of an ideological apparatus.

The first thing to pay attention to, and in extension critique, is **the material stock** that the innovation industry and its agents draw upon. I

alluded to this above, pointing out that much of what is written and performed around innovation draws upon a stock of stories pre-existing in culture, including readymade heroes, well-known stories, and a plethora of clichés and buzzwords. We are all of us already aware that phrases such as "thinking outside the box" contain very little, yet as audiences we are prepared to accept them and even applaud them. Why? Because their recognizability creates a familiarity and a feeling of security, of knowing that one is hearing a telling of innovation. This is why innovation has become a genre, a way of writing tales of novelty and change with clear tropes, pre-defined heroes, and villains, one with the expectation of a happy ending. This is also why I elsewhere (e.g., Rehn 2019) have talked about *innovation pornography,* where I have pointed out that much of what is written and said about innovation follows the narrative logic of porn. Rather than being a realistic representation of human sexuality, it is a fairytale, where everyone is good-looking and always up for it, and where the messiness that accompanies both real innovation and actual human sexuality is carefully edited out. What we need to do, then, is to critique such simplistic and fallacious tales of innovation and question innovation writing and performances that uncritically pull material out of the common cultural stock of innovation tropes and narratives.

The second element that needs greater attention is the tendency for **invocation**. What the innovation industry does, abstracted to its purest form, is to sell us on magical thinking (cf. Subbotsky 2010). The reason for the endless parade of books, articles, conferences, workshops, and so on is analogous to both ancient magic practices and contemporary new age thinking. In the former, shamans, witch-doctors, or other magic-wielders attempted to make something good happen by intense ritual invocation. Rainmaking rituals, such as rain dances, try to bring forth the rain by speaking, singing, dancing, and so on about the rain. A similar thing can be seen in Christian traditions of praying for rain, or in various folk attempts to invoke rain by carrying icons that are thought to be connected to the weather phenomena. A contemporary version of the same, popular in both some neo-spiritual movements and in, for example, prosperity theology (cf. Lee 2007) is the notion of "manifestation" or "attraction," where adherents believe that one can attain wealth and happiness simply by thinking very hard about the same and sending one's wishes for

such things out into the universe or to a deity. We might shake our heads at this as either primitive superstition or religious folly, but what is the structural difference between a rain dance and the fervor that can emerge during an innovation keynote? In both, the phenomenon itself is far removed and only talked about or otherwise manifested, and yet there is an underlying belief that the ritual will somehow allow for the desired phenomenon to emerge. Both also have an important role in community-building. By way of invocations we socially learn what is worth talking about, have rituals around, gather around. The innovation industry provides all these things, by invoking innovation in a far more pervasive and intense way than the shamans trying to make it rain ever could. This, as the rain dance, had to stop, sooner or later, but innovation publishing and the speaking circuit never do.

Yet invocation needs also to be turned into **exhortation**, so that the audience for innovation performance understand their role, and their failures, in connection with it all. Imperatives about the absolute necessity to understand and engage with innovation exist as partially a method of conviction, but also as a signal of original sin. Innovation is the demand that keeps demanding, and it is not enough to realize that one needs to take it into one's heart, one also needs to understand that one can never fully live up to it. No matter how innovative you are, you could always be more innovative, and no matter what you manage to create, there is in innovation always potential for more. The imperative is thus not just one of accepting innovation as the great good thing, but also to humble oneself before it. There is always someone else who is better, someone else to admire, the feeling that other countries and other organizations are doing it better. Here, again, it might be helpful to think about the history of propaganda. One of the more fascinating sub-ideologies (one might even use the term cult) to emerge out of the Soviet Union was that of the Stakhanovites. This was a craze that took the (constructed) tale of how Aleksei Grigorievich Stakhanov in 1935 managed to mine no less than 102 tons of coal in less than six hours as its battle cry, creating a movement that tried to emulate such superhuman, "norm-breaking" productivity (see Siegelbaum 1990). This rapidly spread to most other Soviet industries, with evermore wild results reported—in 1936 it was claimed that one Nikita Izotov had single-handedly mined 640 tons of coal in one

single shift. Just as we might find the notion of a rain dance quite silly, such tales of Soviet propaganda seem ludicrous in our current context. Yet they are structurally similar to the manner in which the innovation industry tells its tales. It is, for instance, an unassailable fact that Elon Musk did not build the first, nor any of the following Teslas, by himself. This simple fact is however not reflected in the many adulatory tales about Mr. Musk, nor reflected on in the many exhortations that exist about the importance to be more like him. While I in no way wish to ignore the many things Elon Musk has done, the manner in which he has been turned into a cult figure in innovation should be subjected to far more criticism than it so far has. What also should receive far more attention than has so far been done in the degree to which we are drawn to such exhortations and the ease with which a psycho-sexual submissiveness toward such can be established.

Finally, the current innovation ideology is dependent on the innovation industry for its capacity of industrial-scale **repetition**. All ideologies are dependent on the message being continuously re-affirmed and recast, to ensure adherence to the same. Innovation is in no way different here, and the at time comical way stories and clichés get repeated *ad nauseam* in the same is worthy of its own study. Again, this repetition is not a bug but a feature, and even one desired by innovation audiences. I have myself, in my darker moments, commented to a fellow speaker that we are not materially different from cover bands, repeating golden oldies over and over to audiences who may say that they desire novelty, but become entranced by the recognizable, comforting dulcet tones of old classics. This may well be the true importance of the innovation industry, the manner in which it creates an alibi and a staging that hides the truth about much of the innovation discourse—the manner in which it never changes, and keeps delivering the same, expected narratives time and time again. Much like in other genre literature, superficial changes are accepted, but universal, well-worn tropes revered.

Is there another way, or are we stuck with the commodified narratives and the skewing of innovation that the innovation industry creates? We should not be naïve in the face of what I have tried to outline here—the innovation imperative and the dominance of reductionist innovation narratives exist because there is a market for this, and most people in

organizations are happy to consume innovation pornography. As humans we are drawn to fairytales and simple checklists, and this is likely to mean that the simplistic invocations and exhortations of the innovation industry will survive for a very long time yet. That said, people who do scholarly work with innovation need to be aware of innovation-as-genre and be prepared to inquire into the same with more critical vehemence than has so far been showed in the field of innovation studies. Although there are some excellent critiques that have come out (see, e.g., Baird 2017; Erixon and Weigel 2016; Gordon 2017; Morozov 2013), it should be noted that most of these come from people outside of the field, while the field itself seems more than happy to repeat the discourse of the innovation industry, if in a more high-falutin way. So where does this leave us? It leaves us with a choice. We can either accept things as they are, and paraphrasing Shakespeare's *Macbeth* states:

> Innovation's but a walking shadow, a poor player
> That struts and frets his hour upon the stage,
> And then is heard no more. It is a tale
> Told by an idiot, full of sound and fury,
> Signifying nothing.

Or, we can, as Rorty (1989) suggests, start engaging with it in a more ironical manner and start calling bullshit on bullshit (cf. Frankfurt 2009), a performance a performance, a rain dance a rain dance. Many of those tired of the emptiness at the heart of contemporary innovation discourse would thank us. As emperor Augustus said on his deathbed (according to Suetonius): "Acta est fabula, plaudite!"

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Part III

For and Against Business Model Innovation

6

In Search for the Holy Grail in Management Research: A Review of the Benefits of Business Model Innovation

Thomas Clauss

INTRODUCTION

In simple terms, business models are models or recipes on how firms do business and make money (Baden-Fuller and Morgan 2010). In addition to traditional forms of innovation, such as product or process innovation, these models have become a new unit of innovation. After early notions about business models and business model innovation (BMI) in the context of e-business around the year 2000 (e.g., Amit and Zott 2001; Timmers 1998), BMI became an important concept in research (Foss and Saebi 2017) and in business practice (Pohle and Chapman 2006). In research, the BMI concept diffused into various management disciplines (Zott et al. 2011) such as entrepreneurship (Futterer et al. 2018; Snihur and Zott 2020), innovation and technology management (e.g., Chesbrough 2010; Clauss et al. 2019) as well as strategic management

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(Casadesus-Masanell and Zhu 2013; Lanzolla and Markides 2021). In business practice, BMI has become a key concept in strategic considerations of firms across different industries and sizes. Numerous consulting firms nowadays offer support in BMI and utilize the many different tools such as the business model canvas of Osterwalder and Pigneur (2010) or the business model navigator of Gassmann et al. (2014) that were created to guide people through creative business model creation workshops. This has created an entire industry for BMI, in which millions of dollars are spent on BMI activities.

Despite this hype created around BMI as well as the implicit assumption that BMI will be beneficial for firms and that investments into BMI will yield appropriate return on invest, a summarizing perspective of the various benefits of BMI is missing. Based on a review of the empirical findings on BMI, I will therefore provide a brief categorization of the various benefits of the concept. By doing so, this chapter is intended to argue *for* the value of BMI for research and management.

The chapter is structured as follows: First, I provide a clarification about what a business model is and how the concept is different from other types of innovation. Second, I give an overview of the three main areas in which BMI yields beneficial effects for organizations: (1) operational and strategic performance, (2) framing condition for organizational transformation, and (3) holistic thinking pattern for new business creation. Finally, I provide some concluding remarks for BMI.

WHAT IS BUSINESS MODEL INNOVATION?

There has been an intense debate about what a business model is and what it is not (DaSilva and Trkman 2014). Recently, research has however more or less concluded that business models are structural templates of organizations that consists of three interrelated elements: value creation, value proposition, and value capture (Clauss 2017; Foss and Saebi 2017; Spieth and Schneider 2016). The value proposition describes the composition of the product/service portfolio and how (i.e., through which channels) and to whom the firm's offerings are made available. Value creation captures through which processes and resources value is

created internally as well as externally, together with customers and suppliers. The value capture element describes the approach of the organization to making money, including the pricing and cost strategy, its revenue sources, and revenue models (Clauss 2017). What ultimately defines the business model and the unique gestalt of an organization is how these three elements are aligned with each other and configured as mutually enforcing activity systems (Kulins et al. 2016; Zott and Amit 2010). Business models are closely related to a firm's strategy as they are usually the operationalization of long-term strategic choices (Casadesus-Masanell and Ricart 2010) and should fit the firms' strategy in order to be successful (Zott and Amit 2008). However, they are not identical to strategy. Whereas every organization will always have a business model, although not necessarily a good or successful one, many firms can and do exist without a strategy.

BMI is defined as "designed, nontrivial changes to the key elements of a firm's business model and/or the architecture linking these elements" (Foss and Saebi 2017, p. 207). New technological developments have facilitated innovation in all elements of the business model, including, for example, value propositions through different channels (e.g., e-commerce), new value creation mechanisms (e.g., selling services instead of products), and new ways how revenues can be captured (e.g., subscription or leasing instead of selling) (Massa et al. 2017). Therefore, BMI captures innovation in addition to and beyond the traditional scope of product and process innovation. It complements product and process innovation through a holistic perspective on innovation potentials across the elements of an organization (Hock-Doepgen et al. 2021; Snihur and Wiklund 2019). Furthermore, BMI goes beyond the innovation of single elements in the configuration of the organizational business model but assumes that this configuration is part of the BMI and may be altered by the innovation (Clauss et al. 2020). In line with this view, BMI does not always require radical changes but can also be the result of more incremental amendments of the business model elements and/or the organizational configuration (Clauss et al. 2020). Thus, BMI can occur along a continuum from more modular to holistic architectural changes (Foss and Saebi 2017). In line with traditional views from product innovation (Schumpeter 1934), these innovations can further vary in their degree of

novelty from being only new to the firm to being new to the industry (Foss and Saebi 2017).

BENEFITS OF BUSINESS MODEL INNOVATION

Effects on the operational and strategic performance

BMI was considered to be a core driver of firms' performances since it was first introduced. Already in 2006, Pohle and Chapman found that 765 interviewed CEOs, business executives, and public sector leaders from around the world saw multiple benefits in BMI. Effects such as cost reduction, strategic flexibility, the ability to specialize as well as the ability to seize opportunities in new markets were frequently mentioned in their interviews. Since then, BMI was naturally associated with performance improvements in business practice and also academic research. Foss and Saebi note in their review of 15 years of BMI research that

> the presumed beneficial consequences of BMI are part of the motivation for the research of the majority of the articles that we reviewed. Thus, the literature recognizes that BMIs may be undertaken for a number of reasons, such as reducing cost, optimizing processes, introducing new products, accessing new markets, and, of course, ultimately improving financial performance. (Foss and Saebi 2017, p. 212)

Although they noted that only a few studies provide substantial evidence for this overarching assumption, recent empirical research contributed to filling this gap and helped to provide evidence that BMI is a driver of operational and strategic performance. Taking the perspective of the demand-side view on strategy (Priem et al. 2018), Clauss et al. (2019) showed that customers of 435 restaurants were more satisfied and showed a higher propensity to co-create value if business models were perceived as being more innovative. Based on the empirical observation of 148 U.S. newspaper publishers who adopted a BMI, Karimi and Walter (2016) found evidence that BMI could significantly improve their business model performance in terms of number of subscribers, online

revenues, outreach, and new non-core products. Aspara et al. (2010) analyzed 545 Finnish firms and found that simultaneous BMI and business model replication yield superior financial performance effects, in particular for small and mid-sized enterprises (SMEs). Similarly, Clauss et al. (2020) in their cluster analysis of 216 SMEs in the electronics industry found that business model innovators realized a competitive performance higher than most (75%) other groups and at the same level of those companies who primarily focus on innovations of products and services. In the particular context of 376 Italian entrepreneurial SMEs in the clothing industry, Cucculelli and Bettinelli (2015) found that those firms who innovated their business model over time could realize a better venture performance than those who kept the business model constant. Desyllas et al. (2020) concretize the BMI performance relationship as they empirically demonstrate an inverted U-shape relationship between the degree of BMI and performance, arguing for either small or substantial BMI.

Some other studies could substantiate these general performance effects of BMI for more specific contextual conditions. Investigating U.S. retail stores that added a new online business model, Kim and Min (2015) showed that the sales revenue after this new business model introduction improves if the firm aligned complementary assets well and if potential conflicting assets are aligned with an autonomous business unit for the new business model. In a recent study of 432 firms from the German electronics industry Clauss et al. (2021a) found that two out of three dimensions of BMI (i.e., value proposition innovation and value creation innovation) were significantly associated with higher competitive performance. Although they even found negative effects of value capture innovation, they noted that this finding may be well caused by the cross-sectional nature of their survey. This assumption could be further substantiated by longitudinal analyses. Menter et al. (2020) analyzing more than 35,000 press releases of German stock-market listed companies over a period of ten years saw that although there may be some short-term effects of BMI, significant benefits of BMI on firms' market capitalization could only be identified after a time lag of a few years. Based on data from a similar time period, Visnjic et al. (2016) found that the interplay between service BMI and product innovation results in long-term performance benefits coupled with a degree of short-term

performance sacrifice. If only service BMI is pursued, short-term profit gains may even turn into long-term market performance decline.

Besides these direct effects on firm performance, BMI is considered to be key to long-term competitive advantages of firms. As during the last years, stimulated through the significant developments in digital technologies, many new business models emerged and have disrupted industries that were relatively stable over decades (e.g., streaming business models in the video rental and music retail industry), firms were advised to regularly reflect and innovate their business model to keep and/or extend their competitive position (Habtay 2012; Jin and Shin 2020). Along this line, studies have shown that firms have to adopt the right business model to keep and develop a competitive market position (Brea-Solís et al. 2015; Zott and Amit 2008).

The review of the empirical analyses above provides substantial arguments that conducting BMI is beneficial to firms, as firms can either directly or over time improve their operational and strategic performance by investing resources in continuous BMI activities.

Framing condition for organizational transformation

The second reason, why BMI is an important construct in research and management is its potential to enable substantial change and transformation of incumbent firms. This is because more fundamental changes of the organizational strategy are difficult if the business model does not fit the new strategic purpose (Zott and Amit 2008) and because the business model usually mirrors a rigid system of strategic choices and its consequences from the past (Casadesus-Masanell and Ricart 2010). Hence, a successful and thorough organizational repurposing or transformation usually requires that a reconfiguration and/or innovation of the business model is aligned with the new strategic direction of a firm. Therefore, BMI was considered to be an enabler or even precondition of different forms of organizational transformations.

First, the recent advancements in digital technologies have boosted research on digital business models and digital BMI (e.g., Amit and Han 2017; Klos et al. 2021; Weill and Woerner 2013). Already Chesbrough

(2007) emphasized that the successful commercialization of (digital) technologies nowadays requires the choice of the right business model. In a digital world, this is of a particular importance as value creation is shifted from internal linear value chains to complex value creation in ecosystems. Whereas in a traditional physical manufacturing process, firms could focus on improving existing primarily internal processes along clearly defined key indicators. In today's connected world (e.g., based on internet of things technologies), value creation is more complex and less bound to physical devices. For instance, physical products now carry different sensors that create data for the customer, the manufacturer, and potentially other ecosystem participants. These data may become an integral part of the value creation and value capture approach, for example, if companies provide machines for free but make money through integrated service contracts, predictive maintenance, and commercialization of customer data. In some cases, this may even shift the value creation logic of manufacturers from selling products to providing services (Frank et al. 2019). Therefore, research has argued that a digital transformation can only be achieved if the business model is innovated around digital technologies (Verhoef et al. 2019). Recent empirical analyses have provided overviews on how the elements and configurations of business models may be redesigned in order to achieve this (e.g., Frank et al. 2019; Klos et al. 2021; Li 2020).

Second, BMI was shown to be an important enabler of incumbent firms' transitions toward sustainability (i.e., a simultaneous pursuit of economic, ecological, and social value creation) (Elkington 1997). If firms decide to broaden their organizational purpose and to integrate ecological and social value creation into their strategy (and mission), existing business models are often insufficiently adequate. In particular, the established configuration of value proposition, value creation, and value capture is naturally dominated by an economic institutional logic. If then ecological and/or social value is to be created simultaneously, multiple institutional logics are created. These may create conflicts and paradoxical tensions in the organization, because "contradictory, yet interrelated elements exist simultaneously and persist over time" (Smith and Lewis 2011, p. 382). Therefore, research has demonstrated that firms that aim for sustainability transitions should create sustainable BMI in

order to enhance the sustainability performance (Geissdoerfer et al. 2018). Based on survey responses of 492 managers from the Swedish fashion industry, Pedersen et al. (2018) found that BMI significantly enhances corporate sustainability, which then mediates the BMI performance relationship. Based on a longitudinal multiple-case study, Schneider and Clauß (2020) showed that the successful alignment of potentially conflicting values in business models for sustainability requires bold choices and consequences deeply rooted in the design (or redesign) of firms' business models. Similarly, Spieth et al. (2019) find deeply rooted value drivers of social business models that could only be implemented in incumbent firms through architectural BMI. As guidance for the design of BMI toward sustainability, recently several design templates and patterns for sustainable BMI were developed (e.g., Joyce and Paquin 2016; Lüdeke-Freund et al. 2018).

Third, firms are often facing crises that are triggered by exogenous shocks and have to react to it with adequate strategic measures. The COVID-19 pandemic outbreak in most parts of the world in early 2020 provided a unique context for analyzing a crisis in which suddenly existing business models could not be pursued (either partially or fully) the way they were configured before. Wenzel et al. (2020) argued that besides other strategies such as retrenchment, persevering, and exit, innovating is a potential strategic response to a crisis. Whereas innovation opportunities for new products were often limited in the first place due to time or budget restrictions, research showed that several firms were able to at least temporarily utilize more or less radical forms of BMI in order to survive the crisis (Breier et al. 2021; Clauss et al. 2021b).

Finally, carrying through the process of BMI can help firms to establish enduring change competences that will be helpful for future transformation activities. In an early experimental study, Schneider and Spieth (2014) showed that BMI will lead to a greater strategic flexibility of the firm, facilitating future repetitions of BMI (Clauss et al. 2021a; Doz and Kosonen 2010).

Based on the research results above, considering and actively pursuing BMI can clearly be considered an enabler of organizational transformation under different contextual conditions and for different purposes.

Holistic thinking pattern for new venture creation

The third main argument for BMI comes from its role as a tool and pattern for the creation of new businesses either in entrepreneurial ventures or established firms. As business models consist of holistic systems of interrelated activities (Zott and Amit 2010), their ideation and development require individuals to imagine solutions that are complex in nature. An iterative process of BMI development has therefore become an integral part of the creation of new ventures. Entrepreneurial teams nowadays almost naturally consider business model design and BMI as part of their new venture creation process and utilize common BMI tools such as the business model canvas (Osterwalder and Pigneur 2010) to cope with this complexity through visual representation (Tauscher and Abdelkafi 2017) as a matter of course. Today, almost no pitch deck or business plan will be found that does not elaborate on the new business model of the company. Luckily, the empirical literature also shows that BMI in the new venture creation process enhances the new venture performance (Futterer et al. 2018) and growth (Cosenz and Bivona 2021).

Besides the more fragmented and iterative process of BMI during new venture creation, another stream of literature has investigated the value of holistic BMI patterns in this process. Several scholars have argued that cognitive representations of business models (and BMI) exist (Doz and Kosonen 2010; Martins et al. 2015). Rooted in the ideas of cognitive strategy (Gavetti and Rivkin 2007) and behavioral theories of organizational decision-making (Cyert and March 1963; Weick 1995), it has been concluded that individuals in organizations typically utilize cognitive simplifications when developing strategy and/or making decisions. Research has shown that managers use heuristics to facilitate simplified decision processes that only use part of the available information (Bingham and Eisenhardt 2011). Along this line, recent research has demonstrated the importance of simplified BMI patterns that can be used as templates for BMI in new venture creation processes. Martins et al. conceptually argue that the process of BMI during new venture creation utilizes business model schemas, defined as

> cognitive structures that consist of concepts and relations among them that organize managerial understandings about the design of activities and exchanges that reflect the critical interdependencies and value creation relations in their firms' exchange networks. (Martins et al. 2015, p. 99)

These schemas can be used by individuals through analogical reasoning or conceptual combination as a basis to develop new specific business models from the simplified pattern of an existing BMI. McDonald and Eisenhardt (2019) empirically substantiate this view through a longitudinal multi-case study, as they show that borrowing and adopting BMI from peers is a regular process in creation of successful BMI in start-ups. These findings empirically substantiate the value of some managerial tools such as the 55 business model patterns by Gassmann et al. (2014) or the business model analogies by Johnson (2010) that provide aggregations of reoccurring BMI patterns or analogies such as *razor & blade* or *subscription* as a basis for BMI creation in other contexts. Therefore, it can be concluded that the existence of certain "role models" of previous BMIs is a stimulating factor and inspiration for new BMI to be created.

DISCUSSION

Key implications

As indicated at the beginning, the idea of this chapter is to provide a positive, yet potentially biased argument for BMI. Although I am doing research on BMI since almost ten years, and therefore clearly believe in the value of the concept, I am as well convinced that this reflection of some empirical findings in my literature review clearly demonstrates the value of BMI for academic research and business practice.

The overview could highlight the beneficial value of BMI for three main purposes: (1) creating operational and strategic performance, (2) being a framing condition for organizational transformation, and (3) providing a holistic thinking pattern for new business creation. These main observations are summarized in Fig. 6.1.

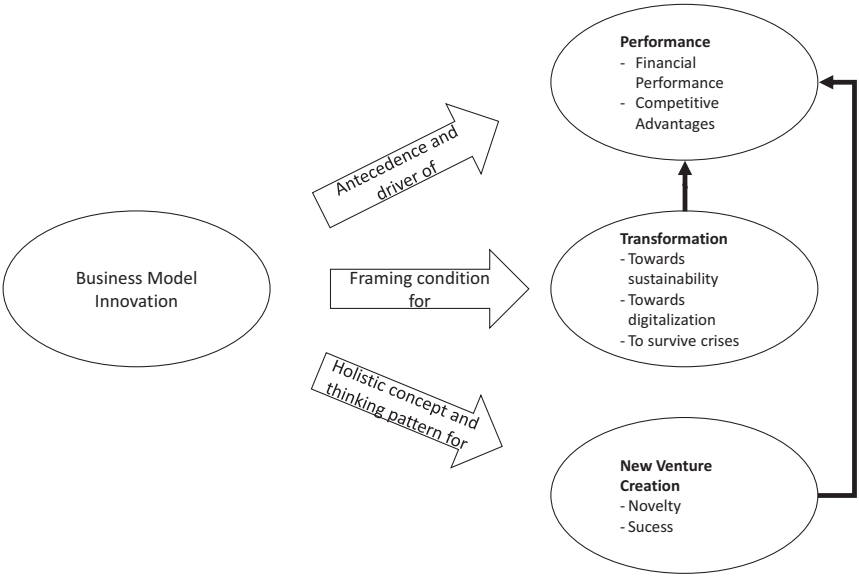

Fig. 6.1 Reasons for business model innovation

These findings show that the many studies that have been conducted after the concept emerged clearly provided substantial value in particular for pragmatic and practical reasons. Managers will realize that many of the prescribed benefits of BMI are indeed realistic and that considering BMI in times where change and disruption have challenged established firms in many industries makes sense. Already the visualization and critical reflection of existing business models provide benefits for firms as common understanding can be created and potential weaknesses may be identified among employees at various levels (Tauscher and Abdelkafi 2017). Even better, firms should actively engage in creating new business models either in the course of holistic strategic transformation or in separate units while keeping the core business untouched (Kim and Min 2015).

Outlook

After about 20 years of BMI research, the concept and the scholarly discourse surrounding it have substantially matured. Initial conceptual discussions could be concluded, and more research resources could be dedicated to investigating the antecedences and consequences of BMI. Still, this line of empirical studies will most likely continue to grow and refine our knowledge about the contextual conditions (e.g., varying firm sizes, ownership structures, or environmental conditions) under which BMI is successful. Furthermore, as BMI often requires holistic transformations, full understanding of causalities and the sustainability of performance require more longitudinal analyses (Foss and Saebi 2017). Over time, it may be expected that a fundamental gap between traditional forms of innovation and BMI can be closed. Whereas product innovation management is very well structured and provides processes and guidelines such as the stage gate process (e.g., Cooper 1990) for students and practitioners, BMI management (Bucherer et al. 2012) is still an eclectic and mostly unstructured field.

Also, less established and yet to be further developed is the contribution of BMI to the theoretic advancement of management research. Many of the theoretical arguments that are discussed in BMI research were previously considered in management theories and are primarily reconceptualized in this concept. Although critics (e.g., Porter 2001) often bring forward this argument, I believe that maybe the practical value alone substantially justifies BMI research. Just recently, however, Lanzolla and Markides (2021) argued that the business model provides a novel theoretical lens to develop new theoretical insights into business strategy. From their perspective, the inherent interdependencies among activities and elements in BMI may help to develop new insights on how to build superior strategies and to explain company performance variance especially when heterogeneity in resources and capabilities is not strong and barriers to imitation are weak. This perspective clearly defines a central avenue for more theory building BMI research in the future.

Critical reflection

As said, this chapter is intended to provide an argument for BMI and may suggest that BMI is indeed the holy grail in management research. Of course, some more critical aspects were intentionally left out and will most likely be addressed in a separate counterpoint against BMI. Without going into detail here, as my responsibility as an academic scholar, I must however acknowledge that despite the many benefits associated with BMI, it is a complex and risky endeavor. The implementation of BMI is bound to various organizational particularities such as the existence of the right capabilities (Hock-Doepgen et al. 2021; Mezger 2014), the right culture (Hock et al. 2016) or the right people in charge (Guo et al. 2013). And of course, like for any other type of innovation, BMI can yield negative results (Clauss et al. 2021a) and can also fail (von den Eichen et al. 2015).

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7

A Critique of Business Model Innovation

La Ode Sabaruddin and Fathiro Hutama Reksa Putra

This chapter puts forward the arguments against business model innovation (henceforth referred to as BMI) by highlighting the dark side—negative consequences or unintended outcomes. This dark side is evident in abundant cases of firms' failed attempts at BMI, failure of firms that lead the pursuit of BMI because competitors/new entrants copy the new business model (BM) and commercialize it in a more successful way and a number of "deceptive" or "exploitative" BMIs, which involve exploitation of natural resources, low salary workers, and data privacy, produce negative consequences for broader stakeholders and society as a whole.

A BM, by definition as a way of how a firm does its business (Teece 2010), is an integral part of any organization in such a way that every firm will inherently always have a BM (Fjeldstad and Snow 2018; Massa

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et al. 2017; Teece 2010). Beyond this general description, however, there are only fragmented descriptions of what a BM is (Massa et al. 2017) and therefore an explicit interpretation of the BM needs to be made. In the present study, a BM is assumed to be a set or pattern of activities that, in terms of abstraction, are represented as a set of elements and the architecture linking the elements describing the way how firms create, deliver, and capture value (Foss and Saebi 2017). As the aggregation of these elements and the architecture linking the elements could be infinite (Casadesus-Masanell and Ricart 2010), it implies that a BM being described merely represents a simplification of a more complex reality of a real BM. Accordingly, while no single definition of BMI is widely accepted, we define the BMI as the development of a new BM or replacement of a firm's existing BM with a new one (Massa and Tucci 2014) through altering "key elements of a firm's BM and/or the architecture linking these elements" (Foss and Saebi 2017, p. 216). From an outcome perspective, BMI in this regard is referred to as the outcome of organizational change processes, that is, new and innovative BMs, whereas as a process, the new and innovative BMs are viewed as the eventual output.

The chapter is structured as follows: first, we highlight the phenomenon of the dark side of BMI, which is "crowded" (a great number of failed attempts) and becoming more so. Second, we suggest a number of factors under which the dark side of BMI may become more prevalent and therefore BMI should be ignored. These include the high level of disruptiveness of the new BM, vulnerable business ecosystem in which the BMI is situated, and lack of capabilities of management or policymakers to manage the process. Finally, we conclude by suggesting that only when reasonable measures toward the suggested factors have been made or taken into account should BMI be allowed to be pursued. We base our argument on three streams of literature. First, disruptive innovation literature, where the disruptive nature of BMI would deteriorate the value stream of existing businesses and the industry (Christensen 1997). Second, firm capabilities, where BMI requires firms to possess certain capabilities (Chesbrough 2010; Sosna et al. 2010) in such a way that the absence or lack of these capabilities possessed by the firm would lead a BMI to the dark side (Teece 2018). Third, contingency theory (Lawrence and Lorsch 1967), where the context in which a BMI has been situated

matters—the likelihood that the dark side occurs is high upon certain context or settings.

BUSINESS MODEL INNOVATION: THE DARK SIDE

Conceptual language defining "the dark side of BMI" does not exist in the BMI literature. We borrowed this term from broader management literature to emphasize the imbalance of the uncontested description of current BMI literature that has tended to focus on the positive benefits and outcomes of BMI. To this end, the dark side of BMI has been defined as a shorthand for the opposite of positive outcomes of BMI, or in other words, negative consequences resulting from BMI.

The phenomenon of the dark side of BMI in practice is "crowded and becoming more so"—a great number of failed cases with an increasing trend (Christensen et al. 2016, p. 31). This has not only occurred in traditional, older, or novice firms but also in firms that have a reputable track record on innovation (Chesbrough and Rosenbloom 2002; Christensen et al. 2016; von den Eichen et al. 2015). A conventional wisdom, for example, would expect that BMI attempts by companies like Google with Google+, Barnes & Noble with Nook eReader, or Ford with Edsel are likely to succeed, as these firms have enormous innovation potential at their disposal (e.g., financial resources, know-how and intellectual properties, networks, and a long successful tradition in innovation). But, as the reality went on, that's not the case. With all the "innovative" efforts (i.e., BMI) by Google, Google+ never gain significant traction as a social network. Similarly, Barnes & Noble with its Nook eReader and Ford with Edsel failed to get a positive customer turnaround, despite great features of both of the products and "new" ways in bringing them to the market by Barnes & Noble and Ford.

Studies have shown that executing BMI is not an easy task (Chesbrough 2010). BMI, by nature, involves a high level of uncertainty and ambiguity, in such a way that firms are highly vulnerable to being trapped in the dark side, as they are likely unable to fully comprehend the necessary

activities and processes that need to be established, or they confront ambiguity in choosing which capabilities and resources need to be acquired. Yet, with these great challenges, managers tend to be biased with the promise of BMI—hoping that their BMIs "magically" turn out to be a "silver bullet" to solve their growth problems or deal with disruptions (e.g., new revenue sources, high growth)—without taking into account the organizational tensions that emerge during the process (Khanagha et al. 2014; Sund et al. 2016). Moreover, what is more important about the dark side of BMI is that it generally has a more devastating impact in which survival of the firm sometimes becomes a gamble (Chesbrough and Rosenbloom 2002; Sosna et al. 2010). Many examples of these can be found in BMI attempts following the Internet bubble in the 1990s in which a great number of firms that adopted new internet-based BMs failed to reap the benefits and many ceased to exist (DaSilva and Trkman 2014; Zott et al. 2011).

Documenting the examples described in literature suggests two clusters of negative consequences: (1) negative consequences affecting the firm as an entity and its stakeholders and (2) BMIs that have been hailed as a success from the firm's perspective but produce greater negative consequences for broader stakeholders or society as a whole.

The first instance of negative consequences of BMI occurring to the firm is cannibalization of profit stream in existing business (e.g., Comberg and Velamuri 2017; Desyllas and Sako 2013). By nature, BMI is disruptive (Christensen et al. 2016; Markides 2006). The disruptive nature of BMI resides in the new set of values introduced by the new BM. Typically, the new set of values is fundamentally different from the existing BM and thus reconfigures current firm's operations, including the network and market linkages (Zott et al. 2011). Such reconfigurations are often incompatible or in conflict, thus hindering the coexistence of two (or more) BMs. Additional complexity may also arise when the old and new BMs are operating in parallel (Markides 2013). The firm may get "stuck in the middle" and end with sub-optimal commercialization. Even, if the "stuck in the middle" problem can be resolved by creating a separate unit, firms may still find difficulty in competing over resources that could reduce firms' vitality and competitive power (O'Reilly and Tushman 2004). A more devastating impact may occur when readjustment and

exploitation of the new BM take time and firm does not immediately regain its efficiency and sufficient customer demand (Coreynen et al. 2017).

Second, a high possibility of failing. By nature, BMI also involves a high level of uncertainty and ambiguity (Andries et al. 2013; Chesbrough 2010; Sosna et al. 2010). Consequently, firms are often unable to fully comprehend the necessary activities and processes that need to be established or are confronting ambiguity in choosing which capabilities and resources to be acquired. Under this circumstance, while firms are hoping their BMIs "magically" turn out to be a "silver bullet" to solve their growth problems or deal with the disruptions, they are only proceeding with the BMI without a clear direction or link to the performance. It is perhaps due to the "dark side" of these processes, many firms' attempts at BMI failed (Christensen et al. 2016; von den Eichen et al. 2015) and in a number of cases ceased to exist (DaSilva and Trkman 2014; Kim and Min 2015).

Third, firms may also suffer from BMI due to imitation from the competitors/new entrants. Park (2011), for example, presented cases of firms who pioneered new BMs but failed to gain superior performance as market opportunities promoted by the new BMs attract fast followers (competitors) into the market, which, through developing a better-equipped BM, more successfully seize the opportunities. Similarly, Sorescu et al. (2011) described that BMI in the retail sector is highly visible and, therefore, prone to imitation. Other examples can be found in firms taking initiate to develop new BMs such as car-sharing BM, low-cost airlines, and ad-sponsored free newspapers (Bonakdar et al. 2017; Casadesus-Masanell and Zhu 2013). In all of these BMs, the firm taking initiative into the BMI could not reap the benefit due to competitive imitation.

Along with the negative consequences of BMI occurring to the firm, a number of negative consequences are also described as occurring to the firm's stakeholders, both internal and external. Jackson and Harris (2003), for example, describe how people experience "adoption fatigue" when a firm changes its BM. This adoption fatigue, for some employees and managers, coupled with the requirement to work in the new way of the new BM and requirement to meet the performance target of the new BM results in job stress, frustration, and work insecurity (Aspara et al. 2013;

Chesbrough 2010). Similarly, Sosna et al. (2010) presented a case in which a failed experimentation with BMI creates psychological trauma for both managers and employees. Other examples include conflict with employees, networks, or between members of top management, work alienation in which individuals become foreign to or not being part of their work environment due to a perceived insufficiency or lack of capabilities in contributing to the development of the new BM, and negative attitudes of employees toward their jobs (de Oliveira and Cortimiglia 2017; Haaker et al. 2017).

Upon external stakeholders, Desyllas and Sako (2013) described a case in which customers felt their privacy was invaded with the introduction of a pay-as-you-go (PAYG) insurance BM that involved the constant monitoring of customer vehicles. Similarly, Aagaard and Lindgren (2015) asserted that some new BMs that use so-called persuasive technologies create ethical issues, as the use of these technologies often influences people, groups, or entities without their consent. Haaker et al. (2017) also found that new commission-based BMs for intermediaries in the insurance industry create ethical problems because intermediaries' advice on customers or society at large regarding the benefit of insurance in some cases are not impartial. There are a lot of examples from platform companies that violate data privacy and other ethical issues in their value capture (e.g., Cambridge Analytics, Google on children's privacy, and Facebook on user tracking). One can argue that the value capture mechanisms are "innovative," but they are exploitative toward users' data.

Other consequences include environmental, social, and economic externalities. Girotra and Netessine (2013), for example, highlight that many BMIs in manufacturing firms often create uncompensated environmental pollution that causes harm to both environment and other aspects of human life such as health or well-being-related issues. On social externalities, an example is the excessive exploitation of public goods by BMI in such a way that degrades the overall quality of current public service (Bowyer and Chapman 2014); and on economic externalities are BMIs that negatively affect local economies through changes in current value chain (Bocken and Short 2021). Archetypes of BMIs that potentially generate social, economic, and environmental harm are described in Bocken and Short (2021), which include 9 (nine)

archetypes: environmental resource exploitation and waste, human resource exploitation and waste, economic exploitation, unhealthy or unsustainable offering, quantity over quality and value, addictive consumption pattern, complex opaque global value chain, short-term shareholder value-focused, and financing and supporting unsustainable practices.

Finally, relatedly, there are a number of new BMs that have been hailed as a success from the firm's perspective but operate deceptively or by taking legal loopholes exploiting the market for a profit premium or competitive advantage at the expense of broader society or society as a whole. Lange et al. (2015), for example, describe how the initiative of some full-service carriers to introduce or move into the low-cost carrier category significantly reduced salaries and many other benefits for pilots and cabin crew, and in certain cases for the sake of cost-reduction compromising the safety of passengers. Similar examples are found in sharing-economy-based BMI where low paid and "exploitation" of employees tend to be the norm (Crane et al. 2019; de Oliveira and Cortimiglia 2017), global value chain-based BMI that rely on low-cost and subminimum wage labor, high levels of outsourcing and contract labor (Allain et al. 2013; Crane et al. 2019; Stringer and Michailova 2018) and new BMs that allow illegal exploitation of the market in disguise such as in the case of Enron, WorldCom, and many other financial-based BMIs (Diaz-Rainey and Ibikunle 2011).

PURSUING BUSINESS MODEL INNOVATION: A CONTINGENCY PERSPECTIVE

The examples of negative consequences resulting from BMI as described demonstrate that the shift to a new BM is not always a good thing. It has a dark side. While a number of firms benefit from BMI, many are unable to achieve the expected benefits and some even ceased to exist as a result of BMI. This prompts a question when and which conditions to pursue BMI? Drawing on a contingency perspective, three contextual factors are suggested under which a BMI may not be a good option to pursue or

rather should be ignored both from a firm perspective and from broader stakeholders or policymakers.

First, level of disruptiveness of the new BM is referred to as the tension brought about by the new BM within the firm and in the industry due to the incompatibility between the new and current BMs. As explained earlier, BMI by nature is disruptive and therefore necessitates a number of negative consequences such as cannibalization of profit stream in existing business or elimination of actors, often uncompensated, that are incompatible with the value imposed by the new BM (Markides 2013). There are at least four elements identified to determine the level of disruptiveness of a new BM. First, radicality of the new attributes introduced (Chesbrough and Rosenbloom 2002; Kim and Min 2015; Taran et al. 2013); second, scope of changes involved (e.g., number of components changed) (Khanagha et al. 2014; Taran et al. 2013); third, reach of disruption (e.g., toward connected business, competitor, dominant BM in the industry and society as a whole) (Taran et al. 2013; Velu and Stiles 2013); and fourth, pace of disruption (Khanagha et al. 2014). The higher the level of these four elements generally (e.g., higher level of radicality, broader scope of changes, wider reach of disruption, or faster pace of disruption), the higher the level of risks involved as more likely the greater negative consequences or unintended outcomes to occur. From a firm perspective, pursuing BMI under this circumstance resembles a "great war" that can put the fate of the company at stake (see, e.g., cases of failed attempts at BMI and collapses of the firms in Christensen et al. 2016; Coreynen et al. 2017; Halecker et al. 2014; Moingeon and Lehman-Ortega 2010). Similarly, from a policy perspective, promoting a BMI with a high level of disruptiveness can put stability of the economy or broader society at risk. The new BM, for example, may eliminate non-compensated actors within the current value chain, negatively affect local economies through changes in the skill sets, employment, and capital accumulation, and generate uncompensated social costs due to transformation of norms, social practices, and institutions of the environment and stakeholders in which the BMI is situated. Moreover, when the "pie" of this disruptive BMI only benefits the few at the expense of the broader part of the society (Cooke 2003; Hardoon 2017) and at the same time the institutional capabilities of government and watchdog organizations

to adapt to and oversight the new ways of doing business brought about by the BMI are extremely weak, the instability can flare up even more. BMI, under this circumstance, may rather push "destruction" of the economy rather than act as the engine of growth or improved productivity. One might wonder, doesn't disruptive BMI provide an opportunity for faster progress? The answer is yes, but this is only possible when the other two contingency factors, as explained in the following, are taken into account, that is, capabilities to manage the process and business ecosystem in which the BMI is situated.

Second factor is capabilities of management to manage the process. A BMI that is characterized by a high level of uncertainty, risks, and ambiguity, particularly if a firm follows a first mover strategy, necessitates that firms with poor capabilities are more likely to walk through the process by heavily "bloodied" in the dark side (Chesbrough 2010; Sosna et al. 2010). If these firms cannot survive the period, the failure of the BMI can be ascertained and the fate of the firms may also be at stake (Christensen et al. 2016; Halecker et al. 2014). Among poor capabilities identified in literature in such a way a BMI is poorly executed include lack of analogical reasoning and sensemaking (Chesbrough 2010), lack of communication, entrepreneurial and leadership skills (Khanagha et al. 2014; Sosna et al. 2010), and lack of systemic and holistic thinking (Amit and Zott 2001). These poor capabilities, which may also be reinforced by other organizational factors (e.g., poor organizational culture, poor organizational design, and poor organizational cognition), lead BMI to the dark side through poor managerial choices and the processes such as poor resource allocation, poor customer validation, or poor performance measurement. Therefore, if a firm is aiming for a BMI but is lacking these capabilities, then an alternative strategy rather than BMI should be sought (e.g., continuous improvement). In a similar way, from a policy perspective, BMI should not be promoted as an "engine" of the economy, as it may push "destruction" of the economy rather than the growth or improved productivity, especially as explained earlier when the level of disruptiveness of the BMI is considerably high. Indeed, many firms and policymakers tend to be biased with the promise of BMI (e.g., new growth) without really considering the costs, implementation challenges,

and organizational tensions that emerge during BMI (Chesbrough 2010; Hardoon 2017).

Third is business ecosystem in which the BMI is situated. A number of business ecosystem-related factors are identified to put BMI into question of being successful. Bonakdar et al. (2017), for example, demonstrate how the difficulty or the absence of intellectual property protection for the new business led BMI to fast imitation and consequently the resulting competitive advantage was short-lived or accumulated negative benefit was experienced. Another case of stranded BMI was described by Chesbrough and Rosenbloom (2002) due to regulatory hurdles that do not allow full potential development of the new BM or are difficult to satisfy economically. Other business ecosystem-related factors highlighted in the BMI literature include the lack of availability of supporting or complementary resources within the business ecosystem (Sánchez and Ricart 2010), poor legislation and continuously changing laws related to the new BM, especially concerning the labor market, privacy, and Internet security (Dilger et al. 2017; Foss and Saebi 2017), and resistance of broader part of the ecosystem to change (Moingeon and Lehman-Ortega 2010). From a firm perspective, the more these hampering business ecosystem-related factors exist in a given environment of a BMI, the more likely for a BMI to be trapped in the dark side; therefore, a BMI may not be a good option to take or even should be ignored.

Conversely, from a policy perspective, the concern regarding the business ecosystem in which the BMI situated is related to whether a given environment is vulnerable to the rise of "deceptive" or "exploitative" BMIs. These business ecosystem-related factors, for example, include weak institutional factors such as weak institutional capabilities of government or private bodies to adapt to and oversight to the new ways of doing business brought about by the BMI, weak integrity of public officials who oversee the business activities (Crane et al. 2019), and other market inefficiencies such as inadequate of relevant corporate disclosure (Diaz-Rainey and Ibikunle 2011). If these contextual factors are highly prevalent, then a skeptical approach toward BMI should be taken if not be ignored. Another concern is when the level of disruptiveness of the new BM is high. If the institutional capabilities of government and watchdog organizations to adapt to and oversight the new ways of doing

business brought about by the BMI are extremely weak, the policymaker should restrict or block the development of the new BM for wider economic stability. The BMI should only be allowed when certain criteria of society welfare, broader stakeholder interests, or stability of the economy as a whole had adequately been measured or taken into account.

CONCLUSION

Is BMI always a good thing? The answer, as has been demonstrated in this chapter, unfortunately is not the case. BMI also has a dark side, which can cause greater harm to the firm, broader stakeholders, or society as a whole rather than attaining the promised benefits. This dark side is evident in "crowded" cases of failed attempts at BMI, failure of firms that lead the pursuit of new BMs to reap the benefit as competitors/new entrants copy the new BM and commercialize it in a more successful way, negative consequences of BMI for firm's stakeholders and "deceptive" or "exploitative" BMIs that may hail as a success from the firm's perspective but produce greater negative consequences for broader stakeholders or society as a whole.

To this end, it seems there will never be a BMI that brings "good" to all, but rather goes hand-in-hand with the dark side. This dark side of BMI necessitates a balanced view toward BMI by taking a contingency perspective suggesting that BMI may not be always a good option to pursue or rather it should be ignored especially under certain contextual factors that could lead BMI to produce greater harm for the firm, broader stakeholders, or society as a whole.

Based on a careful examination, three contingency factors are suggested. First, high level of disruptiveness of BMI that could put the fate of the company at stake or stability of the economy and broader society at risk. Second, poor capabilities of management or policymaker to manage the process in such a way led BMI to poor execution or implementation and thereby pushes the firm or the economy to the "destruction" rather than improved growth, superior return, or higher productivity. Third, vulnerable business ecosystem which put the success of a BMI is extremely difficult or attracts the rise of "deceptive" or "exploitative"

BMIs. From a firm perspective, only when reasonable measures toward these three contingency factors have been made or taken into account, a BMI should be allowed. Similarly, from a policy perspective, a skeptical view toward BMI should be taken in which a BMI should only be allowed when certain criteria of society welfare, broader stakeholder interests, or stability of the economy as a whole had adequately been measured.

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Part IV

For and Against Social Innovation

8

The Pros of Social Innovation

Luis Rubalcaba and Ernesto Solano

Social innovation is one of the latest emerging movements in the history of innovation. It started in 1960 with Peter Drucker and Michael Young and since then, a wide number of authors and disciplines have contributed to its emergence (Van der Have and Rubalcaba 2016). Since 2000 its growth has been a bit in parallel to the emergence of open innovation in the business world (Chesbrough 2003) both pointing out that innovations are not limited to advances inside firms, but that they can and should occur in the way production processes are carried out and that different users and stakeholders can play a fundamental role in those innovation processes. The concept of open innovation was first used in the business world; however, after a few years the relevance that open innovation with social agents can also have for the public sector was studied and evidenced, thus giving rise to concepts such as open government, citizen participation, or co-creation of value in the public sector. Social innovation is kind of open innovation, but with and toward society, not

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just with and toward clients, and applicable to any kind of organization, not just nor mainly companies.

The concept of social innovation has different approaches within the world of innovation studies and it is determinant when facing all the challenges in the world nowadays. In the last years new innovation approaches have raised, as an object of both research and development. Thus, the concept of social innovation has become very relevant as it has appeared in a variety of forms and influences people's lives, in fact, recent investigations have documented the existence of more than 1000 cases of social innovations all over the world (Howaldt et al. 2018), showing how social innovation has changed the way we live together, work, or handle crises. Conversely, practitioners, policymakers, and the research community are increasingly in agreement that the crises and challenges that exist in today's world cannot be addressed with technological innovations alone and that social innovations will be decisive and will have more and more relevance (Simon et al. 2014).

The rationale for social innovation can be based on different kinds of arguments. First, it is a socioeconomic reality covering an important part of what is new or improved in our world nowadays: it refers not only to social initiatives, third sector, and social entrepreneurship, but also to the social dimension associated with any kind of socioeconomic activity. Second, it has the power to put social goals and social means at the heart of innovation processes, enabling the transformations of traditional narrow top-down and supply-side innovation into a much wider bottom-up, demand, and participatory innovation. Third, it is an emerging research field with many scholars and practitioners from different disciplines and areas working on it and creating knowledge and tools for boosting this key innovation area. Moreover, social innovation is aligned with current sustainability development goals, green and digital agendas included.

In this chapter we will explain the relevance of social innovation in today's world from a practical and theoretical point of view, for this, the chapter will be divided into four parts. In the next section, some relevant cases of social innovation in recent years will be pointed out, giving special importance to the cases that have arisen during the COVID-19 pandemic. The section that follows thereafter is about the importance of social innovation as an emerging field of research and how it has been

developed. The section thereafter is about the interconnections between social innovation and other types of innovation. Finally, the barriers that social innovation faces will be explained. All these sections will support the idea, research, and practice of social innovation and possible reasons against it.

REAL CASES WITH SOCIAL IMPACTS FROM SOCIAL INNOVATION

The challenges that arise in the world not only affect our well-being today, some of them have a direct impact on the habitability of our planet in the long or even medium term. Thus, challenges such as poverty, inequality, sustainable development, pollution, wars, or the COVID-19 pandemic are broad and complex, so an efficient response to them is required. In this context, the effectiveness shown by social innovation practices when facing these problems has made the concept of social innovation highly relevant in last years (Ayob et al. 2016; Van Der Have and Rubalcaba 2016).

There are plenty of recent cases that show how social innovation is a tool that allows greater efficiency when responding to certain situations. Popular examples (even included in Wikipedia, see *Wikipedia* 2021) are provided by Phills et al. (2008), among these examples are the following: In first place, in the education sector charter schools are an outstanding case; they are the outcomes of social innovation that seeks to respond to the problems of traditional teaching; these schools operate independently from the education system and allow students to choose study programs that best suit their interests, as well as being ideal places for co-creation and innovation. Another practice that also stands out is community-centered planning, which allows communities to actively participate in value creation and innovation processes, which generates better attention to the needs and problems faced by communities. In addition, community-centered planning can promote other forms of social innovation such as emissions trading or habitat conservation plans, which are initiatives that seek to conserve the environment. Finally, social innovations such as International Labor Standards, Individual Development Accounts, or

Microfinance are intended to help the most disadvantaged people without access to financial services to be able to develop economically, offering them opportunities and protecting them from exposing themselves to situations of exploitation or slavery. We can notice not all these cases are social innovations to the same extent. We can define social innovation in a heuristics way as innovation that aims at social goals with social means and social actors, which does not apply in the same way to these cases: some of the examples have clear social goals but the participation of social agents is very limited.

Beyond these popular examples, others can be mentioned as well. Experiences such as the Snowball Effect in Austria, the Shaping Horizons network in Europe, the SkillLab in the Netherlands, or MIWA in the Czech Republic show how ecosystems and innovation networks that are built under a collaborative approach have positive impacts on different economic sectors and activities (education, entrepreneurship, environmental conservation). Likewise, when facing problems such as aging in Europe or the great migratory movements of recent years, cases of social innovation such as INNOVA SAÚDE in Galicia, Spain, or HelloEurope throughout Europe have shown great efficiency.

The COVID-19 pandemic has stimulated the adoption of social innovation practices, creating innovative projects or finding new ways to do the same things (Penco et al. 2021). For instance, in the USA, MIT researchers have found that people asymptomatic for COVID-19 may differ from healthy people in the way they cough. These differences are not perceptible to the human ear, but can be detected by the AI. Thus, they have created an application for mobile phones (opensigma) that aims to detect positive cases of the disease simply by answering questions on a smartphone and providing a recorded cough sample. In this way, society has been able to help detect asymptomatic cases of COVID-19 without leaving home (Laguarta et al. 2020). In Spain, there are two important cases of social innovation as a response to the pandemic: the collaborative platform Frena la Curva FtC and the hackathon Vence al Virus FtV. These projects have contributed enormously to collecting ideas about urgent problems of citizens, to transform them into solutions during the COVID-19 crisis as they helped to channel the civic energy to co-produce solutions in collaboration with a wide range of actors, mostly

during a time of hard confinement at homes and out of offices. Frena la curva has been replicated in 22 countries due to its success, while Vence al virus promoted the start-up of 15 projects in response to the pandemic in 2020 (Criado and Guevara-Gómez 2021). Another example is Tech4Covid19 in Portugal, a project that brings together engineers, scientists, designers, health professionals, citizens, and other stakeholders who have come together to develop and launch projects that tend to be technology-based to mitigate some of the many challenges created by this pandemic context. This initiative managed to promote 36 solid projects in 2020 alone (Almeida 2021). In Latin America, Mamás Del Río is a community-based maternal and neonatal health program operating in 84 remote Amazon communities in Peru and 30 communities on the Peruvian-Colombian border. The program rapidly adapted to COVID-19 restrictions in order to meet the needs of local people. The project enabled the community to sustain maternal and neonatal health services while responding to urgent needs of the COVID-19 pandemic (Moscibrodzki et al. 2021).

The appearance of these cases of social innovation that are so efficient throughout the world has made different researchers in the areas of economics and entrepreneurship interested in them. This research activity has made innovation an emerging field of research with great growth potential.

SOCIAL INNOVATION AS AN EMERGING RESEARCH FIELD

Some critics of social innovation argue that its location and key actors are diffused and inchoate, making it challenging to identify what are its key elements, drivers, barriers, and characteristics (see Srinivas, Chap. 9 in this volume). Nevertheless, in recent years social innovation has become an emerging research field in which important multidisciplinary studies have been carried out that have helped its development (Adams and Hess 2010; Aksoy et al. 2019; Ayob et al. 2016; Cajaiba-Santana 2014; Gallouj and Weinstein 1997; Pol and Ville 2009; Van Der Have and Rubalcaba

2016). This research has contributed to the fact that social innovation has been able to promote and improve services in different economies (Ahmed et al. 2017; Mason et al. 2015; Voorberg et al. 2015). Thus, questions such as what is social innovation, where does it reside, and how does it happen and why (see Srinivas, Chap. 9 in this volume) are being answered more and more with scientific rigor and based on growing empirical evidence.

These experiences, mentioned above, show that social innovation is being a key factor when facing some of the most important problems of today, its open, collaborative, and co-creator approach gives it great efficiency in the face of crises, such as the COVID-19 pandemic. In this sense, many researchers have been interested in carrying out scientific studies about these experiences, generating concepts, definitions, and frameworks. Despite recent efforts to define and clarify its meaning, the concept of social innovation is still considered quite ambiguous and the state of knowledge continues to be fragmented (Cajaiba-Santana 2014; Pol and Ville 2009). The current lack of clarity or general vision of what constitutes the history of the field makes social innovation an area of special attention in which it is necessary to establish its area of study and its limits. Furthermore, this disintegrated and fragmented context complicates the systematic accumulation of knowledge that allows improvement of innovation practices. Conversely, social innovation has been largely overlooked by the majority of innovation literature (Adams and Hess 2010; Aksoy et al. 2019) with the mainstream of research in innovation studies traditionally focusing on technological innovation in manufacturing, though continuing to expand the range of questions and topics (Gallouj and Weinstein 1997; Windrum et al. 2016).

However, the fact that social innovation is conceptually imprecise and is used in potentially unpleasant ways has not prevented the emergence of studies seeking its harmonization and conceptual development. In fact, several studies indicate that the concept of social innovation began to have great importance in research since the early 2000s, so it is possible to review the most important contributions of recent years for a possible intellectual structure in the discourse of social innovation.

There are several studies that seek to address the problem of the fragmentation of the field of social innovation by analyzing its structure and

intellectual development, contributing to a more complete and integrated understanding. One of the first attempts to broaden the debate on the meaning of social innovation by describing the subject in the literature was made by Moulaert et al. (2005). These authors proposed the existence of three frequently interacting dimensions of social innovation: (1) satisfaction of human needs that are currently unfulfilled; (2) changes in social relationships; and (3) an empowerment dimension in the form of increased socio-political capacity and access to resources (Moulaert et al. 2005).

Contemporary sociologists have defined social innovation as new ways of creating social value. Hochgerner (2011) defines social innovation as the new combination of social practices. For their part, Howaldt and Schwarz (2010) define it as a new combination or new configuration of social practices in certain areas promoted by certain actors in order to satisfy needs more efficiently than already established practices. The central theme of social innovation is in the "practices" and in the way these are configured. Thus, this approach considers social innovation more as a new paradigm of innovation than as a separate category of innovation. For contemporary sociology, social innovation refers to a great revitalization of the social aspects involved in any type of innovation, including technological innovation (Hochgerner 2011).

This sociological approach to social innovation contrasts with the more economic conceptualization adopted by Pol and Ville (2009), who reviewed various commonly used definitions of social innovation and explored the differences between "business innovation" and "social innovation." Their work evidences the existence of four different conceptions of social innovation in the literature and concludes that they all have one point in common: the improvement in the quality of life or the quantity of life. Thus, they redefine social innovation as any innovation in which the new implicit idea has the potential to improve the quality or quantity of life (Pol and Ville 2009).

Subsequently, Ayob et al. (2016) made an important contribution to "how social innovation came to be." Through bibliometric analysis, these authors identified the most influential articles and found that social innovation has taken on a quite diverse set of meanings. In particular, they found a tradition of studies that sees social innovation as any increase in

aggregate individual utility that arises from an innovation and a tradition of studies that focuses on the process of collaboration between different groups and the restructuring of social relationships of power. This broad conception can be seen as a set of processes that amalgamate combinations of up to three related propositions inherent in the literature on social innovation. First, social innovation involves new forms of collaboration, whether at the individual or organizational level, often involving new and less hierarchical relationships between government, civil society, and citizens. Second, social innovations may lead to a restructuring of existing social and/or power relations in the way they are implemented. Third, the innovation must have a positive social impact through its utilitarian value: improving the quality or quantity of life.

Van Der Have and Rubalcaba's (2016) analysis suggests that the social innovation field is grounded in four distinct intellectual communities arising through a somewhat organized diffusion process: (1) community psychology; (2) creativity research; (3) social and societal challenges; and (4) local development. Now, the bibliometric analysis of these authors shows that these communities do not exist in isolation. All four communities agree that social innovation encompasses change in social relationships, systems, or structures, although this can be approached from different levels of analysis. Furthermore, another idea shared among the four communities is that such changes satisfy a shared human need or solve a socially relevant problem.

Thus, this study demonstrates that, despite the plurality of definitions that exist, the literature seems to share the two "core elements" above, around which any attempt to create a general definition for the field must be based. Conversely, in order to describe the key aspects of each intellectual community in social innovation we propose that they are studied in terms of their (1) basic view of social innovation; (2) current key research themes; (3) main perceived outcomes of social innovation; and (4) process versus outcome orientation. These studies on social innovation show several things. First, social innovation is a complex and multifaceted phenomenon that encompasses a wide range of activities, from grassroots social innovations that respond to pressing social demands that are not commercially viable due to market failure, to novel products and services produced by private, third sector, or public sector organizations

(or a combination of both). Second, social innovation can be studied from different areas and approaches, generating different concepts according to the area or approach from which it is being studied. And third, the vast majority of studies on this field are not mutually exclusive, but are interrelated and complement each other.

Research on social innovation has two "core conceptual elements": social innovation encompasses (1) a change in social relationships, systems, or structures and (2) such changes satisfy a shared human need/goal or solve a social problem. Thus, research in social innovation is important for two fundamental reasons. First, because it is an emerging field of research of great breadth, which allows interdisciplinary studies and with great opportunities for the generation of knowledge. Second, research in social innovation and the accumulation of knowledge in it can help boost the already successful cases of social innovation as well as encourage the creation of new social innovation experiences in the world. Social innovation has a relatively young and unsettled history, in which different approaches coexist, so the generation of a strong and consolidated body of research on social innovation would be very beneficial for the implementation of social innovation projects, which would greatly help to combat the innovation challenges posed by today's world (e.g., Chesbrough 2020; Chesbrough and Di Minin 2014). The most recent development in social innovation research can be found in the area of public-private networks for social innovation (Desmarchelier et al. 2020, 2021, 2022), so presenting a new way of understanding the relationships between public sector, private sector, and third sector, able to provide powerful social services based on joint innovation.

INTERRELATIONS WITH OTHER INNOVATIONS FORMS

Another relevant element of social innovation is its relationship with other types of innovations, especially service innovation and system innovation, in fact, these three concepts may be considered as different dimensions of new innovation processes.

Another critique of social innovation is that it is unclear when the social innovation starts and when it ceases and what are the relationships that happen between all the actors of social innovation (see Srinivas, Chap. 9 in this volume). At this point, different studies can be cited that show the key points of social innovation and that also demonstrate its importance and relationship with other types of innovation (Desmarchelier et al. 2020; Gallouj and Weinstein 1997; Rubalcaba 2016; Windrum and García-Goñi 2008). In this section we will see the close relationship that social innovation has with service innovation and systems innovation.

As social innovation, service innovation and system innovation are ways in which the concept of innovation has been broadened, these concepts have had similar processes and are connected to social innovation.

Service innovation plays an important role in social innovation as service can be considered a part of any product, process, or model. Thus, in a service-dominant logic context (Vargo and Lusch 2008), service can also be regarded as a dimension of any social innovation of its nature and outcome. Many services innovation produced in multi-agent contexts (e.g., Gallouj and Weinstein 1997; Windrum and García-Goñi 2008) may be considered social innovation both in public sector (Gallouj et al. 2013), in private sectors (Gallouj et al. 2018) and in innovation networks (Desmarchelier et al. 2020).

Service is an important element in some definitions of social innovation. For instance, *European Commission* (2011) defines social innovation as

> Innovations that are social in both their ends and their means. Specifically, social innovations as new ideas (products, services and models) that simultaneously meet social needs (more effectively than alternatives) and create new social relationships or collaborations. In other words they are innovations that are not only good for society but also enhance society's capacity to act.

The *OECD* (2000) "LEED forum on Social innovations" stated that social innovators identify and deliver new services that improve the quality of life of individuals and communities." Thus, services and service innovations are closely linked with the outcomes of social innovations.

Rubalcaba (2016) appoints that services and service innovations can be identified in four areas of social innovations: the innovative solutions are often service solutions (new or improved services), the societal challenges are often in the area of services (health, education, social services, etc.), the participatory processes often include service co-innovation, and the inputs for social innovation are often based on the use of knowledge-intensive services and service intangibles.

A system innovation can be defined as a new operational model, which is based on the simultaneous development of organizations, technologies, services, and multiple network and partner relationships—often in a situation where different interest groups have contradictory demands (Saranummi et al. 2005). An important characteristic of innovation systems is that the novelty is not limited to the ways of operating, but it can also encompass the new forms of interaction between the different stakeholders and the sources of innovation. On this respect, the relationship between social innovation and system innovation can also be seen as a result of the recent co-innovation trends in businesses, business research, and public administration. The role of users is no longer limited to the simple provision of information about their needs, but rather they can make more direct and active contributions to the process of developing new services and processes to solve problems, being a fundamental part of co-creation of value. Terms and concepts such as "user-driven innovation" (von Hippel 1986, 2005), "user-based innovation" (Sundbo and Toivonen 2011), and "open innovation" (Chesbrough 2003) reflect central aspects of this development. Furthermore, the relationship between system innovations and social innovations can also be approached from the perspective of innovation networks and public management. Collaborative networks in which different stakeholders participate have a central role in social innovations and these, in turn, describe their interrelation with system innovations. Harrison et al. (2010) identify three dimensions in social and system innovations: (1) social dimension—strengthening the social links; (2) economic dimension—producing wealth; and (3) political dimension—demand-based actions and the democratization of socioeconomic life.

Rubalcaba (2016) offers some examples of how social innovations are also connected to system innovations or service innovations. Table 8.1

Table 8.1 Examples of social innovations in relation to service and system innovation

	High participatory intensity	Low participatory intensity
Service innovation	Co-creation and co-design in public services Public-private service innovations networks in public or private services Open date-based innovations Charter schools and other new educational arrangements Social innovation related to social exclusion and social services	Fair trade movement Traditional technological innovations and supply-led digital innovations Technological inclusive innovation Agro and manufacturing extension technological services
System innovation	New urban and regional plans based on participatory process System radical transformations due to disruptive technologies Social innovations led by third sector and small target communities Innovation in social procedures and behavior Social crowdfunding Institutional reforms for new public service provision	User-driven innovations in firms Employees-driven work in organizational innovations Innovative CSR activities

Source: Updated and adapted from Rubalcaba (2016)

groups and updates the list of examples. This set shows how social innovations are growing around the world. Some of them have stronger service content than others, and some are well on their way to becoming part of system transformation, though most remain local and struggle to scale. Examples can be grouped into two categories: those representing a highly participatory social process, or those indicating less intensive level of user and agent participation.

BARRIERS TO SOCIAL INNOVATION AND NEED FOR POLICY ACTION

Some authors claim that social innovation effectively depoliticizes and oversimplifies the great challenges facing the world today and that it is unable on its own to balance social and market goals (see Srinivas, Chap. 9 in this volume). Although citizen participation is essential for social innovation, the approach presented in this chapter postulates that government participation through policies is essential for social innovations to have a real and sustainable impact on society. Thus, social innovation is an important issue for all socioeconomic agents and organizations, as argued in the previous sections. In addition to theory and practice, social innovation is also important at the level of economic policy as it faces certain challenges and barriers that emphasize the need for strategies that allow the development of an appropriate environment for social innovation. This policy dimension is not central in the chapter, so we will only make a brief review of the barriers that make the application of policy necessary and the evidence that social innovation is not only the responsibility of non-state actors.

Although there is very little theoretical or conceptual work on the barriers to social innovation (Cinar et al. 2019; Mendes et al. 2012), a review of the literature allows us to understand what are the groups of barriers that social innovation faces (Bekkers et al. 2013; Edwards-Schachter and Tams 2013; Mendes et al. 2012; *Young Foundation* 2010). First, it is necessary to take into account that, on the one hand, the participation and collaboration of different stakeholders is one of the fundamental elements of social innovation process, and, on the other hand, social innovations take place in a specific environment in which different stakeholders can be distinguished. Thus, barriers to innovation are those situations or elements that make stakeholders collaboration difficult and that eliminate the environments for the development of social innovation.

Based on the characteristics of the social innovation process indicated in this chapter, we proceed to propose a typology of barriers to social innovation that seeks to simplify their understanding and classification in order to facilitate the application of economic policies that allow the

removal of these barriers. In first place, we propose *structural barriers to social innovation*. These barriers follow the logic of Mendes et al. (2012), as they understood certain characteristics of the institutional, political, and economic environment that can hinder or prevent collaboration between stakeholders for social innovation, as well as prevent an adequate environment for social innovation. Among these structural barriers, the following can be highlighted:

- Barriers to entry: Social innovators may face barriers to entry in the new activities they want to set up;
- Lack of an innovation strategy and policy: The lack of strategies implies a lack of agendas, outcome expectations, lack of incentives for collaboration, and lack of a funding program for social innovation;
- Lack of skills and training: The lack of training in the methods to innovate can prevent the emergence of efficient initiatives that are sustainable over time;
- Collective nature of the goods and services: As Mendes et al. (2012) appoint, the explanation and mechanisms of other barriers to social can be found by looking at the economic nature of relevant goods and services delivered by this process, namely the fact that, very often, they have a collective nature;
- Insufficiency of built-in growth and leveraging mechanisms: As Mendes et al. (2012) point out, the absence of growth and leverage mechanisms can be a barrier since this makes it difficult to build networks, associations, and other social connections capable of leveraging results from a small to a larger scale.

In second place, we propose *contextual and cultural barriers to social innovation*. These barriers follow the logic of Bekkers et al. (2013), since in many cases organizations tend not to want to adapt to new ways of working, new methods, new ideas, and therefore also to the adoption of fundamental collaborative schemes for the emergence of new innovations. Among these structural barriers, the following can be highlighted:

- Cultural barriers: The lack of an innovative culture, both among leaders and managers and among employees and workers, can hinder the innovation process;
- Agency failures: Social innovation is also about social innovators being capable of motivating others to participate in new ways to respond to social needs, but they may fail to do so because they may not have enough financial and other resources needed to accomplish their goals;
- Risk definition and management: Innovation, as has been discussed, depends on the addition of new ideas, in which trial and error is important. However, this can be risky. Innovation in itself is a risky process, because a commitment is required regarding a process and regarding unknown outcomes;
- Organizational failures: The collective nature of the services offered by social innovation implies that collaboration between public organizations and social economy organizations plays an important role in the application of these services, in many cases this collaboration does not occur.

These barriers and challenges justify the importance of social innovation at the policy level. In order for social innovation to reach its maximum potential and for there to be collaboration between stakeholders and the active participation of citizens, it is necessary for there to be a policy on the part of the public sector that helps to achieve these ends; however, policy on social innovation is another field with very little theoretical or conceptual work. Thus, further investigations should generate a clear framework of barriers to social innovation that allows establishing a policy agenda that promotes social innovation in the countries.

CONCLUSION

Social innovation initiatives have emerged spontaneously in today's world as a response to the challenges and problems that arise. In this sense, social innovations have arisen organically and spontaneously in society and are not "just part of a political project"—the cases cited in this chapter show its potential for society, so it would be limiting to say "just say

no" to social innovation. Despite that some criticisms still may be justified at theoretical level, and despite that there also are cases that may show negative consequences of some social innovation projects (see Srinivas, Chap. 9 in this volume), social innovation matters in theory and in practice. Social innovation initiatives have shown great efficiency and have made it clear that technological innovations are much more efficient and have greater impact when they are accompanied by social innovations in which different stakeholders are involved in the process, thus, participation is of vital importance for an innovation process.

The impact of social innovation has aroused the interest of many academics and researchers, which has led to a deeper understanding of social innovation, establishing its area of action and its limits, and although these remain unclear, this research has greatly enhanced social innovation practices, making it clear that, although not all participation is good, participation is decisive, so it is necessary to establish methods and frameworks so that it is carried out in the best way.

Research on social innovation also shows that it is interconnected with other types of innovation, which makes it clear that it can have a great impact on the innovation ecosystems of countries, thus, economic policymakers must carry out strategies that allow them to overcome barriers to social innovation, so that social innovation practices can be as efficient as possible.

In short, there are four main elements supporting the theory and practice for social innovation:

1. Existence of successful cases of social innovation dealing with urgent societal challenges, even if this should not neglect the existence of social innovation failures and non-significant initiatives;
2. Emergence of the social innovation research area consolidating it within the field of innovation studies, even if there is still plenty of room for further development;
3. Growing interactions between social innovation and other innovations ways, such as service multi-agent innovation and system innovations, so understanding better social innovations is useful to understand other innovation types;

4. Existence of specific barriers for social innovation justifies the need for specific measures at policy level. Social innovation is not an aspect that is separate from the actions of the public sector (as debated by Srinivas, Chap. 9 in this volume)—on the contrary, we believe that social innovation needs to be promoted by the government to be efficient.

Finally, we believe that the points developed in this chapter respond to the objections raised to social innovation by Srinivas (Chap. 9 in this volume). We do believe that social innovation is one of the most interesting and complex socioeconomic phenomena of recent years, so it is worthwhile continuing researching and debating about.

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9

Against Social Innovation

Nidhi Srinivas

Theodor Adorno (1978 [1951], pp. 156–157) once remarked that

> a mankind which no longer knows want will begin to have an inkling of the desultory, futile nature of all the arrangements hitherto made in order to escape want, which used wealth to reproduce want on a larger scale.

This chapter considers some of these arrangements, and their futile nature, in terms of the cluster of interventions often termed social innovation.

In his unflattering biography of Mother Teresa, the writer Christopher Hitchens asked

> Who would be so base as to pick on a wizened, shrivelled old lady, well stricken in years, who has consecrated her entire life to the needy and the destitute? On the other hand, who would be so incurious as to leave unexamined the influence and motives… The scale alters with the perspective, and the perspective alters with the scale. (Hitchens 1995, p. xi)

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A similar observation can be made about social innovation and social innovators. Who would be so mean as to take exception with a phrase that points to people pursuing good in this world, bringing disparate needs and interests together, seeking a genuine difference? But then again "who would be so incurious as to leave unexamined the influence and motives" (Hitchens 1995, p. xi)?

This chapter makes a case against social innovation. I am not interested in rejecting outright the promise, potential, or hope for social innovation. All phrases serve a purpose, and it is quite possible that this particular phrase can generate more than it actually means, becoming in this sense an empty signifier, paradoxically, of portent. However, I am interested in pointing to the limitations of this phrase, and the dangers in using it uncritically. Just as Hitchens and others were outraged by poverty (including on India's streets) but concerned at the costs of consigning the responsibility to reduce such poverty on the shoulders of an evangelical nun, I am concerned at what is lost when we uncritically take on board the notion that social innovation has a coherent meaning and that it (somehow) happens.

My case against social innovation (hereafter SI) starts by posing four questions about it. What is it? Where does SI reside? How does it happen? And why? After discussing the answers offered by SI literature to these questions, I turn to some unsettling consequences of taking SI seriously as a disciplinary concern.

FOUR QUESTIONS

Four questions posed about SI offer troubling answers. These questions, what, where, how, and why, focus, respectively, on definitions, agents, processes, and motives. I will argue that there are reasons to be skeptical and wary of taking on board seriously the notion of SI. They converge around the following observations: SI's definitional content is unclear and overlaps considerably with other cognate terms; SI's location and key actors are diffused and inchoate, making it challenging to identify who is responsible for achieving it; the SI process is largely ratiocinated by theorists, but in practice accidents and luck appear to play a greater role than

pious intentions; finally, the motives and interests for such innovation tackle surface symptoms leaving underlying causes unchallenged.

Definitional challenges

What is SI? More specifically does the term have a meaning that is distinct from cognate terms? Stated differently is there a value in identifying something *as* SI rather than something else?

To consider this more closely, let us consider some examples of SI. An Indian NGO called "Fifth Pillar" has designed a fake currency note worth literally a zero. Rather than encourage counterfeiting, the note is intended to reduce corruption in Indian government (Mohiuddin 2010). By flashing the note at an official taking too much time to respond to a request, that too in front of colleagues, can be seriously embarrassing. Then the zero rupee becomes worth something. The note's design is innovative enough. But what makes this SI is that the currency note seeks a social impact (reducing corruption) by bringing together multiple organization-level activities, between various partners and groups, finding creative alternative ways to achieve these social goals. Where the currency note is a design innovation, and Fifth Pillar may seek its own organizational innovation through ideas and processes that generate it greater returns, SI seeks that larger level social impact.

The fake currency note is unusual and in that sense something new and untoward. The shock of the new is brought out in a well-known definition of SI as any set of "new ideas that work in meeting social goals" (Mulgan et al. 2007, p. 8). Various foundation reports, journals, university research groupings, and even government initiatives have coalesced around such an assertion that SI simply describes ideas that are practical, tractable, and new. Examples include: fair trade, the Open University, the Grameen Bank, and Linux software (Mulgan et al. 2007, p. 47).

The fake currency note also relies on people, and its effectiveness hinges on the extent it spurs other forms of social action, including citizen demands for accountability, and official efforts to show it. In this instance SI is not only about novel ideational content but also a particular process of engagement. Similarly, Nicholls et al. argue that there "are two

interlinked conceptualisations… focused on either new social processes or new social outputs and outcomes. The first emphasises changes in social relations and often has a focus on rebalancing power disparities of economic inequalities in society" (Nicholls et al. 2015, p. 2), while the second responds to "social market failures in the provision of vital public goods" (Nicholls et al. 2015, p. 3).

The fake currency note relies as well on a multifarious set of organizational expectations, including within the NGO in question, as well as between it and other organizational actors.

It is "characterised by bringing together what is usually separate, whether this is ideas, concerns or practices" (Evers and Ewert 2015, p. 116). There are organizational elements involved in this bridging of the incommensurable. SIs are also

> organizations that meet pressing social needs and profoundly change the basic routines, resource and authority flows, or beliefs of the social system in which they arise. (Biggs et al. 2010, p. 3)

This organizational focus expands the meaning of SI considerably, which now comprises not only ideas and forms of heterogenous engagement, but also organizations and their social interactions. This includes internal organizational aspects, like authority flows, resources, beliefs, organizational outputs, and work processes. It also clarifies that the end outcome is one of transformative and expansive change (that is across a social system).

So to the question of what is SI, an answer could be that it is three elements brought together: something new in terms of ideas, concepts, strategies, products, or organizations; processes of engagement that affect multiple actors, and organizational processes that support these two elements while helping attain social goals (Srinivas 2017). When, in a bold gesture, US President Obama's administration launched an "Office of Social Innovation and Civic Participation" it is telling that its goal was one of "engaging individuals, non-profits, the private sector, and government to foster innovation and work together to make greater and more lasting progress" (*White House: Office of social innovation and civic participation* 2013), that is a combination of outcomes, processes, and actors.

SIs in service provision focus on user-service fit, adapting regulations and rights, adapting governance, adapting work and finance, macro-welfare reform (Evers and Ewert 2015). Three classic roles taken up by innovators are as Poets who express a new idea, Designers who convert an idea to a policy agenda, and Debaters who advocate for a new idea (Moore et al. 2012).

Yet such definitions go only so far. At best they point to a novel social arrangement with potential to reshape an existing social system. But at worst their imprecision and vagueness defeat the possibility of holding onto a shared meaning for the term. For instance, what does "new" actually mean here? And when does the new or novel stop being new? Who gets to term something new? Is new closer to the meaning of fresh or of unusual? Indeed, Evers and Ewert (2015, p. 109) aver that they wish "to avoid objectivising what is 'social' or 'better', since this is a normative issue, subject to widespread debate." Instead they assert that "social innovations are those that, at any given moment, raise the hope and expectations of progress towards something 'better' (a more socially sustainable/democratic/effective society)" (Evers and Ewert 2015, p. 109). Literally they are arguing that an SI is defined by its ability to raise hope regardless of whether that hope is for something everyone agrees is equally tangible. Rather than precision what is apparent in these definitions is an eagerness to paint aspects of social life in an excitable light, in the expectation that these aspects of social life hold portent.

Even if we are charitable and decide to accept such definitions of SI despite their imprecision and aspirational breathless quality, they still overlap with other cognate terms. The foremost of these terms is social entrepreneurship (SE). Is SE different from SI or synonymous? At one level if we take the three elements just mentioned seriously—that is, something new, processes of engagement, and organizational processes—it could be argued that SE is the organizational component of SI. Consider the title and table of contents of a recent volume titled *Social entrepreneurship: A practice-based approach to social innovation* (Kucher and Raible 2022). Its contents, including chapter titles such as "Social entrepreneurship is messy" and "The basics of product development" are concerned with products and services. Indeed Nicholls et al. (2015, p. 5) assert that social entrepreneurship is "a subset of social innovation—the

organisational enactment of social innovation ideas and models." However, in practice the terms *are* also used synonymously. When Biggs et al. (2010) assert that SI includes organizations, it is very hard to distinguish it from SE.

Another term that is often used is social business (SB) or social enterprise. For example, the Grameen Bank, which Mulgan et al. (2007, p. 47) call an SI is often described as a social business, including by its own founder, Mohammed Yunus (Yunus et al. 2010). Is it both, and in that case how do we tell the two apart (SB and SI)? And what is the value in doing so? Then again, what about, simply speaking, processes of development? The phrase "international development" conjures an expectation of social progress quite in line with what is anticipated with SI. Is development synonymous with SI?

It is revealing to consider how the meaning of these terms can blur into one another in research accounts. Kerlin's study is about social enterprise described as

> new business solutions to a myriad of social and environmental problems (Alter 2006)…characterized by the shared human sentiments of social justice, sustainability, participation, inclusiveness, and empowerment. (Kerlin 2012, p. 66)

The examples offered, which include micro-finance initiatives, workers, and social co-operatives, are described as comprising "socially innovative practices…bound together by approaches that respect humanity at their core, differences in need and socio-economic and cultural context stimulate what are, ultimately, uniquely creative initiatives in different parts of the world" (Kerlin 2012, p. 66). Notice the easy slippage here from SE to SI. Both have beneficial consequences for society, both comprise "business solutions," yet what holds them apart? It appears all that does so is that SE is a subset of SI, or, stated differently SE is the organizational arm of SI. But if social enterprise is the organizational arm, where is social entrepreneurship? They appear to add yet another link of ambiguity and imprecision in a chain of empty signifiers.

Locational challenges

Where is SI? That is where does the innovation reside? Of course, one response would be in the hands of the social innovators themselves. But if the innovation in question generates social change and requires the involvement of various actors, as definitions indicate, it is reasonable to also expect the innovation to be the contribution of multiple actors. Such disparate actors can include end-beneficiaries, funders, and trainers.

Some years back I met a group of farmers in an arid region of Rajasthan, in Western India (Srinivas 2013). They were irrigating fields of wheat using water pumped from a nearby aquifer. The innovation here was the manner in which these farmers shared costs and maintained a schedule for access. Since the fields were contiguous it made better sense for the farmers to share pump use. The pump itself, an expensive acquisition was gifted by an NGO based in nearby Udaipur. The farmers shared the cost of maintaining it, and followed a cycle of use, so that each received a share of the pumped water during daylight. In this example, what is innovative and with social consequences is multifarious: it includes the agreement among these farmers to share fuel costs, the NGO that first ensured they would share costs before gifting them the pump, and the farmers themselves whose determination was great enough to enable them to find common agreement.

Most SI activities occur in such "between spaces"—between traditional images of sectors, between the boundaries of sectors, blurring and mixing sectoral logics of actions. They include relationships

> with buyers, funders, and sub-contractors (what can be termed "vertical relationships" in a supply chain); and second, relationships with other service providers (what can be termed "horizontal")…both formal (based on contract) and informal (based more on word-of mouth and a common understanding). (Lyon 2012, p. 151)

These spaces include those between state and private sector, such as public-private partnerships, and new models of welfare provision; those between the private sector and civil society, such as in business plans reflecting social objectives; and between the state and civil society, where

the latter provides state services (health, education, banking) under contract, or substitute for the former, in a shadow state.

One term to describe these "between spaces" is *coproduction*, and it constitutes an important cluster of the activities usually considered as SI. It is the delivery of public services through regular long-term relationships between state agencies and organized groups of citizens, where each side makes regular monetary contributions, "in an equal and reciprocal relationship between professionals, people using services, their families and their neighbours" (Boyle and Harris 2009, p. 11; see also Bovaird 2007). It includes

> co-commissioning (e.g., public participation in policy making, participatory budgeting), co-design (e.g., user consultative councils) and co-assessment (e.g., online satisfaction ratings for family doctors), as well as co-delivery (e.g., expert patients), the focus of many early analyses of co-production. (Bovaird et al. 2015, p. 3)

Coproduction often emerges as a response to declining state capacity, in "countries where state authority is weak, and public agencies struggle hard to fulfil the kinds of roles that we take for granted in OECD countries" (Joshi and Moore 2004, pp. 32–33). Or to adverse logistics, including complex natural environments, diverse and large number of poor households, or extreme diversity of operational situations. It is understood to invigorate local neighborhoods and local civil society. So, when discussing Porto Alegre's participatory budget (*Orçamento Participativo* in Portuguese, OP) Bovaird (2007, p. 851) maintains that "because citizens appreciate being involved with the OP, people now have the confidence to challenge the design of city services in their area, a further example of coproduction." Similarly, in the city of Karachi, Pakistan, a citizen's group fights crime with its own private police force. While "given some formal authority by the governor" it is "effectively run by a network of wealthy businessmen" with close social and business ties (Joshi and Moore 2004, p. 35).

Such SIs require negotiation between various partners and groups, making it quite hard to identify one sole agent of the innovation. It is also quite hard to know who to hold accountable when things go badly wrong.

Another citizens' group in Karachi mobilizes around a very kind of citizen from the wealthy businessmen just described. This is the Orangi project which does not work with the state as much as substitute for an absent one. Its main activity is to map informal settlements so that the poor living in them can fight for their rights and protect their homes. The project has upset powerful interests eager to profit from such land. Their previous Director, Parween Rehman, was murdered in 2013.

The author Samira Shackle recalls

> the human rights activists, women's advocates, charity workers and business people I had interviewed and socialized with in Karachi. Most of them felt that they were potential targets. This fear came out in different ways: some spoke about varying their routines, others about avoiding certain topics of conversation in front of guards or drivers. (Shackle 2021, p. 172)

The very fact that SI is seen as occuring within a cluster of inter-related actions shared by multiple actors makes it hard to know who to hold accountable for attaining it, or protecting those seeking it like Ms. Rehman.

Instead, the temptation is to assign responsibility (and visibility) to a "social innovator" and forget the web of kindred ties that nest these actions. Or for that matter, those ties that vitiate such actions, sometimes with considerable force. In fact, different actors have their own agenda and interests, including within such citizens' groups. Who are these actors? How to name them? What are their key motivations? A discussion of SI hinges on these questions because it presumes the source of such innovation resides in a realm outside the state that is willing to partner with it. But for precisely these reasons it is also very hard to work out where the SI is actually taking place. What remains missing are the relational interactions between these actors that make SI possible in the first place. And troublingly, the more the focus turns on one actor, the social innovator, the harder it becomes to understand the relational context that shapes such innovation. This is a particular challenge in the world of development today, as we confront pro-market policies that have been insufficient for protecting the rights of citizens (Howell and Pearce 2002).

The multifarious quality of SI is also inchoate. It is unclear when the SI starts and when it ceases. Are these farmers socially innovative all the

time, or does the novelty of their shared agreement cease at some point? If the quality is something shared across actors, the problem of identifying when it starts and ceases becomes even harder to ascertain.

How does SI happen?

The process through which SI happens is a curious one. To its boosters, SI appears almost pre-ordained, an expression of rational intent. Innovators seem to be clear about their goals and how to go about achieving them. But in reality social innovations appear to emerge through a mixture of rationalized choices and accidents, with learning playing a crucial role in the process. In this sense, they follow other accounts of social processes, such as classic studies of strategy formation (Mintzberg and Waters 1985). For example, the Grameen Bank and its group-lending model of micro-credit is often mentioned as a successful SI. But the elements of this well-known SI itself emerged through trial and error and years of experimentation and negotiation (Counts 2008; Yunus 1999). In contrast, however, the process of attaining an innovation is frequently depicted as a decomposed process, where the ideational process can be distinguished from the consultation, negotiation, adaptation, even abandonment of original intent that occur as what is planned is brought to fruition. For example, Portales (2019, p. 4) identifies four key elements of SI: "satisfaction of a need, innovation of the solution, change of social structures and relationships, and the increase of society's capacity to act". While he argues that the focus should be on the "process over the result" (Portales 2019, p. 6) it is telling how this process is described. Four stages are identified:

> The first stage is the observations, inspirations, and diagnoses…It involves diagnosing the problem… finding the right solution. (Portales 2019, p. 25)

> The second stage consists of the generation of proposals and ideas…The third stage consists of the construction of prototypes and pilots…The fourth stage is making the case. (Portales 2019, p. 27)

Notice here the emphasis on thinking through the solution to an identified problem, mostly at an individual level.

Similarly, Nicholls et al. (2015, p. 5) characterize

> the key stages of the development of a social innovation as a nonlinear process. This model is characterised by a series of key inflection points where the development of an innovation moves first from prompts and proposals to prototyping (an important part of the design process), then to sustainability and, finally, to scale. (Nicholls et al. 2015, p. 5; see also Murray et al. 2010)

While asserting SI is nonlinear, the effort here, again, is a decomposed characterization, where stages are identified and a teleology established ("finally to scale"). It is hard in these depictions to see SI as anything but a ratiocinated process. Where are the mistakes, accidents, happenstance that reside in depictions of SI such as of Yunus (1999)? And if these aspects are hard to acknowledge is there not a danger in claiming SI as such a deliberate process?

Why SI?

The most important question however is the final one, why does SI matter? The attractiveness and consequences of SI tend to be taken for granted. To advocates, SI is evidently a beneficial consequence, one necessary for society. To ask why it matters, in this sense, appears redundant. Obviously, SI matters. However, when picked through more closely, SI accounts do cohere around a few key reasons why it matters. These point to SI's capacity to respond to urgent scarcities caused by ecological change and deforestation or limitations of the state. They also point to ways that SI initiatives are self-sustaining, that is, able to attract revenue that enables innovators to create viable businesses that achieve simultaneously socially beneficial goals. What these accounts do not acknowledge is another possibility that SI may actually contribute to an effort of urgent political change.

But, in fact, the earliest use of the term actually pointed directly at the possibility of just such political change. As the Québécois scholar Benoît Godin (2002) shows, the term was initially used in the mid-nineteenth century to characterize social change. In 1858 the Englishman William Sargant (1858), in *Social innovators and their schemes*, and the following year the French historian François Guizot in his *Mémoires*, both used the phrase in this manner. Their similar views of these social changes are brought out clearly in this quote from Guizot's *Mémoires*, where he recalls the 1831 Lyon worker insurrection:

> All political parties, all social innovators, all passions, all ideas, all revolutionary dreams, appeared in this anarchy. (Guizot, cited in Godin 2012, p. 12)

"This anarchy" was socialism. The quote "glosses social innovation as revolutionary change, and places it in the context of a worker insurrection and expectations of socialism" (Srinivas 2013, p. 24). In its historical origins the term described not only a transformation of social relationships, through ideas, materials, and politics, but also challenged, politically speaking, the capitalist arrangements that required such transformations as amelioration.

Within 150 years the meaning of SI shifted

> from socialist change, to gradualist social reform, to social adjustments to technological change, and then a dramatic process of social transformation connoting the shock of the new. (Srinivas 2013, p. 26)

For these reasons it is best understood as "part of a semantic network of terms, all of old origin… resurrected from time to time to put emphasis on the social" (Godin 2012, p. 42).

> Rather than treat social innovation as having a definitive meaning, it may be wiser to treat it as an ongoing constellation of meanings, or words uttered in seeming assonance…that shift in semantic emphasis over time from one register to another. (Srinivas 2013, p. 26)

It is striking then that not only do few accounts of SI clarify why it is needed. They also elide the question of how SI will tackle the enduring problems caused by contemporary models of capitalist growth. At best we have a rather grudging acknowledgment, such as of Bovaird (2007, p. 856), that "the strongest concern about coproduction is that it may dilute public accountability, blurring the boundaries between the public, private, and voluntary sectors".

However, the origins of this term remind us of something else. Originally SI named something to be guarded against, something dangerous and unsettling—a desire for social change by those not well served by capitalist society. Sargant observed that

> the dignity of the working classes is principally in their own hands… without industry, frugality, and self-restraint, on their part, no measures of Government, no organizations of society, can raise their condition…it is not to the direct action of legislation on wages and charitable relief, but to an improvement of the men [sic] themselves, that we must look for amelioration. (Sargant, cited in Godin 2012, pp. 10–11).

That is to say, SI originally represented dangerous anti-capitalist acts that deterred the working classes from fending for themselves and instead impelled them to seek greater political accommodation from the state. Initially SI denoted actions that were anti-capitalist and sought rapid and violent change. And to the many who named it such, it was to be abjured. Such efforts were to be abandoned, since otherwise Capitalism would not survive. The term originated in a socialist impulse and reactions to that impulse, a recognition of how capitalist growth creates and relies on social inequality. It is rather ironic then that today SI stands, arguably, for precisely the opposite. It stands not for anti-capitalist resistance as much as various ameliorative efforts that are broadly supportive of capitalism. In this sense it is a bit like looking at well-known propaganda photos of the Stalinist Soviet Union, where inconvenient figures were cropped out entirely from the historical record, thus communicating a distortion of what originally happened. Like the man next to Stalin in one such photo, the socialist impulse has simply vanished from accounts of SI.

CONSEQUENCES

After posing these four questions—what, where, how, and why—regarding SI, let us consider the dangers of unclear and inconsistent answers to them. SI has now become a commonly used phrase that simply denotes innovative management practices generating public good. It is understood to be a "good thing," with positive consequences for not only organizations and those managing them, but society as well.

In three ways such uses of SI as currently understood encourage negative consequences. First and foremost, such usage effectively depoliticizes and oversimplifies the challenges involved in somehow balancing social and market ends. It is quite possible that an effort to pursue forms of social equality, ecological justice, and market redistribution will have to tackle matters more vexing and profound than simply writing up a business plan or running a design charette. Second, the use of the phrase works quite closely with neoliberal discourses that transfer agency and responsibility to non-state actors, who are expected to act as free-market actors. While these non-state actors remain reliant on the support of state and market forces, a support that is often insufficient or entirely lacking, they are also expected to show their ability to do more with less (Srinivas 2022). Is it feasible that the serious and intractable problems confronting global citizens can be tackled effectively through such a skewed approach? Third, the use of the phrase works closely with the creation of an entrepreneurial subjectivity, in which citizens are expected to take individual responsibility for their social welfare and engage with one another on that basis, through the marketplace. In this sense an uncritical view of SI plays its own role in reducing community ties, discouraging political pressure on states to meet their traditional roles of welfare provision, and further contributes to forms of market commodification and alienation among people. Ultimately social innovators are expected to work together to tackle social ills, within settings marked by the neoliberal state and market features that encourage further social inequality, rendering their task a truly Olympian one.

The prominence of SI in our contemporary moment is because it is part of a political project. It points to forms of government that rely on

indirect techniques to encourage better market participation (and less reliance on state welfare) (Fougère et al. 2017). Such an approach encourages citizens to take more responsibility, to give their lives an entrepreneurial form, without at the same time seeking responsible for them from other sources (Lemke 2001). It also renders the social domain economic. It links a reduction in (welfare) state services and security systems to an increasing call for "personal responsibility" and "self-care."

JUST SAY NO

The scale alters with the perspective, and the perspective alters with the scale. And look at the scale of the crises facing our planet. Alasdair Gray (2003) once claimed that the message of his writing was what Chekhov said about his plays: "my friends you should not be living like this." No we should not. Imagine all of us, on this planet, on a raft just now, floating in uncertain seething waters. This raft, on which we are perched, cannot hold us much longer, it is sinking. Should we continue to champion efforts to retain this vague notion of SI, to stretch its value further? It appears to rely on finding ways of extracting more profit from tired avenues of the past while offering a few salves to those not enriched by the process. Somehow we keep the raft afloat. Alternatively, should we seek other definitions of SI, perhaps more closely address the needs of the disenfranchised, the poor, the vulnerable, a kinder capitalism so to speak. Would that make this metaphorical raft sturdier, wider? Or should we consider an alternative to capitalism itself, promote resistance to its current consequences, return to the original meaning of SI? That is to say—abandon the raft (Srinivas 2021).

At best those who claim to pursue SI offer a potential, the possibility of creating spaces for encounters and dialog that assess our current capitalist world, and our obligations—as citizens of it, consumers of its products, and members of its nation-states. The metaphorical raft is evoked in Theodore Géricault's (1818) well-known painting *Le radeau de la Méduse* (The raft of Medusa). A clump of individuals clings to a precarious raft, surrounded by the sea's heaving swells, waiting to be rescued. What can SI possibly mean to all of us as we float, metaphorically speaking, on a

crowded raft floating on choppy seas? Despite the clouds of virtuous intentions conjured by the phrase *social innovation* we must still choose. And act.

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Part V

For and Against Service Innovation

10

For Service Innovation: Some Arguments in Favor of Services and Innovation in Services

Faridah Djellal, Camal Gallouj, and Faïz Gallouj

INTRODUCTION

Contemporary economies are often described in terms of two important characteristics. The first is that they are innovation economies; after all, innovation is the main driver of competitiveness and growth in companies as in nations. This universal character of innovation leads to contemporary economies being described as "permanent" innovation economies. The second characteristic is that these economies have now been service economies for several decades. Services now account for more than 80% of wealth and employment in developed economies.

The first characteristic has been widely viewed positively, and this positive view is echoed in several chapters of this book. Though some works

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underline the negative externalities of certain innovations (military technologies, harmful environmental or social consequences, etc.) (Coad et al. 2021; Ruttan 1971; Witt 1996), innovation activities most often have a positive connotation, and technical change is most often perceived as technical progress (Rosenberg et al. 1992; Schumpeter [1912]1934). The same is not true of the second characteristic. In some academic works (Artus and Virard 2011; Bacon and Eltis 1978; Cohen and Zysman 1987), and in many political discourses, the shift of economies toward the tertiary sector has long been perceived as a problematic evolution that public policy must seek to counteract. These concerns persist, to some extent.

Paradoxically, then, the two fundamental characteristics of contemporary economies are at odds with one another: one (innovation) is viewed quite positively, while the other (services) is viewed with suspicion. Yet these two characteristics are not, of course, independent of one another. However, considering their association (i.e., innovation *in* services) is not self-evident. Indeed, if contemporary economies are at once both service economies and innovation economies, to what extent are they also economies of innovation *in* services? And to what extent does innovation contribute to mitigating (or even erasing) the negative perception of services?

The question raised in this chapter and the next—namely "Innovation in services: For or against?"—is inextricably linked to the more general question "Services: For or against?" And the first question cannot be answered without addressing the second. We therefore devote the first section of this chapter to the myths that have long been responsible for the discrediting of services. We present these myths, showing how questionable and/or outdated they are. Whether addressed from a quantitative or qualitative point of view, the supposedly low innovativeness of services is one of these myths (Gallouj 2002c). We devote the second section to this issue by addressing our initial question "Innovation in services: For or against?" in more detail. We thus examine how the evolution of economic and managerial thinking has led to a full appreciation of the importance and necessity of innovation in services. The second section describes this recognition or rehabilitation through six stages: neglect, subordination, autonomization, focus on specificities, inversion, all is service (innovation) assumption. These stages are embedded in the

assimilation, demarcation, inversion, and integration analytical framework (Djellal 2023) which reflects different ways of addressing innovation in services, depending on whether the focus is on differences or similarities with innovation in manufacturing. Focusing on the evolution of the awareness of the issue of innovation in services in economic and managerial theory, we defend a position "for" innovation in services.

SERVICES: FOR OR AGAINST?

The intrinsic problem of services, which (rightly or wrongly) justifies every other problem, is their nature: their intangibility, interactivity, and perishability. Political economy has discussed these fundamental characteristics that supposedly differentiate services from goods. Adam Smith ([1776]1976) himself considered that the work of service providers "perishes in the very instant of its production." In modern marketing, these intrinsic technical characteristics are referred to as IHIP (Intangibility, Heterogeneity, Interactivity, Perishability). They are expected to have negative consequences on a number of economic and managerial issues. Indeed services are regarded as deficient in terms of both value and economic performance, as weakly tradable and involving bad jobs and low-skill-intensive entrepreneurship (Bacon and Eltis 1978; Banga 2005; Cohen and Zysman 1987). Our aim in this section is to qualify or challenge these negative views (see Wittel et al., Chap. 11 in this volume), and consequently to put forward arguments in favor of services.

Services generate value and performance

Not only do services create value in different forms (technical, economic, civic, public, etc.), and over different time horizons (short term, long term), but the returns (performance) of these different forms of value have been increasing constantly. In addition, certain services (Knowledge-Intensive Business Services/KIBS, in particular) play a role in supporting the production of value in other activities, especially in manufacturing industry. As knowledge processors and creators, in addition to producing

value for themselves, they also support value production, productivity, performance, and innovation in other sectors (Gallouj 2002a, 2002b; Miles et al. 1994). Other services may accompany and complete goods and even be the key element of their competitiveness (the one that confers value upon them). This is the subject of the extensive literature on Product-Service Systems (Furrer 2010; Mont 2002).

Productivity gains in services are thus considerable, and using the productivity differentials criterion to define services and distinguish them from goods (as used to be the case) may now be less relevant than it once was. These undeniable productivity gains can be explained in three different ways.

First, they can be explained by the increasing mechanization of services. Hypotheses underpinning the low capital-intensity myth have however been debunked by observations showing, in accordance with the evolutionary perspective, services too fall within the scope of the natural trajectories of increasing mechanization and economies of scale. Services are thus increasingly capital-intensive, and ICTs have of course played a considerable role in this dynamic, adding economies of scope to those of scale. This dynamic is manifested not only in mass information services such as banking and insurance, but also in material processing services (transport, mass retailing, hotels, etc.). The fourth industrial revolution, Industry 4.0, thus concerns services as much as it does manufacturing and could be referred to as Service 4.0 insofar as service companies and organizations are particularly sensitive to the diffusion of artificial intelligence, Big Data, and the Internet of Things.

Second, productivity gains can be explained by the natural rationalization efforts carried out by service organizations, aware of the difficulties associated with intangible and interactive "products." Thus, in both knowledge-intensive and operational services, service companies and organizations have systematically implemented rationalization strategies aimed at increasing their productivity.

Finally, productivity gains can be explained by the methodological efforts made in productivity measurement. Indeed, the methods for measuring productivity in services are inadequate and contribute to the underestimation of productivity gains (Djellal and Gallouj 2008; Gadrey 1996).

Services are increasingly traded

The growing tradability of services, which is explained in particular by a tendency to slacken the proximity constraint (reduced transport costs, increased transport speeds and frequency, diffusion of ICTs), is reflected in a constant increase in the exchange of services in international trade. While face-to-face contact continues to be mandatory in a number of services, in many cases it is not (or no longer) necessary. The General Agreement on Trade in Services (GATS) (*WTO* 2005) distinguishes four modes of international service trade that bypass the traditional stumbling blocks. In Mode 1, the service is provided remotely through ICTs. In Mode 2, the service is consumed abroad. In Mode 3, the service provider sets up shop abroad, to provide the service locally. And in Mode 4, the service provider temporarily moves abroad to provide a service to its client.

All in all, services are not trapped at local level in terms of trade capacity, and therefore in driving capacity. On the contrary, they are now a significant object of international trade, and over the last decades, the average growth of exports has been higher for services than for goods. Advances in ICTs and opening of domestic markets encouraged by trade agreements are the main drivers of the rise of services in international trade. The driving capacity of services, at both local and international levels, is now recognized.

Services are the major locus of (good) job creation and of entrepreneurship

In struggling economies characterized by chronic unemployment, the creation of service jobs is a positive dynamic, to be welcomed. The service society is, one might say, increasingly a society of engineers, researchers, and managers. It cannot be reduced to a "society of servants," that is, of bad jobs, low-skilled jobs as the French philosopher André Gorz (1988) puts it. While many low-skilled jobs exist, the service society is also the main provider of high-skilled jobs. In other words, in terms of employment and qualification, the service society is a dual society.

The question of entrepreneurship in services is of course closely correlated with that of employment. The complaint against the service economy is that, while it is logically in services that the greatest number of companies are created, these are essentially traditional service companies (personal services companies)—in other words, services that provide low-skilled and low-paid jobs (see Witell et al., Chap. 11 in this volume).

Statistical evidence contradicts this conclusion, highlighting the rise in the service economy of forms of Schumpeterian entrepreneurship that are linked to innovation in all its forms. Djellal and Gallouj (2013) thus highlight three forms of innovative entrepreneurship in services. First, "cognitive" entrepreneurship refers to experts capable of investing in new fields of knowledge: new fields of expertise in consulting, or researchers seeking to take advantage of their own research (whether in natural sciences or in HSS) by creating their own companies. Second, "social" entrepreneurship is a form operating in the social and solidarity economy (creator of new voluntary sector organizations designed to take charge, in a way that is unprecedented, of wicked problems in the field of vulnerable children, minorities, aging, disability, etc.). Third, "ecological" entrepreneurship, lastly, acts in the field of environmental protection and sustainable development. Thus, being in favor of services and innovation in services also means being in favor of entrepreneurship in its traditional form, but also and especially in its Schumpeterian form.

FOR INNOVATION IN SERVICES

As we stressed in our introduction, innovation has an eminently positive connotation regardless of whether it concerns services or any other human activity. Moreover, economic theory has established it as a *sine qua non* condition for the survival of companies and the prosperity of nations (Rosenberg et al.1992; Schumpeter [1912]1934). "Innovate or perish" is considered a universal law. As a matter of principle, one cannot be "against innovation wherever it is born," even though it can be a source of (more or less) temporary inconvenience: the destruction of jobs, the destruction of lives and infrastructures by military technologies, negative ecological and environmental impact, invasion of privacy, and so on.

In economic and management literature, awareness of the importance of the service innovation issue can be described through six stages that fit into the assimilation, demarcation, inversion, and integration analytical framework. This framework, first suggested by Gallouj (1992; see also, Djellal 2023), reflects six different ways of addressing innovation in services in the literature, depending on whether the focus is on differences or similarities with innovation in manufacturing. These different stages in the theory of service innovation reflect an increase in the recognition and importance of service innovation, that is, in the "pro-service innovation" position compared to the "against service innovation" position.

The neglect stage

Economic and managerial theory has long been uninterested in innovation in services. This lack of interest stems from the idea that services either do not innovate or do not innovate very much and that innovation is a manufacturing industry matter. This initial negative view of services in terms of innovation is linked to the fact that economic theory was built on the idea that agriculture and then manufacturing are the driving force of the economy. It is of course the corollary of the various myths discussed in the first section, those relating to performance, tradability, employment, and entrepreneurship. Services are low-performing and difficult to trade; they generate low-quality jobs and entrepreneurship in traditional fields and are therefore naturally closed to innovation. If these findings are confirmed, there is little reason to be pro-service and no reason to be pro-service innovation, that is, in favor of an activity (innovation) that is absent from or quite limited in services. In other words, as far as the assumption is that there is no service innovation, the pro/against service innovation question is off topic.

The subordination stage

The first recognition of a certain form of innovativeness of services only served to reinforce the hypothesis of manufacturing dominance in the field of innovation. Indeed, in this second stage, the innovative character

of services is assimilated to the adoption by service organizations of technical systems produced by manufacturing companies. Since they do not (or only very rarely) produce the technologies they use (transport systems, computers, etc.), simply adopting them "off the shelf," services are in a position of subordination to manufacturing industry. The technological trajectories at work in services are thus "supplier-dominated" (Pavitt 1984). Theories of innovation in services formulated on the basis of this hypothesis are in fact above all theories of the diffusion of technological innovation from manufacturing to services. One example of this is Barras' reverse cycle model (1986), which describes, in services, a cycle in which product innovations follow (incremental, then radical) process innovations. This technologist and subordinate conception of innovation in services is reflected in the first version of the Oslo manual (*OECD* 1992) and in its implementation in the first community innovation surveys. Since these surveys do not use adequate indicators (they focus on R&D expenditure, patent applications, technological product, and process innovations), they naturally conclude that services have little capacity for R&D and innovation. In this subordination stage, the "pro versus against service innovation" question is, once again, not completely relevant. As far as services are considered as passive (subordinate) adopters of technological innovation *originating from manufacturing firms*, the pros/cons question should be raised, beyond services, at the more general level of innovation. However, if we accept the dominant hypothesis of innovation as a positive economic dynamic, a subordinate perspective of innovation in services can only be deplored. Such a perspective is contested in the stages discussed above, starting with the autonomization stage.

The autonomization stage

This stage has three facets. The first is the change in the nature of the process of technology adoption by services. Passive adoption of manufacturing technologies is giving way to active adoption. Indeed, though still originating from manufacturing companies, technologies are modified by the service provider, who is engaged in a process of organizational engineering that integrates them to the idiosyncratic character of its own

activities. Technologies become endogenous components of the service, inseparable from it, rather than remaining as exogenous factors. Following the platformization wave, the latest expression of this endogenization of technologies in services is illustrated by the infusion of artificial intelligence into services. The second facet of this autonomization stage is the observation of a certain inversion of the balance of power between manufacturing industry and services, insofar as the service provider who uses/adopts industrial technologies is able to influence and direct the technological trajectory of its industrial supplier, that is, impose on it the functionalities and technical characteristics of the "product" it requests. This is a frequent configuration in the retail sector, where industrial suppliers (especially when these are SMEs) are dominated by their client (Mowatt 2006). The third facet of autonomization is simply the production of technological innovations by service companies themselves. The literature provides examples of cleaning companies that have invested in the production of their own robots, or banks that have designed their own ATMs, or cooking and refrigeration machines developed in the fast-food industry, etc. (Barras 1986; Djellal 2002). Like the previous stage, this one falls within the scope of an assimilation (or industrialist or technologist) perspective insofar as innovation (regardless of the role played by the service provider) is only considered as such when it has a close relationship with technology or is embodied in a technical system (Barras 1986; Miles 1993; Miozzo and Soete 2001). In this perspective of services taking active control of technologies, the benefits of innovation in services depend on the facet of autonomization considered (active adoption/endogenization, technology orientation, and technology production). The first facet (active adoption/endogenization of technology), but also to some extent the third (technology production), reflects a form of materialization of services, which helps to reduce the many criticisms and concerns raised by the supposed services intangibility (see the first part of this chapter). The second facet (technology orientation) reflects the ability of some service organizations to favorably influence the quality and prices of industrial suppliers' innovations. As in the subordination perspective, the third facet (service firms producing their own technology) brings the question "for or against innovation in services" back to the general question "for or against innovation," whatever the sector concerned.

The stage of recognition of specific forms of innovation

This stage falls within the scope of an analytical approach that has been described as demarcation (insofar as it frees itself from the technologist bias) by recognizing the importance and usefulness of forms of innovation (not necessarily technological) that emerge in services (Gadrey and Gallouj 1998; Gadrey et al. 1995; Hjalager 2010; Niehans 1983). Empirical work has increased rapidly to highlight invisible or forgotten innovations in different service activities. This work began by focusing on the specific forms of innovation in KIBS, using two hypotheses. The first of these is that KIBS, as knowledge processing and producing arrangements, are by nature the most innovative of services. The second is that KIBS are the archetypes of pure services, insofar as they best meet the technical characteristics (intangibility, interactivity, and perishability) that are supposed to distinguish services from goods. Thus, where service innovation has some specificity, these types of activity provide the best arena in which to observe it. Work in search of specificity of innovation in services has subsequently increased in most other service sub-sectors—including the least knowledge-intensive. Thus, non-technological forms of innovation have been highlighted everywhere in both products and processes: for example, new insurance contracts, financial instruments, fields of legal expertise, formulae for catering, retailing or hotels, leisure concepts, or consultancy methods—but also cleaning or care protocols, etc.

The growing interest in specific forms of innovation in services has also focused on social innovation, which is often service innovation (Djellal and Gallouj 2012; Gallouj et al. 2018; Harrisson et al. 2010; Rubalcaba 2016). Of course, one can only be in favor of innovations that are social in their *means* (i.e., based on collaboration, especially with users) and in their *ends*, since they aim at solving major societal problems, in particular the so-called wicked problems, that is, complex and multi-faceted problems, including in the following areas: elderly issues, education, minorities, long-term unemployment, environmental protection, and so on.

It has also focused on innovation in public services (Djellal et al. 2013; Halvorsen et al. 2005; Hartley 2005; Windrum and Koch 2008). Paradigm shifts in public management (the transition from "traditional" to "new" public management and thence to new public governance) have led to a change in analytical perspective on innovation. There is a shift from an industrialist conception (focused on the development of homogeneous quasi-products) to conceptions that take into account a broad and open concept of innovation (technological or non-technological, including social innovation): product/service innovation, process and organizational innovation, conceptual innovation, strategic innovation, radical changes in rationality, institutional innovation, administrative innovation, and rhetorical innovation (Desmarchelier et al. 2019). This recognition of the multiplicity of forms of innovation in public services, particularly the invisible forms, leads to the removal of the image of public services as lazy monopolies, closed to innovation. Helping to get public services out of their real or supposed laziness is an important argument in favor of innovation in services.

The specificity of these innovations does not mean that they are not or cannot be based on material technology, but rather that they are not consubstantial with them—and can in some cases do without them. This awareness of the specificities of innovation in services led to a revision of the Oslo Manual in 2005 (*OECD* 2005), which introduced non-technological forms of innovation, namely: organizational innovation and marketing innovation.[1] As is only natural, this new conception of innovation in services has led to a certain reorientation of public policy in support of innovation in services, moving from horizontal policies to specific/vertical policies (Rubalcaba 2006). Alternative innovation public policy is thus being implemented, aiming to promote invisible innovation (to favor non-technological innovation and R&D) and to foster the specific skills needed to achieve non-technological innovation.

[1] The latest version of the Oslo Manual (*OECD* 2018) distinguishes between two categories of innovations: product innovation (both goods and services) and business process innovation. *Business process innovation* refers to the different functions of a company identified in the business management literature: Production of Goods and Services, Distribution and Logistics, Marketing and Sales, Information and Communication Systems, Administration and Management (including Strategic Management, HRM, Accounting, etc.), Product and Process Development.

The corollary of taking into account specific forms of innovation in services is the identification of modes of organizing innovation that are more flexible, less institutionalized, and less permanent than in manufacturing companies. Thus, although permanent innovation departments can exist, and innovation in services can be based on structured New Service Development methodologies (such as New Product Development methodologies), it is most often handled in more flexible and transitory models that are emergent, rather than necessarily planned. These are described in the literature as ad hoc, rapid application, bricolage, and practice-based models (Fuglsang 2010; Gallouj and Weinstein 1997; Toivonen 2010; Witell et al. 2017). The softer and simpler nature of innovation and the less systematic nature of the corresponding organizational modes may have resulted in an image of a less spectacular, more random, and less far-reaching service innovation. However, the economic impact of new business models in services (e.g., low cost in transport or retailing) is considerable, and we should bear in mind that a major non-technological (organizational) innovation (i.e., the multidivisional form) has had a far greater impact than have many radical technological innovations in the development of the American economy.

Taking into account invisible innovation, in other words, closing the "innovation gap" in contemporary economies also contributes to closing a "performance gap." This "performance gap" measures the difference between the reality of performance in an economy and the performance evaluated by traditional economic tools (essentially productivity and growth). It corresponds to a hidden performance, invisible to these tools, which reflects concerns in terms of human development, social cohesion, equality, equity, environmental preservation, and so on.

By taking into account this double gap (innovation gap and performance gap), the "innovation-performance" relationship, which is a fundamental argument in favor of innovation, can be considered at different levels. The first level, which is at the heart of economic theory, is that of the traditional relationship between visible innovation (technological innovation based on R&D, science, and techniques) and visible performance (measured by productivity and growth).

However, there are other levels that are often neglected (Djellal and Gallouj 2010): the relationship between visible innovation and invisible

performance, between invisible innovation and visible performance, and finally between invisible innovation and performance.

Indeed, visible innovation can also give rise to invisible performance related to socio-civic and ecological sustainability insofar as certain technological innovations can also be a source of social, civic, and ecological benefits (e.g., the substitution of videoconferencing and, more generally, telecommuting for physical travel), technological innovations that respond to the problems of the elderly (domestic robots, intelligent housing, remote monitoring, etc.).

Invisible innovation is also a source of visible performance, that is, productivity and growth. Failure to take this relationship into account can lead to errors in interpreting the economic situation. It is thus the failure to take into account the impact of invisible innovation on visible performance that explains the paradox highlighted by *NESTA* (2006), which noted in the 1990s and early 2000s that the low relative innovativeness of the British economy compared to other countries was linked to strong economic performance.

Finally, it can be assumed that there is a privileged relationship between invisible innovation and invisible performance. There are many examples of non-technological (invisible) innovations that contribute to sustainable performance, covering all types of services: sustainable tourism offers, innovative initiatives in the field of elderly care, early childhood, social integration, micro-credits to meet banking exclusion, and subsidized loans to promote ecological equipment in businesses.

The stage of inversion of the balance of power

This new recognition of the role of services in innovation concerns KIBS (engineering and consulting in all their forms); it highlights an inversion of the domination/subordination relationship, which shouldn't necessarily be considered as an argument against service innovation (see Witell et al., Chap. 11 in this volume). KIBS are indeed characterized by a strong capacity for innovation and do represent an interesting field of investigation into specific forms of innovation—but beyond this, they also play an essential role in the innovation of other sectors of the

economy. Thus, at the macroeconomic level, econometric studies show a strong correlation between a country's capacity for innovation and KIBS employment as a proportion of total employment. At the microeconomic level, KIBS (and especially consultancy companies) represent a new locus of expression of the Schumpeterian innovation spirit (Gallouj 2002a, 2002b). Whatever the form of innovation envisaged (product, process, organizational, strategic, etc.), these service providers assist their clients in various ways, to different degrees, and at different times in the innovation process. This consultant-assisted innovation model complements the entrepreneurial model (Schumpeter Mark I) (Schumpeter [1912]1934) and the monopolistic or routine model (Schumpeter Mark II) (Schumpeter 1942). To support this idea of inversion of the balance of power, it should also be remembered, as Baumol (2002) himself suggests in an evocatively titled article ("Services as Leaders and the Leader of the Services"), that R&D, whether carried out by public or private providers is, "primus inter pares," a service activity.

The "all service" (and therefore "all is innovation in services") stage

The rise of service and service innovation culminates in the integration or synthesis of analytical perspective (Gallouj and Weinstein 1997). This perspective considers that there is no need to distinguish between goods and services (nor indeed between innovation in goods and innovation in services), because there is complementarity between these activities in the creation of value and there is also a blurring of the boundaries between them. This blurring of the boundaries is both strategic and natural. It is strategic in the efforts to industrialize services (Levitt 1976) achieved by certain service providers and in the contrasting efforts at servitization achieved by industrial companies (Vandermerwe and Rada 1988). It is natural when we observe the consequences of the introduction of information and communication technologies to services.

This "all service" philosophy reflects different situations. First of all, it reflects the fact that the intangible component (service, information, knowledge) is largely dominant in the value of many goods, even those

most trivial. Nahon and Nefussi (2002), for example, discuss how rich a potato is in knowledge and services, insofar as its value is dominated by the R&D, marketing, and logistics components. It also reflects the rise in different forms of "services around the product" (pre-sales, during sales, and after-sales services), culminating in the formation of product-service systems (Furrer 2010; Mont 2002). The success of many industrial innovations is thus based on service innovation. The "all service" philosophy also reflects the fact that certain iconic companies from the industrial world (IBM, Benetton, etc.) have become service companies, insofar as their industrial product turnover has been surpassed by their turnover in services. It also reflects the change in the business model of some industrial companies, which now rent out their products, rather than selling them (Xerox), or sell volumes of product use. Lastly, it reflects the emergence of industrial companies specialized not in the production of goods, but in their refurbishing.

CONCLUSION

The evolution of economic and managerial thinking (from assimilation to demarcation, inversion, and integration) has made it possible to defend a position in favor of innovation in services.

The arguments in favor of innovation in services, derived from the demarcation perspective concern both the nature of innovation and its mode of organization. To sum up, it can be said that the intangible and interactive nature of service innovation is not a weakness (an argument against service innovation), but, on the contrary, an asset. In services, simple ideas that do not require a high level of technicality (R&D activity), that are frugal, relatively inexpensive, conceived in a non-formalized way (no R&D department and no linear New Service Development-type organization) are important sources of entrepreneurship and can give rise to economic empires. There are plenty of examples in the field of home delivery, elderly care, and tourism, among others. This demarcation perspective conveys other arguments in favor of service innovation, in particular in its relationship with the environmental issue, the development economy, aging, and the gender agenda (Gallouj and Djellal 2018).

Indeed, the question arises as to whether services are (or might be) greener than manufacturing. From the point of view of development economics, service innovation can be seen as an opportunity for developing countries, insofar as it can develop more easily than technological innovation. It is generally less costly, as it does not necessarily require R&D and heavy infrastructure, and it can be the result of simple imitations. Moreover, services are a reservoir of innovative solutions for major societal problems, such as the aging of the population, the empowerment of women, and gender equality. For example, service innovations that allowed women to escape confinement in the home and join the labor market include home delivery, childcare services, various types of assistance and residential facilities that provide care for the elderly, and so on. More generally it should be noted that social innovation (which always has a positive connotation as it has socially valued ends: repair, inclusion, etc.) is often synonymous with service innovation as the main fields where social innovation is developed are services (sectors or functions).

The so-called inversion perspective brings new arguments in favor of service innovation. It emphasizes the fundamental role that services (especially knowledge-intensive business services—KIBS) play in the innovation dynamics and performance of other sectors, including manufacturing industry. KIBS are indeed strategic activities in contemporary economies and innovation systems, not only because of their own innovation dynamics, but also because of the innovation and performance dynamics they induce in their client organizations. In this same perspective of reversing the balance of power between industry and services, another argument in favor of service innovation lies in the fundamental role played by "product-related services" (pre-sales, after-sales, during sales). These service innovations can be a major factor in the competitiveness of industrial firms, adding a major value to industrial goods.

In conclusion, it should be noted that if, in economic and managerial thinking, the perspective of integration (which no longer distinguishes between goods and services) prevails (in other words, if everything is a service and therefore everything is service innovation), then the question raised in the introduction to this chapter (Service innovation: For or against?) stand to lose its legitimacy, since it could be simply rephrased: "Innovation: For or against?"

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11

Against Service Innovation: Why Service Innovation Is Not Sustainable

Lars Witell, Hannah Snyder, and Per Carlborg

INTRODUCTION

Over the past decades, the service sector has grown tremendously and now constitutes a majority of most countries' GDP (Wirtz et al. 2015). The rise of the service sector can largely be attributed to different types of service innovations. In fact, service innovation is considered the main

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source of growth in the modern economy (Bitner et al. 2008). A service innovation can be viewed as a new service that creates value for one or more stakeholders where the customer is key (Witell et al. 2016). Unsurprisingly, the different mechanisms and effects of service innovation have received a large amount of interest from researchers and practitioners alike (Carlborg et al. 2014). Researchers have investigated and reviewed the service innovation literature (Snyder et al. 2016), and empirical investigations have shown that firms such as Paypal, AirBnB, and McDonalds are built on service innovations that have changed their industries (Andreassen et al. 2018).

Overall, there is a general agreement that service innovation can provide a positive change for the environment, creating new types of jobs, making consumers' lives easier, and creating service growth (see Djellal et al., Chap. 10 in this volume). In the development of service innovation research, the belief in these "facts" has been further strengthened over time. They have been well reinforced through presumptions, research questions, study objects, data collection, and research agendas. This perspective on service innovation has also been cheered on by companies and research funders alike. We believe that the generally optimistic tone in the research and debate on service innovation masks a large set of problems both in theory and practice. In particular, the effects of service innovations on sustainability remain largely unexplored and unchallenged (Djellal and Gallouj 2016). For example, considering cryptocurrency as a type of service innovation (i.e., a new currency for trade and payment that creates value for its users), it was revealed that the energy needed to mine the cryptocurrency bitcoin was more than annual energy requirements of a small country like Sweden (Aratani 2021).

In this chapter, we challenge the positive view and arguments for service innovation. We make the case that while service innovation might seem positive, there are negative effects on the economic development, the social development, and the environment. The purpose of this chapter is to start the debate and provide a nuanced picture of the sustainability of service innovations and its promises to individual consumers, businesses, and society at large. In four different sections, we briefly present the arguments for service innovation and then argue against them. First, we provide an overview of the concepts of and research on service

innovation and sustainability. Then we question whether service innovation is sustainable by discussing the effects on the different dimensions of sustainability (financial development, the social development, and the environment). This is followed by the introduction of the line of conflict into service innovation research, where we further develop the arguments against the sustainability of service innovation, which include both environmental, financial, and social concerns. The chapter ends by summing up our key arguments against service innovation and suggests that society might be better off without it.

WHAT IS SERVICE INNOVATION?

A service innovation can be defined as a new process or offering that is put into practice that creates value for one or more stakeholders (Gustafsson et al. 2020). Research on service innovation is built on the assumption that it has positive effects on customers, firms, and society. However, Rogers (1983) suggests that there is a "pro-change" bias in innovation research: that is, service innovation leads to more successful firms and a better public sector. However, while there is such a bias, experience has taught us that most new services fail (Biemans et al. 2016).

Early on, Barras (1986), Miles (1993), Sundbo (1997), and Gallouj and Weinstein (1997) have made key contributions to research on service innovation and conclude that it is crucial to understand the nature, mechanisms, and role of services and service innovation to understand the economy. Traditionally, research on service innovation has often been positive toward innovation and the development of new services. In general, it suggests that service innovation contributes to the creation of new markets and jobs, as well as better consumer value, and has positive effects on the economy. While research has shown that service innovation often fails, this is mostly explained by businesses having flawed processes, methods, and tools to develop new services (Storey et al. 2016). There have been several attempts at conceptualizing service innovation and synthesizing research. Carlborg et al. (2014) indicate that the perspective on service innovation has evolved over time from a product-based (i.e., value is integrated in the product or service) to service-based (i.e., value is

shaped as value-in-use through the use of products and/or services). Different studies have examined what service innovation is (Gustafsson et al. 2020; Witell et al. 2016), using key characteristics or dimensions as the denominator to nail down the core concept. Witell et al. (2016) suggest that the key characteristics vary according to product, process, change, customer, value and offer, and firm. In addition, a service innovation is often built by bundling different services. Gallouj and Weinstein (1997) argue that such re-combinative (e.g., combination of different existing goods and/or services) service innovations are the most common types of service innovation and are key in succeeding with new services on the market.

There is a large stream of research focusing on the development of service innovations and encompassing core concepts, such as new service development, service design, or the service innovation process (e.g., Biemans et al. 2016). A key contribution has been service blueprinting as a practical approach for designing service innovations, with a particular focus on the customer experience (Bitner et al. 2008). New service development (NSD) focuses on the system and process needed for bringing a service innovation from an idea through development to a service that has been tested and launched on a market (Edvardsson and Olsson 1996). Even though the NSD process is usually described as linear, it is, in reality, often nonlinear and iterative. Recently, service design has emerged as a popular term, and it has sparked further research on how to develop and design new services. Gustafsson et al. (2020) argue that NSD should be understood and defined as the process of developing a new product or service for a market, while service design should be seen as being concerned with systematically applying design principles and methodology to the development of services.

In a key attempt to discuss the environmental effects of service innovations, Djellal and Gallouj (2016, p. 21) suggest that "Overall, we can conclude that services are not by nature intangible and green, but that they are capable of dematerializing and greening themselves via the implementation of appropriate innovation strategies." Again, it is not service innovations that are the problem but rather the innovation strategies used. In short, we can conclude that there is a lack of critical research and

debates on service innovation, especially from a sustainability perspective.

WHAT IS SERVICE SUSTAINABILITY?

Sustainability as an idea can be traced back to the United Nations (UN) and the 1970s and focuses on the long-term ability to use and process natural resources—an ideal of leaving a prospering planet to future generations (Benson and Craig 2014; Djellal and Gallouj 2016). It is often linked to the concept of "sustainable development," which can be seen as common societal goals of economic and social development that respects and considers the environment and ecosystem, as well as long-term ecological prosperity.

A common method to approach sustainability and sustainable development is through the three pillars or intersecting circles: social sustainability, environmental sustainability, and financial sustainability (Purvis et al. 2019. These three pillars are not based on a theoretical foundation but have rather emerged over time to cover different aspects of the pathways toward a long-term resilient society: that is, a society which does not erode its natural ecosystems and that proactively does what it can to mitigate and eliminate unjust social differences (Purvis et al. 2019). These aspects are not meant to be considered in isolation. Instead, they are intertwined and have much in common, such as social inclusiveness, equal distribution of economic welfare, and ecological awareness. Isolating one aspect, such as economical sustainability, might have negative effects on the other pillars in the system. For example, economic welfare might improve at the expense of a healthy natural ecosystem. As sustainability has often received criticism for being too vaguely defined (Benson and Craig 2014). Knight (2015) addresses this by raising three questions:

- Sustainability of what?
- Sustainability for what purpose?
- How do we know if we are being sustainable?

We address the sustainability of service innovations, and in particular, sustainability to reduce the CO_2 footprint and the financial and social inequality associated with service innovations. If service innovation leads to better outcomes in all dimensions of sustainability (e.g., reduced emissions and reduced social inequality), then a service innovation can be viewed as sustainable, according to our perspective. See also Djellal et al. (Chap. 10 in this volume) for a discussion if services are greener than manufacturing.

QUESTIONING THE SUSTAINABILITY OF SERVICE INNOVATION

While the positive effects of service innovation are well known in research and practice, a critical perspective and its harmful effects have received far much less attention. This is worrying since service innovation is presented unfailingly as a highway to sustainable development. Instead of a naive admiration of service innovation, we need a debate that problematizes the dark side of service innovation, especially in relation to sustainability and sustainable development, as service innovation otherwise risks being counterproductive by advancing non-sustainable practices (see Table 11.1). In this section, we present the main arguments for service innovation and argue against them.

Financial argument: Service innovation is good for growth and job creation

It has been argued that service innovation could be a main driver of economic growth (Andreassen et al. 2018). The argument is that when we develop and introduce new services, productivity rises; that is, we can do things more efficiently in less time (Parasuraman 2010). In addition, it is said to increase wages for workers (*European Central Bank* 2017). This is mutually beneficial, since when workers have more money, they can consume more goods and services. Based on this logic, the business community invests their combined efforts into creating new services or into

Table 11.1 The arguments for and against the sustainability of service innovation

Dimensions	Argument	Counter argument
Financial	Driver of economic growth.	The costs of service innovation are higher than the gains.
Social	Creation of new jobs for young adults.	Reduction of labor wages.
	Creation of possibilities for education in poor parts of the world.	Creation of jobs with low labor safety, low salaries, and increased inequality in society.
		A high concentration of power and capital to a few actors with strong brands.
Environment	Creation of new services with positive environmental effects.	New services complement rather than replace existing services, leading to negative environmental effects.
		New sustainable services encourage new consumer behaviors that are unsustainable.

Source: Authors

add-on services to enhance the value of their products. However, this basic assumption can be challenged. While one could argue that it would be wise from an environmental perspective to not increase growth at all and instead work to slow down the economy (Panayotou 2016), we can even argue that service innovations might not be sustainable from a financial perspective. We have seen radical service innovations during the last decades, such as music streaming and platform services, like Spotify, Uber, AirBnB, and Amazon. However, in comparison to older radical innovations, such as the telephone, engines, and the computer, whether or not these new types of services have increased productivity can be questioned (Aspara et al. 2018). One reason is that these new services simply do not make us produce more or be more efficient at a societal level. While Uber provides us with a type of taxi service that is cheaper and more convenient, it does not increase productivity.

There is scarce evidence that service innovation increases performance and productivity (Aspara et al. 2018). Instead, many companies that launch new services struggle to break even, and often they simply fail (Heidenreich and Spieth 2013). For example, service innovations such as

Spotify have struggled with profitability, despite being viewed as a success story (Ingham 2020). While founders and owners have secured their wealth, it still cannot be viewed as a profitable business for all actors in the service ecosystem. Similarly, several car brands have failed in offering carsharing services. For example, Volvo introduced Sunfleet as their carsharing business and later rebranded it as M. With increased competition, consumers expect low prices and will easily switch service providers if they feel that the prices are too high or if the quality of the service is reduced. This leads to a second problem. Remember, the argument that service innovation increases productivity, which in turn leads to higher worker wages. However, this part of the equation does not really hold up. As customers are not that eager to pay a lot for these new types of services, companies have prioritized maximizing their profit by keeping workers' wages at a minimum. There have been numerous reports of low wages for workers in these new types of services, with workers juggling two or more jobs to support themselves (Andreassen et al. 2018). As a result, one must ask, are these people out there spending their money on goods and services? Probably not. In addition, while there are some examples of successful service innovations that are profitable, the problem is that only a few firms dominate the market. Based on this, we argue that service innovations can often be viewed as attractive services that might be nice to have but which society could likely do without. They will make their founders and owners rich but will not help in enforcing social resilience and sustainable financial development for all actors in the service ecosystem.

Social argument: Social service innovation increases human well-being and builds inclusive societies

In service innovation literature, the positive social effects of service innovation are often mentioned. For example, many new jobs created in the service sector as a result of innovation are typically created by students or younger individuals with low levels of education (Penenberg 2009). Even if this is true, it is also true that young individuals are forced to take jobs with low or non-existing labor safety and low salaries. This leads to

increased inequality in the society, as these effects typically are long reaching. It is exceedingly difficult for a person who starts a working life with a low salary to ever catch up.

Another social aspect that is often missing—mainly a symptom of an uncritical treatment of service innovation—is the damage and erosion of local initiatives. Let us take Massive Open Online Courses (MOOC) as an example. They are often seen as service innovation initiatives that allow students in poorer parts of the world to participate in higher education. This is a valid point, but what is missing in this dynamic is a meaningful transformation of the higher education system in terms of completely mainstreaming activities, which leads to a high concentration of power and capital in the hands of strong actors with strong brands. This leads to erosion of local capacity to provide higher education and, even worse, a system where the education agenda is decided in a location that is distant from the individuals affected by it. It can also be questioned whether the providers of MOOC are doing it for the sake of improving the sustainable development of our society or if it is related to increasing profits and building brands in new markets. It has been demonstrated that MOOCs primarily work as a marketing tool and revenue source for "certificate" sellers (Kizilcec et al. 2020).

A more fundamental issue that has been poorly covered by service innovation scholars is the question of what happens with the power balance in a society where more and more activities are being outsourced as services. This is equally relevant for companies, households, and individuals. When service providers are doing activities that are no longer of interest to the other actor (e.g., cleaning the house, doing the cooking, taking care of the garden, and running in-house R&D), this implies a shift and transfer of knowledge to the provider. In the short run, the customer feels relieved at getting rid of a work task, but in the long run, it erodes the knowledge and skills of the customer in a range of activities since these more and more fall under the control of the service provider. This is as true for households as it is for larger firms that transfer work and knowledge to external actors.

Environmental argument: Service innovation is good for the environment

A change from a product-based economy to a service economy driven by the introduction of service innovation is believed to have positive effects on the environment and helps to reduce CO_2 emissions to levels low enough to reach the 2 °C target (Grove et al. 1996). However, most service innovations are often devastating for the environment since they contribute to increasing levels of energy and pollution. Not even the individual service innovations that potentially could have positive environmental effects are good, since they do not replace existing products and services; instead, they simply add capacity, leading to an increase in the use of resources and consequently negative effects on the environment.

First, service innovations increase the use of resources in that the introduction of a new service often does not replace an existing service; instead, it creates a new market. The introduction of service innovations under the umbrella of the sharing economy is often viewed as an environmentally friendly concept. The main argument is that service innovations, such as carsharing, allow customers to satisfy their mobility needs without owning a car and through more efficient resource usage. As an example, BMW is the largest carsharing provider in Germany, with almost 500,000 members. The dark side of carsharing business models is evident, since automobile manufacturers are not introducing business models that cannibalize their sales of new cars. Instead, they are introducing complementary services that reach new customer groups and increase their sales of new cars. Bellos et al. (2017) demonstrated that carsharing would have negative environmental effects since it attracts customers who would otherwise choose alternative modes of transportation, such as public transportation or bicycles. This effect has even been labeled the "boomerang effect," since it turns green consumption into less sustainable consumption (Korhonen et al. 2018). The implication is that existing customers keep owning their cars, and new users enter the market and switch from bicycles to cars.

Second, what about service innovations that are created by new actors and create entirely new markets, such as AirBnB? In such services, people

traveling would rent a room, share resources with the owner of a house, and reduce resource utilization of energy and electricity. In theory, such a service innovation would use existing resources better, with no extra resources needed for service provision. In the early days of such services, this was actually the case, but with professionalization of the market, it developed into something different. In practice, guests often rent an entire house and do not share their living quarters with the owner. This means that the owner uses resources, and further resource utilization is encouraged for the guest. It might even be that the owner, when renting out their home, has another housing arrangement that has higher resource consumption than staying at a hotel. The potential positive effects on the environment might be reversed, and sharing services may even have negative effects on the environment.

Third, but what about couch-surfing? Should not services characterized as true sharing have any positive environment effects? No, not even true sharing, where an individual shares their resources, has positive effects. This is because it stimulates increased consumption in other parts of the service ecosystem. This means that even though the individual service innovation would not increase the use of resources or even save resources in relation to the alternative consumption modes, such services enable trips from consumers that would have otherwise stayed home. Even if the key service innovation is not bad for the environment, considering the full customer journey and looking at resource consumption in the entire service ecosystem, such true sharing will have negative effects on the environment. Therefore, even pure sharing services often increase consumption and contribute to environmental pollution.

SERVICE INNOVATION: ANALYZING IT FROM A LINE OF CONFLICT

There is no question that service innovations have drastically improved the life of a number of actors. However, to determine whether a service innovation is actually sustainable, we need to analyze it simultaneously from several perspectives (see Fig. 11.1). This approach means that the

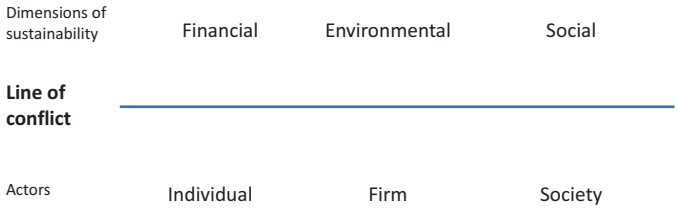

Fig. 11.1 The line of conflict

question of whether they are sustainable will be answered differently depending on who you ask and what perspective you take. It goes without saying that service innovations might have many advantages, but these advantages might be in direct conflict with those of other actors. For example, something that might be good from a social or financial perspective for the individual might be bad for society from an environmental or financial perspective. As mentioned earlier, while carsharing might save money and time for an individual, it increases the overall environmental footprint. The same is true of music streaming services. While it might be beneficial for the individual in the short run as it increases the options for music and listening experiences, it also leads to a decrease in compensation for individual artists and others involved in the production of music (Hesmondhalgh 2021). Over time, this leads to fewer musicians that can make a living on their profession, and thereby music streaming services limit the variety and supply of music to the individual. Therefore, while such service innovations might be good for some market-leading companies, in general, it has several drawbacks for small businesses and customers.

One can argue that the benefits of service innovations are often linked to a drawback for other actors in the service ecosystem, and these drawbacks can be environmental, social, or financial. A good example of this is the service innovation of digital medical consultations, which at first glance seems like a user-friendly service that should be cheaper for both society and businesses and more convenient for customers. However, technological innovations are widely seen as a major driver of the rise in healthcare spending (Rahimi 2019). Moreover, it has been shown that digital medical consultations dramatically increase the demand for

healthcare overall and do not limit the need for physical consultations; therefore, it is very costly for society in general, making it unsustainable both from financial and environmental perspectives (Rahimi 2019). These examples are pretty clear cut, but there are also examples in different shades of gray. Consider a service innovation focusing on simplifying babysitting. While this might help a family's everyday life, the simplicity of the process might also make them spend more time away from their children and family, which might have several negative consequences both for the individual family, but also on a societal level, with the question of raising future generations. If we take the example of service innovation in delivery services, problematic conflicts between businesses and the workforce can be observed (e.g., lower salaries and the possibility of actually making a living on the job you perform), as well as individual consumers that become more and more passive, staying in and ordering things they do not really need from their couch.

CONCLUDING REMARKS

In this chapter, we have argued against service innovation, especially against the accepted view that it represents the future that businesses and society should invest in. In these final remarks, we point especially to the current focus of service innovation research, the role of research funding, and the paradox of the passivation of consumers.

Research on service innovation focuses almost solely on the positive side of service innovation, ignoring the potential negative side effects. The "pro-change" bias in service innovation research has grown more intense over time (Witell et al. 2015) and we argue that researchers and managers need to take a more critical view of service innovation and its relation to sustainability. First, changing perspective using the line of conflict can reveal that service innovations seen as having positive effects on sustainability, in reality, have negative effects. This means that service innovation research misses the mark in their studies on the sharing economy and green services. Second, research on service innovation solely focuses on "successful" service innovation but neglects the services that never become service innovations. What if these failed services used the

exact same methods and processes and had similar effects on sustainability, so what has been established as success factors in reality might have no influence on success?

Research with a pro-change bias has a higher probability of being published, and in addition, it might be easier to obtain funding for such research projects. Funding based on the logics of a market makes it difficult for research integrity to prevail over time (Vie 2021). As much research funding comes from external sources under competition, they are typically more or less restricted in their freedom of use, that is, in which type of research questions they can address. Financiers with interests and research agendas in a specific direction or topic often challenge the research integrity of the individual researcher. The power of the financier places the researcher in a situation where integrity needs to be balanced with the ability to stay financially viable to conduct research. Hence, researchers need to balance both professional academic ethics, norms, and a high degree of critical thinking with the influence of financiers and the logic of the market (Vie 2021). By focusing too much on individual firms' success in research, the negative effect on sustainability increases as the larger service ecosystem of actors is disregarded (e.g., social and environmental sustainability). To prevent the effects of weakened research integrity, research funders, and especially research in the form of commissioned research (where external actors define topic and research problems), need to better understand the long-term value of independent research.

While at first glance, much of the service innovations discussed in this chapter appear to be undoubtedly positive for the individual consumer, making their lives easier, saving them time, and increasing the variation and supply of services, we argue that there are several downsides for the individual consumer. First, paradoxically, recent theory and practice have advocated for a more active role of consumers and stated that customers now actively co-create value with the producer and other actors. However, this depends largely on how we define "active." While they might be more active in interacting with the service innovation, at the same time, they become more passive in their daily lives as they outsource more and more tasks that were previously performed by themselves and over time become less competent. In addition, when some service innovations

become dominant in the market, this has the risk of decreasing variation and local initiatives, and thus, consumers actually have less to choose from. Therefore, even if individual consumers may feel that they have endless possibilities and choices, this might not actually be the case.

What is the lesson to be taken from these examples? One answer is that since accepting that innovation appear in services (see Djellal et al., Chap. 10 in this volume) the lack of critical studies on service innovation has resulted in a flawed and somewhat overpromising picture of service innovations and what they can do. The universal and uncritical acceptance of service innovation as a panacea for the modern economy demonstrates just how far the ideology of appropriating and suturing a notion of society, organization, and self around service innovation has gone. This makes it difficult—but not, as we hope we have demonstrated, impossible—and at the same time important to argue "against service innovation."

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Part VI

For and Against Open Innovation

12

For Open Innovation

Lykke Margot Ricard and Sergio Jofre

This chapter presents and discusses key aspects influencing the past, present, and future of the open mode of innovation in the business firm. Based on the review of existing literature, we explore the theoretical roots of the widely known concept of Open Innovation (OI), broadly promoted by Henry Chesbrough as

> a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology. (Chesbrough 2003, p. xxiv)

The OI paradigm as well as other relevant open models will be discussed through the perspective of the R&D organization evolution. The chapter also discusses different examples of inbound and outbound OI activities

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in firms of different sizes across various industries, followed by a brief discussion of trends emerging from research and practice arguing in favor of Open Innovation.

The chapter is structured into four sections as follows. The first section presents a historical perspective of the opening of innovation with emphasis on the evolution of the R&D organization. The second section discusses different contemporary theories explaining the opening of innovation. The third section introduces and discusses the concept of Open Innovation or OI, its different modes and applications in firms, and examples of inbound and outbound activities among large firms and SMEs. In the fourth section, the present and future of OI are discussed through the analysis of evidence emerging from practice. The last section presents conclusions, insights, and implications for the strategic management of innovation in firms.

THE IDEA OF CREATING VALUE "IN THE OPEN"

The drivers behind the more openness in innovation as opposed to firms' closed R&D processes have been discussed as far back as the 1960s (Hartmann and Trott 2009). But it is Henry Chesbrough, who has been its top promoter for OI as creating value in the open. One of the strongest arguments for OI is that, in an information age, companies cannot afford to rely entirely on their own R&D department. There are indeed external paths to innovation, firms can, for example, buy or license processes or inventions, that is, in form of patents from other companies. This is, for example, termed inbound Open Innovation.

One could say that it is foremost the unprecedented degree of technological advancement attained during the last half of the century, that has allowed the development of complex products and services feeding intricate (and often fragile) global networks of systems for mass production and consumption. Enveloped in such complexity, the modern business organization of the firm faces problems beyond the scope of its competences—more than often—over the capacity of its resources, and capabilities (Nicholls-Nixon and Woo 2003). To cope with the increasing cost of adapting to changing environments, and because the limited nature of resources and capabilities, organizations are prompted to search for complementary ideas, capabilities, and technologies outside their

organizational boundaries. Ebersberger et al. (2011) indicate that in environments under rapid technological transformation, growth and competitiveness become contingent on the ability of firms to compose, establish, and maintain external interfaces; to choose the right mode of governance; and to link them effectively to internal knowledge accumulation and capability development. By opening to external interfaces, the firm can also benefit from becoming a source of ideas, capabilities, and technologies to other organizations.

In theory, firms are capable to continue to create value, growing and competing even under increasing uncertainty, by managing the internalization and externalization of diverse assets—therefore, by innovating through active collaboration and networking. This form of innovation is often depicted as a strategic "opening" of the innovation process—the antithesis of linear innovation practices focused on the monopolistic use of new knowledge. Initially, this opening was a sporadic occurrence observed in some large American technology firms back in the early 1970s. During the following two decades, the frequency of open innovation activities increased radically, prompting the development of several theories to explain the rapid transformation of R&D.

Niosi (1999) indicates that there are four consecutive R&D organization generations spanning from the mid-nineteenth century to the late 1990s. The first two generations did function on a linear flow of knowledge. At this stage, R&D units did not have a formal managerial structure and operated in relative isolation from other organizational functions. In the late 1950s however, the second generation assumed the basic routines of project management. During the following two decades, R&D activities focused on business development and coordination of different functions within the firm creating multidirectional flows of information. Between the late 1980s and most 1990s, the non-linear flow of information increased beyond the boundaries of the firm to include external sources emerging from new technological alliances with users, suppliers, and competitors (Niosi 1999; Paraponaris 2003).

Ebersberger et al. (2011) indicate that since the 1970s, the pace and scale of R&D activities grew exponentially as a response to trade liberalization, increasing rates of technological change in the wake of the ICT paradigm, and the advent of India and China as players in global production and trade. In the following decade, the global influence of the

American production model waned under the economic stagnation afflicting most of the West, in favor of Japanese and European standards influenced by "best practice," managerial flexibility, and labor mobility. Throughout the 1980s and 1990s, R&D organizations evolved into smaller multifunctional units with short-term focus but wider competences, paving way to more open forms of production and innovation. Roussel et al. (1991) suggest that the consolidation of third generation R&D organizations influenced the development of diverse modes of innovation such as clusters of innovation (Delgado et al. 2010) and regional and national systems of innovation (e.g., Cooke 2001; Lundvall 2007).

In the early 2000s, the ICT paradigm fueled the birth of new industries and helped improve production, managerial functions, and create radically new products, services, and business models (Ebersberger et al. 2011). This also influenced the establishment and coordination of global networks for distributed production and innovation. Globalization, according to Ebersberger et al. (2011), created intense technology-based competition that forced firms to focus on the protection of intellectual property, and acquisition of managerial flexibility and increased awareness of changes in external conditions and opportunities.

THE THEORY ON THE OPEN INNOVATION IS STILL A WORK IN PROGRESS

In the modern innovation theory, knowledge is central to economic growth and competitiveness through intense innovation and entrepreneurship. The knowledge economy, for example, is a framework in which growth focuses more on intellectual capabilities than on physical inputs or natural resources (Powell and Snellman 2004), while in the resource-based view of the firm knowledge is key intangible resource for innovation and competitive advantage (Thornhill 2006). From a spatial point of view, innovation can be defined as a geographical system characterized by flows of knowledge, technologies, resources, and people within the boundaries of regions or nations (Tödtling et al. 2009). Closely related,

the triple helix model for university-government-industry argues that the dynamics of collaboration between science, industry, and governance defines the innovation outputs of nations or regions (Leydesdorff and Ivanova 2016).

However, the most prominent concepts regarding the opening of innovation—absorptive capacity (Cohen and Levinthal 1990) and open innovation (Chesbrough et al. 2006)—emerged from the theory of management and innovation sciences. Absorptive capacity is a measure of the organization's ability to learn by identification, internalization, transformation, and use of external knowledge, research, and practices (Cohen and Levinthal 1990). Instead, Open Innovation or OI occurs by accessing, managing, and internalizing flows of knowledge across the firm's boundaries (Chesbrough 2017).

Although both terms imply the use of external sources of complementary knowledge, absorptive capacity focuses only on the use of external knowledge inside the firm, while OI looks at the use of internal and external knowledge flowing across the organizational boundaries. And following the argumentation of Vanhaverbeke et al. (2002, 2008), the integration of both concepts could better explain how the internal management of external knowledge would lead to either success or failure (e.g., Ahn et al. 2016; Lewandowska 2015). During the last decade, OI established an increasing base of communities across science, policy, and management (Bogers et al. 2018; Chesbrough 2017; Ebersberger et al. 2011). Today, the practice of OI continues to evolve and diversify among firms and across sectors (e.g., Chesbrough 2017; Chesbrough and Bogers 2014). This gives good reasons for more empirical studies to be conducted to further develop its theoretical foundation.

THE DIFFERENT MODES OF OPEN INNOVATION IN FIRMS

In academic terms, OI

> is a distributed innovation process that relies on purposively managed knowledge flows across organizational boundaries, using pecuniary and non-pecuniary mechanisms in line with the organization's business model to guide and motivate knowledge sharing. (Chesbrough 2017, p. 36)

Therefore, he argues, we must differentiate between *inbound open innovation* or the external knowledge flows inside the firm, and *outbound open innovation*, which refers to the knowledge flows outside the firm (Chesbrough and Brunswicker 2014). In such modes, if knowledge flows are *non-pecuniary*, there is no direct financial reward nor compensation associated with it, inversely, in *pecuniary* flows there is a full compensation for any exchanged idea or contribution. Then, OI performance in firms can take four different directions according to the combinations of modes and the nature of the compensation: *inbound pecuniary*, *inbound non-pecuniary*, *outbound pecuniary*, and *outbound non-pecuniary*. Each mode entails a collaborative dimension with different mechanisms and actions (see Table 12.1).

Table 12.1 Different modes, directions, and mechanism of Open Innovation in firms according to Chesbrough and Brunswicker (2014)

	Pecuniary flows	Non-pecuniary flows
Inbound direction	– IP licensing (internalizing) – Contracted R&D Services – Intermediaries – Ideas/start-up competitions – Suppliers – Innovation awards – University research grants	– Co-creating with consumers – Crowdsourcing – Publicly funded R&D – Informal networking
Outbound direction	– Spin-offs – Corporate business incubation – Selling market-ready products – IP licensing (externalizing)	– Joint-venture activities – Participation in public standardization – Donations to NPOs

Source: Modified from Chesbrough and Brunswicker (2014, p. 19)

However, assimilating that OI to inbound modes only is a common mistake (Chesbrough 2017). From a system's perspective, a firm can benefit from using external knowledge as much as from sharing unused or underutilized knowledge with external organizations (Chesbrough 2017; Chesbrough and Brunswicker 2014). Indeed, firms that strategically focus on outbound modes can eventually be able to control the core asset(s) from which other firms derive complementary products and services, to eventually become the leading player, or a "hub-firm" in emerging business ecosystems (Masucci et al. 2020).

IN PRACTICE: HOW SIZE, STRUCTURE, AND CULTURE OF FIRMS MATTER

In Chesbrough's seminal book *Open Innovation: The New Imperative for Creating and Profiting from Technology*, Chesbrough (2003) illustrated the open character of innovation using the informal (yet very strategic) interaction between two rival firms competing for leadership in the telecommunication market: Lucent and Cisco. Although direct competitors in a complex technology industry, Lucent and Cisco adopted two different innovation strategies. Lucent focused on the development of intramural radical innovation, looking for the next generation of materials, components, and systems, while Cisco searched on the open for new ideas emerging from start-up firms around the world, investing, creating partnerships, or acquiring them. Many of those companies were spin-offs from the innovation effort of larger firms, including Lucent. In this way, Cisco was able to compete in equal terms with world-class R&D powerhouses without much internal research of its own (Chesbrough 2003).

Outbound and inbound OI in large-size companies

In 2013, the Garwood Center for Corporate Innovation at the University of California and the Fraunhofer Society in Germany published the results of the first major survey of OI adoption in large firms in both Europe and the US (Chesbrough and Brunswicker 2013). The survey

revealed that 78% of firms were implementing at least one mode of OI, including inbound (35%) and outbound (8%) activities. Establishing new partnerships, exploring new technological trends, and identifying new business opportunities were the most common reasons for engagement. Preferred inbound activities included customer co-creation, informal networking, and university grants—while outbound practices included joint-ventures, selling market-ready products, and standardization. In either case, customers, universities, and suppliers were the most important partners, while—interestingly—internal employees were the most important source of innovation ideas. In the context of non-pecuniary activities, firms tended to engage more in inbound activities as net takers rather than net givers of free knowledge, a common adverse trend observed in innovation ecosystems where large firms tend to appropriate knowledge critical to the survival of small firms without compensation. The study concluded that OI projects have a scant impact in the organizational performance due to their informal implementation.

A contemporary example of large companies benefiting from an outbound from different OI modes is given by Apple. As a "hub-firm," Apple manages the interdependencies coming up from joint value creation, dealing with coordination challenges posed by the complementary activities in the ecosystem of other firms creating value for themselves. Masucci et al. indicate that

> Apple has to steer the development and marketing activities of an array of app developers to expedite the creation of complementary products that can enhance the value of its iPhone for final users (…) to align their incentives and coordinate their activities, Apple uses technology standards and platform interfaces, and sets market participation rules. (Masucci et al. 2020, p. 2)

Chesbrough and Brunswicker (2013) indicate that problems of managing innovation lie within the internal environment and culture of the firm, were formal routines, and established behavior conflicts with informal, temporal, activities. OI, broadly an informal activity, will involve 20 full-time employees on average, with an annual expenditure of around US$2 million in large firms.

Outbound and inbound OI in SMEs

The conceptualization of both closed and open innovation modes emerged from observation of activities at large firms. In closed innovation modes, enterprises generate their own ideas, processes, and strategies to produce and compete, acquiring a strong sense of self-reliance. This implies a considerable concentration of investment in the acquisition and retention of resources, skills, know-how, and enabling technologies. In open modes, firms draw on both external and internal ideas and paths to the market, in which enterprises look to discover and develop innovative opportunities (Chesbrough 2003). The cost of building and sustaining self-reliance in a closed mode in highly competitive and volatile is prohibitive for most emerging small firms. Van de Vrande et al. explain

> that innovation in SMEs is hampered by lack of financial resources, scant opportunities to recruit specialized workers, and small innovation portfolios so that risks associated with innovation cannot be spread. SMEs need to heavily draw on their networks to find missing innovation resources, and due to their smallness, they will be confronted with the boundaries of their organizations rather sooner than later. (Van de Vrande et al. 2009, p. 426)

Today, SMEs tend to rely more on OI than large firms, expecting to receive greater rewards because of their increased willingness to take risks, ability to react to changing environments, and reduced level of bureaucracy (Gentile-Lüdecke et al. 2020). For SMEs, the application of OI is a strategic move to overcome the lack of technical and managerial skills, through the creation of organizational solutions to access external knowledge, and the modification of their internal organization to share, adjust, and integrate externally accessed knowledge (Gentile-Lüdecke et al. 2020).

Van de Vrande et al. (2009) conducted a survey among Dutch SMEs to analyze trends, motives, and managerial challenges regarding OI implementation. The sample considered 605 firms with sizes ranging from a base of 10 to 499 employees, across different industries within the manufacturing and services sectors. Results indicated that SMEs engage in OI to find efficient means for identifying and internalizing constant

changes in customer demands, commonly through customer and employee involvement in the innovation process, and external networking with intermediaries. In average, SMEs considered intellectual property licensing and joint venturing as the least suitable OI strategies, unless they were looking for external technology solutions or did operate in the service sector. In general, OI projects were short-term, informal activities, to which the main problems to implementation were cost and organizational culture. An interesting result suggests that SMEs find that governmental grants increase the administrative burden in OI projects due to the inflexibility of current funding mechanisms.

In a recent cross-sectional survey of OI activities in Chinese SMEs, Gentile-Lüdecke et al. (2020) assert that organizational structure has a considerable effect on inbound and outbound activities. The study suggests that formalization and specialization of tasks and routines, and centralization of decision-making within the firm have diverse effects on the OI performance. In general, SMEs tend to have a less formal organizational structure where the division of tasks and routines, and the locus of decision-making is shared among employees across competences, in contrast to large firms where managerial competences are clearly defined and highly centralized (Van de Vrande et al. 2009). Gentile-Lüdecke et al. (2020) conclude that in SMEs higher specialization (of employees) and centralization (of responsibility and decision) within the firm foster the use of both inbound and outbound activities, and while higher formalization (of tasks and routines) negatively affects outbound activities, it tends to foster inbound flows.

Thus, establishing the right organizational structure and culture in SMEs is fundamental for the adoption of OI. We argue that in this context, the strategic role of managers and CEOs is critical. Gentile-Lüdecke et al. remark that

> managers need to create a work context where everyone can make use of their specialization and benefit from that of their colleagues (…) because specialization has proven to be critical for both inbound and outbound OI strategies. (…) CEOs and top managers at SMEs need to know that they play a central role in influencing the routine change that the adoption of inbound and outbound OI practices generate, contributing to reduce the

uncertainty and to cope with the associated risks. (Gentile-Lüdecke et al. 2020, p. 1106)

Brunswicker and Ehrenmann (2013) present the case of CAS, a market-leader in the field of customer relations management (CRM) software for SMEs in Germany, as an example of OI best practice. CAS was founded in 1986. Ten years later, the firm employed approximately 430 people and provided software solutions to more than 200,000 clients in more than 7500 companies and organizations. After winning numerous awards, the firm was considered one of the most successful innovators among SMEs in Germany.

In strategic terms, CAS recognized that the successful commercialization of new ideas requires an appropriate business model—in this case—based on the principle of modularity. Consequently, the firm developed an integrated software system embedding different in-house as well as external software applications, holding the necessary basic technologies to integrate these applications via interfaces into a total system, while combining existing and innovative solutions to a customer-oriented bundle of products and services. As a result, the firm acts as an innovator in the market for CRM software by itself, offering a variety of more than 100 applications and services in collaboration with over 200 partners in more than 24 countries. To consolidate and expand its operations, the firm expended over 30% of revenues in R&D annually, over additional investments in training of employees and building links with research institutes and universities. CAS relied on equity holdings to secure access to strategic key technologies, and often applied the strategy of "first-mover advantage."

Brunswicker and Ehrenmann (2013) explain the success of CAS as the result of formalizing OI activities. The firm has a balanced management approach in connection to a rational design paradigm (e.g., plans, rules, and norms), as well as a realistic comprehension of internal and external conditions based on learning from both good practices and failure. The scholars suggest that for SMEs, it is crucial to follow a "guided cultural evolution" toward a climate that fosters openness.

OPEN INNOVATION HAS BEEN AROUND FOR SOME TIME: BUT WHERE IS IT GOING?

A few years ago, Chesbrough (2017) indicated that the practice of OI will continue to diversify, expand, and formalize among firms of different sizes across all sectors, focusing more on value creation than on cost reduction of innovation activities. He also suggests that there is a need to develop better strategic and managerial mechanisms to establish and formalize partnerships and alliances with particular emphasis in the early involvement of customers, suppliers, and R&D partners into the innovation process. Chesbrough also highlights the role that new Intellectual Property trade systems should play in the future formalization of OI management. It is important to consider that the effect of Intellectual Property Rights (IPR) in open innovation is not yet fully understood. As of today, the IPR systems are broadly perceived as a barrier for OI activities in SMEs, notably for firms operating within networks of large corporations (Bigliardi et al. 2021) as well as IPR is also a barrier to innovation growth in developing countries (Neves et al. 2021).

In another context, Chesbrough (2017) observes the lack of a unifying OI theory, calling for integrating the various strands of evidence emerging from practice into a larger theory. Bigliardi et al. (2021) suggest that the development of a unified OI theory depends on future developments in other disciplines intertwined with the study of innovation. Consequently, as we see it, future research avenues may focus on four aspects of OI: (1) context dependency with focus on the conditions outside the firm such in the industry, market, or environment; (2) collaborative frameworks with emphasis in the role of university; (3) outbound flows for pecuniary and non-pecuniary activities among both large firms and SMEs; and (4) technology as a resource for inbound and outbound collaboration, and as a collaboration platform.

Further developments of research and practice of OI will then also consider trends in globalization that are moving the locus of R&D processes into networks of external partners and sites across the world; the evolution and the mobility of workforce are posing new challenges to enhance the human capital in firms; and the digital revolution that is

affecting not only the innovation process but also the behavior of people in organizations.

In fact, following the argumentation of Barjak and Heimsch (2021), any trend affecting the organizational culture becomes relevant to the OI theory and practice, as openness is a cultural trait of individual and organizations.

CONCLUDING REMARKS

Insights from the brief conceptual history of innovation theory

Considering the evolution of the four consecutive R&D organization generations proposed by Niosi (1999), we argue in favor of OI, since innovation in firms has been open to external influences since the very institution of the R&D organization. These influences have evolved from the simple act of finding inspiration in the broader environment, toward a strategic intent to access and use external knowledge to cope with complexity and uncertainty. Internally, this evolution implies shifting from exploratory, uncoordinated, and independent initiatives within the R&D organization toward a multifunctional, coordinated effort within and outside the organizational structure. In strategic terms, this is a shift from opportunistic search and competition, toward collaborative learning and positioning.

We consider the contemporary version of the OI concept a useful framework for the analysis and interpretation of the opening of innovation in firms that adds a new dimension to an already diversified innovation theory. Importantly, we see a bright future ahead for the concept—especially if other complementary models are further explored and integrated into the OI theoretical framework. Thus, we argue that the concept of OI should not be considered as a self-standing theory, but as a complementary framework to assess the evolution of innovation modes in firms. In this context, the distinction between the two OI modes, inbound and outbound flows, provides a strong platform to

rationalize the increasing diversification of innovation activities observed today.

In our opinion, it is fair to conclude that the effect of openness in large firms is less determinant to the organizational performance than in SMEs, due to obvious differences in availability of and accessibility to resources and skills. However, in both cases, the OI performance is affected by the organizational structure and culture of the firm. When firms open their innovation process, predatory strategies such as the appropriation of knowledge can occur, highlighting the need to develop new mechanisms to protect intellectual property through fair trade of knowledge.

In general, the knowledge of external partners and internal employees is a key strategic asset in OI collaborations. We argue that the knowledge of partners should be highly complementary to the objective of an OI project as to avoid redundant knowledge. Here, universities and research institutes can play a major role as knowledge brokers in any OI network.

In our perspective, the role of technology in OI has three critical dimensions: (1) as complementary technologies enabling new components, products, or services; (2) as platform for remote networking and communication; and (3) as a driver of change in peoples' behavior. Although most examples of OI practice regards firms engaged in technology development, there is increasing evidence of practice among other industries, from primary sectors to services. We highlight two less-explored areas in which OI will be needed in the future: in social innovation and sustainable innovation. For the earlier, the potential benefits to exchange knowledge and resources with external partners are just as promising as for business organizations (see McGahan et al. 2021), while for the later, the intrinsic networking nature of OI entails greater opportunities to explore opportunities for circular economy, and to innovate in collaboration with users and partners involved at different stages of a product lifecycle—creating new value chains and business models. And thus, to serve as an important condition to internalize social, economic, and environmental requirements into the innovation process (see Payán-Sánchez et al. 2021).

Implications for the strategic management of innovation in firms

We argue that Open Innovation is a conceptual evolution of the perception of innovation: growing from an internal linear model focused on minimizing R&D costs, toward a complex system of open collaboration to maximize the strategic creation of value across organizational functions. In this representation, collaboration entails the strategic purpose of internalizing and/or externalizing scientific and nonscientific knowledge through interaction with a variety of relevant agents, within and among the boundaries of firms. We associate this with the organizational capability to learn, where learning emerges from an increased awareness of internal and external conditions, and the strategic response to changes of such conditions. A strategic management of learning and teaching capabilities, the smart internalization, and release of knowledge may strengthen the position of the firm in the innovation ecosystem. We suggest that capitalizing on this knowledge could be a stepping stone toward the creation of new business models that are better aligned with internal capabilities, and external conditions and opportunities.

Eventually, we agree with the need to identify proper mechanisms to formalize OI routines. If informal, OI will remain a temporary R&D activity with no significant impact in the organizational performance. The formalization effort though implies the implementation of an additional long-term task: changing the organizational culture. In established firms, the change means moving from the prevailing culture of self-centered competition for profit, toward a culture of open collaboration for value creation. For new entrants (notably among SMEs), the change implies the establishment of formal routines and structures to support the development of managerial flexibility, the specialization of skills, and centralization of the decision-making process. Once formalized, open innovation can be a powerful strategic asset to deal with the increasing uncertainty closing upon modern and responsible production and consumption systems.

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13

What Could Possibly Go Wrong? Reflections on Potential Challenges of Open Innovation

Pia Hurmelinna-Laukkanen, Ioana Stefan, and Jialei Yang

Open innovation (OI) can come with notable benefits. In the contemporary innovation environment, firms "can and should use external ideas as well as internal ideas, and internal and external paths to market" (Chesbrough 2003, p. xxiv). However, we argue that firms (should) simultaneously acknowledge the potential challenges on the path to successful open innovation results. Existing literature and practice demonstrate two-directional moves between open and closed modes of innovation, thereby suggesting that open innovation is not found optimal at all times and in every situation (Appleyard and Chesbrough 2017; Coad et al. 2021).

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This chapter addresses some of these issues. It considers challenges and risks related to open innovation identified in existing literature and practice. Many challenges reside around the risk of harmful imitation (especially in weak intellectual property regimes), opportunism, and other such issues, but they may also emerge in the form of information (or knowledge) overload, resource allocation, and under- or over-investment problems, becoming "held captive" by the open innovation partners, and accidentally neglecting potentially promising development trajectories, to mention a few examples. Networks, organizations, teams, and individuals may stumble into varying problems. This is not to say that open innovation should be put aside. On the contrary, the underlying idea in focusing on the problematic aspects essentially is that identifying things that could go wrong eventually facilitates proactive, solution-oriented approaches in open innovation. It helps to remove unnecessary pessimism or fears, and allows approaching open innovation with realistic optimism instead.

This chapter is organized around three important topics of open innovation: (1) value creation based on knowledge; (2) innovation appropriability and appropriation; and (3) innovation network orchestration. Our discussion spans from individual to institutional levels, touching upon a variety of factors, but deliberately not going deeper into them. This chapter first considers value creation issues addressing, for the sake of simplifying the discussion, especially inbound knowledge flows. It then considers innovation appropriability and appropriation aspects, and discloses potential challenges that may emerge in relation to outbound knowledge flows in particular. While this division is a simplistic representation of what happens in practice, it offers a view of some of the main problems that are very likely present when coordinating open innovation activities. In fact, as shown in the discussion on innovation network orchestration, many tensions are present both in the substance of open innovation, and in its governance. Concluding insights and implications for innovating organizations close the chapter.

PITFALLS OF OPENNESS IN VALUE CREATION BASED ON KNOWLEDGE

Open innovation (OI) is typically defined as a distributed innovation process based on purposive inflows and outflows of knowledge across organizational boundaries to accelerate internal innovation, and to expand the markets for external use of innovation (Chesbrough and Bogers 2014; Chesbrough et al. 2006). This definition indicates that open innovation is very much a product of the era where knowledge is central to growth and competitiveness. Yet, as many studies establish, the generation of genuinely new (combinations of) knowledge and turning that into commercialized offerings is a task that requires both effort and luck (Freeman and Engel 2007).

What if there is just too little or too much information?

While open innovation surely provides the tools needed in the contemporary business environment to access and generate relevant knowledge, it also involves aspects that call for attention. An issue that may become a challenge is *the amount of knowledge*. Related to *inbound knowledge flows*, too limited access to relevant knowledge is a huge problem. A contemporary example can be found in the healthcare sector, where access to patient data is integral for developing digital solutions. However, privacy issues are also highly relevant in this context. Thus, access to knowledge is often restricted, restraining OI activities (Kemppainen et al. 2019).

At the same time, in open innovation, less can be more when acquiring knowledge. Laursen and Salter (2006) caution that companies may fall into the trap of "over-search," meaning that they look for external knowledge even too widely, which then has negative consequences for their innovation performance. This connects to the notion of value diminution, entailing an over-focus on value co-creation at the expense of other activities (Niesten and Stefan 2019; Vafeas et al. 2016). According to Koput (1997), over-search is problematic due to absorptive capacity problems, timing problems, and attention allocation problems. Too

many ideas to handle in an efficient way may come in, possibly at the wrong time, and it may be that with extensive external signals, managerial attention does not persevere from the acquisition of knowledge to actual implementation. Spreading resources and attention too widely hurts efficiency, and may start to deter the utilization of existing knowledge. Exploration cannot surpass exploitation indefinitely (Andriopoulos and Lewis 2009).

A practical example of too much information being a challenge can be found in Quirky's crowdsourcing failure. Quirky invited individual inventors to submit their ideas for products in a virtual space, and it built a community that helped to improve and develop the products (Chesbrough 2019). Within a few years, the startup attracted more than a million community members, commercialized over 100 products, and raised over $180 million in venture capital funding (Fixson and Marion 2016). However, it filed for bankruptcy in 2015. The reasons behind its downfall were tracked down to an abundance of information possibly burdening open innovation participants with poor-quality ideas and preventing them from recognizing, assimilating, or exploiting the good ones (Abhari and McGuckin 2022; Gentile-Lüdecke et al. 2020; Ovuakporie et al. 2021). In the end, open innovation can fail.

What if the knowledge is too familiar or too distant?

The amount of information and knowledge is not the only concern regarding inbound knowledge flows. In recent times, the issue of "garbage in, garbage out" has raised serious concern in relation to the development of artificial intelligence (Yu and Kohane 2019). Similar challenges may burden open innovation results that are dependent on the *quality and characteristics of knowledge* flowing across the organizational boundaries. In this regard, the familiarity of the knowledge, for example, has been found relevant: Purdy et al. (2022) note that transaction-related costs and risks inherently present in open innovation projects form a notable problem and, unfortunately, many open innovation projects end up being terminated especially if the acquired knowledge is too distant. It has been acknowledged for a long time that knowledge may be very sticky

inside the organizations, let alone between them. When such an issue is combined with factors such as the not-invented-here syndrome (NIH) or limited absorptive capacity, it is easy to see why open innovation bringing in completely new knowledge is not automatically a recipe for success (see Szulanski 2000; Trott and Hartmann 2009).

On the other hand, too much familiarity is very likely to become a problem for open innovation. Rerup (2004) reports that having in-depth knowledge in a specific area can lead to increasing focus on that area only and ruling out other views. Turning toward the familiar can be quite natural, however. High uncertainty typically present in open innovation increases risk and vulnerability and brings in the issue of trust; it is relatively easier to collaborate with familiar, trusted partners. However, considering that open innovation is a vehicle for novel ways of doing business and new types of offerings and/or markets, turning repeatedly to the same partners inherently starts to limit the extent to which innovation results can be achieved.

From these notions, it can be seen that the challenges of open innovation start from the individual level and spread from there quite widely. In fact, Salter et al. (2014) remind that individual managers and employees play an important role, but also have notable challenges to tackle, starting from their cognitive frames, elements of affection, allocation of time, and issues with attention capacity. Teams within and across organizations may be influenced by different biases in their search for new problems to solve and their solutions (Baer et al. 2013; Nickerson and Zenger 2004), and when reaching national boundaries, cultural and language issues start to affect inbound open innovation.

INNOVATION APPROPRIATION IN THE OPEN INNOVATION CONTEXT

Open innovation (OI) is typically defined as a distributed innovation process based on purposive inflows and outflows of knowledge across organizational boundaries to accelerate internal innovation and to expand the markets for external use of innovation (Chesbrough and Bogers 2014;

Chesbrough et al. 2006). Therefore, open innovation is not the same as free innovation (Chesbrough 2012). In line with this, knowledge sharing entails risks that need to be acknowledged; not everything can and should be given out, and the ways in which this is done call for attention.

What if someone steals and abuses your or others' ideas and assets?

Outbound knowledge flows may be problematic in a similar fashion as the inbound ones; both the *quantity and quality of the flows* matter. An obvious challenge occurs if an actor opportunistically expropriates knowledge acquired from its open innovation partners. The more critical and valuable the knowledge, the bigger the issue. Smaller innovators may be especially disadvantaged in this regard (Bird and Stefan 2019; Marullo et al. 2020). However, too limited or poor-quality knowledge flows also deter achieving the pursued outcomes. Not being able to share the right knowledge at the right times may lead to limited value capturing opportunities, or even losing them completely. For example, innovators developing general-purpose technologies need to allow others to do the experiments in parallel to speed up the discovery of the best use cases (see Yang et al. 2021).

The search for balance is challenging, but understanding what makes knowledge flow outside of an organization provides the starting points for avoiding the biggest problems. The risks of misappropriation of innovation and imitation of ideas or products are often associated with explicit, codified knowledge, as transferring such knowledge (intently or unintendedly) is inherently easier than that of tacit knowledge embedded in routines, people, and structures, for example. Understanding the knowledge leverage paradox (Coff et al. 2006; Kogut and Zander 1992) may help address the risks. Ritala and Stefan (2021) argue that the knowledge leveraging paradox is embedded in the paradox of openness (Arora et al. 2016; Laursen and Salter 2014) meaning that value creation in open innovation requires knowledge codification to make it transferable, while value capture in open innovation benefits from the knowledge that is difficult to imitate, more tacit in nature. The use of varying

appropriability mechanisms that are designed to limit free copying of codified knowledge assets (Hurmelinna-Laukkanen and Yang 2022a) and practices such as selective revealing of knowledge (Alexy et al. 2013; Henkel et al. 2014) may resolve such paradoxical issues. However, it needs to be remembered that they are not similarly applicable in all industry sectors or contexts, which maintains a conundrum related to knowledge characteristics when creating and capturing value in open innovation (Ritala and Stefan 2021).

The tensions between knowledge sharing and protection need careful consideration also beyond knowledge codification. Recent studies have raised the point that open innovation and value appropriation from innovation are by no means obviously contradictory (Foege et al. 2019; Hurmelinna-Laukkanen and Yang 2022a; Lauritzen and Karafyllia 2019). While the initial intuition is that letting others see how one does things and sharing one's own intangible assets increases vulnerability and the possibility that others will copy and exploit that knowledge, this is not necessarily the case. Hurmelinna-Laukkanen and Olander (2014) note that competitors may not be willing or able to copy what the firm has (see also Hurmelinna-Laukkanen and Puumalainen, 2013; Posen et al. 2022). Likewise, it is easily considered that imitation of an innovator's creations emerging in OI projects inevitably means that the innovator will lose in the innovation race (Marullo et al. 2020; Veer et al. 2012). Yet, imitation may, in fact, be exactly what the innovator needs to enrich its own knowledge base, and to benefit from network externalities as well as faster adoption and diffusion of the innovation (Alnuaimi and George 2016; Yang et al. 2010).

The above insights do not mean that innovation should be made completely free and directly available (Chesbrough 2012), however, or that care should not be taken when engaging in OI activities. There are many stories where valuable innovation has been lost to others to exploit, denoting a form of the appropriability problem (Arrow 1962). Antonio Meucci was acknowledged as the inventor of the telephone only after decades of his passing, and Matti Makkonen, the father of text messages, noted retrospectively that he did not think he had created something that would be patentable. When it comes to such issues, fairness aspects may also come into play and have various implications (Faullant et al. 2017;

Franke et al. 2013). Recent studies show that even those not directly involved in OI partnership (e.g., OI intermediaries) may experience affective tolls when perceiving unfair, opportunistic behavior in open innovation (Stefan et al. 2022). At the individual level, such affective responses may be expressed through figures of speech, for example, dark humor, hyperbole, or metaphors, pointing to a dark side of open innovation at this level (Stefan et al. 2022). The issue of imitation and the ways in which it emerges is far from straightforward, especially considering that a collaborator today may become a competitor tomorrow. Such issues may be even more pronounced considering the convergence of industries.

What if conditions change or context gets in the way?

Industry- and institution-level contingencies bring in some "what-ifs" also. In regard to context, environmental factors could affect OI collaboration. Bogers et al. (2017) note that firms accustomed to broad flows of knowledge across industry boundaries are more likely receptive to knowledge inputs from actors from outside their field. Nevertheless, when industry or national borders are crossed, the rules of the game also change, and it is not given that the firms are prepared for that. For example, certain mechanisms that are commonly used to allow safe knowledge transfer in one industry might signal protective and proprietary approaches in another. It can cause problems in building relationships, as actors might misunderstand others' intentions as opportunistic (see Yang and Hurmelinna-Laukkanen, 2022). International settings also pose challenges. For example, while knowledge crosses borders in open innovation thereby enabling global collaboration (Chesbrough and Bogers 2014), the territorial nature of legal systems, including that of intellectual property (IP) law, should be taken into account in international OI endeavors (Peukert 2012; Stefan and Bengtsson 2016; Trimble 2015). Weak (or missing) patent protection in another country, for example, may make some knowledge assets too easily available. On the other hand, however, crossing cultural and linguistic borders may also contribute to the

stickiness of knowledge to such an extent that successful open innovation becomes endangered.

Constant changes in the OI contexts can also bring challenges (Hurmelinna-Laukkanen and Yang, 2022b). Aside from initial differences in intellectual property regimes, regulation in a country may change in a way that favors specific actors over others, for example, and the innovator is not always the winner (Kao 2013, pp. 94–106). Likewise, different innovation stages may require adaptation in terms of opening and/or closing the innovation process (Appleyard and Chesbrough 2017; Granstrand and Holgersson 2014) and the openness to different types of OI partners (Stefan and Bengtsson 2017). For instance, collaborating with universities is mainly beneficial for novelty performance (e.g., access to top knowledge in the field) and mainly so in the early and middle phases of the innovation process (Stefan and Bengtsson 2017). Later on, commercially oriented actors may become more relevant partners (Hurmelinna-Laukkanen et al. 2022). Such findings indicate the need for a dynamic selection of partners, mechanisms, and degree of openness.

Addressing the challenges of open innovation is a moving target. Since the balance between creating and capturing value in open innovation is dynamic, resolving tensions or challenges related to it may require multiple rounds of searching for solutions (Stefan et al. 2021). Challenges linked to value creation and capture in open innovation projects may result in so-called tension loops, where new tensions arise after initial tensions are resolved (Stefan et al. 2021). Thus, open innovation requires constant monitoring and identifying dynamic, complex solutions for potential risks and challenges that may arise. This needs to be done at the individual or the firm level, but also collectively among the involved actors more widely, for example, through innovation network orchestration.

ORCHESTRATION OF INNOVATION NETWORKS

Open innovation can be defined as a distributed innovation process based on purposive inflows and outflows of knowledge across organizational boundaries to accelerate internal innovation, and to expand the markets

for external use of innovation (Chesbrough and Bogers 2014; Chesbrough et al. 2006). Therefore, it means that some form of coordination across organizational boundaries is inherently present. In many cases, open innovation can be considered to entail orchestration, that is, "deliberate, purposeful actions undertaken by a focal actor (or set of actors) to initiate and manage the construction of and collaboration in an innovation network" (Hurmelinna-Laukkanen et al. 2022, p. 171).

What if different actors do not work towards the same goal?

Managing OI initiatives is a demanding task. Bogers et al. (2017, p. 9) note that "while the original concept of open innovation is firm-centric, the literature links it to various related innovation phenomena" such as users as innovators or innovation communities. Accordingly, there are likely varied actors involved with multiple motivations and different capabilities, and varying forces at play that are not always easy to observe across the web of ties and relationships. For example, those individuals engaging in open innovation activity at the most practical level may be bound and otherwise influenced by the rules and policies of their teams, their organizations, the networks of their organizations, and different institutions (Blomqvist and Hurmelinna-Laukkanen 2021; Carlsson-Wall et al. 2011).

Considering this, the involved actors are also positioned differently in terms of coordination of the network and the activities done within; there are differences regarding who can orchestrate open innovation activities and in what ways, and how different actors respond to coordination and orchestration. As noted by Hurmelinna-Laukkanen and Nätti (2018), the type of orchestrator enables, but also restricts what they can do to steer innovation networks toward favorable outcomes. For example, while individual firms as orchestrators typically have certain power and leverage over the involved actors in their networks, they may face challenges in terms of trying to influence communities that have emerged more organically and draw strongly from voluntary participation and shy away from commercial intentions. From an orchestration point of view,

open innovation is both about influencing others and being influenced (see Håkansson and Ford 2002). Likewise, it is about controlling others and letting others take control, which is not a simple thing; as Håkansson and Ford (2002, p. 137) note, a "paradox is that the more that a company achieves this ambition of control, the less effective and innovative will be the network." In fact, different actors may react to orchestration (and orchestration attempts) in varying ways, and the participation and engagement of different actors—such as lead users—may be dependent on whether they feel that they can take part on their own terms or not (Hurmelinna-Laukkanen et al. 2021).

As noted in earlier studies (e.g., Hurmelinna-Laukkanen et al. 2021; Miller and French 2016), the health care context provides a good example of these kinds of issues. Collaboration and interaction of patients, regulators, professionals such as doctors and nurses, firms of different sizes and coming from different fields, academics from different disciplines, and other such actors are typically necessary, but open innovation among such actors is highly challenging. Although a common goal can be found in ultimately improving health and well-being, the means to reach that goal can be very different. The contact points and means of interaction can be quite difficult to establish in an environment where professionalism and hierarchies and privacy meet commercial aspirations and enthusiasm for technological development. The subgoals may even come across as downright contradictory. Returning to the issue of data, firms developing AI solutions for healthcare would need varying health data and insights from end-users to generate products and services that are genuinely purposeful, and they might need continuing access to different databases, but this might require too much effort from the health professionals (Kemppainen et al. 2019; Yang et al. 2021). The accustomed practices, views, and assumptions may be very hard to combine and change. A question emerges, if it is possible—with reasonable effort—to combine knowledge between different actors, or to do the same within the involved organizations.

What if you lose your own focus?

Earlier literature clearly indicates that being part of a wider entity and interacting with others generates some paradoxes and tensions regarding one's own focus (Håkansson and Ford 2002). A firm's relationships—and OI activities that it engages in—are the outcomes of its strategy. At the same time, the firm itself is the outcome of those relationships and activities. Especially organizations with limited resources may face notable organizational and cultural challenges when trying to deal with a large number of external partners (Marullo et al. 2020), some of which may be quite powerful. In networks and OI activities, each actor has their own specific goals, which may match the goals of the wider entity more or less clearly, but the goals also become adjusted depending on what kind of (open innovation) activities the actor in question engages in. An initially promising setting may yield even better opportunities than expected, but it also may start to limit opportunities for individual parties to pursue their own trajectories.

This issue connects back to the aspect of familiarity and trust. A threshold level of trust is needed to enable the transfer of both codified and tacit knowledge, but over-investment in trust—placing too much trust on another actor or on what they have to offer (Niesten and Stefan 2019), or investing in trusting relationships that have little value for the company—may lead to misallocation of scarce resources, unnecessary risks, or becoming limited in terms of potential sources of external knowledge (Molina-Morales et al. 2011). In fact, OI risks are many when it comes to the implications of being orchestrated as a part of a wider entity, or engaging in open innovation as an orchestrator. Becoming too specialized on a single thing (that may become obsolete in the long run) as a result of connectedness to others, or having to devote notable effort to searching for the appropriate means of orchestration or interaction instead of being able to focus on the substance matter are challenges at different levels, but equally serious things to consider.

CONCLUDING REMARKS

This book chapter discusses some potential challenges of open innovation focusing on three topics: value creation based on knowledge, innovation appropriability and appropriation, and innovation network orchestration.

Regarding value creation, pitfalls of open innovation relate to too much or too little information being present for efficient activity, and to very familiar or very distant knowledge being problematic in their own ways. In practice, these challenges may result in over-search or in high costs of acquiring external knowledge on the one hand, and in failing to generate innovation, on the other hand. The search for a balance is not an easy task.

A balance is also needed in terms of knowledge sharing and protection. Turning attention to innovation appropriability and appropriation shows that open innovation is risky regarding outbound knowledge flows. IP misappropriation and uncertainty are pronounced risks in OI activities. The former may have effects beyond organizational profit loss, reaching individuals' affective well-being; the latter makes it difficult for organizations engaged in open innovation to design contractual terms and other details for (future) OI endeavors. A lot of effort is needed from companies to find suitable approaches.

Managing networks in open innovation also entails challenges and risks. Network orchestration may fail with multiple (and changing) partners with varying motivations being more and less receptive to the coordination efforts. The practical execution of the open innovation work may be notably challenging to organize, and problems may emerge in open innovation taking too much managerial attention within a participating organization if managers start to focus on inter-organizational activities at the expense of intra-organizational management. Divergent goals and the risk of losing one's focus are to be reckoned when firms engage in open innovation.

The glance at the possible challenges of open innovation in this chapter suggests that it is crucial for innovators to understand both the valuable side of open innovation and the challenging, paradoxical dark sides of open innovation (e.g., Coad et al. 2021; Stefan et al. 2022). While

efforts have been devoted to figuring out the optimal level of openness in different situations and contexts and the ways to achieve that level, much of the discussion starts from the expectation that open innovation will be beneficial. Accordingly, attention is turned to strengthening the good sides and removing the possible obstacles to open innovation. However, open innovation can be subject to decreasing returns (Kim et al. 2016), and too much focus on openness can result in narrower opportunities and loss of control over core competencies (see Enkel et al. 2009; Laursen and Salter 2006). The dark side is real in practice. How it can be approached is a different thing, however. We believe that when practitioners are aware of the potential challenges, risks, and costs, they may be able to find ways to turn them into opportunities (see Purdy et al. 2022). Relevantly, embracing pitfalls purposively—rather than removing and dismissing them—may allow them to get even more out of open innovation.

The insights on open innovation challenges discussed here can be the first step toward finding the solutions to limitations of and in open innovation. We hope that this study can serve as a steppingstone for future research in this regard. Specifically, each what-if scenario can be expanded and examined more, and quantitative and qualitative studies are invited to explore the details of different what-ifs. The likely emerging new what-ifs should be welcomed.

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Part VII

The Road Forward from Here

14

What Does It Take? Feminist Readings of Innovation Studies

Sine N. Just and Sara Dahlman

INTRODUCTION

Innovation studies tend to ignore gender issues, arguing that the practices and processes of innovation are gender-neutral or gender-blind. However, what such practices are, in fact, blind to is the existence of women in innovation. Thus, the traditional argument that gender is irrelevant to innovation offers male innovators a privileged position and positions women as "other" to innovation. Studies and practices that seek to ameliorate this situation, however, tend to reverse it—making women overly visible and essentializing the "female innovator." Here, a particular position is carved out for women, which both means that women have to fit a certain stereotype to become recognizable as innovators and that the general field of innovation remains male by default. While the second trend reacts directly to the first, it both reproduces some of its problems

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and incurs limitations of its own. Noting this dilemma, we ask: what does it take to make the gendered practices of innovation visible without re-confirming essentialized gender dichotomies?

In answering this question, we seek to contribute to a "third wave" of feminist readings of innovation studies that take issue with both the assumptions of gender-blindness and gender-visibility, arguing, instead, that gendered norms result from innovation practices. To do so, we use Gibson-Graham's (2006a) theory of diverse economies to build an alternative vision of innovation; one that is both critical of current gendered norms and actively involved in designing better alternatives. We illustrate the methodological and practical purview of this framework through analyses of three illustrative cases. The first reproduces gender-blindness and, hence, reinforces current structural inequalities. The second focuses exclusively on innovation for and by women, thereby redressing issues of gender-blindness, but also reproducing gendered stereotypes through one-sided visibility. The third adopts a norm-critical perspective that is aligned with Gibson-Graham's retooling of performative gender theories for practical purposes of social innovation. Critique of current social norms, we conclude, is an effective driver of innovation for gender equality, specifically, and may offer new impetus for innovation, generally.

INVISIBLE WOMEN

Innovation is not traditionally seen as a gendered field and practice, but the seemingly gender-neutral approach has disguised male privilege and rendered female innovators invisible (Alsos et al. 2016). This is part of a general trend of focusing on the contexts and processes of innovation, for example, in organizations, university spin-offs, and innovation systems, which de-emphasizes individual human innovators (Alsos et al. 2013). Thus, the focus on the constitutive conditions of innovation differs quite a lot from entrepreneurship studies where the entrepreneur has become the center of attention (Brännback et al. 2012). Emphasizing the individuality of entrepreneurship has fueled a heroic image in popular culture (e.g., through the narrative of Steve Jobs and the countless other stories of the lone genius fighting for *his* idea), which is paralleled by an

academic focus on entrepreneurial characteristics (e.g., Blanchflower and Oswald 1998). While one may commend innovation studies for resisting such mythological hero-worship, the lack of focus on individual innovators comes with its own problems; most notably, it may account for the lack of gender perspectives in innovation studies (Brännback et al. 2012; Nählinder 2010; Thorslund and Göransson 2006).

In recent years, however, increased attention to the people who are involved in innovation processes, organizations, and systems has created awareness of the role of gender in innovation (Alsos et al. 2016). More specifically, such research has uncovered the inherent structural inequalities that impede women's innovativeness (Aidis 2016; Alsos et al. 2013; Foss et al. 2013). Women, it is argued, encounter institutional disadvantages such as less access to resources, education, and financial support (Runco et al. 2010) as well as limited access to social networks, higher bureaucratic barriers, and hindering gendered attitudes, social norms, and biases (Aidis 2016). For instance, Foss et al. (2013) show that while women and men generate the same number of ideas, existing structural differences cause women's ideas to be less frequently implemented in their organizations. Similarly, Cooper (2012) shows that because women are not perceived as innovative, their ideas are either dismissed or deemed inferior to the ideas of men. Thus, raising awareness of the gendered norms of innovation points out how male innovators are, generally, in privileged positions as compared to their female counterparts.

Further, women's innovation has been largely invisible because academic research, public reports, and policy documents usually deal with industries in which men traditionally outnumber women (Kvidal and Ljunggren 2013; Nyberg 2009). Innovation as a concept was first conceived and used in the realm of industrial engineering (Nählinder et al. 2015), thus creating a "natural" link between innovation and high-tech industries (Alsos et al. 2013). Consequently, these industries are the preferred empirical sites for innovation research. This is problematic, as women are underrepresented in STEM (science, technology, engineering, and math) (Huyer and Hafkin 2012) and overrepresented in, for example, service industries that are not seen as innovative (Ranga and Etzkowitz 2010).

For example, Nählinder et al. (2015) show that the European Community Innovation Survey has a strong gender-bias in the selection of industries, which, significantly, does not include health-care. The focus on high-tech and manufacturing industries makes women appear less innovative, as they are underrepresented in the surveyed industries. This enforces a "vicious circle in which employees in certain industries do not see their creative problem-solving as innovative" (Nählinder et al. 2015, p. 79).

A final and related explanation of the invisibility of women in innovation suggests that the very concept is biased towards male connotations (Alsos et al. 2013; Blake and Hanson 2005; Nählinder et al. 2015), implying that innovation is governed by a hegemonic masculine discourse (Wikhamn and Knights 2013), including associations to masculinity, science, and engineering (Alsos et al. 2013; Nyberg 2009). Hence, the operationalization of innovation tends to involve technology, material goods, patents, commercialization, and similar stereotypically masculine notions (Nählinder et al. 2015). This limits what is understood as innovation and contributes to upholding the hegemonic masculine discourse in innovation studies. Two examples of such discourse relate to patents and R&D as measurements of innovation, respectively. Hunt et al. (2013) show an underrepresentation of women among patentees, which means that using patents as a measurement of innovativeness will result in underreporting of women's innovativeness. Similarly, R&D has become a proxy for innovation, but these activities are concentrated in male dominated industries, like technology and manufacturing, whereas female dominated industries, such as the service sector, are not equally characterized by R&D activities (Nählinder et al. 2015). Hence, when R&D is used as an operationalization of innovation, the tendency to overlook female innovation is reproduced.

VISIBLE WOMEN

Making women visible in innovation often begins with a critique of the social norms and discursive practices that render them invisible, as may, for instance, emerge from analyses of policy documents and existing

research (Alsos et al. 2013). Such studies document the othering of women in innovation policy and demonstrate that the inclusion of women is typically understood to bring stereotypically feminine characteristics to organizations rather than innovation (Fältholm and Norberg 2017; Kvidal-Røvik and Ljunggren 2016). Such identification and critique of existing gendered assumptions in innovation may broaden the conceptualizations and practices of innovation (Alsos et al. 2013).

Interestingly, this development has been spearheaded by research that looks beyond the typical Western contexts of innovation to, instead, study emerging economies. When turning to the innovative practices of, for instance, rural communities, the role of gender in innovation becomes evident (Alsos et al. 2013), as innovation tends to be linked to small-scale, less technological, and more incremental change, which is often community-centered and focused on sustaining women's livelihoods (Kawarazuka and Prain 2019).

Similar shifts in perspective may help challenge the underlying gendered assumptions of Western innovation practices and bring women's innovation to the fore. For example, this may involve an increased recognition of service, social, and organizational innovation (Alsos et al. 2013; Blake and Hanson 2005), with a concomitant focus on innovators from the healthcare and public sector (Nählinder 2010). In a study that is representative of this shift, Amble et al. (2016) look at care work, showing how the development and implementation of a new rota system changes the structural conditions—and, consequently, the perception—of care workers from part-time to full-time employees. While such change would not be regarded as particularly innovative from the traditional perspective of innovation studies, it arguably represents a novel and value-adding organizational form.

Generalizing the shift in perspective, Lindberg et al. (2014) argue that the traditional Triple Helix model of innovation, which involves academia, industry, and the government in the creation of innovation and economic development, is gender-biased, as its three domains are all male dominated. In order to include women and promote gender equality in innovation, these authors propose a Quadruple Helix that also includes civil society. Thus, two ways of making women visible in innovation are to expand the definition of innovation to include those industries and

sectors in which women are more well-represented and to expand the definition of what may count as innovation.

As such, including women in innovation is often linked to the business case for diversity; meaning, women and other underrepresented groups are seen as untapped potentials. That is, women are assumed to have specific experiences and/or competencies that may be leveraged to the benefit of the organization, just as increased diversity among the work force, generally, will increase the performance of the organization. In the innovation literature, the business case usually translates into the idea that women as a group may add a particular value to the innovation process (Østergaard et al. 2011; Sardeshmukh and Smith 2016). For example, Fernández (2015) examines how gender diversity in R&D teams has an effect on innovation output and concludes that gender diversity has a greater impact on product innovation than on process innovation. Similarly, Díaz-García et al. (2013) show how diversity in R&D teams brings about certain dynamics that provoke novel solutions, leading to radical innovations.

FROM WOMEN TO GENDER

Within the literature on gendered innovation, there is an increasing awareness of the potential risks involved in focusing exclusively on the inclusion of women, which is accompanied by a call to, instead, focus on gendered norms and gender equality. In this regard, Alsos et al. (2013) offer an overview of the relevant literature and identify three perspectives on gender in innovation studies: gender as a category (empiricist feminism), gender as a relationship (standpoint feminism), and gender as a process (post-structural feminism). While all perspectives have their place in highlighting the lack of women in innovation, the two first approaches tend to reinforce assumptions of essential differences between men and women (Foss and Henry 2016) as well as the belief that certain attributes or characteristics are feminine or masculine (Alsos et al. 2016). For example, the argument that gender diversity will contribute to the innovativeness of organizations implies that women, or the dynamics that their inclusion create, bring something to the innovation process that men do

not. More specifically, the business case is linked to particular notions of the female innovator or "girl boss" who "leans in" and applies her particular entrepreneurial femininity to her own advantage and that of her organization (Ahl and Marlow 2021; Alexandersson and Kalonaityte 2021).

Whether this difference is believed to be essentially inherent to women in a biological sense or to stem from socialization is less important, as the othering of women (in relation to men) reinforces a binary understanding of gender. Moreover, and maybe more troubling, this othering of women contributes to upholding the hegemonic masculine discourse in innovation studies. Repeating an analysis of women as marginalized and subdued, risks overshadowing other narratives of gender and innovation. Even when the analysis is followed by a positive revaluation of women, it incurs a certain essentialization of female gender traits. Thus, highlighting women may be just as problematic as the (false) claims to gender neutrality (or gender-blindness) that render women invisible within traditional innovation studies and practices.

In response, feminist readings of innovation studies are shifting their focus from gender as a cause of innovation outcomes to, instead, seeing it as an effect of innovation processes. Pecis (2016), for instance, aims to break with the dichotomous understanding of gender by looking at the doing and undoing of gender in innovation processes and offering an alternative contextual and intersectional understanding of the interrelations of gender and innovation (see also Pecis and Berglund 2021). Instead of assuming gendered categories of men/male and women/female, gender is understood as fluid and relational, the performative result of normative innovation practices rather than their prerequisite (Säll 2017).

In line with this shift, Eriksson (2014) shows how an applied gender perspective in a school supported innovative processes, which led to gender-sensitive product, process, and organizational innovations to the benefit of everyone involved. Similarly, Lindberg et al. (2016) explore how gender equality measurements can contribute to structural changes in organizations by changing gender norms, implying that gender equality measurements could be understood as innovation. Both studies shift from an essentialist understanding that women bring something special

to the innovation process to a focus on gender equality as a driver for *and* a result of innovation.

Others have highlighted the role of materiality as mediating between gender and innovation. Focusing on the gendering of products, Kovalainen and Poutanen (2013), for instance, show how women are excluded from innovation process, arguing that the feminization of a product enables female innovators to reclaim ownership of the product, as male colleagues lose interest in it. And combining the emphasis on materiality with an action-oriented approach, Börjesson et al. (2016) disclose inherent but hidden gendered aspects of the innovation process. Thus, a critique of inherent gendered norms remains a starting point of feminist readings of innovation studies that aim to move beyond essentializing to, instead, explore the potential of innovation to produce gender equality. Seeking to support this ambition, we will now suggest how Gibson-Graham's (2006a) framework of diverse economies may strengthen its theoretical basis and point towards its practical implementation.

DIVERSE ECONOMIES AS A FRAMEWORK FOR FEMINIST INNOVATION

"Why can feminists have revolution now, while Marxists have to wait?" writer collective Gibson-Graham (1993, p. 10) asks. The answer, they suggest, is that while the Marxist revolution demands full replacement of the capitalist system with that of socialism, feminist revolution is incremental, counting every advance towards gender equality as a victory. From this perspective, change can happen from within an existing system—indeed, is already happening if one cares to look. This is not to say that the dominant order is about to come tumbling down, but rather that one cannot change the system by means of critique alone. Instead, Gibson-Graham (1996, p. 543) proposes a dual strategy of depicting "…economic discourse as hegemonized while rendering the social world as economically differentiated and complex." Thus, transformative

potential is anchored in the presentation of already existent diverse economies as alternatives to economic hegemony.

In claiming the transformative potential of existing alternatives, Gibson-Graham is inspired by Butler's post-structuralist feminism, generally, and her theory of performativity, more specifically. The concept of performativity denotes the process by which dominant social norms are both upheld through the repetition of such norms, which is necessary for the individual subject's achievement of social recognition, and become subject to change, as the very demand for repetition introduces the possibility of deviation (Allen 1998; Butler 1990, 2004). This focus on norms of recognition leads to an understanding of gender as the result of performative processes rather than the underlying cause of particular actions. As Butler (1990, p. 25) famously puts it: "There is no gender identity behind the expressions of gender; that identity is performatively constituted by the very 'expressions' that are said to be its results." Gender is not an explanation of anything (for instance, of a particular perspective on innovation), but is, instead, the result of the repeated enactment of gendered norms (producing, for instance, the subject position of "the female entrepreneur"). Meaning, we should not assume that an individual possesses particular personality traits or professional abilities because of their gender, but study gendered norms and subjectivities as the results of social processes.

Beginning from this "reversed causality," Gibson-Graham (2006b, p. 75) extrapolates three key points from their encounter with post-structuralist feminism: "…a new language, new practices of resubjectivation, and a new kind of dispersed collective action that [does] not depend upon the organized revolutionary agendas of more established radical politics." When applied to the broader context of diverse economies, the latter point implies that alternatives worth exploring are not delimited beforehand. Rather, we might find potential for broader societal transformation in any of the many specific ways in which the currently dominant order of the market economy is resisted, negotiated, and/or reformed (Gibson-Graham 2006a, p. xiii).

In searching for alternatives, Gibson-Graham links diverse economies specifically to social innovation. Focusing on the change that emanates from and is operative at the level of local communities, they do not define

a community economy "…by geographic or social commonality; it is an ethical and political space of decision making in which interdependence is constructed as people transform their livelihoods and lives" (Gibson-Graham and Roelvink 2009, p. 25). Here, social innovation—or the process of "making other worlds possible"—is subject to three general principles: visible diversity, distributive justice, and self-determination (Gibson-Graham and Roelvink 2009). These three principles, we believe, may drive innovation in both the economic and the social sphere and, more importantly, bridge the two to produce economics innovations that are also socially beneficial. Returning to the question of gender, this vision of innovation is not anchored in a specific gender identity; to the contrary, it aims at opening up spaces for the expression of diverse (gender) identities and producing greater (gender) equality.

A NOTE ON METHOD

Methodologically, what we take from Gibson-Graham is the dual practice of criticizing hegemonic discourses and promoting better alternatives. Aiming to "have revolution now" (1993, p. 10), as the introductory quote of the previous section promised, we offer three illustrative examples of organizational innovations that, in accordance with the theory of performativity, hold potential to produce gender equality. Our readings are both critical and reparative. Meaning, we do not see the first case as a failure but, instead, as a missed chance that may still be recuperated. Similarly, the second case does not necessarily lead to a dead-end of essentialization, but can still shift its emphasis from female causes and causalities to gendered effects. Finally, the third case indicates how gendered dynamics can be identified and reformed through explicitly norm-critical innovation processes. However, the case also illustrates the tendency of gendered innovation to become an end in itself, as the explicit purpose of the innovation is to produce increased gender equality. This raises the question of whether and how it might produce anything else.

SusPens: A MISSED CHANCE TO INNOVATE FOR GENDER EQUALITY

Sustainable investing has grown popular in the last 20 years as both a risk-mitigating investment practice and a political tool for rewarding companies that contribute to sustainable development. SusPens, a Danish fintech startup, has developed a machine learning algorithm that screens investment portfolios for unsustainable stocks. By automating the screening process, SusPens presents a novel approach to sustainable investing, which is traditionally dependent on manual screenings and evaluation of companies. Although the algorithm has saved SusPens from the cost of manual screening, the algorithmic approach to sustainable investing has the consequence that SusPens is dependent on reliable and accessible data in order to make investment decisions. In their initial product offer, SusPens had set up the algorithm to discard investments in companies that are involved in fossil fuels, tobacco, and weapons. Although SusPens had a vision of expanding the range of sustainability criteria, it gradually became clear that this was not easily done. Maria, a tech developer at SusPens who we met in our own research on the organization, explains:

> I was attracted by it, like cool that it was a pension that would be good for a lot of things. But now it is like it has become more specialized in the direction of climate because it is quantifiable and measurable and easy to report. But the more parameters that have to add up, like human rights and women in management, the more difficult it will be to create a portfolio that still gives a good return. Because it should not cost our users any money to protect something good; that is our entire selling proposition. (quoted in Dahlman et al. 2021, p. 10)

Since the algorithm can screen investment portfolios for any chosen criteria for which there is quantifiable data, SusPens has the potential to apply their innovative technology to work for gender equality. Yet the organization has not done so.

As Maria makes clear, the more parameters included in the screening, the smaller the investment universe becomes. Consequently, any addition of exclusion criteria to the original three (fossil fuels, tobacco, and

weapons) will limit the organization's investment strategy, making risk-diversification harder and likely returns on investment smaller. Despite the initial vision of innovation for sustainable development, the organization has limited its potential to realize this vision because it has tied sustainability to profitability. In sum, the organization is governed by a financial logic, which implies unfulfilled potential to innovate for gender equality. SusPens does not see gender because the algorithm has not been trained to screen for it; by this oversight the organization not only misses an opportunity to contribute to gender equality, but actually—if implicitly—helps maintain existing inequalities.

CLUE: INNOVATION FOR WOMEN BY WOMEN

Femtech has become an increasingly popular phenomenon in the last years, referring to products, services, software, and diagnostics that employ technology to support women's health. The field of femtech is strongly linked to female entrepreneurship, where women are understood to invent for women. Focusing on the lived experience of women, femtech has grown to be an area where women can be inventors, entrepreneurs, and tech-developers—setting the agenda within professions that are usually male dominated. While women's health has traditionally been a neglected area, femtech innovations solve problems related to menstruation, fertility, menopause, pregnancy, and other aspects of female sexual health. As such, the booming field of femtech has not only made up for traditional oversight, but is becoming recognized as "the next big thing." As femtech innovations target 50% of the world's population, the market potential is high, and many investors are keen to capitalize on this opportunity.

Ida Tin, who coined the term *femtech*, is the founder of Clue, one of the pioneering companies in the field. Clue is an app that enables menstruating people to track their periods and ovulation, thus gaining a better understanding of their menstruation, fertility, and hormonal cycles. Based on users' tracking of their periods and other bodily states, like vaginal discharge, pain, emotions, and energy levels, the app predicts the chance/risk of getting pregnant by labelling days as high risk or low risk.

Tin is often mentioned as a role model for how "the mothers of femtech inventions" manage business, innovation, and entrepreneurship. In their book on female entrepreneurs, Ryland and Jaspers (2019, pp. 28–29) indicate that Tin's personality may be instrumental to the success of her business:

> On stage, Ida emanates a measure of calm, humility and thoughtfulness that we hardly ever encounter at startup conferences. During our conversation with her, she also came across as a quiet and incredibly thoughtful person, who considered each answer carefully before she responded. We were impressed by her honesty and openness as she shared some of her struggles related to building a large company that serves as many people as possible, whilst simultaneously sticking to her values of sustainability, empathy and collaboration.

As women are typically more inclined to—and, perhaps, better at—identifying the needs of women, the overrepresentation of female innovators and entrepreneurs in femtech should be no surprise.

However, the focus on female entrepreneurs risks setting them off from the general category of entrepreneurship, which can then continue to be assumed to be male. If the female entrepreneur is assumed to have inherent and essential characteristics that differ from those of the male entrepreneur, as demonstrated in the quote above, then she continues to be "other" from the general category of entrepreneurs—and she "others" women who do not possess the traits that are attributed to the female entrepreneur. Tin is described as calm, humble, and thoughtful; traits that are very uncommon among entrepreneurs. Further, she is said to "stick to" her (conventionally understood as) feminine values.

The undeniable importance of an increased focus on women's health notwithstanding, portrayals of femtech and female entrepreneurs as essentially different from the general (and assumed male) categories of innovation and entrepreneurship risks reinforcing essentialized and dichotomized understandings of gender.

THE ANDROCHAIR: NORM-CRITICAL INNOVATION FOR GENDER EQUALITY

Innovation processes typically aim to develop new and attractive products as means for companies to increase profit. With a single-minded market focus, innovations and designs tend to uphold or reinforce societal norms and values. To counter the hegemony of the market economy with its conservative pull towards recognized consumer demands, norm-critical design has developed as a design practice that explicitly aims to illuminate problems of current societal orders, question taken-for-granted truths, and challenge established norms.

The Androchair is the result of an action-research project that applied principles and practices of norm-critical design to explore and question the dominant norms of female and male reproductive health (as reported in Börjesson et al. 2016). Beginning from individual experiences of meeting the health-care system, the project explores material objects' involvement in the (re-)production of existing norms. Starting in the examination room, it becomes apparent that for women the gynecological chair is an accepted but often disliked part of the gynecological examination. Maintaining the same design as when it was introduced in the 1880s, the gynecological chair makes women feel exposed, uncomfortable, violated, and undignified during the gynecological examination.

Interestingly, there is no equivalent to the gynecological chair for men who must typically bend over an examination bed for examination of the lower abdomen, which many men experience as uncomfortable and unsafe. The absence of proper equipment for male examinations underlines the invisibility of andrology—the study of the male reproductive system:

> Andrology is a neglected field, with the absence of routine check-ups for men, such as there are for women, being highlighted by both urologists and andrologists in the interviews we conducted. The fact that men do not have the same close contact with health services and are less inclined to seek care could be addressed if andrology was developed and if similar health checks were available for men as there are for women. (Börjesson et al. 2016, p. 264)

Beginning from this observation, the design team developed a prototype of the Androchair, designed to facilitate prostate examination.

Copying many of the features of the gynecological chair, including cold leg support in metal, metal handles, and an attached paper roll, the chair materializes the female interviewees' experiences for male users. Thus, designing the Androchair based on women's experiences with the gynecological chair not only points to the neglect of andrology, but also highlights the fact that many objects used by women are based on male experiences. The Androchair reverses the direction of influence, as it were, thereby drawing attention to and questioning otherwise invisible norms.

Simply developing a better gynecological chair would not have accomplished all these ends. Notably, an improved chair would not have illuminated the lack of innovation and product development in gynecology or the ignorance of women's experiences with the gynecological examination. Similarly, it would not have highlighted the neglect of andrology and men's experiences of reproductive health issues. As such, the Androchair identifies and problematizes norms about gender as well as gendered norms of innovation. Designed to instigate debate, the Androchair also invites further innovation within both gynecology and andrology and insists on better solutions for both men and women.

CONCLUDING DISCUSSION

We began by asking what it takes for innovation studies to produce gender equality. And we will end by asking what it will take for gender-equal innovation to produce other results. That is, we have seen how a claim of gender-blindness is conducive to innovation, generally, but has the side-effect of reproducing structural gender inequalities that make women's needs and female innovation invisible within the field. In response, a focus on innovation for and by women has produced a number of products and services that fulfill hitherto unmet needs and create attractive market opportunities. However, such female innovation has the side-effect of reproducing gender stereotypes, making certain positions all too visible and keeping others in the dark.

Finally, the norm-critical approach to gendered innovation avoids both pitfalls of doing too little and too much for women, but can it produce anything but awareness of and alternatives to gendered norms? While existing experiments focus quite narrowly on social innovation for gender equality, the emergence of norm-critical design thinking does indicate a broader potential (Christensen et al. 2020). Given the chance to shape innovation practices as such, this approach will, as is inevitable, hold its own normativities, shining a light on some areas of innovation and making others less visible. However, the performative consequences of a general implementation of norm-critical innovation remain to be seen. What it takes is not only revolution now, but revolution every day.

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15

Non-Western Perspectives on Innovation

Abhinav Chaturvedi

Today, the idea of innovation is universally accepted. It has become an essential fragment of our culture—so much so that it verges on becoming a cliché. Not only in the space of technology, but innovation is discoursed across the technical literature, in social sciences, and across the domains of humanities and arts. Concisely, innovation over the years till today has evolved as an emblem of society, an elixir for many problems, and a phenomenon to be explored. But even though the term is now entrenched in our language, to what extent do we understand it and is the understanding shared? A scientist's view of innovation may be very different from that of a mechanic or an electrician.

Innovation has been argued to be the engine of growth (Seelig 2012; Trott 2011). It is important to note that it can also provide growth almost regardless of the condition of the larger economy (Trott 2011). An ephemeral analysis of economic history will show that industrial-technological

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innovation has led to substantial economic benefits for the innovating company and the innovating country. As Freeman and Soete (1997, p. 266) wrote, "not to innovate is to die," companies and countries that have established themselves as market leaders have all shown the ability to innovate by successfully developing new products. However, given the poor state of new product success, Western organizations endeavoring to bring new products into the international markets (especially in developing economies) face numerous problems. The most important decision is regarding the kind/type of innovation that should be sought by these firms. A promising field of research is the study of innovation models and strategies for new product development in emerging markets.

The chapter moving forward first raises a question to understand the possibility of a Western bias presence in innovation, followed by a discussion on the innovation challenges in the non-Western context. Further, some of the non-Western innovators are highlighted along with the unique ways of innovating in their respective regions. Finally, the chapter moves toward critiquing the definite presence of Western thinking in the field of innovation while emphasizing that it is now time for a turning point.

THE WESTERN BIAS IN INNOVATION?

A large part of literature about (new) product development assumes resource sufficiency for following a structured process of development. Till the second half of the twentieth century, the normative models of (new) product development have dominated the extant literature. However, it is the economic ascent of developing markets recently, particularly in India, China, and Brazil that has added to the creation of a new market segment. In such markets, the innovations have been captured by various names such as frugal innovation, reverse innovation or blowback innovation, cost innovation, Gandhian innovation (grassroots innovations), Jugaad, and at times as simple workarounds.

Let me put a question: it is not the first time this question has been asked, yet as an aide-memoire—Why does innovation mainly come from

the developed world? Or should I reframe it and ask, is there a Western bias in innovation?

The answer is both simple and complicated. Simple because if you are from a developed nation and have enjoyed the benefits of resource sufficiency it is a simple "Yes," with an argument that organizations that invest in R&D and have an abundance of resources can innovate better and faster; hence, innovation mainly comes from the developed world. But if you are from an emerging economy, the one which is defined by the low to middle per capita income and considered mostly a by-product of globalization, then the answer to the question is not so simple. Rather, in an emerging economy, the following is definitely present:

1. Resource scarcity;
2. Infrastructure underdevelopment;
3. Institutional voids;
4. Political instability;
5. Rapid or catching-up growth;
6. Nascent entrepreneurial ecosystem.

However, the earlier-mentioned parameters may be present across emerging markets but what provides complexity to the answer to our earlier question is the growing rate of innovation in such economies. Various new forms of innovation have emerged from these emerging markets such as

1. Frugal innovation—minimizing the use of resources; "doing more with less" (e.g., Renault Logan, GE portable PC-based handheld ultrasound).
2. Reverse innovation or blowback innovation—from developing markets to developed markets (e.g., Tata Nano, GE Logiq Book, Grameen America).
3. Gandhian innovations—"Affordability" and "Sustainability," "doing more with less for more and more," and transformation of the elements of the value chain (e.g., Arvind Eye Care, The Jaipur Foot).

4. Jugaad and jugaad-based innovations—do something somehow with available & alternative resources (e.g., the Bullet Shanti, Multipurpose food processing machine, Mitticool).

These cases of non-Western innovation force us to think about the state of innovation in the future, especially when emerging economies are expected to grow 75% faster than the developed nations by the year 2025 (*OECD* 2021). Also, it adds to the complexity in answering the question because will this wave of non-Western innovations prove that all this while there was a Western bias in the field of innovation. However, another reason why there is complexity is that there are numerous challenges, which stem from the characteristics of such emerging economies. These challenges restrict such economies from becoming the new powerhouses of innovation.

THE INNOVATION CHALLENGES OF THE NON-WESTERN CONTEXT

Globalization provides possibilities and pressures for domestic enterprises in developing market economies to innovate and strengthen their competitive position when borders are opened to trade and international investment. Increased competition from and links with international enterprises are at the root of many of these constraints and opportunities. Also, it is important to highlight that not all developing countries are referred to as "emerging." While many countries have increased their GDP, they have yet to develop the prerequisites for long-term growth. Overreliance on commodity exports and a failure to establish adaptable innovation systems that respond to dynamic changes in competitiveness might stymie long-term progress. Stable functional governments with effective state organs to implement policy through well-defined formal institutions, a robust stock of private and public companies, and a threshold level of basic and sophisticated infrastructure are also required for long-term growth. In addition, multi-national enterprise (MNE) innovation has been a vital component of emerging nations' sustained growth and competitive advantage.

However, research in the innovation domain suggests that a "systems" perspective is meant to determine whether the economic and technological transition will succeed or fail (Edquist 1997; Lundvall 1992). Sustainable growth and innovation are shaped by the efficacy and scope of links between a wide range of actors within an economy, as well as between actors in other economies (Hirschman 1958; Lall 1992). We know that innovation is becoming increasingly reliant on cross-border collaboration between (local and foreign) businesses, universities, and scientific institutions, resulting in increased cross-border knowledge flows (Bruneel et al. 2010). But, the innovation in the non-Western context is different and also plagued by some challenges. Broadly there are three challenges:

1. Challenge 1—capability development of local firms;
2. Challenge 2—meeting the underserved needs of lower pyramid markets;
3. Challenge 3—inchoate innovation culture.

Challenge 1: Capability development of local firms

The following challenge is about developing local enterprises' technological competence to catch up (or at the very least avoid falling behind) in global competition. It can be defined as the latecomer catching-up challenge. The fundamental issue is that many small businesses compete on "cheap" resource costs and lack the scale to invest in innovation capability. Although, such local firms lead in pursuing affordability innovation because of their low-cost mindset and having no legacy of high-margin products to defend. A sign of insecurity is observed in the foreign multinationals as they joined—though reluctantly—this kind of innovation to defend their position and to guard against the future challenges by emerging-market firms back in the developed country markets. In the emerging markets the initial phase or the "easy" period of "growth by the accumulation" is passed; the next period of "growth by assimilation and innovation" is going to be difficult, because the landscape of competitive

advantage is in a transition from competing on low resource cost to technological capabilities. But, even at the rate at which the technological frontiers are advancing many developing economies find it difficult to catch up. Adding up to the challenge of developing capabilities to innovate faster and better. It adds to the vows of managing limited resources in such a competitive scenario. However, there are opportunities to capitalize on a variety of latecomer advantages, such as harnessing local knowledge, knowledge spill overs, and novel disruptive technologies.

Challenge 2: Meeting the underserved needs of lower pyramid markets

The bottom of the pyramid (BOP) was described by Professors C. K. Prahalad and Stuart L. Hart in 2002 as the billions of people living on less than $2 per day. Companies who realize the potential for business consumption at the BOP, according to Prahalad and Hart (2002), can develop a new, potentially valuable market that benefits both the business and BOP customers. Also, when a firm innovates to fulfil the demands of BOP customers, it treats them with dignity and respect that was previously reserved for the wealthy. This signifies the development of a particular mindset of the local firms but is also restrictive as it is unable to meet the needs of the lower pyramid markets completely. The major issue has been that even the local firms have tried to just imitate products of the developed market. The products intended for the BOP market can't simply be watered-down versions of developed world products, and old technology can't answer the concerns of BOP consumers. Instead, things must be redesigned to be significantly less expensive while yet meeting the highest criteria of the BOP. Therefore, the local firms have shifted up to the middle of the lower pyramid. Now with a large lower pyramid market (BOP+ middle-lower pyramid) firms are unable to fulfil the social needs of these customers. However, in such under-exploited markets, there lies an opportunity for new market-fit innovations and local firms along with innovative entrepreneurs may have a competitive advantage due to their local knowledge, combinatorial capability, as well as limited network.

Challenge 3: Inchoate innovation culture

Successful innovation, according to Ulijin and Weggeman (2001) and Westwood and Low (2003), requires specific antecedents, with culture being a key determinant. Also, greater tolerance for uncertainty is linked to innovation. This characteristic can cause difficulties in the creation of new ideas in societies that utilize norms to prevent ambiguity. From the cultural aspect, it is researched that individuals who are willing to confront the status quo are frequently associated with innovation (Chaston 2010). Shane (1992) discovered a favorable association between patented inventions and individualism, demonstrating that individualism can help radical innovation. Also, values such as ambition, independence, and personal success are dominant in highly masculine cultures. Given that invention or innovation entails risk, it is plausible to expect that masculine societies are more likely to experience high levels of innovation. However, there seems to be no correlation between any form of economic creativity and masculinity (Shane 1993; Williams and McGuire 2005). As per four dimensions out of six from Hofstede's model of national culture (see Table 15.1), India, China, Brazil, and Mexico, among many other rising markets in Asia and Latin America, all have a high level of power distances as well as medium to high levels of masculinity, uncertainty avoidance, and medium or level of the individualism dimension having implications on the growth of the society from the innovation aspect. According to various studies (Kaasa and Vadi 2010; Khan and Cox 2017; Taylor and Wilson 2012; van Everdingen and Waarts 2003) culture has an impact on innovation levels. Numerous researches in the recent past have tried to study the different positive and negative implications of culture but with respect to emerging nations there exists limited research (Efrat 2014; Shane 1993). Developing markets, on the other hand, suffer in terms of Hofstede's dimensions of power distance, individualism, masculinity, and uncertainty avoidance where each dimension predicts the level of a nation's innovativeness, and because culture can provide a better or worse innovative environment, it has an impact (Kaasa 2016). Such nations must have the following cultural characteristics which they currently lack in order to be more innovative (Efrat 2014; Gallego-Álvarez and Pucheta-Martínez 2021):

Table 15.1 Hofstede's model of national culture

	Power distance	Individualism	Uncertainty avoidance	Masculinity
Emerging/ developing nations				
China	High	Low	Medium	Medium
Mexico	High	Medium	High	High
Brazil	High	Medium	Medium	Medium
India	High	Medium	Low	Medium
Greece	Medium	Medium	High	Medium
Spain	Medium	Medium	High	Low
Developed nations				
Australia	Low	High	Low	High
Canada	Low	High	Low	High
Finland	Low	High	Medium	Low
Germany	Low	High	Medium	High
Japan	Low	Medium	High	High
UK	Low	High	Low	High
USA	Low	High	Low	High

Source: Adapted from Hofstede (2001)

1. Reduce high levels of power distance because it shall improve communication and information between hierarchical levels, allowing for more innovations;
2. Promote persons who are unafraid of generating and implementing ideas in front of a group;
3. Develop settings that encourage collaboration rather than competition in order to gather information and, as a result, produce new ideas;
4. Encourage persons with a more entrepreneurial personality who are more likely to tackle challenges and take risks while putting new ideas into action;
5. Work to cultivate a long-term mindset that will assist people in preparing for a bright future through education.

Although, this measure of knowledge about culture is limited in its comprehensiveness because there are various other factors that need to be considered such as how culture influences the extent of corruption and, as a result, the rate of innovation in countries such as the emerging nations.

However, despite such challenges provided earlier, there are various practices in different emerging economies that have given birth to some game-changing innovations and can be categorized as the "new powerhouses of innovation"—China and India; the "up-and-comers"—Latin American countries like Brazil, Peru, and so on, Mexico, Southeast Asian countries like Indonesia, Thailand, and so on; as well as some "new entrants" largely comprising the African and Middle-Eastern countries and the Global South countries.

THE NON-WESTERN INNOVATORS

The new powerhouses

China

We know the very famous Sichuan opera in China for the art of *bian lian*—or "face-changing." It is about the protagonist of the opera trying to avoid its capture by a quick and surprising change of masks. In the business realm, China's enterprises have undergone a similar change, evolving from copy-cats or backroom producers to the world's leading innovators. In the year 2016, Guangzhou-based Ehang Inc. introduced the Ehang 184, the world's first airborne passenger drone, capable of independently transporting a person for 23 minutes in the air (*EHang* 2022). Also, the very same year till 2018, the Sunway TaihuLight, which was the world's fastest supercomputer, launched at the National Supercomputing Center in Wuxi, China, with 10.65 million CPU cores. It stands at the fourth position as of November 2021 (*TOP500.com* 2022). What is perplexing is that did it happen overnight? What is the success mantra for China? Or what are the elements of China's model of innovation? The answer to many such questions isn't only about the mechanics of politics, the power of finance, the tenacity of determined entrepreneurs, or the brilliance dreamt up in university dorm rooms. It is about some critical stepping stones which laid the foundation of this country.

Back in 1984, President Ronald Reagan ran one of the most successful presidential campaigns in history that promised "Morning in America Again" to make America what it is today, while in the far East China's recovery was happening from the decades of political and economic turmoil where still almost three-quarters of the population was living in extreme poverty (Roser 2017). The state determined who worked where, what each plant produced, and how much everything cost. However, things changed and the first stepping stone of this change was the "party-state focus."

Party-state focus. It all began with China resuming membership in the world bank back in the 1980s led by the Vice-Chairman Deng Xiaoping of the communist party who brought the party-state focus back on the framework for the four modernizations—agriculture, defense, science and technology and manufacturing. The national government released a *Medium- to Long-Term Plan for Science and Technology Development* in 2006 (Kewalramani 2019). By 2020, the declared goal was to foster an inventive society. These plans provide policy direction, specify goals, and assist in capital mobilization, resulting in an incentive structure within which local governments can pursue execution. These local actors have a lot of leeway in terms of designing policies and channeling resources in this process. As a result, provinces and localities frequently establish guiding funds, which bring together public and private investors to assist creative businesses. This is reflected in China's rising R&D spending reaching 2.7864 trillion yuan in 2021 (*National Bureau of Statistics of China* 2022), as well as Chinese technology firms' increased funding. Local governments also provide a variety of incentives to businesses to help them retain talent and liquidity. Additionally, efforts are being made to streamline administrative procedures in order to make conducting business easier. However, this may give an impression of a top-down approach to innovation and growth but what it does is that it provides a strong support structure for innovators and entrepreneurs that want to try new things and progress.

The systems approach. The Chinese rise to becoming an innovation nation lies in the quest for market power which is characterized by a systems approach. The copycat phase not only made the Chinese enterprises thrive but what it essentially did was help build basic engineering and

digital entrepreneurship skills for firms to survive the intense competition growing by copying Western ideas. Now, one may think it to be a cultural argument, but this isn't a cultural debate about the atomic nature of Western thought vs the systemic nature of Eastern thinking. In a competitive and very chaotic economy, this is about recognizing opportunities, smart acquisitions, and developing real-world business models to maximize market share and, thus, power. This can be seen in the evolution of WeChat into a multipurpose app, as well as Meituan's evolution from a discount platform to an all-purpose platform. Increased market power draws more finance, talent, and data, all of which fuel innovation even more. Another facet of this strategy is the development of partnerships between commercial firms and universities. Tsinghua University, for example, collaborates with Tencent while Baidu supports AI research at Peking University. The CEO of SenseTime wrote the country's first AI textbook for high school pupils. Such is the reason why the quest for market power characterized by a systems approach is the holy grail of China's innovative tech companies.

Everything is personal. Intensive political instability, natural disasters, economic suffering, and decentralized governance have all distinguished China's history, contrary to the common assumption of an autocratic, centralized state. Traditional Chinese society was based on the family and was primarily rural. The main cultural belief, Confucianism, emphasized the interdependence of social relationships. Strong, codified laws were less important in business and cultural connections than trust networks and shared commitments. In the lack of institutional backing, Chinese entrepreneurs created personal organizations to support their firms through their social networks. If we look at the success of Chinese entrepreneurs' evidence is visible where we can see that achievement is more likely from persons with vast, open networks, and trust and reputation are more likely in closed networks, according to two network theory principles known as brokerage and closure. It can also be said that China's emergence as a "bottom up" process because of the Chinese network better known as *Guanxi* is much different from the Western networks. Three qualities characterize guanxi relationships: (1) familiarity, closeness, (2) trust, and (3) reciprocal obligation (Burt and Burzynska 2017). It is important to take a look at Guanxi from three perspectives: personal,

corporate, and governmental. On a personal level, the aim is to build mutual trust and benefit that we like and aid those who are similar to us, who boost our ego or make us appear good, who are helpful and bring benefits, or who make us feel like we are a part of something bigger and more meaningful. On a business level, understand the industry and geography to determine the value of guanxi with suppliers, key partners, and customers. It's possible that having a business dinner or drink, which has long been considered a requirement of doing business in China, is no longer necessary. Guanxi's impact may be lessened even further by technological instability and increased competition intensity. At the government level, international firms may never be able to build the same level of trust and relationships with authorities as domestic companies. This can be advantageous in some cases because it frees Western corporations and executives from adhering to the same standards of conduct. Guanxi can be developed, but it must be carefully maintained. However, Guanxi is a fascinating concept with a significant role to play, but it is unlikely to save a company that lacks a solid strategy and effective operations. The lesson here for the West is that for innovation and change to flourish it must recognize that the emergence of crony capitalism in the West may indicate that Guanxi and relationships may be a bigger driver of corporate success than most people believe.

Looking at the rapid growth of China not only amazes many but also suggests that the Chinese didn't agree with the West's philosophy on innovation. As a result, they created their own and are living it each day.

India: The land of jugaad

Jugaad is in effect a particularly Indian philosophy of innovative problem-solving in situations with very limited means. Its practitioners, Jugaadu, are often part of the most socioeconomically challenged group in India and are characterized by being poor to the level of destitution, illiterate or functionally illiterate, uneducated and often either living in rural areas or having a rural background. They are, to put it succinctly, among the poorest of the global poor. At the same time, as detailed in a number of contemporary management books (see, e.g., Birtchnell 2013; Leadbeater

2014; Radjou and Prabhu 2015; Radjou et al. 2012), they have shown a tremendous capacity for developing novel solutions using extremely limited resources, utilizing an improvisational approach to technical development reminiscent of bricolage (see Baker et al. 2003; Garud and Karnoe 2003) and what in entrepreneurship studies has been called effectuation (Sarasvathy 2009).

To put it in the simplest way possible, jugaad is an indigenous knowledge system of innovative problem-solving, normally utilizing very limited and repurposed means and mostly associated with rural India. As a word jugaad is part of normal discourse across the Indian subcontinent and is essentially a colloquial word of Indian origin derived from the dialectal *jugat*. One of the meanings of this is "contrivance," which can be further traced back to its Sanskrit form *yukti*, a term that can mean union, connection, or combination, but which can also mean contrivance, expedient, trick, and so on (Monier-Williams 2005). People who practice jugaad are sometimes referred to as jugaadu, and have in the Western interpretation of their craft been referred to as unlikely innovators, "positive deviants" (Pascale et al. 2010) and, somewhat breathlessly, "modern-day alchemists" (Radjou et al. 2012). In less flowery terms, they could be described as craftsmen working with very limited means, problem-solvers who are forced to make constraints work for them and improvise "satisficing" (Simon 1972) solutions. A key reason for its emergence in India is because it provides for a survival strategy in a situation with widespread scarcity. One example of this, and possibly the origin of the Hindi term, relates to the brain-child of a farmer in a small village of Gohana, Uttar Pradesh, who put together a "modest contraption" for transportation (Mitra 1995) with the help of semi-skilled and semi-literate mechanics, mounting an old engine on a wooden body and using old tires. Soon variations of this improvised car became a mode of mass transportation in the large countryside of north India.

We might also consider the case of Mr Mansukhbhai Jagani, from Mota Devaliya in Amreli. To overcome the increasing difficulty of ploughing the land by the use of animals after the 1994 drought in Saurashtra, he repurposed a bullet motorcycle as a farming implement. In doing so, he managed to create a cheap, multi-utility farm device which has a leveler, a ploughing machine, a weeding device, and a sowing machine, all

in one. The development of this made concentrated use of traditional knowledge regarding how to plough the land, inter-culturing, and the local sowing challenges, and did so with the simple technology at hand. The indigenous knowledge of Mansukhbhai ensured a machine functional for its local deployment and has gone on to earn him considerable praise.

Indian culture is an amalgam of both indigenous cultures and several outside ones, cultures brought by traders, invaders, and colonizers. This has led to a contemporary Indian meta-culture which is highly diverse (Yongnian 2004). Important to note here is that innovation studies, as well as the more popular discourse on the matter, always postulate a positive link between cultural diversity and innovation. Diversity is claimed to increase both the capacity for divergent thinking, a broader input of ideas and insights by way of having multiple perspectives on an issue or problem, and an improved scope for robust critical evaluation, leading to enhanced and more effective decision-making and problem-solving (Bassett-Jones 2005; Hennessey and Amabile 1998; Ozbilgin and Tatli 2008).

Jugaad, this expedient contrivance, has in the literature on it been referred to in numerous ways. It has been called "creative improvisation" (Krishnan 2010) or "making do" (Tully 2011), as well as a mostly "makeshift arrangement" (Gupta 2013). In their popular management book, *Jugaad Innovation: Think Frugal, Be Flexible, Generate Breakthrough Growth*, Radjou et al. (2012) refer to jugaad as "the gutsy art of overcoming harsh constraints by improvising an effective solution using limited resources" (Radjou et al. 2011). It is also termed an "improvisational approach of solving problems of self or others in a creative way, at a low cost, in a short amount of time, and without serious taxonomy or discipline" (Brem and Wolfram 2014, p. 4). There is thus a malleability in the term and its usage. As a concept, it can be "reconfiguring materialities to overcome obstacles and find solutions" (Sekhsaria 2013, p. 1152). Prahalad and Mashelkar (2010, p. 3) describe this same phenomenon as the one of "developing alternatives, improvisations, and make-dos to overcome a lack of resources and solve seemingly insoluble problems." They, however, completely dismiss the term "jugaad" for what they call "Gandhian innovation" (Prahalad and Mashelkar 2010, p. 3) due to an

assumed connotation of low quality. However, Vijay Mahajan of Basix, an Indian social entrepreneur refers to jugaad as the ability "to manage somehow, in spite of lack of resources" (Cappelli et al. 2010, p. 95) and argued that "the spirit of Jugaad has enabled the Indian businessman to survive and get by" (Cappelli et al. 2010, p. 95) in an economy primarily beleaguered by numerous controls and thwarted by lack of larger purchasing power (Cappelli et al. 2010; Mello 2014).

Regardless of the exact definition one prefers, jugaad is a term used for a complex group of creative and innovative behaviors in a situation with severely restricted resources, more specifically rooted in the lived experiences of India, in particular among the rural poor. In this sense, jugaad can be understood as an indigenous knowledge system, a way to use innovation for survival in a situation defined by destitution. This latter aspect is of course not unique to India, which has led to the emergence of a parallel term, namely "frugal innovation" (Brem and Ivens 2013; Fukuda and Watanabe 2011; Mukherjee 2012; Radjou and Prabhu 2013; Rao 2013; Tiwari and Herstatt 2012; Zeschky et al. 2011). Such forms of frugal ingenuity unsurprisingly exist in most if not all societies/communities with a poor populace with highly limited resources. I, however, argue that while jugaad can be understood as a form of frugal innovation, it is also a unique form of a local innovation culture, defined by its sociocultural context and a knowledge system itself—which is why it in India has been afforded a special place and vernacular. This can, for instance, be seen in the social network of the jugaadu, who are not merely innovators that work with restricted resources, but a learning community (Stoll et al. 2006; Wenger 1998). As new forms of jugaad are developed, these are shared and re-deployed, and often adapted to other local conditions.

Rather than merely seeing this as a specific form of cheap innovation, it could better be understood as a locally embedded set of practices and practitioners, one that can only be fully understood in the social and cultural context it emerges. That, however, is not how it has been received in global management thinking, nor the way it's been presented in business literature. While one could argue against our interpretation of jugaad as separate from other forms of frugal innovation—or at least state that many other local forms of frugal innovation might be described in a similar manner—the fact is that innovative thinking has also presented jugaad

as a separate phenomenon, albeit for very different reasons. In popular business books and the likes, jugaad has been used as a specific example, but not necessarily out of care for its cultural embeddedness. Instead, it had been co-opted as a tool for Western management thinking.

The up-and-comers

Latin America and the Caribbean

It's always a gamble when it comes to innovation. It is risky to pursue an idea, a project, or a goal without knowing how it will turn out. Thousands of people in Latin America and the Caribbean have already taken this risk and are dedicated to solving problems of all types, from environmental to financial, but with one key difference: the social impact. The five of the most unique and original ideas from Latin America range from artificial intelligence and sustainable food to apps that translate into sign languages. Firms like dLocal, Mercado Libre, and iFood to name a few are leading the way in improving trade, transactions, and education prospects for Latin America. Some of the most innovative companies are encountering companies from burgeoning start-up hotspots like Buenos Aires, Montevideo, and Lima.

According to pitchbook data, the innovative companies of Latin America raised $14.8 billion in roughly 800 deals in 2021 (Bluestein 2022), making it the world's fastest-growing region for venture capital. There is an overabundance of unicorns, such as Kavak, a Mexican online marketplace for preowned automobiles that grew to a nearly $9 billion valuation because of the COVID-era used-car boom and developed 40 logistics and reconditioning centers in Mexico, Brazil, and Argentina (Bluestein 2022). dLocal, Uruguay's first unicorn that allows cross-border payments for merchants in emerging markets, has established a program with Amazon that allows non-domestic merchants to sell their products through Amazon's online shop in Brazil for the first time. COVID-19 also sparked a surge in food delivery, with successful enterprises finding creative methods to reward their partners. But just like China and India, Latin America has a culture for developing indigenous innovations. There

is *Gambiarra*—the skill of using wacky and clever improvisation to fix what doesn't function or create what you need with what you have similar to the *jugaad* of India. There is also *Gambiologia*, a science that investigates and praises this type of creative improvisation by merging it with electronic-digital tools, which can also be titled technological *Gambiarra* or the science of *Gambiarra.* Just like the German word "Kludge" and the US counterpart "makeshift," *Gambiarra* is close to meaning a workaround. Being a Brazilian cultural practice of solving issues in novel ways at minimal cost and with a lot of spontaneity, it is about giving odd functions to everyday objects that lay the foundation for experimentation and prototyping for many start-up entrepreneurs to build new ventures further.

Over the past 20 years, the rate of innovation was sluggish in the region, however, things are brightening up, and the various innovative start-ups are coming up with various initiatives to bridge the innovation gap. According to the Global innovation index 2021 (*World Intellectual Property Organization* 2021), only Chile, Mexico, Costa Rica, and Brazil are among the top 60 countries in Latin America and the Caribbean. With the exception of Mexico, few economies in this area have continuously improved their rankings over the last decade. Also, in terms of innovation, some of these developing economies are outperforming their peers in terms of their level of development. As per the index, 30 economies have shifted performance groups since 2020. Fifteen economies improved their performance from falling short of expectations to meeting them. The Plurinational states of Bolivia, Chile, Ecuador, Guatemala, Paraguay, and Uruguay make up the majority of these cases (six economies) from Latin America and the Caribbean.

Southeast Asia, East Asia, and Oceania (SEAO)

While China may be the only country in the world's top 30 from Asia, there are others like Thailand, Vietnam, and the Philippines that are not far behind. Southeast Asia, East Asia, and Oceania (SEAO) has had the most dynamic innovation performance over the last decade and is the only region that is closing the gap in comparison to other regions across

the world. As part of SEAO, South Korea is the most successful. As per the Global innovation index 2021 (*World Intellectual Property Organization* 2021), Thailand and Vietnam, as well as the Philippines, rank in the top 30 countries in the world in terms of market sophistication. They have also risen to the top of important innovation metrics. Thailand, for example, is the world leader in business-funded R&D, while Vietnam and the Philippines lead the world in high-tech exports. In the last decade, these and other Asia's middle-income economies have made enormous economic transformations and experienced rapid growth. However, many businesses still lack the ability to innovate, which is vital for boosting productivity, economic development, and sustainable development, all of which are critical for their long-term success. Several issues have hampered innovations in the region, and the impact of the extended Covid-19 outbreak has exacerbated the problem. These problems include a lack of knowledge about recent technologies, uncertainty about the rewards of innovative projects, weak business capacities, insufficient personnel skills, and limited funding alternatives. In addition, now, post the pandemic of Covid-19, climate change, and the rapidly changing global environment have increased the necessity for governments to support greater innovation through improved policies in the region. Despite being home to several high-profile innovators specifically in the field of information and communication technology (ICT) and innovative companies like SCG Chemicals, which plans to open Thailand's first demonstration plant for post-consumer plastic management and renewable feedstocks for its downstream petrochemical facilities at its petrochemical site in Rayong. As well as advancing green building by employing drones to assess construction sites for smarter project planning, Thailand only spends 1% of its GDP and ranks below that mark in comparison to many other developing economies in the region. One of the reasons attributed to this could be that most of the developing economies operate far from the "technological frontier," therefore resulting in the region falling behind the Western developed economies in the scope and intensity with which new technology is used. To maintain economic performance, technological advancements are boosting the need to migrate to new and better ways of production.

Thus, a broad-based innovation model is required, one that encourages a large number of businesses to adopt new technology while simultaneously allowing more sophisticated businesses to pursue cutting-edge projects. Also, such countries must reorient policy to foster the diffusion of existing technologies, not simply creation and production, but also support for service-sector innovation and increasing enterprises' innovation capacities. Also, to strengthen ties between national research institutions and stimulate innovation growth in the region, more investments in worker skills are needed, as are new approaches to finance innovation projects. In addition, through its new "TechCul" program, UNESCO Bangkok has opted to bring digital technology into the arena of Asia-Pacific cultural and creative sectors. Specifically, the goal is to encourage collaboration among IT professionals, culture sector executives, entrepreneurs, and creative start-up founders in order to "brainstorm" novel digital solutions and viable business models in the culture sector, therefore tackling many of the sector's current issues. One such example is a start-up called the Roots Routes, which enables enthusiastic explorers with a wealth of knowledge on a given area via an interactive interface that encourages cultural immersion with local and indigenous people as well as lesser-known points of interest. This allows visitors to access a condensed but potentially large web of cultural exploration. Such start-ups provide technology-based companies access to the local innovation ecosystem as well.

Certain key initiatives in the region look promising as they will enable the rate of innovation and development to prosper. According to a World Bank survey of academics in Thailand, the Philippines, Malaysia, and Vietnam, their governments have improved national research capacity, although the overall impact is unknown. Malaysia has implemented a National Policy on Science, Technology & Innovation (NPSTI) for the years 2021 to 2030 in order to make sure that the country becomes a high-tech nation by 2030. This includes establishing a national economic framework centered on strategic initiatives to develop technology-based industries. The government and business community in Vietnam is fully aware of the importance of innovation and has launched a number of strategic research initiatives; nonetheless, one issue the country faces is about striking a balance between labor-intensive production and the

demands of the green economy. The absence of high-level skills and technological competency has hindered Vietnam's ability to expedite its push toward green economy goals.

Therefore, for growth to happen, policymakers, academics, and tech-based enterprises working together must assist each country to relate NPSTI to socioeconomic development. Incorporating innovation into education, particularly higher education, will aid in the implementation of the plans.

The new entrants

Africa and the Middle East

According to a new World Bank analysis (Cusolito et al. 2022), full adoption of digital technologies in nations across the Middle East and North Africa (MENA) would reap enormous socioeconomic advantages, totaling hundreds of billions of dollars each year and a much-needed rise in new jobs. Such claims are not hollow, there have been indications in the current year that various nations in the MENA region are progressing in the innovation race. FirstCheck Africa, a woman-led pre-seed fund located in Nigeria, is betting large and "ridiculously early" on African women-led firms (*FirstCheck Africa* 2022). It has already made investments in a number of creative and locally significant portfolio firms, including FoondaMate (which enables students with restricted internet access to learn online), Healthtracka (which allows users to obtain diagnostic tests from home), Tushop (which analyses grocery demand in Kenya on a community level in order to facilitate delivery and lower pricing), and in South Africa, Zoie Health offers home consultations as well as the delivery of contraception and health testing kits.

Sote (Swahili for "all of us") a Kenyan firm is utilizing software to drastically improve Africa's shipping business. It is Africa's first registered logistics company, employing software to assist importers and exporters on the continent in moving freight over rivers and navigating customs and other trade restrictions. The company aspires to accomplish for Africa what Flexport, which has secured $2.2 billion in funding, is doing for the rest of the world (Grothaus 2022).

Similarly, to tackle a major social issue, a Nigerian company is challenging the ride-hailing business through its bus subscription services. Shuttlers, which has spent most of its six-year tenure bootstrapping is helping people reserve a seat for a trip along a predetermined route in advance. It's less priced than ride-hailing services, has no surge pricing, and offers a subscription service. Companies can cover some or all of their employees' journeys and even hire buses directly through B2B options.

Moving over to the Middle East region, we see the region capitalizing on is commitment to innovation, as revealed in one of the latest global innovation surveys conducted by BCG in 2020 (Ringel et al. 2020). Guided by national visions and ICT goals, this region's public and commercial sectors have made great progress in building a stable digital infrastructure that fosters innovation and creates new economic opportunities. The public institutions have also established policies and prioritized digitalization in their goals. The importance of innovation is only growing as the region's economies seek to diversify away from their historical reliance on oil and gas, and as the various industries such as energy and many others ride the digital wave in order to adapt to global market trends. Various start-ups like Jamalon, situated in Amman, is Middle East's largest online bookseller. Readers in the region frequently face difficulties obtaining books, and many are obliged to attend yearly book fairs to buy them directly from publishers. Aside from making it easier for Middle Easterners to find Arab novels they wish to read, the company launched a print-on-demand service for Arabic authors who are unable to find a publisher. Similar is Anghami the Middle East and North Africa's largest music streaming platform. The service contains songs from major Arabic labels such as Platinum Records, Mazzika, and Melody, as well as foreign hits. Its repertoire contains over 30 million songs that are available to over 70 million subscribers. In a location where there are few concerts, the company also serves as a social network, exploring ways for fans to share music with one another and discover musicians as a community. Also, there is Careem a regional internet platform for the Middle East. Careem, a pioneer in the region's ride-hailing economy, is expanding its platform's offerings to encompass public transportation, deliveries, and payments in order to become the region's everyday SuperApp. Careem's purpose is to

simplify and improve people's lives while also creating an enduring organization that inspires. Careem was founded in July 2012 and was later acquired by Uber in 2020. Careem works in over 100 locations across 14 countries, creating over one million job possibilities in the region. The region is now growing to be the home of some of the most passionate and dedicated innovators with R&D expenditures rising as the Middle Eastern executives feel they are adhering to global best practices and rate the maturity of their own firms' innovation as high according to the BCG survey.

THE INNOVATIVE LANDSCAPE AND THE WAY FORWARD

Economic growth is endogenous to innovation. Purposive activity generates new processes and products, as recently recognized in the development of endogenous growth theories in economics and, increasingly, in politics. They represent the economic and social circumstances under which innovations are conceived, developed, and made available to users. While technologies have inherent properties, technological change is certainly biased (Kaldor 1961). Chris Freeman emphasized that innovations result from deliberate investments in knowledge production and technological growth, which entailed putting directionality on technological advancement (Freeman 1992). Looking at the emerging nations in contrast to the developed world, it is easy to debate that more than deliberate investments, it is the need for change or to be part of the change which drives innovation.

It can be observed that the biggest game-changer for many economies is digitalization. It is responsible for the next innovation revolution in developing economies. Novel technologies are being used to achieve large-scale economic development across various sectors. East Asia's scientific capacity, technology capital, and skilled labor have all been used by Japan, the Republic of Korea, and China to completely integrate into the global economy as crucial and significant contributors to IT global value chains (West 2018).

Looking at the trend post-pandemic, the pace of global innovation is expected to pick up significantly over the next four years. A larger source of new thinking will most likely come from telecommunications and industrial systems firms, followed by automobiles. In today's fast-paced world of modern innovation, innovators require tools and data to assist them in better comprehending the ecosystem and its influences. Also, an innovative economy necessitates not only R&D investment but also a workforce capable of doing that R&D and leveraging the knowledge generated by it. According to the OECD, China's overall headcount of full-time researchers has quickly expanded to reduce the gap in the fields of science and technology, plus doctoral degrees, despite the fact that the USA continues to produce the most.

The majority of rising economies are challenged with two structural issues. The first is the predominance of a vast informal sector; the second is the degradation of the potential for a "flying goose policy" akin to China's export success. However, the crisis created by the two issues presents both a challenge and an opportunity, as well as three distinct groups of innovative prospects for these developing economies. These include the relatively untapped innovative potential of the informal sector, the opportunities created by increased regional and South-South commerce, and the revolutionary potential of the underlying technology propelling the new techno-economic model, ICTs.

CRITIQUING THE WESTERN BIAS IN INNOVATION THINKING

Henry Ford developed mass production in 1908, which laid down for almost seven decades the two important characteristics that helped form the economic and social structure of individual economies and the global economy. First is the commitment toward standardization of both process and product provisioning component interchangeability in order to reap the benefits of scaling. Second, in order for an innovation to be successful, consumers must have the purchasing power to consume the product of the assembly line. The impact of Ford's idea extended beyond

the assembly line. It was accompanied by substantial structural changes in the organization of society as a whole, as well as the expansion of mass consumption. Two events, World War II and the Great Depression marked the diffusion of the mass production principles as well as the potential benefits of scale. Not only in the West, but even in Europe the rise of the welfare state provided another impetus to foster mass consumption. What started with the establishment of mass production in a single productive sector firm resulted in profound and far-reaching transformations in economic, social, and political organization. It resulted in historically unprecedented rates of economic growth, not just in USA and Europe, but throughout much of the world economy.

However, after the oil crisis, the post-1970 rate of growth declined because the performance gains from the augmentation of the "mass production paradigm" slowed due to the combined effects of the law of diminishing productivity growth within the productive sector, increasing "tertiarization" of the economic model (Kaplinsky and Kraemer-Mbula 2022), and a number of major limitations in the "mass production sociotechnical framework," such as the development of large and influential trade unions. Not unexpectedly, when productivity rates fell, so did the rate of investment, which was a critical engine of long-term productivity development (Kaplinsky 2021). So, the growing size of mass production, and also the growing need for substantial investments in knowledge creation and dissemination, prompted the enterprises to expand their operations beyond their local economy, to not just the other developed nations, but also to the developing economies. Originally, international investments in low-income economies were aimed at extracting natural resources and supplying (limited) domestic consumption. However, post-mid-1970s, such investments took on a new form. The new form entailed taking advantage of inexpensive labor in developing economies. Some of the developing nations (being recently decolonized) not only had almost inexhaustible labor supply but as a result of governmental expenditures, a growing share of this labor force was educated and trained as well. In addition, the global development of neoliberal policies facilitated transnational capital's ability to exploit this low-cost labor force. Such global trade liberalization, first in 1950 with the GATT and then in the 1990s WTO being a voluntary act in the developed world was made

mandatory for the developing nations. Irrespective of their liking many nations such as Taiwan, Hong Kong, Korea, and Singapore to name a few shifted to the new outward orientation resulting in fresh investments now serving the requirements of international rather than domestic consumers. The abundance of inexpensive and more skilled workers in developing economies, as well as the quick and deliberate liberalization of the trade regime, were aided by innovations across sectors impacting the decline of cost to control and organize global supply chains leading to an increase in Foreign Direct Investments (FDI) in the developing nations. Not only did the FDI flow increase beyond the GDP growth of some of these developing nations but it became disproportionate to a very large extent (*UNCTAD* 2017). This led to the vertical specialization of production (Feenstra 1998; Hummels et al. 2001) and the establishment of global value chains (GVCs) that led to a significant shift in global trade, thus resulting in the reversal of falling productivity post-1970s as well as the reversal of declining profitability. Similarly, other factors such as transfer pricing in sectors such as retail and knowledge-intensive services also help boost the profitability of the enterprises in the West.

The foundation of bias was set and this led to three primary effects on the developing world. First, the GVCs were extended and deepened resulting in higher and better profitability for the developed economies. Second, as a result of GVC outsourcing, trade performance became increasingly imbalanced with surplus production in export-oriented countries of Asia and Africa. Finally, labor displacement, as well as the increase in poverty and unemployment, resulted in the degeneration of industrial regions to simply rust-belt areas. However, developing nations like China and India capitalized on the evolving geography of transnational production and trade, reflecting the "centrifugalization" of production resulting from the growing fragmentation of production and growth of GVCs (Kaplinsky and Kraemer-Mbula 2022). Thus, China, India, as well as many North and South Eastern Asian economies share of global trade in manufacturing increased due to their increasing technological intensity. Thus, leading to the industrial dynamism of the countries to rise. In other words, shaping opportunities in a fragmented world of production.

It is important to note that in the context of the post-World War II Golden Age, many great things came to an end and by the millennium's turn, the functioning and architecture of the global system were fraying. Many of the fundamental conflicts of the emerging "mass production paradigm" were exacerbated as financialization progressed. It both created and mirrored the rise of short-termism in business plans, which dampened protracted and profitable investment as well as spending on innovation. The crash of the high-tech stock exchange in 1998/1999 and further the global financial crisis of 2008 burst the "bubble economy" raising significant questions about the durability of the mass production framework.

THE TURNING POINT

Post the financial crisis, the turning point came when the rapid expansion of ICTs coincided with the growth of these fundamental tensions in the "mass production paradigm." The question to ask is where does this leave the developing world, particularly those outside of the fast-expanding East Asian region? The answer lies in the three interlinked traits of what is believed to have substantial implications for the innovation trajectories, also reemphasizing Freeman's key areas of concern (Kaplinsky and Kraemer-Mbula 2022).

First, is the incidence of marginalization, as well as the size and function of the informal sector. Informality has both positive and negative aspects. On the positive side, it has the potential to channel entrepreneurial activity while also providing employment and income to individuals who have been excluded from the formal sector (Williams and Nadin 2010). The relationship between the informal and formal sectors is complicated to a large extent, however, some even described it as exploitative (Harriss 1990) and others as symbiotic (Meagher 2013). Usually, informal players source inputs and use trash/waste from the formal sector in certain operations, while also supplying some inputs and low-wage commodities that help formal sector firms succeed (Hande 2019). But there is also a notion to view the informal sector as a

"homogeneous residual category" (Kaplinsky and Kraemer-Mbula 2022). Due to the low barriers of entry and exit, many enterprises turn out to be "survivalist" in nature, with little dynamism, reflecting on the negative aspect of informality. However, such a portrayal in many Western texts, for example, across scholarly literature is incorrect and refuses to acknowledge the current and potential innovative dynamism of many informal enterprises (Kaplinsky and Kraemer-Mbula 2022). Typically, the informal enterprises work with numerous constraints related to both the input and the product market, thus pushing them to innovate (as seen in some of the practices described earlier across Latin America, India, and others) in order to survive. Market-pulled innovations in processes and products are spurred by consumers who are of low income and devoid of the purchasing power to afford produce of the formal sector. In addition, the innovations are largely incremental in nature, there are few ties to the formal systems of innovation, and there is no formal R&D practice, yet such characterization led to the growth of economies like that of African nations, Latin American as well as some Asian nations in becoming suppliers along the supply chain for specialized components. In simple words, becoming the world's factories.

Second, reflects a change in trade from global to regional markets, as well as from North-South to South-South commerce. As per the World Bank (*The World Bank* 2022), intra-regional trade has risen faster than inter-regional trade in recent years. The percentage of intra-regional commerce in developing and emerging markets barely increased between the 1960s and 2000 (24% and 27%, respectively) was dramatically hitting 42% in 2019. Some of the reasons for such a dramatic increase are, *one*, exports resulting from the growth of "regional value chains" (RVCs), with a large number of inputs sourced from various other neighboring developing economies. *Two*, the sharp decline in developed economies has contrasted with fast growth in many underdeveloped economies. China, becoming the largest exporter led to the growth of other neighboring economies as many components are sourced from neighbors to support the demand of developed nations' high-income consumers. Thus, the overall growth of South-South trade in well-accepted products, sustainable and appropriate technology as well as developments of new inclusive and innovative trajectories.

Third, is the maturation of ICT, the new foundational technology that succeeds in mass production and offers numerous potentials to support more sustainable and equitable growth as well as innovation trajectories as seen by the mushrooming of the entrepreneurial ecosystems across the developing world. Numerous opportunities have been created due to the rapid diffusion of ICT as well as by participation in the GVCs by many developing economies. One such example is India which developed a world frontier software sector with over a billion dollars of export of IT software and services. Not only this has opened the doors for opportunities in the formal sector but a growing number of ICT-related innovations have begun to transform possibilities for the informal sector and marginalized communities. The rapid spread of mobile phones was the first key driver of these new technologies. M-Pesa is an excellent example of such development. Vodafone and Safaricom, Kenya's largest mobile network operator, introduced this mobile phone-based money transfer, payments, and micro-financing business in 2007. It has now grown to Tanzania, Mozambique, the Democratic Republic of the Congo, Lesotho, Ghana, Egypt, Afghanistan, and South Africa rapidly. Such an advent of ICTs like a general-purpose technology not only unlocks a plethora of new recombination and application possibilities, resulting in a self-reinforcing dynamic of rapid technological evolution but also leads to the development of dynamic SMEs, digital start-ups, and also various players such as fabrication labs, maker spaces, and tech hubs. One such example is Ushahidi, an open-source software platform, currently Africa's technological leader. It began in a co-creation space, offering a mobile platform for reporting on election monitoring and crisis response, and has since expanded to nine other nations.

Thus, the rise of the informal sector, the shift of trade from north-south to south-south, as well as various examples of ICT applications in low- and middle-income nations mirror historical patterns and demonstrate the transformational potential of the new foundational technology. This demonstrates how the innovation agendas of various emerging nations have been affected. In many cases, they prove the possibility for "leapfrogging," as Soete (1985) defines it.

Finally, in this essay, the "elephant in the room" is one that plagues innovation studies. It is important to check and develop measures to inculcate the freedom of many emerging economies to innovate not for the developed world but with the developed world for the world.

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16

Innovation, AI, and Materiality: Learning from the Arts

Astrid Huopalainen

INTRODUCTION

Innovation is a popular societal discourse, even *ideology* (Rehn 2017), with almost exclusively positive meanings attributed to it. Innovation is also a contextual and historical social construction, continuously being (re)produced as a phenomenon (Segercrantz et al. 2017) across specific settings. In this chapter, I argue for developing our understanding of innovation through learning from the arts. Specifically, I argue that the creative industries, to which the diverse fields of the arts belong, offer important insights to *how* individuals innovate in close conjunction with materiality in experimental and formative ways (Gherardi and Perrotta 2013), for example, by maneuvering the tensions of novelty and familiarity (Islam et al. 2016; Jones et al. 2016) or through interacting with the material tools they happen to have close at hand (Leclair 2022). In the present chapter, I focus on Finland-based new media artists who co-create

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with Artificial Intelligence (AI), a specific form of technology. I ask what kind of meanings and significance the artists attribute to AI, here understood as self-learning algorithms (i.e., codes) transforming the creative expression (Birtchnell and Elliott 2018). How do the artists relate to AI, a new kind of material agent potentially *changing* their practices of artmaking? Moreover, how do the artists relate to other significant *materialities*, like human bodies and other tools, in developing artistic innovations in mundane and practical terms?

Theoretically, I understand materiality as a (relative) property of *all* organizational phenomena (Cooren 2020, emphasis in original), innovation included. I refer to materiality as agential (human) bodies and (nonhuman) objects fundamentally shaping and giving form to the innovation process. Despite giving existence and character to artworks, the *activity* of materiality has often been fairly neglected in the scholarly literature. Whereas plenty has been written on the complex innovation journey (Cunha et al. 2015; Van de Ven et al. 1999), we know less about the significance of materiality in this process (for notable exceptions, see Duff and Sumartojo 2017; Islam et al. 2016; Jones et al. 2016; Poutanen and Kovalainen 2018). This chapter develops our understanding of the artistic innovation process as non-linear, experimental forming (Gherardi and Perrotta 2013) that intertwines humans, learning algorithms, artifacts, tools, and other materialities. From this perspective, innovation is not a rational, discursive, or disembodied process that unfolds in a stable environment. Rather, innovation emerges collectively and formatively in assemblages of humans, artifacts, and algorithms, where relationships between different materialities are ongoingly established (DeLanda 2006; Duff and Sumartojo 2017).

The present chapter draws upon insights from an ongoing study of Finland-based new media artists. This study combines spatial analysis with creativity process analysis in the research project "Co-creativity in the Era of Artificial Intelligence" conducted in 2020–2023. In this project, we, researchers in human geography and organization studies, have studied the processes of artistic creation among new media artists working with AI, machine learning, and digital media. Artists representing visual arts, electronic music, and performing arts have also been included in the study. The notion of AI is in itself tricky. With AI, I refer to evolving,

learning algorithms that have particular agencies. AI is a technology that can learn autonomously from given data (Birtchnell and Elliott 2018).

Empirically, I build on eight in-depth semi-structured interviews with four of the studied AI-artists, who all work in an intriguing "culture of technological experimentation" (Barker 2013, p. 282) and changing arts practices. The interviews were conducted over Zoom in 2020–2021 during the Covid-19 pandemic. Besides conducting interviews, my aim was also to closely observe the artists' actual work practices through ethnographic methods, which Covid-19 momentarily prevented me from doing. Therefore, this chapter builds solely upon interview materials depicting relations among materiality and meaning making in the artistic innovation process, as articulated by the human artists. What is intriguing is *how* the artists talk about the roles and agency of AI and other significant materialities, as well as how they describe co-creating and innovating with AI in mundane terms.

The chapter is organized as follows. First, I discuss innovation in the context of the arts with the help of practice-based theorizing and materiality-centered theoretical approaches. Second, I briefly discuss the methodological considerations before turning to the analysis. I conduct an analysis showing how artists themselves attribute varied meanings to AI and materiality in their work. Based upon the artists' verbal accounts of their processual work, I also show how innovation emerges in practical and non-linear terms through the dynamics between objects and human bodies. Finally, I conclude by discussing why the materiality of the innovation process merits fuller scholarly attention, also in ways that go beyond the artistic context.

APPROACHING ARTISTIC INNOVATION PROCESSES

On innovation in the context of the arts

Much like the widely celebrated, loved, and hated notion of creativity, innovation is an unruly and ubiquitous process that comes in multiple forms (Rehn 2017, 2019, 2020). "It is not always easy to say exactly what

innovation is," Rehn (2020, p. 212) aptly reminds us, although the mainstream innovation literature generally views innovation in an uncritically positive light as something value-generating, disturbingly linear, and societally important. In popular parlance, innovation is often understood as "the successful realization of a creative idea that is accepted in a use-context and/or system of exchange" (Rehn 2020, p. 214). In other words, innovations are said to follow from creativity (Barker 2013; Rehn 2009, 2020), the ability to think and act freely without boundaries. Although innovation is said to require creativity, creativity does not necessary lead to innovation (Rehn 2017).

What kind of material settings provide the context for and the properties of artistic innovating? As a disruptive, emerging, and experimental mode of expression and form of cultural expression, art challenges habitual ways of being, thinking, and feeling (Carter 2004; Kontturi 2018). Art infuses creative potential *ex nihilo* (Barker 2013), and innovation in creative products, like artistic outcomes, often resides in their physical materials, symbolic dimensions, and aesthetic properties (Jones et al. 2016). In the artistic context, innovations often (but not exclusively) materialize in the form of physical artifacts permeated with affect and symbolic meanings. By bringing difference, disruption of *status quo* and aesthetic experiences to the world, art can be radically innovative. For example, art provokes and breaks with existing structures and conventions (Jones et al. 2016) by challenging existing art institutions (Chipp 1968) or prevalent aesthetic idea(l)s, by employing novel techniques and tools, like AI-artists currently do, and by redefining what is socially accepted as art. Also, by raising societal critique, the artistic context of creation and innovation can be seen as somewhat "different" to the usual pro-growth, pro-capitalist, and pro-firm framework of innovation that so much existing research has focused on.

The capabilities to think freely and break norms are widely accepted to be at the heart of artistic practice (Hautala and Nordström 2019). Meanwhile, the "use-context" of artistic innovation is largely shaped by a *collective* of critics, curators, institutions, museums, collectors, and consumers (Becker 1982). Also, the value of art is subjectively experienced and interpreted, with many agents, institutions, and moving materialities participating in the constant production and *becoming* of art. In this

ongoing negotiation, innovation is rarely an act of an individual genius. Rather, the innovation process is collective and contextual. However, seeking to define the process in which artistic innovation unfolds or discovery and creation come about in practice is not easy.

What do we know about the production of innovations in the artistic context, then? Gherardi's (2019) research on practices as formative activities guided by taste, experience, and experimentation as play is highly relevant to discuss here. As a spatial, form-taking process, artmaking activates the artists' whole sensory body. Central to this process is the bricolage-like doing by inventing the way of doing (Gherardi and Perrotta 2013), linking meaning with various materials, objects, and tools in the material world. Studying creative practices in craftmanship, Gherardi and Perrotta (2013) found that innovation is a hybridization and continuous forming of meaning and materiality: an improvising, translating process that proceeds by trials and errors, change, repetition, making connections, and constant refinement. In this process, also non-human materialities are active constituents of innovative practice (Duff and Sumartojo 2017). This is the view to artistic innovation to which I attach the present chapter.

In their study of innovation in perfume-making, Islam et al. (2016) showed how material affordances, like olfactory stimuli, play a significant role in driving innovation. More broadly, artists of the varied kind rely upon their senses, creative faculty, manual knowing-how, everyday doings, and making skills to realize innovative ideas. Creating art requires mobilizing creative ideas, people, and various materialities and resources, searching for ideas in new and unexpected places, and practicing everyday mobilities between various locations and workplaces (Amabile 1996; Hautala and Jauhiainen 2019; Hautala and Nordström 2019; Pereira 2007; Runco and Jaeger 2012). From this perspective, artistic innovation is manifested in the everyday processes of creation with work phases that feel dull, phases when creation (momentarily) stops, and phases that the individual artist experiences as creative and exciting. These ever-changing processes are closely bound with experimenting with materiality. Finally, despite the "messiness," relationality, and collective nature of artmaking, the work of artists is often romanticized and *individualized*, both in academic literature and in popular media. Arguably, the common

perception of the individual human artist or innovator "mastering" the innovation process from start to finish deserves to be nuanced. This could be done by taking the labor, agency, and movement of material objects, forces, and entities into fuller consideration. Next, I discuss materiality in artmaking, illustrating how materiality-centered approaches provide valuable insights for innovation studies, as well.

Materiality in artistic practice: Insights for innovation studies

Material agency (Pickering 1995) plays a key role in organizational processes, artistic innovation included. Of course, the idea that matter, bodies, and objects play a key role in innovation processes, like artmaking, is not new. We know from existing literature that matter matters "as an active partner" (Gherardi and Perrotta 2013, p. 228) in the everyday work of artists. Since Orlikowski's (2007) defining essay on sociomaterial practices, a material turn has been completed in organization studies (Cooren 2020). Today, there is a rich literature on the *agencement* of materials, bodies, and ideas (Gherardi and Perrotta 2013) in organizing. In innovation studies, we might also notice how materiality is gaining increasing scholarly attention (e.g., Duff and Sumartojo 2017; Islam et al. 2016).

Materiality is both human and non-human, organic and inorganic, tangible and in-tangible. In recent years, a growing strand of scholarship orienting to process ontology and the active roles of matter has emerged. This strand that has been inspired by Haraway's cyborg manifesto is called *new materialism*. "We are vital materiality and we are surrounded by it," Jane Bennett (2010, p. 14) writes in her highly influential book *Vibrant Matter: A Political Ecology of Things*. Materiality-centered approaches emphasize the emerging relationship between the human artist and other vital materialities of the moving, expressive, and doing kind (see also Coole and Frost 2010, pp. 8–9). Beyond the creativity capabilities and actions of the human artist, various non-human or more-than-human *agents* contribute to artistic inventions in a pivotal manner. Duff and Sumartojo (2017, p. 420) exemplify this idea in the following way:

> a painting is as much a force of canvas, timber, brushes, light and space, and the hue, viscosity, temperature, saturation and intensity of paint as it is a subjective function of the artist's desire or intention.

Jones et al. (2016, p. 755) further suggest that unravelling and "specifying the role of agency, with emphasis on the trajectories of different actors' positions," are important in order for us to more dynamically understand innovation in creative industries. Materiality-centered theoretical approaches help us to further question and nuance the dominant anthropocentric stance of humans "mastering" the innovation process from idea to "full-blown innovation" (Rehn 2020, p. 214).

This connects with Jane Bennett's discussion (2010, p. 14) about *thing-power*, a discussion which encourages us to stop treating materiality as mute, dead, and passive, as this risks ignoring "the lively powers of material formations." Taken together, new materialist approaches (e.g., Bennett 2010; Fox and Alldred 2017; Kontturi 2018) stress the vitality, liveliness, movement, connections, and distributed agencies of multiple non-human materialities in the sensing and making of art.

METHODS AND EMPIRICAL MATERIAL

The empirical material describes the artists' creation processes and their innovative characteristics in detail. All the studied Finland-based artists have used or currently use AI-based methods, different data, programs, algorithms, and codes in their artworks. Their works have been presented publicly in art galleries and (inter)national art exhibitions. I build upon eight semi-structured interviews with one female and three male artists. This means that altogether two interviews were conducted per interviewee at different phases of the artists' creative work. During the interviews that lasted between 45 minutes and 90 minutes, the artists' creative processes, work and co-creation together with AI, space, and mobility during Covid-19, were discussed. I refer to the artists with the following pseudonyms: Aiden, Ben, Michael, and Sara. Also, I acknowledge that interview materials do not "capture" the nuanced, moving and dynamic real-life processes of artmaking like in-depth ethnographic observations

of different practices do. Instead, interview materials highlight the artists' subjective experiences and opinions about these practices. Relatedly, I faced the challenge of putting into words the artists' embodied knowing-how of their creative practices (Gherardi 2019).

After closely reading the empirical materials, I selected themes and quotes which seemed to be the most significant concerning my research focus. Through further reflection in relation to the materials and theory, these aspects were reflexively developed further. I deepened the analysis by moving between the theory and research materials, searching for interesting connections in-between them. In this limited space, it is impossible to elaborate on all significant material actors and forces that participated in the creation of artworks. In what follows, I focus on how the artists describe relating to AI. Second, I discuss the innovative processes of AI-art "in the making" from the perspective of the artists, including how the artists describe the dynamic and lively relationship between AI, objects, and bodies.

ANALYSIS

Artists relating to AI: From "an interesting element" and "a fancier brush" to a "companion-like extension"

How do the studied Finland-based artists who utilize AI-based methods in their artworks articulate their relationship with AI? How do they describe the roles and agency of AI to begin with? For most of the studied artists, AI seems to represent a playful tool or instrument that they enjoy experimenting with, as working with AI may liberate the artists to find new art worlds and novel opportunities. Interestingly, this rarely means that the artists view AI in itself as radically creative or even think that AI has agential capabilities, although technically speaking, AI is capable of producing novel outputs from input data through an autonomous learning process. Given that humans have programmed the algorithms in the first place, the artists often reduced AI to an instrument that merely conveys the artist's aesthetic intentions, without in itself affecting these

intentions (cf. Duff and Sumartojo 2017) or changing the artistic practice. Ben articulates the following viewpoint, where he conceptualizes AI as a result of human creative capabilities, merely serving the human creator:

> I think… AI is always going to be a tool for creativity. If you think of a creative AI, creativity has to be programmed into it. So, it has to be taught. So, the creativity again is not originated in the AI but in the person or the artist or the engineer that created it or created the programs, or created the algorithm, or the rules.

To Ben, AI is "a very interesting element to play with," which also, to some extent, indicates human control over the tool. In this case, the human artist initiates the play or the artistic innovation process. In the overall process, Ben considers "the role of the AI so small compared to the artist or the programmer or the comprehension of the artists and the programmers." Although he treats AI as a less significant agent compared to human agency in the process, his approach to artmaking is inherently collective. Sara, then, talks about AI in fairly similar terms. She does not regard AI as an actor with agency, let alone a creative agent:

> Artificial intelligence builds on material that is human-chosen, and the ability to understand recurrences in information. I don't really see how… Although there will be surprises for humans when generative algorithms combine in a new way, there is no intentionality involved in itself. AI is no actor making intentional combinations or choices, from images or anything else. By no means do I believe that AI is even close to creativity yet.

Although AI has evolving agencies due to its self-learning capabilities, Sara considers AI primarily as an artistic *tool* or potentiality that she wants to learn more about. She emphasizes how learning to work with algorithms and programming are requisite skills for producing interesting artworks. AI is a creative potentiality to be actualized in surprising ways. Sara talks about learning to develop her tool "at the level of the brush," which reproduces a refined and rather specific understanding of AI, yet

treats the overall innovation process, involving humans and non-humans, as human-led:

> I somehow want to develop these tools of art, and get to the level of the brush to really influence and affect what that brush is like. I view it [AI] as such a tool. Perhaps for me, it has provided an opportunity to study humanity and human perception in new ways. I'd also somehow describe it as a relationship of unravelling: when you develop those brushes yourself, you have to unravel what AI is…

Compared to both Sara and Ben, who emphasize artmaking with AI as human-led experimentation and unravelling, Aiden articulates a somewhat different approach to AI. For him, AI is not merely a passive tool in the hands of humans. Rather, Aiden explains how AI and human artist combine in his approach to artmaking, so that it is difficult to separate the two agents from each other. To him, human creativity also "spills over" AI in a more entangled process, compared to the previous articulations:

> I'd see that artificial intelligence and human combine, that they are not separated from each other, at least at this point. Humans are capable of creativity, so therefore I'd say that creativity spills over to the artificial intelligence, be it in their intended use or operation. So yeah, AI can be creative.

Different to Aiden, Michael, then, explains how he deliberately seeks to separate the human artist from other non-human agents in his artistic process. He views AI primarily as a support function for the human creator. Again, this reproduces a rather traditional view of artistic innovation as a process controlled by the human artist. Also, this view contrasts with Aiden's opinion about AI as a partner or "companion-like extension" in an entwined process. To Michael, AI is a more powerful and sophisticated material (tool) than many other tools, but it is still a tool that the human artist masters. He calls AI a "fancier brush" that works in a certain way:

> Like the fact that it [the tool] can do so many tasks that artists weren't used to doing make it [the tool] a difference support for creation. But also, it kind of helps me separate this idea that… even though the tools are getting more sophisticated and more powerful, they are still tools. It's still more of a fancy brush, you know… that's what I think I'm trying to say.

This section has illustrated different approaches to AI among the studied artists, ranging from AI as an instrument, a "fancier brush" to a partner in an assemblage, where AI is difficult to separate from the human innovator. Next, I turn to the discussing artistic innovation process from the artists' point of view.

Foregrounding the relationality between material things and human bodies in artistic innovation processes

Many agents, institutions, and moving materialities play a part in the constant *becoming* of art. How do the artists articulate the process of developing artistic innovations in practical terms? In contrast to cognition as a manner of explaining emerging actions and orders, practice theories (Gherardi 2019) stress the entwinement of embodied actions, practices, craft, materials, artifacts, tools, and objects associated with experimentation, creation, and making (cf. Bell et al. 2019). Many of the studied AI-artists articulated their iterative, non-linear work in similar practice-based terms. For example, Aiden talked about how AI can be creative *in collaboration* with the human. To him, algorithms also have capacity to "shape or manipulate the things or people with which they come into contact" (Fuller and Goffey 2012, p. 5). More broadly, then, Aiden emphasizes establishing close connections with AI, technology, and other artifacts in his artistic innovation process. However, at times Aiden has to *distance* himself from both AI and technology, more broadly, to be able to proceed with his work:

> If I'm thinking about working with artificial intelligence… It feels like it requires yes, the technical work, the internalization, yes, and the rotation,

> and in a way, finding technical possibilities. But then, the realization of the idea or the direction one takes goes somewhat ….[pause]. It might require *distance* to technology to be born, or that the ideas are born in the shower or on the train or in other situations than… Of course, a lot of things happen at the computer and while working, but even those things require distance to brighten and to become concrete, but it has to be internalized to some extent. Or, there has to be that connection with technology.

Interestingly, the above quote suggests that AI is not always physically present in meaningful moments of the innovation process, but more implicitly so. The innovation process proceeds in non-linear ways, also in unexpected spaces and times, like in the shower or on the train. In this case, technological possibilities and novel solutions might require distance from the actual work practice to crystallize or move forward. Aiden further explains his process as formative, emerging (Gherardi 2019), and experimental:

> Of course, sketching also plays a big part on the programming side, you try, you sketch, you see what comes out of it. That's like a very practice-oriented, creative approach, and you kind of let work take itself forward. When you then start coding, you discover how it goes and what happens. (Aiden)

Central to the above-described non-linear artistic process is the bricolage-like doing by inventing the way of doing (Gherardi and Perrotta 2013), linking meaning with various materials, objects, and tools in the material world. Above, we see how artistic innovation is conceptualized as experimental, relational, and emerging. This approach highlights the relationality of bodies and non-human materiality in creative practice, where the individual artist *becomes-with* materiality in the everyday relations with multiple materialities.

Also Michael, who works on a composition during the study period, describes his work in inherently practice-oriented terms, also demystifying the innovation process:

> So, there'll be practice and that is a huge part of the creativity, how it appears. I don't think, to be honest, that creativity could happen while you

> are sitting on your chair and, you know, looking at the ceiling. That's like where you, actually, *physically*, act on the creative activity where the creativity appears. So, the creativity doesn't come to you, but actually it's something that you make happen.

Artmaking urges us to pay attention to the relationality between human and non-human materiality. Unsurprisingly, physically "acting on" the instruments is crucial for the innovation process to move forward, as bodies inhabit the material world through relational touch (Valtonen and Pullen 2021). Moreover, practice-based theories consider the spatial and temporal loci in which innovating and working occur (Gherardi 2019), directing our attention toward what the various things and people do together—in practice. Ben explains his work in practice-based terms like a craft that foregrounds human and material relationality: "There is also an important part of creativity when you're doing a manual skill task. And that includes programming. It doesn't sound like a craft, but it is too," he says. While programming, the artist activates his sensory body to manually type on the computer. In this formative activity, the artist is letting himself be led by experimentation and tentativeness (Gherardi 2019), which critically depends on the relationality between the materiality of the body, the computer, and surrounding materialities. Ben elaborates on this experimental process in the following way:

> You can make mistakes and you can take advantage of those mistakes. Because these are things that you didn't plan. Also, you can have some kind of inspiration by the tool itself. It's something that doesn't happen away from the tool….

As artistic innovation is practice-led (cf. Gherardi 2019; Gherardi and Perrotta 2013), this non-linear process requires human openness to the process, being *close* to the tools, and learning from surprises and "mistakes" that are an integral part of the process (cf. Jones et al. 2016), as they have the potential to change practices. Also Michael emphasizes his close connection with the material artifacts in the innovation process: "The way that a particular relationship you actually, you know, create with these artifacts, that's a huge part of the artistic outcome itself."

During the study period, Michael developed a musical instrument with autonomous features by applying a particular deep learning model to the sound synthesis parts of this instrument. Specifically, the AI techniques he applied included neural networks that are part of deep learning. In such autonomous machine learning techniques, humans do not supervise the learning process of AI (Santos et al. 2021). Moreover, creation happened in specific time and space through continuous technological experimentation, coordination of the hand, the eye, the instrument, the materials, tools, and technology. Michael further explains:

> In our case, we wanted to develop a different autonomy in a way, so that this autonomous features, it doesn't respond to you with any sort of counter actions like human musicians do, but it actually aims to keep you in a bit uncertain situation, so that when it notices that you are really confident in playing a particular musical texture, it gradually changes the sonic characteristics, so that it actually puts you, puts the musician, into a bit uncomfortable situation in the beginning, but it also lets you explore the musical features this instrument provides further.

The above quote illustrates the instrument's potential and agency: despite being developed by humans, it keeps the human in uncertainty. This uncomfortable space provides radical possibilities for innovation. What the instrument does and *can* do—is not in the hands of humans. However, relationality is key here, and the intensive force of technology is brought forward through human collaboration, where artists affect AI by supplying it with data, such as sounds, images, and movements. To conclude, this section has discussed the relationality between humans and other materialities in experimental artistic processes that materialize in a formative manner (Gherardi and Perrotta 2013).

DISCUSSION AND CONCLUSIONS

Building on eight semi-structured interviews with four Finland-based new media artists who work with AI, this chapter offered insights into those partly "hidden" and fine-grained characteristics of artist's

innovative work, including how artists relate to and give situated meanings to AI. In doing so, the chapter develops our scholarly understanding of the significance of AI and materiality in artistic innovation processes. AI is a rapidly developing technology, and it is crucial to understand AI's capacity to act and change the surrounding world together with humans. Artmaking provides an intriguing empirical context for the study of relationality and co-creativity. We still know fairly little about how humans and learning algorithms are *jointly* involved in artistic processes, which this chapter has partly addressed. The development and inclusion of AI also force artists to reflect upon their own practice. As a new kind of material agent that can learn and adapt, AI could *change* the practices of artmaking in unexpected ways. Besides focusing on the relationship between human artist and AI in artmaking, we must also consider the multiple roles and agencies of other vital materialities, like PA systems, computational and material tools, atmospheres, and spaces. All of these material forces have a central—yet too often neglected—role in artmaking and innovation.

Empirically, I focused on how AI-artists discussed their work and co-constructed their ambivalent relationship with AI and other meaningful materialities. I illustrated how the artists articulated human–non-human relationality through spoken language. Despite co-creating art together with AI, my material suggests that the artists surprisingly often reduced AI and other present materialities to mere instruments, potentiality, or passive "tools" of human expression. They emphasized that humans have programmed the learning algorithms in the first place, which makes AI an inherently "human-led" or controlled agent. In articulating their evolving relationship with AI, the artists often treated AI as an instrument that merely conveys the artist's aesthetic intentions, without in itself largely affecting these intentions (cf. Duff and Sumartojo 2017) or changing the artistic practice. Only one artist saw himself closely connected with AI in his own artistic practice, which perhaps says something interesting about how humans have different capacities than AI, and how humans are still seen as the "masters" of the artistic process.

However, during the interviews, the artists also talked about their work in ways that brought themselves inherently close to the materialities they worked with. In the actual creation of new media art, one might say that

humans and algorithms are merged into work practices (Günther et al. 2017; Lichtenthaler 2018). In these practices, human and algorithm agencies are already entwined, yet gain particular agencies through processual co-creativity. In these shifting assemblages, relationships between humans, algorithms, and other materialities are ongoingly established. In the second part of the analysis, I connected my empirical material with the idea of formativeness in practice, as introduced by Gherardi and Perrotta (2013). The interview material depicted the entwinement of objects, bodies, and artifacts in processual AI-art, where AI was no longer seen as a separate agent to the extent that the first analytical section suggested.

The study of artmaking is still anthropocentric, and this dominant anthropocentrism deserves to be nuanced and problematized further. Materiality-centered approaches offer intriguing perspectives on innovation that more thoroughly consider the agential capabilities of various materialities, bodies, and objects in artmaking. Materiality-centered approaches to innovation (Islam et al. 2016; Jones et al. 2016) direct our scholarly attention to the creative recombination of material affordances across domains, the dispersed agency between humans and other materialities, and the difference that relational configurations between different materialities make in specific moments in the overall process. These approaches help us to further problematize the human-centered, cognitive, and often romanticized understanding of art (making) as a linear process of "flow" controlled by the human artist.

The unpredictable and creative potential of matter merits fuller scholarly attention also within innovation studies. Compared to ethnographic studies, interview studies do not allow the researcher to closely attune toward the mundane, moving, and "messy" practices and relations of artmaking, where relationships and negotiations are continuously co-created between human bodies and other materialities across spatial arrangements. This chapter suggests further novel possibilities for researching innovation. Practice theories (Gherardi 2019; Gherardi and Perrotta 2013) combined with new materialism theorizing (Bennett 2010; Bolt 2004; Carter 2004; Kontturi 2018) offer an intriguing theoretical approach to understanding innovation processes "differently" through reorientating toward the moving, messy, material relations in

organizational life. These approaches could develop our scholarly understanding of the vitality, relationality, and impact of vibrant matter (Bennett 2010; Jakonen et al. 2021; Kontturi 2018) in processes of artmaking. These theoretical perspectives seek to affectively and dynamically follow *where* and *how* innovations take place, also asking in-depth questions about *who* and *what* participates in innovation—and on what ethical terms. Great potential lies in expanding research on innovation to deal more explicitly with the material, moving and messy sides of innovation. By foregrounding the agencies of multiple materialities, as well as openly asking where the agencies of matter might take us, we might develop more nuanced and less "black-boxed" or human-centered understandings of the innovation process.

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17

Peace Piece: On the Machiavellian Moment in Organizational Innovation

Karl Palmås and Stefan Molnar

INTRODUCTION: AGAINST DISRUPTION

During the past decade, the notion of innovation as synonymous with disruption has come under question. Perhaps Jill Lepore's (2014) devastating attack on the "gospel" around disruptive innovation in tech and business circles set the tone. As Lepore shows, the idea of innovation as disruption is relatively novel, stemming from the work of Clayton Christensen (1997)—which Lepore accuses of resting on shaky evidence. What's more, prior to Schumpeter's casting of "innovation" as the creation of new products and services, the term had chiefly negative connotations, being associated primarily with "excessive novelty, without purpose or end" (Lepore 2014, p. 30).

As an antidote to disruption-oriented accounts, and as a way to understand innovation as a kind of stabilization, one could do worse than read

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Niccolò Machiavelli. Indeed, in his magisterial *The Machiavellian Moment*, John Pocock (1975) suggests that Machiavelli's *The Prince* is a book about innovation. The Machiavelli-innovation connection stretches further than the oft-repeated quote about the perils of innovation—"that nothing is more difficult to handle, more doubtful of success, nor more dangerous to manage, than to put oneself at the head of introducing new orders" (Machiavelli [1532]1998, p. 23). Instead, the importance of Machiavelli in the context of this chapter resides in his insistence on the need to *mantenere lo stato*—to maintain the state of things.

The *mantenere lo stato* imperative can be described as follows: First, one must understand Machiavelli's work through the triad of virtue (*virtú*), fortune (*fortuna*), and corruption (*corruzione*) (Pocock 1975, p. viii; von Busch and Palmås 2016, p. 286; 2023, p. 56). Virtue is that which is employed by a ruler in order to counter two threats—the element of chance introduced by *fortuna* and the general tendency toward institutional decay and corruption. Innovation (*innovazione*) enters as a fourth concept, which the ruler can deploy as a means to restore order to turbulent world (Godin 2015, p. 58). Thus, Machiavelli's work highlights the intertwining of politics and innovation and the specific moments in which this nexus comes to the fore: In such "Machiavellian moments," working customs, traditions, and routines are dissolving, which in turn creates the need for stabilizing innovations (Marres 2005, p. 142).

This, then, is why Machiavelli's view of innovation differs starkly from that of the contemporary disruption gospel:

> To Machiavelli, innovation serves to stabilize, not to revolutionize. The world is changing constantly, hence the need for innovation to stabilize it. There is need to stabilize a ruler's power and secure it through innovation […] In contrast, to modern theorists, the world is too stable and needs innovation to change it, even revolutionize it. (Godin 2015, p. 69)

There are, however, contemporary conceptions of innovation that follow a broadly Machiavellian approach. Actor-Network Theory (ANT) is one such approach, which in part has drawn inspiration from Machiavelli. Indeed, an early intervention from Latour on how to conceptualize sociotechnical change is famously titled "How to write *The Princ*e for machines"

(Latour 1988, p. 20, italics in original; see also Callon et al. 1986, p. 6). Thus, innovation is a matter of finding a stable settlement among allies. Since the "social 'material' and the technical 'material' are both relatively malleable" (Akrich et al. 2002, p. 210), innovation is not a matter of dissolution, but one of consolidation.

Aside from the ANT approach, there is also a somewhat lesser-known socio-theoretical approach to innovation that also chimes with the idea that stabilization is key innovation: that of American sociologist David Stark (2009). For him, organizational innovation emerges from a dynamic in which disruption is followed by settlements. This dynamic is described in the language of "dissonance" and "resolution," borrowing from the musicological notion of dissonance. Stark's approach is revitalizing since it reorients the view of the organizational analyst—not least by virtue of its references to the highly evocative metaphorics of sound and music. Still, this approach to the study of organizational innovation has caused some scholars to raise concerns: What is the exact relation between dissonance and organizational order? This chapter seeks to contribute to the discussion on "anti-disruption accounts" of innovation by evaluating, extending, and embellishing Stark's music-inspired account of organizational innovation.

The argument will run as follows: The next section will introduce Stark's view of organizational innovation by way of a short case study of organizational innovation in urban design and development. The subsequent section will then review scholarly interventions that suggest that Stark's work warrants a fuller account of how dissonances in organizations are resolved. In the Section "FROM MACHIAVELLI TO MONTEVERDI", Stark's account of organizational innovation is extended and embellished with some insights from musicology and music history. Following Jacques Attali's proposition that music can be prophetic, the section will introduce Monteverdi as Machiavelli's kindred spirit, and as inventor of the modern use of dissonance. The chapter ends with a concluding discussion, which interrogates what the dissonant soundscapes of contemporary music can tell us about the future of organizations and organizational innovation.

STARK ON ORGANIZATIONAL INNOVATION

In vacant space adjacent to Järntorget, the square often described as the cultural heart of Gothenburg, a new neighborhood is to be built. The organization tasked with creating it is a composite one; a meta-organization consisting of members from municipal and private development companies. The mission of this newly formed organization is to design and develop "active frontages"—street-facing ground-floor rental spaces that are designed to foster active and lively urban spaces. The organization is also expected to find ways of serving as a guardian for the future integrity of this design. However, neither the exact meaning of "active frontage" nor the exact urban values to be safeguarded are defined at the outset. Those things—as well as the modes of working together—must be invented from scratch.

This was back in 2012. Since then, the so-called Active frontages team went on to design and develop the emerging Masthuggskajen area in central Gothenburg. In this process, divergent evaluatory principles regarding the value of certain designs clashed with other principles. The chief conflict was between the need for property companies to extract rents, on the one hand, and the supposed urban values of low rents for creative uses of the ground-floor facilities, on the other. These frictions between conflicting values, in turn, set off a search for novel design-related and organizational solutions (Molnar 2022; Molnar and Palmås 2021). Today, the outcome—the physical resolution—of such dissonant design values can be viewed as live-sized buildings, a minute's walk from Järntorget. In due time, we will be able to determine whether the organization formed some ten years ago can safeguard the active frontage arrangement for the long term.

This case description goes some way to illustrate the broad outlines of David Stark's approach to organizational innovation. Here, organizations are construed as sites where conflicting evaluatory principles meet. These opposing and contradicting values—these "dissonant" values—must, however, be reconciled with each other. In order for organizations to cohere, there must be some form of resolution. The proposition of studying organizations as sites of dissonant values was put forward in Stark's

(2009) *The Sense of Dissonance*. Drawing on ideas and field experiences that dated back to his graduate studies, Stark sketched the outlines of an approach to studying economic life that straddled economic sociology, organization theory, and science and technology studies. As we shall see, the notion of organizational innovation is key to the argument. This is hardly surprising, given Stark's position as founding director of the Center on Organizational Innovation at Columbia University.

As befits any theory—note Smith's pin factory, or Engels' Manchester factory—Stark's (2009) approach comes with an illustrative case study of a factory, which also serves as an origin story. The introductory chapter recounts Stark's 1983 fieldwork in a Hungarian factory, a site that represented ambiguity in an otherwise binary world of socialism and capitalism. In response to a liberalization of the Hungarian labor regulation, the factory operated in a one-factory-two-systems fashion: It was a part of the planned economy during standard hours, while producing for individual firms during off-hours and weekends—all using the same factory equipment. From a standard politico-economic perspective, this peculiar situation could be interpreted as an expression of the opposition between modes of production. However, Stark's attention was drawn to other aspects:

> In place of the grand historic clash of modes of production, I now heard another noisy clangor in the workplace: the clash of contending principles of evaluation. (Stark 2009, p. xiii)

The things valued highly in the planned economy did not carry the same weight in the "intra-enterprise partnerships" and vice versa. Nevertheless, this arrangement proved highly innovative. It seemed that a remarkable kind of ingenuity emerged from the clash of dissonant values.

In the context of this illustrative tale, several analytic terms are introduced. First, there is the notion of *re-combination*. For Stark, organizational innovation is essentially one of re-combining resources, of "reconfigurations of institutional elements." In the Hungarian factory, new solutions were forged as the workshop started to run under two divergent modes of production while still using the same machinery, skills, and personnel. The shifting around of the factory equipment

generated new solutions. Thus, an organizational innovation process is a "search" for viable recombinations.

Second, there is the notion of *dissonance,* denoting a clash of conflicting values. Organizational actors, Stark proposes, are required to constantly evaluate and assess "what counts, what matters, what is of true relevance." However, just like in the Hungarian factory, everyday organizational life involves a clash of different conceptions of what counts, which yields uncertainty and incommensurable logics. Dissonance, then, is what emerges as different, out-of-sync valuation practices meet. On the one hand, this phenomenon involves friction and conflict; on the other, it represents the source of innovation, as the rise of dissonance is that which sparks the search for viable recombinations. In the dissonant moment, new solutions can be forged, and actors (entrepreneurs) may exploit these new solutions.

Third, Stark introduces the notion of *heterarchy*, meaning an organization that thrives on such dissonance. Stark suggests that the notion of the hierarchy, based on rigid vertical command structures and strictly univocal conceptual and cognitive structures, is losing its explanatory powers. In contrast, the heterarchy should be used as the metaphor for the twenty-first-century organization. Thus, "heterarchies are cognitive ecologies that facilitate the work of reflective cognition" (Stark 2009, p. 5), based on "multiple evaluative principles" and contested value systems. In short, a heterarchy is a governance structure designed for dissonance and thus organizational innovation. Finally, there is the notion of *coordination*. However, in order to realize this promise of innovation, viable recombinations must be stabilized—there must be coordination. Stark borrows this term from the work of Boltanski and Thevenot (2006), who have shown that conflicting valuation principles and practices can be resolved through negotiation, resulting in agreements or through pragmatically settled compromises. In addition, Stark suggests that coordination can also be attained through misunderstanding.

Still, while Stark writes at length about dissonance and the heterarchy metaphor, he pays considerably less attention to the mechanisms of coordination. This potential shortcoming has been noted by other scholars within economic sociology. The next section will review some of those critiques.

DISSONANCE AND ITS DISCONTENTS

The Sense of Dissonance (Stark 2009) is an influential book that has received much praise. However, early reviews suggested that this process of coordination is somewhat underdeveloped in Stark's (2009) book. For instance, Jens Beckert (2011, p. 610) asserted that "there exists a danger of overemphasizing the notion of dissonance" and forgetting that organizations are also about order. Thus, he asks: "How can one conceptualize the simultaneous occurrence of dissonance and stability in one theory?" (Beckert 2011, p. 610).

In a similar vein, Petter Holm pointed to the tension "between dissonance and noise" (Holm 2010, p. 334). Writing in *Administrative Science Quarterly*, he asks:

> what are the conditions under which the interaction of different evaluation principles shifts from contributing to productive search and starts facilitating strife? […] If I were to recommend heterarchy for business leaders or others, I would do it with greater confidence if I also could give some instruction on the dosage and a regimen to shut it down when the dissonant chords become deafening. (Holm 2010, p. 334)

In other words: Is Stark overemphasizing the prevalence and benefits of heterarchical dissonance? If dissonance really is legion, how is it that organizations are still coherent entities (Beckert 2011)? Do we really want organizations that are constantly teetering on the edge of cacophony (Holm 2010)? The remainder of this text will address these concerns.

So, just to rehearse the points made so far: Stark's work can be read as broadly consistent with the idea that it is not enough to disrupt—a key moment in innovation is the "Machiavellian" one, in which the new is to be stabilized and consolidated. For Beckert and Holm, it is this moment in organizational innovation that Stark seems to under-emphasize and under-theorize. However, as mentioned above, Stark does provide a basic account of how coordination of conflicting values is achieved. In part inspired by Boltanski and Thevenot (2006), he points to several ways in which value conflicts may be resolved: Actors may agree on the legitimacy of one specific valuation, pragmatically settle compromises between

incommensurable valuations, or let an outside party decide on how resolve the dissonance. Alternatively, dissonances may be resolved through persuasion or misunderstandings.

Thus, it is productive to qualify Beckert's (2011) concern: Stark (2009) does not lack an account of coordination. However, one could venture to say that this account could benefit from a deeper engagement with Machiavelli, in particular in relation to the question of power and organizational politics. Arguably, Stark's account places an undue emphasis on "gentle" modes of resolving dissonance. This implies that Stark-inspired studies of organizational innovations tend to underplay the influence of power and malice. This is because a Starkian approach to organizational innovation will focus on conflicting values, not on conflicting actors: Again, his interest is not in the kinds of clashes between interests previously studied by political economy—not in the "grand historic clash of modes of production," but in "another noisy clangor in the workplace" (Stark 2009, p. xiii). Indeed, the point of seeing the world as noisy clashes between principles and practices of valuation is precisely that those principles and practices are not necessarily tied to either actors or particular interests. Thus, the dissonance of clashing values may emerge within any single actor or participant in a codesign process. Here, one may note that Stark's approach also differs from ANT accounts, which do study actors with interests—even if those actors are mutating sociomaterial entities, whose interests are never given *a priori*. In this way, ANT can study the kind of deliberate scheming activities normally referred to as "Machiavellian power games."

In order to illustrate this point, it is useful to return to the case study briefly outlined in the previous section: The design of active frontages—and the concurrent design of a guardian organization—in the emerging neighborhood of Masthuggskajen in Gothenburg. For sure, it is possible to describe the resolution of dissonant values using the Stark lexicon, focusing on agreements, pragmatic compromises, infinite deferrals of thorny issues, and outright misunderstandings that disguise conflicts. In this process, it was clearly the case that any given actor was in itself torn between different principles and practices of valuation (Molnar and Palmås 2021). Nevertheless, this analytic lens obfuscates the kind of Machiavellian power games mentioned above.

The diminished role of such power games in Stark's (2009) approach is problematic for two reasons. First, few organizations are devoid of such power games, and the Masthuggskajen process is no exception to this rule. Indeed, the long-term safeguarding of the active frontage design—the low rents that are supposed to create urban vitality—will most likely involve some advanced Machiavellian scheming. In short, any account that underplays the role of such power games risks being accused of naiveté.

However, beyond this shortcoming, there is the question of how to account for organizational process. In ANT and other accounts inspired by Machiavelli, the base motives and lowly actions of micro-level scheming serve as the motor of organizational process. It is the element that drives the narrative forward. Stark's approach can be accused of lacking such an element. Again, this is what Beckert (2011, p. 610) calls for when asking how to "conceptualize the simultaneous occurrence of dissonance and stability in one theory." Here, we turn to musical theory, which—as we shall see—has a strong account of how movement, process, and narrative are created.

FROM MACHIAVELLI TO MONTEVERDI

At this point in the argument, it is productive to turn to musicology and music history to accompany Machiavelli's contribution to organizational innovation. In so doing, we are heeding the call of Jacques Attali, who suggests that ideas from the world of music may assist in the re-conceptualization of the social world. In *Noise: The Political Economy of Music*, published in 1985, he suggests that it is

> necessary to imagine radically new theoretical forms, in order to speak to new realities. Music, the organization of noise, is one such form. It reflects the manufacture of society; it constitutes the audible waveband of the vibrations and signs that make up society. An instrument of understanding, it prompts us to decipher a sound form of knowledge. (Attali 1985, p. 4)

So, just like Stark, Attali suggests that it is productive to think with concepts borrowed from the toolbox of musicology. However, there is something more fundamental at stake in *Noise*. Bluntly put: "Music is prophecy" because the "styles and economic organization" are prefiguring the rest of society (Attali 1985, p. 11). In his foreword to the book, Fredric Jameson spells out this proposition more clearly. Attali speculates on a reversal of the classic Marxist dictum that the base determines the superstructure. Indeed, he is interrogating

> the possibility of a superstructure to anticipate historical developments, to foreshadow new social formations in a prophetic and annunciatory way. (Jameson 1985, p. xi)

In this chapter, we are particularly interested in the notion of dissonance—a term and phenomenon that has rich connotations within music. As it happens, the organization of dissonance looms large over the history of music. Indeed, Western musical history can be interpreted as a gradual introduction and mainstreaming of dissonance. Here, it is worth considering the fact that music is both a physical and cultural phenomenon. Dissonance is in part a matter of physics—consonant notes are based on frequencies that relate to each other through simple ratios, and dissonant notes relate to each other in more complex ways. However, dissonance is also in the ear of the listener. It is perceived as a quality of sound that is unstable in character, and our appreciation of music has taught us to expect the "tension" of dissonance to be "resolved" to a stable consonance. This expectation has however changed over time. So, in more specific terms, Western musical history can be understood as a gradual progression to cultures which tolerate increasing degrees of dissonance.

As one may perhaps expect, this narrative tends to be told as a process starting in the Middle Ages. During that era, music composition was based on strict consonance. This perfect order was said to reflect the perfect order of divinity. Nevertheless, the experimentalism of the Renaissance broke this preference for perfect consonance. It was during this period that composers deliberately introduced dissonance in music, so as to craft

a musical narrative in which "tension" begets "resolution" (Attali 1985, p. 27).

The great innovator here is Claudio Monteverdi—the inventor of modern opera, who in many ways can be interpreted as a kindred spirit to Machiavelli. For one, they operated in a similar milieu: The Italian city states of the Renaissance, dominated by powerful families like the Medicis. It is no coincidence that Machiavelli's notions of *fortuna* and *virtú*—as well as Machiavellian princes—are a pervasive feature in Monteverdi's plots (Bokina 1991). Second, Machiavelli and Monteverdi shared political orientations, both seeing a division of power between rulers and ruled as key to good republican governance (Horton 2010).

However, more fundamentally, their respective works expressed the same worldview. They also shared the same determination to portray the world as they saw it—even if some observers vehemently opposed these depictions. Machiavelli's worldview was based on a distinction between the heavenly world of stars and planets, and the sublunar world of human beings. The former determines the latter—the twists and turns of social and political life were ultimately shaped by cosmic motion (Parel 1991). This premodern conception of the world does, of course, seem archaic to us. Still, the key point of Machiavelli was the dissociation of the heavenly and the sublunar: In human affairs, let alone political affairs, there is no such thing as a divine perfect harmony. This view underpins his realism, and his insistence to describe the world in these realist terms: If real politics is disharmonious and ungodly, why insist on describing it as somehow related to the ideals of divine harmony?

Monteverdi would subsequently make the same argument, in the context of music. *The Fable of Orpheus* of 1607—sometimes considered the birth of opera—made use of dissonance for dramatic effect. While observers complained about the unpleasantness of such dissonance and argued for a return to consonant compositions, Monteverdi stood fast in his determination to show the world as actually is, not how it ought to be. By the advent of the Enlightenment, this had become standard practice. As a case in point, GW Leibniz writes in 1697:

> Great composers very often mix dissonance with harmonious chords to stimulate the bearer and to sting him, as it were, so that he becomes con-

> cerned about the outcome and is more pleased when everything is restored to order. (Leibniz, cited in Attali 1985, p. 27)

This practice of creating movement and narrative in music would subsequently reverberate through the centuries that would follow. Thus, innovation in musical composition has often emerged from new approaches to introducing dissonance. The famous "Tristan chord" that introduces Wagner's opera *Tristan and Isolde* is but one example. This tendency stretches into the twentieth century. As Attali attests: "We find the same process in operation all the way down to jazz" (Attali 1985, p. 27).

Nevertheless, the twentieth century also saw musical movements that opened a new chapter in the history of music. In various ways, the convention of resolving of dissonance into a stable and pleasant "order" started to crumble. Indeed, in contemporary popular music, traditional forms of resolution are also fading away: In today's pop, dissonance reigns supreme. If music really is prophetic, what does this new musico-cultural condition mean for future organizational life? Does it mean that Stark's intuitions regarding heterarchies are correct, and—if so—what will the heterarchies of the future look like? These questions will be explored in the next and final section of this chapter.

FROM DAFT TO DAFT PUNK: INNOVATION AND INFINITE SUSPENSION

Let us return to the case study of the new building developments on Masthuggskajen in Gothenburg. The design of active frontages in this urban space required organizational innovation. A newly formed organization (or meta-organization) was assembled, tasked with designing and developing new architectural forms. At the same time, it had to come up with ways of serving as a guardian for the future integrity of the design. The modes of working together, and the ways of compromising between conflicting values, had been invented from scratch.

It is certainly possible to tell this story in a Starkian manner. This "heterarchy" served to coordinate dissonant values, resulting in physical

designs and abstract governance structures. This has been a process of dissonance and resolution: Value conflicts have been overcome through settlements. However, judging by the empirics of the Masthuggskajen case, it is also the case that the outcomes of the innovation process came about without any sense of resolution. As hinted above, this outcome owes a lot to infinite deferrals of thorny issues and outright misunderstandings that disguised unresolved conflicts.

Here, a disclaimer may be in place: In assuming the perspective of Stark (2009), there is certainly a risk of overstating the benefits of heterarchies and the prevalence of dissonance in organizations. Moreover, when tying this analysis to broader trends in music, one may go too far in connecting organizational life with the demise of resolution in contemporary music. Nevertheless, in the case of Masthuggskajen, it seems resolution has in fact been deferred in a manner that resonates with this broader analysis. So let us speculate on how to make sense out of this development.

There are two ways of interpreting a potential diminishing role of resolution in organizational life. First, one may interpret it as a situation in which conflicts are never laid to rest. Here, one may recall Holm's concerns about how to manage a heterarchy that "shifts from contributing to productive search and starts facilitating strife" (Holm 2010, p. 334). On this issue, Stark concedes:

> As a form of governance, heterarchy organizes dissonance. But it is not a panacea. Just as the metaphor of heterarchy is not of heavenly provenance, so the problems that the implementation of heterarchy creates are all too human. (Stark 2009, p. 31)

However, there is another way of interpreting the fact that value dissonances are never fully resolved. In the case of Masthuggskajen, the lack of resolution is not so much a matter of lingering interpersonal conflict. Rather, following the music-inspired metaphorics, it is better understood in narrative terms. In processes like the one on Masthuggskajen, there may well be "Machiavellian moments" when working customs, traditions, and routines are dissolving. However, these moments—which prompt the need for stabilizing innovation—do not necessarily lead to

distinct moments of resolution which clear all the discord and instill a comforting sense of harmony. Much like democracy can be described as a constant muddling-through devoid of any "moments of truth" (Runciman 2014), organizational innovation may be understood as an infinite suspension of resolution. In organizations like the one in the Masthuggskajen case, resolution always eludes us—all we get is misunderstandings and infinite deferrals.

This resonates with a more general cultural condition that one may denote as a "state of suspension"—a sense of unstable levitation that never seems to resolve to a stable endpoint or denouement (Palmås 2020). In music composition, this sense of suspension can be created by introducing a "sus chord"—a chord that incorporates one dissonant note—followed by a resolution to a standard "tonic" chord. In perfect alignment with Attali's argument, popular music has prefigured this sense of permanent dissonance. Today, it is commonplace to hear music based on chord sequences that never resolve to a standard, non-dissonant chord. A paradigmatic example is the song "Digital Love," from 2003, composed by the French electro duo Daft Punk. The song is based on a sample from jazz and funk artist George Duke. The original Duke song, released in 1979, starts with a ten-second progression of suspended chords, which resolves to the tonic (B major), and the first verse starts. Daft Punk's "Digital Love," however, is based on a sample of the suspended chord progression, looped for 4 minutes and 58 seconds. It thus creates a musical narrative that never resolves—there's no denouement, only a perpetual repetition of promise and longing.

Attali's (1985) idea of music as prophetic implies that contemporary music "stands both as a promise of a new, liberating mode of production, and as the menace of a dystopian possibility" (Jameson 1985, p. xi). The dystopian aspect of this development has already been discussed by authors such as Richard Sennett (1998): What is the personal toll of working in organizations that are constantly in flux? How do we cope with fractured professional selves and a loss of professional narratives? However, musical history also suggests that our culture seems increasingly tolerant toward dissonance: Judging by musical tastes, we seem to relish in dissonance. By the same token, we may end up relishing in organizational dissonance.

There is, perhaps, even a kind of liberatory promise to be gleaned from this music-inspired way of conceptualizing organizational innovation. If Stark's (2009) heterarchies are modes of governing dissonance, one may well look to music for inspiration on how to build organizations in flux, which are perpetually in a suspended state and never resolve. Alternatively put—in response to Beckert (2011)—certain musical genres may indeed allow us to "conceptualize the simultaneous occurrence of dissonance and stability" in new ways. There are several places to look for such inspiration—the twentieth century is full of musical experiments in finding alternatives to consonance, harmony, and tonality.

One such experiment would be modal jazz, which is a deliberate attempt to dispense with the idea of a stable tonal center to which a song always returns. Prior to the advent of this sub-genre, which includes Miles Davis' bestselling *Kind of Blue*, jazz had progressively become stuck in a game of constructing ever more elaborate chord progressions. In turn, melody had become subordinated to such chord sequences. Modal jazz, then, upended the hierarchical use of tonality. The complex chord sequences are replaced by minimalist chord structures, designed to maximize the space for improvisation.

The closing track on *Kind of Blue*, "Flamenco sketches," is a good example of this approach: It starts with a simple piano vamp, played by Bill Evans, and "after a few bars the piece drifts free of its original key and the band floats along together on a raft of melody" (Richardson 2007). Those same piano chords are used on Bill Evans' own "Peace piece"; another example of how a minimalist chord structure may serve as an empty canvas for seemingly infinite variations of musical phrases. Granted, the question is what the organizational equivalent of modal jazz would be. Still, music provides us with metaphors to imagine how heterarchies may retain order while maximizing the space for experimentation.

In conclusion, the following points can be made. This chapter set off to explore David Stark's account of innovation in the context of other accounts that highlight that the process of innovation involves stabilization—not only disruption. In exploring Stark's (2009) idea of dissonance, it has touched upon the classic question that Daft (1978) once asked: Where does organizational innovation emanate from? However, this

exploration has also suggested that it is more generative to interrogate the changing ways in which the tension between organizational innovation and organizational stability is negotiated. Heeding the call of Jacques Attali (1985), the chapter has suggested that the tension between innovation and stability may be reconceptualized by thinking with and through music.

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18

The Animal Spirits of Innovation: On Companion Species, Creativity, and Olly the Airport Cat

Damian O'Doherty

In this chapter we consider evidence which suggests that creativity attains its greatest potency (in terms of both horror and fascination) for management and organization when humans acknowledge and work with their entanglement in non-human "companion species" (Haraway 2003, 2008). Drawing on two and a half years of full-time ethnographic fieldwork at Manchester Airport (O'Doherty 2015, 2017), we introduce a remarkable character called "Olly the Cat" and explore her contribution to creativity at the airport during the period 2008–2011. Olly became quite a media celebrity on account of her residential status at Manchester airport and attracted an international following that would rival some of the most impressive H-indexes sported by academic specialists in creativity and innovation. We will see that the period 2008–2011 was notable for extraordinary feats of imagination and ingenuity at Manchester Airport in which Olly helped inspire a series of breakthrough original projects including new aircraft and terminal redesign, champagne bars,

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and executive lounges. Her contribution is a contested one though, and we must tarry with danger when getting too close to the cat because things have an uncanny ability to rapidly escalate and get out of hand. Indeed, she may well have been the cause of a potential industrial relations dispute that could have brought the airport to a standstill.

The flight of the shaman may have become a somewhat hackneyed trope at work among certain theorists of management and organization interested in creativity and organizational transformation (Dean 2019; Frost and Egri 1994; Waddock 2015), but animal partners have not been treated with the same degree of respect and fascination in the popular texts and handbooks (Bilton and Cummings 2014; Henry 2001; Martin and Wilson 2018; Zhou and Rouse 2021). Research into creativity in work organizations typically seeks to test and measure things like human personality and psychological profile, predisposition, and valency, even if the contribution of teams and collective group phenomena (van Knippenberg and Hoever 2021; Perry-Smith 2006) invite us to consider creativity as something which is not locatable in the interior or psyche of an individual. However, despite its creaturely associations and obvious etymology, creativity is in the main treated as a human capacity, and even where more recent contributions have sought to take an embodied or fashionable "materialist" turn (Weik 2021), it is the singular bounded human body and its cognitive functions that command most attention.

We will see that these entanglements and emerging relations entail a certain "becoming feline" that imparts an ontological unreliability and undecidability to organization (see also Linstead 1994; Mol 2002; O'Doherty 2017). The chapter recounts a kind of detective story in which the ethnographer learns how to stalk his prey from Olly and in so doing opens up a shadow organization at the airport centered around the presence and activities of the cat. Creativity is inspired in these shadows, both seemingly cause and consequence of this liminality, and the demimonde that develops around Olly gives rise to forms of creativity far in excess of what can be leveraged commercially for the purposes of innovation. Indeed, the very existence of work organization would appear to depend upon this creativity that inhabits these dimensions of organization, but which at the same time management has to deny or keep suppressed. One enters tense and febrile relations in crossing over the

thresholds that mark out the boundaries between the formal and informal, or the official and the unofficial, and who better to teach ways of making this boundary crossing than a creature with renown qualities of stealth and transgression? In so doing, the writing becomes more than a little strange as it struggles to find an appropriate mode of descriptive practice, becoming a little feline in the process.

In our perambulations with Olly the Cat we are given access to the kinked and sinuous trail in which projects evolve, a kind of convolution that might cause considerable embarrassment to the custodians of professional project management equipped with their PRINCE 2 methodology and professional accreditation (Hinde 2018; Roberts 2020). But this embarrassment might not be confined to practitioners of project management. There are trails and tails. With the swish of her tail Olly might also mimic or reveal with transgressive aplomb the labyrinthine-like quality in which most academic research proceeds, not least the way it establishes its own rationale by way of a gestural politics of citational plotting to authorities and seminal papers, often vicious and untrustworthy, if for nothing other than to create room for one more contribution…

Olly teaches us that this kind of academic busyness proves counterproductive for those interested in understanding the way creativity works in organization. For Walter Benjamin prolonged periods of inactivity and boredom were necessary. Boredom "is the dream bird that hatches the egg of experience," he writes, in the oft-quoted lines from his essay on the storyteller (Benjamin 1999, p. 90). We should then perhaps not expect too much creativity from our good colleagues staring half mad and delirious at screens in their honeycombed partitions that subdivide the call center we still call the university. However, to come to terms with the kind of creativity at work in Manchester Airport 2008–2011 does demand that we redress some of our ingrained academic habits of busyness, research, and writing, not just the practices of "normal science" in which most of us have to labor (Kuhn 1962). We need to reverse the denigration of experience as an essential component of empirical and theoretical endeavor. This chapter shows how one has to tarry with the dangers of "becoming feline" in order to access the realm of creativity in which humans are coupled with creaturely creativity and find ways of evading our customary language and discursive expertise predicated on

those shibboleths of objectivity, aggregation, standardization, reliability, and replicability.

This chapter draws on the recent turn to the animal in management and organization studies pioneered by the research of a small group of scholars (Hamilton and Taylor 2013; Labatut et al. 2016; O'Doherty 2016). These nascent body of work is starting to open up hitherto under-explored dimensions of work and employment to show how the non-human animal contributes to management and organization. Normally we are reminded in this research that the non-human animal has been historically ignored and/or variously exploited and abused for the benefit of the modern industrialized Homo Sapiens. In this chapter, however, we show a more complex human/non-human relationship at work in practices of management and organization, one in which the non-human animal, in this case Olly the Cat, helps provide the conditions of possibility for creativity—but in ways that also foster the conditions for unpredictability and unknowing, resistance, and perversion. Hence, the telling of this tale demands a capacity for narrative "fabulation" (Bogue 2010; Deleuze 1989) for which Olly has much to teach…

OLLY THE CAT MAKES AN EN-TRANCE

The story begins with the arrival of an intrepid ethnographer on the cusp of beginning fieldwork at Manchester Airport in August 2009. Imagine the monumental pillars and marble stairs that greet the visitor to the corporate headquarters of the Manchester Airport Group, the morning sun glinting off the glass and steel, dappled and dispersed by the shine of stone and marble (see also Berg and Kreiner 1990; Rippin 2011). Can you see the long snake of people in suits and ties making their way conga-like through the revolving glass doors that give access to the executive offices and departments of finance, information technology, human resource, marketing, and capital projects? The swish of the door is punctuated only by a periodic thud that seems to soundtrack the collective orchestration of these bodies in movement and formation (Mohammed 2019). Ahead of the ethnographer is the chief executive officer, walking "crab" like—even if it later transpires that one of his most admired but

also feared qualities is his "doggedness." He is portly, and swaggers, his legs protruding pin-like from the wealth of his posture. An invisible circle or aura seems to emanate around him. He is given his space by workers and staff, not least by the ethnographer who wants to avoid the possible embarrassment of a premature meeting ten minutes before a scheduled meeting in the chief executive's penthouse office, with its reputed panoramic view of the runway and airport campus. Can you imagine the excitement and awkwardness? On his say-so access to the organization for this ethnographic study will be permitted or denied.

As the chief executive officer makes his way to the glass curtain wall entrance he suddenly veers left, not quite a duck left, but a pivot that hinges on the heel of his polished leather-soled brogues that recent research in organization studies has taught us to be so mindful (Zundel 2019). I think I can hear him wheezing as his movements articulate a vast digressive arc that conveys him to the left of the entrance doors, delaying his arrival at the building toward which he now approaches from a considerably more oblique angle than seems strictly necessary. What explains this digression? Many types of walking have been shown to be important in business and the keeping of good management and organization—not only the cat-walk superstars of high fashion (Gherardi and Murgia 2015), but the Sergeant major's parade (Elder 2010), the tramp of the apprentice journeymen in early modern labor market regulation (Leeson 1979), and the ubiquitous "walking the talk" or the "gemba walk" trained by six sigma consultants (Burghall et al. 2014). But this cannot be a functional ritual or routine. It appears more spontaneous and improvised, perhaps a signature flourish that keeps his underlings impressed, but in line. It is certainly creative. And then, we see the cat… How can we describe this with a fidelity to the ethnographic data that gives passage to creaturely creativity?

A ball of orange-ginger tabby fur. Prostate, languorous, coiled, uncoiling, coiling, rolling on its back while stretching its right paw from under its body, head moving back, claws extending, slowly stretching again, retracting. The CEO must have seen it! A cat, soaking up the rare Mancunian morning sunshine, and displaying more than just a Cheshire grin. For the ethnographer it struck like a flash, an "ethnographic moment" as Strathern (1999) explains, akin to an "event" familiar to

students of Deleuze and Derrida that is only seen when first seen twice (see also Riles 2002). In the contemporaneous moment it compels attention, but it passes as it strikes. Only as the time of Chronos passes does it return and gnaw away, seen twice, recalling the "first" moment of its encounter, and then the simultaneous moment of its second sight, but recalling that first moment. In this paradoxical event, time and its customary temporalities are brought into crisis. The body and mind are simultaneously sent back and forward. A deja-vu. A series of protensions, retentions, and retrojections that spin the mind forward and backward into a frenzy of deliberative and associative analytics connecting things in way that proffer explanations but also hypotheses for further testing.

The chief executive appears to have made way for the cat! Has he deferred to the authority and sovereignty of the cat, or has he, more mischievously, in a gesture worthy of the feline, and hence never to be entirely trusted, demonstratively made way for the cat, as if to underscore the nuisance, the pest, the utter embarrassment that is this cat? Mangy, a half closed puss'd up eye, an ear folded and torn, it's head all askance and out of kilter. Right on the doorstep of the corporate headquarters of the Manchester Airport Group. Curiosity, of course, killed the cat; but how could this be recorded, exemplified, or explained, calculated or validated?

BOSS CAT

Bob the receptionist smiles with a twinkle in his eye as I ask about "Olly the Cat." With a conspiratorial nod and wink, gestures so important to the ethnographic method (see Van Maanen 1979), he shepherds me toward the back of the reception area. "You mean 'Olivia?'" he asks. Olivia? I thought the cat's name is Olly. "Olly came from Miami, FLA…" Bob starts to sing mimicking the shaky baritone of singer Lou Reed. Bob is quite the song and dance routine on the reception at the airport. He can be quickly roused into variations of an episode in the not too distant past when he had to accompany David Beckham down a subterranean passageway to avoid the fans and paparazzi. Favorite airline stewardesses who he might not have seen for a couple of days are welcomed back to reception with a show tune he hums or sings. With deft footwork and

graceful posture he slides into a ballroom promenade and then chasse before executing a perfect open position with his partner—all to the enthusiastic approval of whoever happens to be the audience in the reception at the time. Popular and in-demand, he withdraws from the stage to take me into his confidence. With his back to reception and his hand holding tight my upper arm, he tells me in hushed tones: "Olly is a girl, Damian! … When she arrived we thought she was a boy, and so we called her Olly, but in fact the vet confirmed that he was a she." "You know? Like in the song … Olly came from Miami, FLA" he starts to sing again, laughing—turning around to see if anyone else was listening, either to reach out to a possible audience or to check the clandestine status of our private tryst. Her name is still Olly, but as in "short for Olivia!" This was quite a shock it appears, and the doubtful sexual or gender status of Olly was often recalled by members of staff and retold in an infinite variety of ways in international press reports and various internal airport media.

To piece together the story of Olly and how she came to have such celebrity status, I have to broach the subject by finding ways around the expected ethnographic formula of an organizational theorist interested in the business and management practices of an airport (Doganis 2005; Graham 2013; cf. O'Doherty 2017). I tread carefully because the reputation of a Professor of Business and Management from the oldest and most prestigious business school in the UK, at least from the perspective of many in Manchester, might be at risk in paying too much attention to the cat. Of this I became acutely and painfully aware despite the signal lack of attention in some of the best contemporary organizational ethnographies to the intricate methodological problems associated with being amidst routine corporate politics and power struggles. These struggles often mean the ethnographer is often precariously positioned and tested or enrolled during the course of their enquiries (but see Alcadipani and Hodgson 2009; Neyland 2007).

During one brief confessional moment with an experienced member of the management team, though not a member of the most senior executive committee, it dawned on me that my attempts to explain my work had been translated in a most peculiar way, and one which was difficult to comprehend. It appears that many in the airport had understood my research to be a "cultural audit" of management. "So, what you're doing

is a cultural audit," Geoff replies after I tried carefully to translate the ambitions of my research and how it seeks to address current theoretical and paradigmatic problems in my subject area, but still with possible practical value for managers. There appeared a certain defensiveness in this portrait, one preoccupied with evaluation, grading, and judgment and its omniscience in organizational life. It seemed to be a taken-for-granted among many in the airport, but not something I was reflexively aware could be the way my research might be translated or understood—and this despite 25 years training in labor process theory and critical management studies which insists on the calculative and instrumental "ideology" of management (Alvesson and Willmott 1996; Knights and Willmott 1990; Thompson 1983).

Was I also at risk of embarrassing management with this focus on the cat? Management was a serious business in the airport, and the commercialization of the airport and aviation sector in the UK since the 1986 Transport Act had posed a series of challenges to management and organization (Ison et al. 2011; Starkie 2002), an effective response to which would require considerable creativity and innovation. Indeed, the airport had consciously set out to appoint a slew of "creatives" and "designers" to work on terminal construction projects who had helped pioneer new design solutions to passenger experience in their £50 million Terminal 1 scheme which attracted considerable praise and a number of industry awards. Complete with "wow" factors and "pooh-stick" lighting schemes to guide passengers through zones of "transference" and "desire," the airport was being recreated as a postmodern pleasure dome modeled on contemporary urban retail developments, much to the chagrin of died-in-the-wool engineers and security staff for whom airports had to remain functional and operational "sterile transit zones" (Pascoe 2001, p. 10). But the attempts to consciously and instrumentally deploy creativity in these ways seemed paradoxical and self-defeating, most often leading to pastiche and cliché, cynicism, and "innovation fatigue" (Rehn 2019). Despite the fanfare and publicity campaign designed to promote the "Manchester experience" with recitations of Manchester the "original modern city" and the incantation of the "we do things differently around

here" mantra from creative Svengali Anthony Howard Wilson,[1] it was the spontaneous flash of a smile from a young girl dashing over to Olly Cat that lent a clue to where creativity might be at work in Manchester. Surrounded by airport trolleys towering with packed luggage and a stockade of wheelie bags which appeared to menace the mutinous rabble of holiday makers packed on the pavement waiting for the bus, the girl broke free and rushed up to the cat lounging on the marble forecourt of Olympic House. Did time slow down as she curled herself around Olly, the cat arching its back to invite the stroke, fingers and paws braiding their way around each other dancing a miniature pas-de-deux? Tempted to recite another mantra to which I had been subject on numerous occasions, one might ask, but what is the *commercial value* of this spontaneous act of feline joy?

To assemble the data on Olly the Cat I had to be vigilant to fleeting moments such as this, often caught out of the corner of my eye or in that precarious and liminal space the anthropologist Kathleen Stewart (1996) calls the "side of the road." In digressions from the topic at hand, often accompanied by complex gestures of feint and humor that sought to test an interlocutor's willingness to venture into the apparently trivial or frivolous, I would gently stalk my prey and tease out the scraps that might be pieced together to tell of Olly's role in the airport and her contribution to management and organization. If one could have shed customary inhibitions to lay down on the forecourt with Olly (Holbrook 1997; White 2013), like the little girl breaking free from the crowd, one would have been rewarded with a tremendous vision. Just behind where Olly lay there towered up a magnificent and ornate wooden structure, a kennel constructed with the finest craftsmanship and attention to detail complete with raised pedestal and a pitched waterproof roof. This was Olly's kennel, a model Berkshire style town house, and as if there was any doubt as to whom this belonged a plump Prussian-blue cushion embroidered

[1] Anthony or Tony Wilson (20 February 1950–10 August 2007) was a well-known and sometime notorious TV presenter hosting breakthrough programs covering new culture and music on Granada TV in the UK during the 1970s and 1980s. He was one of the co-founders of Factory Records in 1978 and managed a number of Manchester-based bands. In addition to radio and television presenting he was a journalist for Granada Television and the BBC, and at various times, in no particular order, a nightclub owner and manager, impresario, film producer, and most times bon-vivant, raconteur and gourmand.

with the name "Olly's Place," and sealed inside a plastic cover, swung from a swing pavement sign that stood adjacent to the cathouse. Once seen, it couldn't be missed. In fact it was right in your face, directly in front of the revolving glass door entrance. I would have seen it on day one if I hadn't been so preoccupied with the chief executive officer…

It would seem that Olly had arrived at the airport one early morning several years ago, or perhaps it was now "once upon a time." She was mangy and flea riddled, underweight, and visibly limping. Very defensive, she wouldn't let people approach and refused food or milk offered by various staff in reception, airline employees, and other terminal based workers at the airport. However, over time she slowly began to respond more positively. Staff members were soon able to coax her into their arms and they were then able to establish that Olly was in dire need of veterinary care. They pooled money together to pay for emergency dental work and soon after she was admitted back to the Vet for expensive exploratory hip replacement surgery. Once returned to health Olly reclaimed her place and took up residence in "Olly's place" outside Olympic House where the embroidered cushion atop her house might have been mistaken for a crown. Gifts started to appear; postcards, colorful flags, and trinkets begin to be pinned to her house. She takes up a position as "cub reporter" for the staff magazine and writes in the "Philosophy Corner" offering thought pieces and monthly reflections on matters existential seemingly for both human and cat: "We were given two hands to hold, two legs to walk, two eyes to see, two ears to listen—but why only one heart?" she writes on one occasion, "The Answer? Because the other was given to someone else. For us to find." A competition to name a new aircraft launched by the budget airline "BMi Baby" returns an overwhelming majority who, perhaps predictably at this stage, want to name it "Olly," and the plane is duly named during a ceremonial naming day that provides colorful copy for newspapers and media outlets.

Olly also opens up a Facebook account and soon attracts over 2000 friends and followers. Meanwhile, an aspiring local pop band whose songwriter works at the airport charts a new single all about Olly. On Christmas Day 2008 a whole salmon freshly caught from the Hudson river in New York is flown over to Manchester and presented to Olly by airline staff working for American Airlines. Soon a public letter has to be

published asking for moderation. Olly was apparently "slightly overwhelmed" by the profusion of gifts and food items and "she has asked if she could share some of her food and bedding with his canine and feline friends at the *Society for Abandoned Animals*." A doormat then appears one morning, placed outside her wooden house it reads "The Boss." Olly sits regal that morning, upright and proud, casting a quizzical eye on people entering and leaving Olympic House.

CATFIGHT AND CORPORATE UPROAR

Prowling in circuitous routes through meetings and interviews, juxtaposing overheard snatches of conversation from the "bits and pieces" of organization (Pullen and Rhodes 2009), we are learning to deploy that Keatsian capacity for "negative capability." We are also finding ways of slowly making way for Olly the Cat and the play of doubt and ambiguity that follows the flick of her tail. Czarniawska (1999, 2006, 2012) has pioneered the understanding of organization studies as a genre akin to the "detective novel" which proves helpful when taking up the methodological challenges posed by these discoveries. Is this just a discarded piece of clothing I see before me, or is it a tribute or gift bespeaking the clandestine activities of a cat conspiracy? Are those gaudy balloons and decorations surrounding Olly's place simply the paraphernalia of ailurophiles, or might they be an orchestrated act of subversion designed to parody management and its apparent pretensions? Olly's house in front of Olympic House is suggestive of a mise-en-abyme that might betray Rabelaisian-like behavior flaunting transgressions and bawdy humor, but we need to push the enquiry further. Are these acts a contribution to creativity and organization, or subversive of management? Things are about to get a lot more serious.

"Olly basically divides the organization in two," I am told by the terminal operations manager. There are some who think she is not an appropriate advert or symbol for a serious organization that has recently been re-launched as a corporate entity. Manchester Airport at the time of this research had become one of four airports (including Bournemouth, East Midlands, and Humberside) that makes up the Manchester Airport

Group, and it is not clear if Olly is the staff cat, the airport cat, or the group cat. However, like the infamous cocks in Geertz's (1973) classic study of the cock fight, there are clearly wider power struggles being expressed and mediated through the treatment of Olly. In this respect, it is important to note that Manchester Airport was the biggest and financially most powerful airport in the group and its senior management is co-located in the same headquarters as the corporate executive team working for "Group." This can be the cause of considerable confusion with multiple and overlapping loyalties and responsibilities who had previously enjoyed independence and autonomy. Olly seemed to mediate or "carry," as some psychoanalysts might explain, anxieties and otherwise repressed and denied features of struggle (see Gabriel 1995) between a newly ascendant group and the recently dethroned subordination of Manchester Airport.

There are rumors that the cat's days at the airport are numbered. Pursuing this thread opens up another dimension of feline activities at the airport. Bob the receptionist invites me backstage again. I have been trying to ask him more questions about the cat, which I preface with a smile and an apologetic demeanor that I hope serves as embarrassment for my curiosity. Down a small corridor that is recessed and hidden behind the trompe l'oeil of a stud wall we enter a storeroom or small office. Bob wants to show me the contents of a white Formica wardrobe. He opens the doors and stands back. Amidst a cornucopia of tins and food packages arranged in neat stacks, there is overflow and spillage. Bob raises his eyebrows and looks at me. Was that a slight downward nod of his head? There is a sense I might have been let into a sacred space. Inside the cupboard I also take note of rolls of toilet paper, black plastic bin liners, and a bottle of anti-bacterial spray cleaner. I recall that Olly has been accused of incontinence of late and there are complaints that Olly's place has begun to emit foul odors. A regular laundry operation is rapidly mobilized to help keep the blankets and bedding clean, which might also explain the bottles of disinfectant and spray. Fox scat has also been found, and there are worries about health and safety if other animals and local wildlife living parallel lives in the urban environment might be attracted to Olympic House (see Philo and Wilbert 2004).

Our senses heightened by the possibility that things might get out of hand and rewild, I am drawn to a small-framed picture of a ginger mackerel tabby cat that is hung up the desk. It is intricate and complex in design, a cross-stitch embroidery of a bucolic scene that displays fine needlepoint. The cat is sat in what appears to be field, surrounded by green rolling hills. There are flowers and a small bird delicately rendered in fine blue. The bird has landed next to the cat and has perched itself on top of a strawberry plant that cascades with a profusion of fruit and flowers. The bird seems to be offering the cat a small worm. The juxtaposition of these opposites seems incongruous but the design achieves considerable harmony and even a marriage of sorts, albeit the faded colors seem to lend the panorama a rather melancholic and washed out tone.

Tempting as it is, it is not a psychoanalytic or psychodynamic reading of this artifact that I am encouraged to pursue (but see Gabriel 1995; Sievers 2018). As a means of diagnosing wider corporate struggles and their mediation, there is no doubt much to gain from this analysis, but it's not something that comes from the field-site. It would seem like an abstraction and imposition, even perhaps a little extractive, and it is not the way the indigenous members of the organization collectively work out their struggles, even in a rudimentary way, or at least it is not the way I was able to participate in the day-to-day activities of organization during the ethnographic research at that time. Instead, I became aware of how attentive I have become to marginalia and the seemingly aberrant and incongruous, perhaps even things irrelevant or happenstance, senseless to human motivations and desires. A miniature snowman sporting a felt bucket hat, his neck wrapped with a hand-made red and white crochet scarf. A bottle of Heinz tomato ketchup, a carafe of vinegar, a small glass bowl filled with water, and a spray of flowers. A white plastic spoon protrudes from the bowl, but at what must be a geometrically impossible angle; it droops and elongates in a way that recalls Dali's time pieces.

Flooded with memories and associations, the ethnographer senses he is intruding close to something like trauma, where the "God of small things" comes into play, as pursued in Arundhati Roy's strategies of fiction (Roy 1997 see also Bogue 2010). Trauma plays out in part as a performative automatism or regurgitation of involuntary memory that disseminates apparently random shards and fragments into the ostensible

reality of everyday or "paramount reality" (Berger and Luckmann 1967). These shards and fragments then appear to breed or hybridize with more familiar objects making them morph and mutate (akin to "displacement" and "condensation" in Freud's early work on dreams). In pursuit of Olly things are re-wilding in ways that might bespeak a dimension of creativity in organization that is awkward for management to acknowledge; it is a realm of excessive and forbidden memories and associations, and one in which the rational sovereign agents that make up the human resources of an organization begin to lose their autonomy and control. Bob looks at me again. Is that a quizzical or *sympathetic* smile?

THE CAT COMMITTEE

There are rumors of a cat committee, signs perhaps of a subterranean "shadow" organization that subtends the performance of formal organization. Indeed, as time passed started to see and hear more and more things that were suggestive of considerable feline activity in the airport, one that—correctly attuned and equipped—bespoke a collective underground, or an element of what some have identified as England's "hidden reverse" (Keenan 2004). If there is a cult of the cat it is both seen and "unseen"—in the sense that there is denial or a trained disregard among many in the airport, and who live perhaps much like the inhabitants of China Miéville's (2009) "The City and the City" where the citizens of two cities live in the same geographic space but are not seen or known to each other—and trained not to see each other. This conceptual pair—the seen and the unseen—might appear to be simply a literary device, but recent research in organization studies (Brown and Reavey 2017) is beginning to find that organization can be thought of as a phenomenon similar to language or literature (Beyes et al. 2019; De Cock and Land 2006; Hassard and Holliday 1998; Rhodes 2001) and it may offer a very useful way of re-thinking how work organizations manage to operate in two different dimensions of reality. The formal and the informal is a division that is of course constitutive of the discipline of organization studies (Roethlisberger and Dickson 1939), but there are a number of ways of cutting up organization including management and worker, men and

women, the functional and esthetic (see Linstead 1994), and the "straight" (or "normies") and LGBTQIA—all of which bespeak parallel universes where people are largely ignorant of one another's worlds.

To begin to follow the cat and explore the world that might be opening up and unfolding around her requires considerable tact and discretion in addition to the suspension (or unlearning) of many of the most routinized theoretical and methodological resources we deploy in management studies. Can we admit phenomena that are neither subjective nor objective, for example? What tolerance do we have for things that exist in a liminal or twilight state of fact and fiction? Following recent corporate scandals, the published financial accounts of an organization are now routinely treated, at best, as "versions" of reality or at worst probably a lie, or socially constructed fiction. And what about the fabulous inventions of science that we live with for many years, sometimes hundreds of years, before they are considered fictions—the ether, phlogiston, magnetism, or ambulatory automatism, or research league tables (see Hacking 1998; Kuhn 1962; Latour and Woolgar 1979)? So, what of this cat committee?

On the one hand anything to do with the cat has to go through the committee, I am told, but on the other the status of the committee is difficult to establish. Membership is a closely guarded secret and there does not appear to have a published timetable of meetings. They will have much to discuss. We have seen Olly has regular visitors and tributes are paid, and there are signs of increasing catlike phenomena and behavior. Let us tread with care, senses alert …

Thousands of cat photographs are beginning to show up around the airport—on desks and screensavers, but also in the form of stickers and coffee cups. This is no doubt not unique to the airport, but part of a wider cat fascination (Berland 2008). Seen on T-shirts, greeting cards, calendars, and badges, and increasingly in the digital and online culture of cat memes, lolcats, and lolspeak (Thibault and Marino 2018), the cat is a ubiquitous presence in everyday life. But in the airport there are distinctive and exceptional qualities. There are cats in the *Cougar* airline fleet of Boeing 727s. A jaguar is on display in Terminal 1, its speed and agility broadcast on a 40-foot plasma advertising screen in Terminal 1, where following Barthes (1972) we might say the roar of its engine has been designed to appeal to the hunting spirit of its intended market

demographic, the carnivorous middle-aged male business executive projecting fantasies into the car of their dreams. I begin to see the cat everywhere. The stripes of the shoulder boards of the pilots and co-pilots who stride through the airports mirror the stripes of the cat; allegations are made of "corporate fat cats," and supervising commercial floor layers in the construction of the Escape Lounge in Terminal 1 is described as "herding cats." There are games of cat and mouse, and accusations of copycats. There are cats' eyes on the runway and leopard print swimsuits for sale in the zone of desire, a Tiger car rental, and the Lion and Antelope pub in Terminal 3. But there are also signs that people are becoming catlike. And *who* is training who in this becoming (see Tucker 2016)? As people drop down onto all fours to sit with Olly on the plaza in front of Olympic House we might have cause to wonder. Here, people variously engage in acts of stroking, rubbing, tickling, petting, nuzzling, grooming, hugging, and kissing, where bodily properties are exchanged and transferred including hair, scent, and perspiration. For whom is this a pleasure?

It is interesting to note amid all these visual rhymes and relational entanglements that the name of the receptionist, the one person who had no qualms about his name appearing in print here, is Bob Molloy, a near anagram of Olly. In one media story Bob appears crouching down to feed Olly. He is ginger haired and wearing a ginger-brown three-quarter-length suede leather coat that reveals a white collared shirt covering his chest. It precisely mirrors the ginger-brown tabby mackerel stripes and white chest markings of Olly. In a remarkable image captured by the photographer (Fig. 18.1) they are seen leaning in together, almost wrapped around each other in a mutual embrace, backs arched, face down, fingers and paws extended, reading a postcard sent to Olly or Bob from one of their worldwide fans.

"Staff respond to the cat Damian, and you can see that it helps," Bob tells me one day, "people learn to be more giving and generous, it brings out the better side in a lot of us." She brings out "emotions and generosity" and "makes people feel good," he elaborates on another occasion. At the same time though, these emotions might not all have been supportive or generative. People also teased and toyed with each other. It was good to think with the game of cat and mouse as a way of making sense of many inter-personal managerial rivalries, or of that between the cat

Fig. 18.1 Bob and Olly

committee and senior management. And then, rumors begin to fly that management is going to get rid of Olly—this time in cahoots with health and safety and the local RSPCA…

STRIKE

On the morning of 27 July I arrive at Olympic House to find that Olly's Place has disappeared. It is a big absence, a palpable void. There is no sign of the cat, and all evidence of her has been removed. I track the online chat sites including Olly's Facebook page and the PPRuNe forum (The Professional Pilots Rumour Network) where I discover a flurry of texts and activity posted in the last 24 hours, all passionate but much of it confused and angry. Among the many written contributions, there are also rallying calls for demonstrations and even a strike. Others suggest trauma and grief:

> "Olly will be going nowhere, she's part of the airport and so many people love her … They'd [sic] be up roar I'm sure … I'll fight for it".
> "Ollie belongs at Manchester Airport. We need to keep her there. How can they do this to her. She does not harm".
> "I called into Olympic House today and I got a lump in my throat & my eyes filled up with tears"
> "Oh olly I think my heart broke in two when I walked round the corner to find no trace of u tonight …"
> "Maybe its time for a demo outside OLYMPIC HOUSE"
> "I call a strike"
> "I keep praying for a miracle … I still keep checking outside of Olympic House to see if you're there Olivia my gorgeous chicksi!!!"

The night before, the local *Manchester Evening News* had published its front page with the headline "Claws come out as Manchester Airport chiefs show exit door to Olly the Cat." To make sense of some of this it is important to know that all stories in the Manchester Evening news are carefully crafted exercises that must have the approval of the corporate media team. While highly creative the efforts at humor or irony in the newspaper headline and report appear ill-judged and wide of the mark on this occasion, innovative perhaps, but lacking some of the excess and originality associated with creativity. This gamble on humor, with its apparent critique of corporate management, could be interpreted as an attempt to deploy humor in an effort to placate and displace the passions invested and generated by Olly. It suggests more deep-seated and underlying anxieties about how to come to terms with the cat. An earlier effort to get rid of Olly had failed, but with a new chief executive in place and rumors of a possible shared ownership deal to raise capital for the purchase of Stansted airport, this newspaper report was perhaps evidence of a resurgent seriousness as senior management sought a corporate image more befitting a global corporation. And yet this seriousness was marked by anxiety and nervousness, alluded to by some non-managerial staff in the occasional use of an expression I came across on several occasions, "well, Manchester has always tried to *get above its station.*" Similarly, but with perhaps a little more bravado, one might hear from time to time an

executive talk about the airport always being able to "punch above its weight."

In this light the effort to mobilize the press is strongly suggestive of nervousness and anxiety among senior management, much of which is invested in and generated by the cat who by now had her own global brand reputation and dedicated media interest and international following. Behind the scenes there had obviously been considerable negotiations revealing a carefully calculated campaign on behalf of senior management, some of which I came to understand had been channeled through what was emerging as a bone fide cat committee. Indeed, it later transpires that clandestine investigations had been conducted in an attempt to try and identify what was presumed to be a "ghost author" responsible for Olly's writings and Facebook account. "Have you heard about the cat committee Damian?" one senior business development manager asks me during the days immediately following the departure of Olly. "You wouldn't believe it," she tells me, "you can't do anything without going through that committee you know!?" There is a sense of scandal in the air, of embarrassment and awkwardness, whether because matters were being handled in ways that did not respect the status of the cat, or because of the status the cat had managed to achieve in the airport. I am told, for example, "Your story reminds me of my days at Manchester airport, it really captures the spirit of the place and it took me straight back," during the presentation of an earlier version of this paper at an industry event in London, where I was presumably in danger of aggravating an airport "nervous system" (Taussig 1992).

Mindful of the awkwardness and embarrassment, I have to stalk my prey in literal and metaphorical half-lit corridors and other liminal spaces, which of course legend records as the principal domain of the cat (Briggs 1980). Revered and vested with seer like status they are considered great teachers of mystery and magic, and in some cultures considered to guard portals through which one could pass between the world of the dead and the undead. These powers explain the long history of cat adoration that can be dated back to the worship of "Bastet" in Ancient Egypt for whom temples were constructed and adorned with the finest carvings and sculptures (Rogers 2006; Zuffi 2007). However, with Olly now gone I had no guide to navigate my way, and in these most liminal of spaces, the

contemporary airport (Augé 1995; Knox et al. 2015; Pascoe 2001), care and stealth had to be observed at all times. Here the borders of security and commerce, the domestic and the foreign, the nation state and its others, rubbed cheek by jowl, causing edges to blur and splinter, forming lines complex and often "baroque" in shape (Deleuze 1993). I began to suspect these furtive glances and labyrinthine-like conversations were not simply deviations or digressions but were instead marks of a creativity essential to the phenomenon, or a creativity inspired by presence of Olly.

More paperwork was starting to emerge in the nooks and crannies of airport bureaucracy, or even inchoate signs of a lively "shadow" bureaucracy (cf. Gouldner 1954). Piecing together a disparate set of clues I was able to establish that in the year prior to Olly's departure deputations on behalf of senior management had been sent to the cat committee and a project team established to enquire into the possibilities of a "refurb" of Olly's place. "Vector Design concepts" have been appointed to act as the client architect and an eight-page project brief is drafted and later published dated 20 August 2010. The brief outlines the main problem and criteria. Olly's existing place "gets buried in blankets that then get sprayed by foxes, other cats, etc. and it then smells like we have a permanent tramp outside our building." The casual grammar of some of the text suggests that the author of the brief is directly quoting from aural depositions collected during a meeting, presumably, of the cat committee or possibly the project team. It was difficult to establish the exact details, and memories were partial and often inconsistent among those considered key players in the drama. "It has to look like a piece of street art," the brief outlines, "so that those who hate her can appreciate the art, those who love her can appreciate the new Olly house." Notable was the following condition: "It has to be fitting to be outside the Head Office of a multi-million pound business," revealing some of the sensitivities at work in this project.

The brief then goes on to proffer solutions. An outline design is sketched drawing on computer modeling and mock-ups which are said to be inspired by a set of principles and a "philosophy" of flight and aviation. There are images and photographs included in the brief to help convey the esthetic ambition (see Fig. 18.2), which includes the use of contemporary acrylics and design materials that seems to replicate the

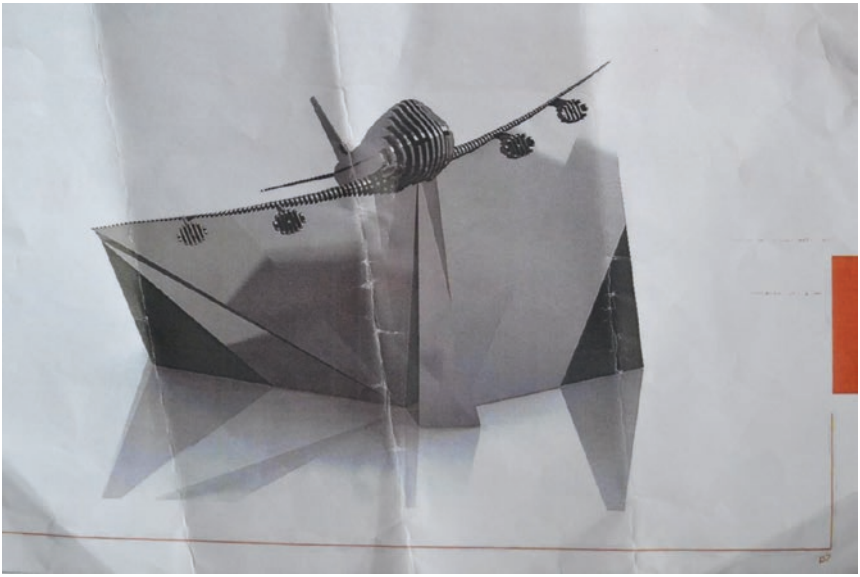

Fig. 18.2 Computer-rendered model of Olly's new cat shelter

"glass and steel" minimalism of modern corporate architecture (Dale and Burrell 2008). The result is a bold and remarkable piece of architectural sculpture that dazzles the viewer with its reflective surfaces and confident line of ascent. From the ground the eye is drawn up toward a dramatic and soaring cantilevered roofline where the vision rests momentarily before dissolving to reveal the roofline as the leading edge of a set of Boeing 747 wings lending the sculpture its final lift and take-off. The whole effect is achieved with effortless movement and grace, almost feline-like in its poise and spring.

Further exploration reveals a remarkable attention to detail in the synthesis of form and function. In the brief, it is noted, for example, that cats will not sleep and eat in the same space. Responding to this the designers advance a tripartite structure made up of a sleeping zone, a feeding zone, and a watering hole. It is a structuring that recalls (parody's?) the zoning of the Terminal 1 retail scheme which featured zones of desire, exploration, transference, and reassurance. The watering hole for the new cat-house is particularly ingenious and impressive in design. Proposing a

system based on "running water"—citing the brief, in which it is noted that cats prefer it—the roof of the new shelter is designed to catch and channel the rainwater into a funnel that feeds a water trough. To produce water clean enough for the esthete tastes of these capricious and somewhat coquettish animals the design recommends "pumping the water through a carbon filter, then up to an outlet." Most inspired perhaps is the suggestion that the "water could act" in addition, "as a method of cooling the sleeping zone in the summer month," thereby achieving valued environmental benefits and offsets.

What can explain the creative energies that went into this extraordinary project and the design? We know the efforts of the project team were not successful. By July 2012 Olly had been "retired," which she explained in postings to her Facebook account avidly followed by airport staff, and many now obviously traumatized by her disappearance. The entanglement of Olly with airport staff had become progressively more complex, compassionate, and empathetic, features of human/non-human relations noted by many in the literature of multi-species ethnography and participatory research in more-than-human worlds (Bastian et al. 2016; Blattner et al. 2020; Kirksey and Helmreich 2010; Stone 2019). So profound were these feelings that resignations followed the departure of Olly—some among senior members of the management team. The director for learning and development, for example, was able to confess that the true motivation for his resignation was the treatment and departure of Olly. We have also taken note of evidence of a "becoming-feline" in much of the thinking and behavior of airport staff. The fact that the receptionist Bob Molloy also had to take retirement, in part, and like Olly, because of ill health brought on by respiratory problems and complications arising as a consequence, is noteworthy in this respect. What is cause and what is effect here? Might this be a case of sympathetic magic? A human taking on the ailments of the cat instead of the more widely recognized phenomenon that non-human animals provide therapeutic benefits and even take on the disorders and illnesses of their human partners (Fine 2010)? Olly was clearly not simply a vehicle for the projections of her human followers, she often resisted their efforts to enroll her into certain projects (including a refusal to be photographed in an England football team shirt for one publicity shot), and it often made more sense of the data to see

Olly as an active agent of management and organization practices rather than simply a projection screen or passive plaything of her companion species.

Notwithstanding these resistances, the cat shelter "refurbishment" project appeared to draw on a hidden reserve of creative energies and passions that stand in stark contrast to much of the highly routinized work of airport management and operational staff alike. Elements of what Haraway (2006) and others have called a "thinking otherwise" seem to be in play here, an unrestrained and wild or creaturely creativity that draws from dimensions of organization beyond individual cognitive faculties embracing bodies and passions and the sometimes embarrassing but nonetheless essential Rabelaisian, impulsive, contrary, and even perverse features of creativity. Indeed, there is a whole economy of erotics entangled in a zoophilia (see Dekkers 1994) specific to this case, and which could be usefully addressed in future work to help advance our understanding of the creativity that dwells in these disavowed and shadow realms of organization. Management it seems cannot condone or even recognize this organizational *demimonde*. And yet it seems creativity is given license where bodies shed their bounded form and lose their inhibitions giving rise to all manner of transgressions and trans-species imaginaries and becomings. We have perhaps begun to tap here elements of that "vertiginous consciousness" explored by George Bataille (1988) which are triggered by encounters with what he calls "base matter" opening up a generalized or universal (sovereign) communication marked by "contagions of energy, movement, warmth, of transfers of elements, which … passes from one point to another (of from multiple points to other points), like a current or like a streaming of electricity" (Bataille 1988, p. 96).

I catch Bob's eye again. In some respects he is still on reception, keeping post on the boundary of the corporate head office, a frontier designed to permit or deny access. He sees I am after the cat. His head turns quickly to the left and then to the right before returning his gaze to me, furtively, as he shepherds me again into his confidence. There is an anxiety that drives the ethnographer's quest for confirmation and triangulation. How does one validate the data I had collected, the documentation, the interviews, etc.? Was this an elaborate hoax, perhaps one that had even been

in part designed to satisfy the anthropological curiosity of the ethnographer? Was I a character or a part author of this drama, mobilized and enrolled in a multi-species actor-network? I am reminded of Edgar Allen Poe's *System of Dr Tarr and Professor Fether*, during which it slowly dawns on the reader that the narrator has been a victim of a charade, the wardens of the hospital having been imprisoned by the patients who then collectively assume the role of wardens (Poe 2014). The paperwork would suggest, however, that there was indeed a request made somewhere for a design brief. And yet this documentation cannot be found in the official project files listed on the project management information management system. And senior members of the executive team could always deny the existence of their involvement in this "project." A cat? Here in the airport? Surely not. But, can you see Bob? The corners of his mouth are lifting slightly. A smile (is it?). In a complex movement his eyebrows rise toward his tabby ginger crown as his head lowers, his forehead furrows in gothic lines, and his eyes look out, wide eyed, in a flash, staring at you from below his eyelids and jutting brow…

CONCLUSIONS

In this chapter we have reported on an ethnographic study that sought ways of tailing the tracks left by Olly the Cat at Manchester Airport between 2008 and 2011. This entailed the development of a mode of enquiry and form of descriptive practice equal to the ontological challenge posed by emerging human–cat relations and novel "communities of practice" within the formal work organization of the modern corporate form. The report here should be read with these experimental features in mind. Snooping, prying, spying, and sometimes literally crawling and currying favor, the traditions of ethnography have always had to grapple with de-humanizing conditions and practices that often stimulate a becoming-other, an alienation from our customary ways of being in the world (Stocking 1984). To risk becoming the phenomenon in the case we report here placed demands on the researcher that were highly unusual. Not only did we have to find ways of registering and responding to the particular sensorial cues of cats while attending to the slightest gestural

nod or wink deployed in relation to the cat, the ethnographer had to resist the temptation to know or explain with too much definition or certitude, which may have scared off the cat, so to speak. Hence, we had resort to the use of a subjunctive mode of description and explanation marked by the provisos of "perhaps's" and ellipses and the cautious step of the essayist practiced in other ways by masters of the form such as Howard Becker (1982, 2007).

Easy to spook, as known from histories and behavioral studies (Bradshaw 2014), cats often seek out and dwell in hard to access and otherwise liminal spaces on the borders of transition between two spaces—doorways, gateways, windows, and so on. Over time the ethnographer was able to work with Olly—or rather with a "human-becoming-cat collective" in ways that helped gain access to a twilight world of organization, a somewhat fantastical "demimonde" of inchoate management and organization that shadowed the formal world of organizational charts, reporting lines, task, roles, and responsibilities (cf. Du Gay and Vikkelsø 2016). The ambiguity of its truth status is precisely what makes it such a challenge to management and theoretical explanation. Sometimes this shadow bordered on what some might suspect to be subversion and parody, even disrespect, but it also marked a depth or reserve of creativity upon which formal organization is compelled to extract and draw. This demimonde is an unseemly and often secretive world of bodies and base matter, animals (Borgerson 2005), smells and intimacy, eroticism, and "leaky fluids" (Linstead 2000).

It is a world to which business and management normally shy clear, typically disavowed in acts of bad faith; but it is a world nonetheless upon which management depends for creativity, and out of which innovation draws reserves of energy and power. However, following Olly has taught us that creativity is a more-than-human phenomenon, an excess, an unruly outside beyond the pale of formal organization. While creativity is often studied as a human faculty and achievement we have learned to be attentive to animal companion species and the more-than-human worlds that animate creativity. Moreover, the inchoate nature of the organization that seemed to open up around Olly the Cat invites us to consider a liminality slightly more complicated than the one normally identified in studies of management and organization (i.e., Garsten 1999;

Meira 2014). On the one hand this liminality lies *between* what we have called "demimonde" (a first degree of liminality) and the more familiar features of formal organization. On the other, it is accessible only through the most complex loops of reflexivity (a second degree of liminality) in which the researcher has to innovate and enact methods that take seriously and thereby help enact or perform the world(s) of this liminality. Highly fertile, albeit capricious and unreliable, this liminality marks out a reserve out of which our customary oppositions and categories seem to dissolve and renew. Hence, neither cat nor human should be identified as the agent responsible for creativity. Instead we have seen that properties assumed "proper" of human and animal were being exchanged, learned, and acquired, giving rise to new capacities and potentialities in a trans-species actor-network. Cultivating conditions for a highly creative "thinking otherwise"—or even a "monstrous" (cf. Thanem 2011) form of thinking, being, and creativity—organization becomes disorganization in the wink of an eye and the undecidable oscillation between that which is serious and the *unserious*.

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19

The Future(s) of Innovation

Alf Rehn

INTRODUCTION

Any story about innovation is, at heart, a story about the future of innovation. This as the story of how innovation becomes always involves a forward push, an opening up to the novel, the new, the never-before-seen. Innovation is future-directed activity, focused on making the future real today, if by ever so little. Innovation, in whatever way we try to do it, is an attempt to open up today to the future, if by ever so little. At the same time, the future of anything, including innovation, is unknowable. Had this book been written in the 1980s, it is exceedingly unlikely that it would have predicted the many ways in which the internet affected things such as business model innovation, social innovation, or open innovation. The step from networking technologies to what the internet became would simply have been too enormous to contemplate. Thus,

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any attempt to write about the future of innovation is bound to fail and to be an exercise in futility.

That said, if this book has debated what innovation is right now—for and against, from different perspectives—it would seem a dereliction of duty not to at least attempt a comment on what innovation might become. For even though some of the chapters here have been quite critical of innovation (not least my own previous chapter on image and ideology in the innovation industry—see Rehn, Chap. 5 in this volume), I believe even the more critical commentators (see, e.g., Godin 2015; Godin and Vinck 2017) would agree that we will need innovation in the future. In fact, as we look to how the future seems more and more likely to be defined by a number of "wicked problems" (Rittel and Webber 1973), it becomes clear that there will be a more and more pronounced need for new technologies, new solutions, and new ways of working.

This, however, doesn't mean that innovation won't be forced to change, even in painful ways. Looking to wicked problems such as the ecological crisis, a phenomenon like innovation looks very much like a double-edged sword. On the one hand, innovation has wreaked havoc during the consumption-driven era of late capitalism (cf. Jameson 1991). We have created more and more ways to entertain ourselves, and in so doing also created mountains of waste, and wasted mountains of energy. Bitcoin and other innovations in the field of crypto-currency have been interesting in the way they open up for new ways of understanding the economy, yet at the same time it has been estimated that bitcoin alone uses as much energy as Argentina (with its 45 million inhabitants) and that it thus generates emissions on about the same levels as Greece. Innovative e-commerce firms, in conjunction with advances in manufacturing, have ensured that an astounding amount of products are available to buy for consumers globally, with all of the attendant waste and logistics externalities. In a very real way, innovation created the problem it is now asked to solve, and no one knows where the flywheel stops. On the other, we can view the current state of the world as a *fait accompli* and have little choice but to trust in the capacity of innovation to bring forth novel ways of both keeping the world going and at the same time lessen the impact of contemporary capitalism. Either we start consuming far less, aiming for the politically very challenging project of global degrowth, or we

innovate our way(s) out of the problem. Even in the latter case, it would seem that more and more of our innovation engagements will need to take into account something greater than innovation for the sake of innovation.

Instead, many commentators (see, e.g., Suchek et al. 2021) have noted that one of the core issues for innovation now is how to engage with issues such as the circular economy, and in general addressing the issue of over-exploitation of global raw materials and other resources. Whereas innovators as recently as a decade or so ago could go about creating the new new thing with casual abandon regarding any other issue of sustainability than whether raw materials could be had at a price point where the innovation could be sold at a profit in the market, today innovation is already a different ball-game. Issues such as repairability, recyclability, design for disassembly, material re-use, and sustainable production systems are no longer just an issue for sustainability experts and environmental engineers, they need to be heeded by anyone whose innovation has a material form, and most of those whose do not. The innovation calculation has changed, and while we certainly need to keep innovating, the task may well become one of not innovating *more,* but rather innovating *better.*

To this there will no doubt be innovation evangelists who would point to how the improvement in tools for innovation—*meta-innovation*, if you will—are ushering in yet another golden era for innovation, one where the power of the self-same will be so augmented as to easily deal with pesky issues such as a global ecological crisis. Such a progressivist and solutionist (Morozov 2013) stance is attractive, and answers to a most human need, namely the need for hope. Arguably this has driven our innovation discourse for a very long time, but in our age of techno-optimism, it has taken on an almost religious tone. The new boosters of innovation are not merely stating that innovation is a necessity, but rather that it is *transcendental.*

Consider the entrepreneur-cum-speaker-cum-author Peter Diamandis and his writing partner Steven Kotler. With book titles such as *Abundance: The Future Is Better Than You Think* (Diamandis and Kotler 2012), *Bold: How to Go Big, Create Wealth, and Impact the World* (Diamandis and Kotler 2015), and *The Future Is Faster Than You Think: How Converging*

Technologies Are Transforming Business, Industries, and Our Lives (Diamandis and Kotler 2020), the pair stands as a kind of paragon of innovation triumphalism. In their telling, all we need to do is wait as "exponentially accelerating technologies" do their thing, and accept the abundance that this will bring with it. It is a strange reversal of accelerationism (Noys 2014; see also Loadenthal 2022), which argued that societal collapse might just as well be accelerated so that a new one could be built (a fantasy that the extreme left, the extreme right, and extreme green movements have occasionally indulged in—helter skelter), evangelists such as Diamandis and Kotler are seeing technology accelerating on its own, leaving most of humanity with the task of getting out of the way, waiting for the abundance to come.

This kind of thinking is sometimes coupled with what is known as *longtermism,* a philosophical theory that charges that our decisions today should be driven not only by what is good for the planet and society today, but for these both long into the future (see, e.g., Ord 2020). In one form, this could be used to argue that the economy needs to grow, consume, and innovate less, so as to keep resources free for generations that may not be born for hundreds of years. In another, more radical form, it could be used to argue that the development of technology today can be of such importance to untold generations untold years into the future that e.g. the death of millions or even hundreds of millions of people now starts looking like an acceptable cost. If we can save a hundred billion people in the future, should that affect how we treat a few million people today? Put somewhat differently, some longtermists would say that we need to speed up technological development and innovation now, no matter the cost, as not doing so could pose an existential risk for generations far into the future.

Some, again, would state that all of these notions are in fact built on a very Western outlook on life, and driven by privilege. We want to keep our lifestyle, and to have the innovations that ensure it, but look at it strictly from our own, Western perspective. As, for example, Chaturvedi's chapter in this book shows (Chap. 15 in this volume), this is a very limited way of looking at the world. While there certainly is the possibility that Western countries such as the US and the EU countries will remain strong innovators, it is also clear that innovation in areas such as China,

Southeast Asia, and Africa (without forgetting South America) will become more and more important. China is already an AI powerhouse, and the networked structures for innovation that have developed in Shenzhen (see Hu 2020; Nylander 2017) are showcasing a very different approach to innovation that is normalized in Western views of the same. To all this comes the geopolitics of innovation. While Western corporations may increasingly veer toward more sustainable practices, China as well as many countries in the Global South may well feel that they are entitled to at least some more innovation for innovations sake, referring to a principle of fairness. In other words, the future of innovation might not only be an answer to wicked problems, it might be a wicked ethical problem unto itself.

Lastly, there is the issue that we opened with—the unknowability of the future. The real future of innovation might lie in something that is too weird to contemplate with what we know now. Some discount "weird futures" as being frivolous flights of fancy, but consider the following. Today, if I wonder just how warm it is outside, I start talking to my watch. It can understand simple questions quite well, and can then relay them to a slab of glass and circuits that I have near me at all times, and that can access a global network of information to find the answer. In a timeframe that still seems magical, my wristwatch, speaking in a soft, faux-Irish lilt, gives me the outside temperature and some additional weather info. Utilizing highly sensitive motion sensors, and its innate desire to be helpful, it also sometimes interrupts me mid-lecture or mid-conversation, trying to add to whatever it was I was talking about. Looking back 35 years, to the technology-interested teen I was, such a story would have both stimulated and saddened me. Stimulated, as I wanted to believe, but saddened, as I still was mature enough to know that such marvels would not come during my lifetime. Yet here we are, in a weird future. Discounting the possibility of, for example, synthetic biology, advances in nano-technology, or quantum computing (not to mention technologies we simply do not have terms for yet) to generate far weirder possibilities for the future of innovation than we can imagine today would thus be a mistake.

Taking this as our starting point, we might thus postulate at least four potential scenarios for the future(s) of innovation. These would be:

- *Faster innovation*—a future in which particularly technologies of augmentation make innovation quicker and more explorative.
- *Slower innovation*—a future in which social sustainability issues pushes for more considered, slower (yet possibly more impactful) innovation.
- *Diverse innovation*—a future in which the current, Western innovation logics are challenged, and a new geopolitics of innovation emerges.
- *Weird innovation*—a future of the unknown unknown, in which miracles and magic have to redefined. Also a future in which novel monsters emerge.

These are obviously just very simplified scenarios, and the real future of innovation will be plural and is likely to contain elements of all of these. It is still worthwhile to deal with these scenarios as separate entities, in order to tease out the things they may bring to the future of innovation, and to enable the esteemed reader to think through the many possible hybridities that may emerge. Note that I am here not aiming to make a full, academic review of these possibilities, but rather aimed to show how they might play out. As a result, I have not referenced the text with quite the same ardor as I otherwise would, in part as these are all fields where the speed of development—for good or bad—is often so rapid as to make references outdated before this book has a chance to be printed.

FAST, AUGMENTED INNOVATION

Many of the most influential names in technology have stated that what we've thought was the golden age of innovation may be anything but. While innovation skeptics like Tyler Cowen (2011) and myself (Rehn 2019) have suggested that the "low-hanging fruit" (in Cowen's terms) may have been picked, and that any substantial innovation may require substantially more resources than before, people like the aforementioned Diamandis (as well as most of the innovation industry) have steadfastly argued that a number of technological developments are in fact ushering in an era of innovation that might overshadow our own. These technologies come in two flavors, as it were. One, there are potentially radical new technologies that may redefine much of what we think regarding our

global limitations; space mining, hyperloops, and synthetic biology to mention a few. I will not address these here, but they could in their way be fitted under the heading "Weird Innovation" (no insult intended). Two, there are already emerging technologies that would directly enable new forms of product development and innovation. Key among these are machine learning, artificial intelligence (AI), AR/VR/XR (Augmented/Virtual/eXtended Reality), enhanced simulation and automation technologies, and quantum computing. Some of these are already here, others are radically developing, and yet others show tremendous potential as proofs of concept.

I have taken to calling this *augmented innovation,* which while unfortunately sharing the abbreviation AI with a part of itself, describes the potential quite well. What we see here is that these novel technologies will not shift innovation by themselves, but will act as key technologies through which innovators gain novel capabilities and augmented skills with which to explore, experiment, test, and communicate new innovations. Again, I will not reference the theories and books that exist regarding these technologies at the moment of writing, as by the time this book is read, more up to date literature will have been published.

To start, we know that innovation has the potential to be super-charged by *machine learning, AI, and algorithmic logics*. Human beings may still best computers when it comes to issues such as imagination and creativity, but in sheer generation of ideas (and their permutations) computers reign supreme. We have already seen software that have been fed with both basic parameters of certain products and a large dataset of images of the same, and then been asked to generate large amounts of potential new designs. While the current systems have a tendency to generate much that is innately impractical (a system I saw suggested ideas for coffee cups that included handles on the inside and a cup that for all intents and purposes was a plate with a handle), better programming and bigger datasets could quite quickly enable vast improvements, at least in the case of simpler designs. Similarly, a machine learning system can be trained to explore existing patents and suggest possible combinations thereof (e.g., if a patent for mining, possibly combined with one in material sciences, might find use in an adjacent field such as metallurgy). Today, the signal/noise ratio of such systems tends to be less than satisfactory, but every

iteration also tends to bring about improvements, and the speed with which such iterations emerge is increasing. It is not beyond the realm of the possible that the innovator or product development engineer of tomorrow has very powerful systems at their beck and call, enabling very rapid idea generation, idea variations at the touch of a button, and the capacity to run tests *et cetera* on new ideas at speeds that we would see as quite magical. Tomorrow's innovator will not need to do boring archival work, but instead call upon smart algorithms to instantaneously catalogue, for example, all existing designs in a specific category, complete with what parts of these currently enjoy IP protection. Following this, our future innovator might ask an AI to generate novel forms of said design, establishing parameters, filtering out all forms that might have IPR issues. Through three iterations of this, and with a little input from the innovator (beyond the parameters), and a new, innovative design might have been created. In a similar manner, contemporary innovation management often suffers from (a) not being able to capture all the ideas that exist in a corporation, (b) not having sufficient time for filtering ideas to find those that might be interesting to develop further, and (c) having bias play a part in both of the previous instances. While we should be aware that algorithmic systems can show bias as well, running an AI-powered innovation management system in parallel with a traditional one can generate interesting results with new ideas captured and otherwise ignored ideas potentially explored.

Second, the set of technologies today referred to as *the metaverse* holds the potential to have an outsize impact on innovation. While the term is still somewhat contentious and marred by hype, it still seems that various forms of VR and AR will develop to quite an extent in the years to come. Whereas the innovators of yore had to do sketches with a pencil, or mock things up in often cumbersome CAD-programs, the innovator of the future may well don a pair of glasses and get transported to a virtual laboratory where all kinds of digital prototypes can be summoned at the flick of a digital wrist. Imagine being able to think of a new kind of design for an airplane, and then simply describing it to a virtual assistant which uses voice recognition to sketch out a prototype. Imagine then entering your virtual lab, giving additional instructions and seeing your idea take form and develop in real time, as you speak. Want to shrink it down to

palm-size to look at its lines? One voice command. Want to test it in a wind-tunnel? One command. Want the wind-tunnel to mimic a Texas tornado that rips your plane to shreds? One command, and one more to bring the plane back. Combining voice assistants, specialized and general AIs, massive datasets, and the metaverse, we could create virtual product development laboratories that would give a large part of humanity the kind of R&D facilities that today only the richest corporations and countries can afford. Look far enough into the future, and most professionals may be able to afford digital innovation spaces that can mimic entire factories or even ecosystems, democratizing innovation to a degree never-before-seen. Another part of all this, one that will arrive before the house of innovation magic I outline above, is the manner in which several of the aforementioned technologies support an increased use of *digital twins* in innovation work. Already today, corporations experiment with taking an existing product or system and creating digital twins that can be tweaked in order to find new efficiencies or novel functionalities. The metaverse, coupled with AI-supported systems, can boost these capabilities in a tremendous fashion. Today, digital twins tend to be simple systems with a limited amount of parameters, but these new technologies of accelerating innovation could potentially enable making a digital twin of an entire factory or supply chain. Imagine being able to test every possible set of variables in a factory to find its optimal balance between efficiency and sustainability, while running no risk for breaking equipment or shutting the production line down. Today, many of our systems run in a suboptimal fashion simply because we can't afford to test all possibilities for them. Digital twins remove that cost, with great potential to e.g. develop new forms of process innovation.

Lastly, we need to mention the potential inherent in *quantum computing*. While still an early-stage technology, the sheer speed and volume boost this technology might bring have the potential to change what is possible when it comes to computation. In areas such as pharmacology, the kind of computation required to fully model complex systems such as the human body, or to compare large amounts of complex molecules simultaneously, is today outside of what is feasible for any researchers or companies. With quantum computing, it might be both possible and easy to compare millions of molecules and their attendant reactions

simultaneously, something which could speed up drug discovery in a way difficult to imagine today. In a similar fashion, the kind of VR you can engage with today is still cartoonish, as rendering a fully lifelike world would demand far too much from contemporary computer setups. With quantum computing, these limitations are lifted. The plane you conjured up in the example above can now be rendered in exact, lifelike detail. Every rivet will be visible, and you will be able to enter the plane and test the difficulty of overhead lockers, not to mention shifting around seating orders and inhabiting every seat with a perfectly lifelike avatar. That virtual factory? It will now look and act like a real factory, complete with natural-looking oil spills on the floor and sweating workers trying to get a piece of machinery to work.

Taken together, these technologies will not make innovation automatic, but they will augment the power of innovators to work with their ideas to a level that will feel like a set of superpowers. They can also open up brand new vistas for organizations, that can draw upon more of the ideas already existing in them and enable collaboration around innovation on new, and newly empowered, platforms. It also has the potential of creating more democratic innovation, as the costs of exploring ideas and showcasing the same go down in a radical fashion. If everyone in the organization can try out new ways of working, and show their managers why their ideas would work by way of lifelike simulations, a great deal more innovation power can come to the fore.

SUSTAINABILITY AND SLOW INNOVATION

As stated above, there are indications that innovation might accelerate in quite a massive way in the future. That said, we should also consider whether the future of innovation lies in slowing down and becoming more measured and considerate. We should by now all be aware that there are not one but several mega- or gigatrends in connection to this that will affect society as a whole and through this innovation.

The first, and most obvious one, is *global warming* and the many attendant phenomena this has or will give rise to. If we are to survive, as a species and in something akin to the civilization we have established,

radical change is needed. We have for too long lived with the unspoken assumption that any kind of innovation is good innovation, and this has led us to waste money, material resources, and cognitive power that could have been used elsewhere. As an example, consider the attempts by several startups and corporations to create a laundry-folding robot. In one case, that of the Laundroid (see Rehn 2020a), more than 100 million USD was invested in a startup that in the end failed to even deliver on the promise of easing our laundry-folding woes. This can be inquired into from several perspectives. Does the world, in the state it is in, need to solve this "problem" technologically? Was there nothing more important that the amount of money and expertise that went into the Laundroid could have been used for? The champions of innovation might here point out that innovation trajectories can often be complex, and that there is a chance that, for example, some innovation discovered in the creation of the Laundroid might later bloom into something far more impactful, and this is a fair comment. Yet this does not take away from the fact that as global warming is turning into an existential crisis for humanity, we may not be in a position to gamble quite so freely with our limited resources as we have done up until now, and in the studies I have done about the Laundroid there seems to be little if anything in the way of positive externalities. Hope may spring eternal, but hope alone cannot save the planet.

The second crisis that innovation needs to address is the evermore problematic issue of *resource depletion*. Our current global system is such that we are overusing most planetary resources, and in many cases do not at current have feasible ways of switching these out. The resources most discussed today tend to be fossil fuels, pointing to the critical issue of energy. Here, again, innovation is something of a double-edged sword. Many forms of innovation are energy-intensive, but innovation can also aid in the conservation of energy, and this discussion has already been quite robust in innovation research (see, e.g., Adams et al. 2016; Suchek et al. 2021), and we are already seeing impressive progress in a transition toward green energy. A far less discussed resource-issue is that of materials that tend to be understood as mundane and plentiful. We may seldom discuss the connection between innovation and water, but the fact remains that without potable water, most other conversations are pointless. With massive urbanization has come critical issues regarding how we

can keep up water infrastructures, and ensure continued life on our planet. Twenty-one of the 37 biggest aquifers on the planet were already in 2015 past their "sustainable tipping point," i.e. drying out (Richey et al. 2015), with obvious ramifications for the global food system. Another, possibly more surprising depletion event is occurring in sand. While it to a layman might seem impossible that there could be such a thing as a sand shortage, with deserts and beaches seen as endless reserves, the fact of the matter is that sand shortage, with sand being the planet's second-most used resource after water, is becoming a crisis event. The issue lies in the fact that much of what we normally call sand cannot be used for the purposes it today is: construction, glass manufacture, and the production of, for example, silicon chips. Desert sand, for instance, is not coarse enough to be used in making cement and other critical infrastructure, making a radical shift toward a circular economy needed, in particular when it comes to the built environment (cf. Torres et al. 2021). The issue doesn't become rosier when we consider less common raw materials. Rare-earth minerals, with lithium as the best known of these, are as their name indicates rare. They are used in basically all electronics, their mining is often highly non-sustainable, and they are very difficult to replace. Something similar could be said about helium, which has been called the world's only completely non-renewable resource, and one that we are wasting at alarming rates. To most people, this might seem like a non-issue, as helium is famous for balloons and little else, but in reality it is a critical resource for our modern world. It can act as a super-coolant, and is important for things such as medical apparatuses such as MRI machines as well as the aforementioned quantum computers, which all rely on liquid helium-cooled superconductors.

A third crisis refers more to social sustainability, but is also linked to the two above. The issue of *social inequality* may at first glance seem somewhat further removed from the above-mentioned innovation issues, but I would contend that such an assumption would be mistaken. There has been a long tradition in innovation thinking of assuming "trickle-down" effects, so that an innovation initially is only used by the wealthiest, most novelty-seeking individuals or organizations, and in many cases this has held. Computers, the car, electric light, the television, and refrigeration are all cases where the early models were expensive luxuries, but

today seen as necessities. That said, there are no guarantees that this is a process that will always occur, and in addition we have over the last decades seen that despite what some in the innovation industry have referred to as a golden age (by any other name) of innovation, many have not seen their socio-economic standing change in anything like a positive way. On the contrary, a number of commentators (see, e.g., Klein 2020; Piketty 2014, 2020) have remarked on an increased polarization even in affluent Western countries, where the middle class is being hollowed out and where structures of privilege have ensured that innovation increasingly benefits the few, rather than the many. Contemporary innovation has been a boon to the urban elite I myself represent, where I by pressing a few buttons on my iPhone can get people to deliver an ever-expanding universe of goods to my door, yet done little to ease the life of, for example, poor pensioners, who may not even be able to afford the smartphone that I see as an utter necessity. With some of the latest business model innovations acting as a way to establish digital serfdom, this trend looks unlikely to end anytime soon. Here it should also be noted that despite a tremendous amount of the innovation conversation focusing in particular on the younger demographic, the main aging trend is not a question of more and more young people crowding the economy, but rather the general graying of society. Here, again, innovation literature has been achingly slow to respond to a clear trend that has been evident for several decades, and where costs for care and often insufficient pension systems are setting many societies up for very challenging decades to come.

All three of these cases, which deal not with great future potential but actual and increasing limitations, may force the hand of future innovation, in various ways. It is self-evident that the carefree innovation for the sake of just creating more stuff cannot be sustained. Innovators will need to pay far more attention to what the environmental impact of their innovations are, and societies need to develop robust conversations about what kinds of innovation should be encouraged and supported. Whereas the augmented innovator of the future might have a virtual lab with unending possibilities, they will also need to think long and hard about whether and how their creations can be produced in a world with limited resources, and be quite sure about the ways in which these resources can be re-utilized at, for example, a product's end-of-life. Further, innovators

will need to understand that the socio-political context innovations are introduced in, and consider whether there might be more deserving audiences and more pressing problems than those that the urban elites face.

All this will require *slow innovation.* Not in the sense that innovation processes *per se* need to be slowed down, but so that our innovation thinking becomes more considered and capable of thinking beyond the moment of commercialization. Life in the Anthropocene forces us to think not in the weeks it takes to prototype, or the months that it might take to create an innovation, but in decades and generations. Life in a complex world also makes it an imperative to think about true diversity and inclusivity, rather than about how one best can sell yet another gadget or service to a middle-aged, white professor in central Copenhagen. This might sound like the pessimistic cries of yet another Cassandra, but this would be a most mistaken reading. This kind of slowing down, this kind of focus on greater care and consideration might be exactly what innovation needs in order to be something more than the rote production of novelties. This might be what breaks a flawed innovation ideology and enables us to transcend simplistic models of the economy and innovation.

DIVERSE INNOVATION REGIMES AND THE GEOPOLITICS OF INNOVATION

For much of its history, innovation has been a story of white men inventing and commercializing novel technologies and ways of doing business, with other white men being the assumed primary users and consumers. This state of affairs has been supported by Western nations, Western ecosystems, Western innovation agencies, Western entrepreneurial finance, and Western media, to just mention a few. Yet, as, for example, Abhinav Chaturvedi's chapter (Chap. 15 in this volume) shows (and, in a somewhat different way, the chapter by Sine N. Just and Sara Dahlman, Chap. 14 in this volume), much innovation occurs outside of these Western networks of privilege. In fact, as Martin (2016) has remarked, one of the key challenges for innovation studies is to break with the sclerotic

tendencies of the field and start seeing both the innovation that happens in the "dark" parts of the world (here not seen as a colonial term, but as that which has been overshadowed by the focus on Western innovation orders) and to make the field truly global.

This, however, is challenging in several respects. Not only are most successful and popular innovation scholars situated in the West, the very ontology of the field has a bias that marginalizes alternative innovation regimes. Much of what is written about innovation carries with it a set of assumptions regarding the necessary structure thereof—triple-helix structures (Leydesdorff and Etzkowitz 1998), Western notions of entrepreneurial finance, diffusion models with wealthy early users (Rogers 1962), and so on. What this has created is a field where alternatives to the simplistic view of the market economy have been systematically silenced. One possibility for the future of innovation might thus be the emergence and ascendance of one or several alternative innovation regimes challenging the hegemony of contemporary innovation thinking. Such challenges aren't necessarily just geographically driven, but might also be defined by alternative ideological world-views, or simply novel experiments in the ways of creation.

The first emergence might be that of *new innovation geographies.* This clumsy phrase is meant to draw our attention to the fact that the future might not be built in Palo Alto, no matter what the innovation bros (cf. Chang 2019) think. For too long, the notion that innovation will only flourish in advanced Western economies, or localities that mimic these, has plagued the conversation about innovation. What this has led to is a classic case of colonization—we might as well coin the phrase "innovation colonization" here—where many actors have either an investment in or confusion about what innovation needs to look like. For too long, the notion of Silicon Valley (and the numerous clumsy attempts to copy this unique setting) has loomed over innovation thinking as the one right setting for innovation. Looking at the new, global world of innovation, several things stand out. One, not all structures will be as driven by hard capitalist logics. Looking to the Nordic countries, which always do very well when indexes about innovation are tallied, we can see that a more collaborative, social logic can work just as well. In the Nordics, systems such as social security, free healthcare and education, and strong

innovation support from the government have created an innovation landscape that actually outperforms more capitalist systems such as those in the US and the UK. It turns out that when people do not have to worry about affording basic necessities such as health- and childcare, their creative faculties can have freer reign. Companies such as LEGO and IKEA can keep innovating, drawing part of their innovation capabilities from the supportive social structures of their native countries.

In quite a different way, countries such as China and India are showing not one but several pathways toward the innovation of the future. Whereas the dominant innovation logic of the Western countries has been one of competition "red in tooth and claw" (as depicted by Tennyson and Marx), we are increasingly seeing more collaborative and supportive structures emerging in countries less Western. While the dream of ubuntu innovation (from the Nguni Bantu term) might not yet have made its ascendance in Africa, we can already see that China is developing innovation regimes that are markedly different from those we have been familiar with by the Western innovation discourse. Consider the aforementioned Shenzhen (Hu 2020; Nylander 2017). Here, companies are spitting out endless varieties of whatever the market seems to be keen on, in neither direct competition nor strict collaboration with others. Rather, we can in the region see something akin to an organic response to environmental demands, a kind of accelerated evolution which accepts that much of what is produced will fail and be wasteful expenditure (cf. Bataille [1949]1988), yet this is seen as part of the cost of doing business. A teeming, roiling innovation Petri dish, less occupied with SEO and marketing strategies than simply spitting out what might be desired down the line. Both China and India are examples of innovation ecosystems that care far less about stability (a most Western preoccupation) than about whether they are working fast enough, generating novel varieties at the speed demanded by the market. China is reacting to the Western impulse of more, now, but at the same time India is showcasing another innovation regime, one far more attuned to the market as it is, where it is. In 2005, C. K. Prahalad took his experience from being born and growing up in India and wrote *The Fortune at the Bottom of the Pyramid* (Prahalad 2005). Here he argued that the economic dynamism that existed in even those with the least wealth could actually be corralled for innovation and novel

wealth-creation. In India, there is a tremendous amount of "dark innovation" (Martin 2016) that may well redefine how we view successful innovation in the future, particularly as India is consistently showing that their own, local approach to innovation (including forms of *jugaad*, as discussed by Chaturvedi in this volume) can engender impactful change.

A second, possibly more speculative scenario is that of *norm-breaking innovation regimes*. Here, I am thinking in particular about more community-driven innovation logics, as well as the potential in alternative organizational forms such as anarchism in innovation (cf. Parker et al. 2008; Rehn 2020b). For quite a long time, the field of innovation studies has been aware of alternative innovation structures, such as networks and innovation (Benkler 2007) or open innovation structures (Chesbrough 2003). What has been lacking, though, is a more consistent thinking regarding these which would see them not as local aberrations but as regimes unto themselves. Referring to remarks made earlier, it is not beyond the realm of the possible that innovation might become radically democratized by technology, not entirely unlike the way in which the internet allowed for freer dissemination of information, for better and/or worse. With the technological wherewithal being accessible to evermore increasing audiences, the current corporate stranglehold on innovation might not so easy to uphold. We are also seeing how the potential in digital economies has created possibilities for new kinds of criminal gangs, engaging in high-tech thefts and ransomware attacks. While these often non-Western gangs aren't today engaging in much beyond criminal innovation, over time such engagements might spark new startups and technologies.

We should also be aware of the possibility that *a new geopolitics of innovation* might emerge. The rise of the innovation regime we have at current was to a great degree driven by globalization and friction-free supply chains. As I am writing this, several things have emerged to challenge this. The coronavirus pandemic of 2020–2022 showed the fragility of our globalized system and created global disturbances in transportation as well as shortages in several critical supply chains. Geopolitical disturbances such as Brexit, isolationist policies in general, and Russia's war of aggression in Ukraine has exacerbated these issues, with the full global consequences being quite difficult to predict. While the geopolitics of

innovation for a long time has been one of increasing openness and collaboration, it is not beyond the realm of the possible that we may see more and more walls between, for example, national innovation systems—with the attendant challenges this might bring.

We thus need to learn to think about innovation in a manner that is less Eurocentric, less attached to the innovation systems we are used to, and more open to novel forms of innovation as well as new forms of innovation barriers. While a new geopolitics of innovation might bring with it various kinds of creative destruction, some of which might hit our current, Western economies, there is much to be said for rise of new innovation economies. Innovation thrives on diversity, and our current innovation context is still sorely lacking in diversity, equality, and inclusivity. Maybe new, norm-breaking innovation systems, from countries we today write less about in innovation journals, are exactly the kind of disruption that we need.

WEIRD INNOVATION: THE NEW NEW THINGS

As I indicated at the very beginning of this chapter, the future is unknowable and it would behoove us to remain very humble in the face of the same. I have so far indicated various possibilities, all of which I see has having a high probability to have a big impact on innovation in the future, but I am more than aware that I may be completely wrong. The triumphalist notions of augmented innovation I outline above might be scuppered by unforeseen technological problems, or by repressive politics, or a toxic mixture of both, or something else entirely. The idea of a slower, more measured innovation I lay out as a possible scenario may be made completely redundant by sudden and surprising developments in technology that ensure endless free energy and resources for all. It might even come to pass that the Western hegemony over innovation continues, and that there is no great diversification, just more of the same. I see none of these possibilities as particularly likely, but it would take a far more arrogant man than me (even though I am a full professor, and thus know a fair bit about arrogance) to completely deny these possibilities.

We should also be aware of the fact that even if the scenarios I've outlined here would be relatively close to the actual state of the future, that doesn't mean that everything pans out as predicted. I have in the above not discussed the many kinds of externalities that these futures also might engender, and which might complicate the innovation situation. Take, for instance, the way in which augmented innovation may shape the future. In the future I envisioned above, technologies such as AI and the metaverse were presented as enabling better innovation in the future, giving us superpowers. That is only one side of the story. I have recently started to talk about the phenomenon of "long bias" in algorithmic innovation logics, by which I mean the capacity, for example, AI-powered systems to create long-term skews in innovation trajectories. Much of what today is written about biases in AI deals with errors that can be detected in the here and now—faulty categorizations, erroneous exclusions, and so on. When it comes to innovation, the actual results of a biased decision (e.g., to fund one research project and not another) might not be detectable in years, and in some cases will remain speculative. Consider, for instance, the decision to fund the initial ARPANET, which directly led to the development of the internet. Had that decision not been made, we might still have gotten networked computers, but the trajectory could have looked very different (and developed a lot slower). As we move toward more and more innovation being affected by algorithmic logics, we may thus be blackboxing (Latour 1999) a lot of potential developments, and not even be aware that we are missing out, or stuck in algorithmically generated suboptimal path dependencies and dominant designs (cf. Anderson and Tushman 1990).

Something similar lies as a potential in what I above called slow innovation. While the idea of a more measured and considered innovation might seem sensible and even necessary, we should be aware that there here lies a risk of what we might call "seriosity bias." The term might sound strange, as we normally work with the assumption that we should aim for being serious rather than frivolous. In innovation, however, this simple logic might be misleading. Seriousness is a culturally and therefore historically defined category, and therefore tricky to use with regard to emergent phenomena. Consider video games. The first video game was hacked together by an enthusiast and played on what was supposed to be

a machine for research (the PDP-1). For a long time, these games were considered a frivolity, a silly and childish marginal phenomenon. Today, video games represent a 200 billion USD market and have led to various other business developments such as gamification. In a similar manner, the first steam engines were considered toys for idle gentlemen to experiment with, and were long considered frivolous technology without serious applications. In fact, innovation often seems to follow a path where it starts out as a non-serious experiment, developing into something akin to a toy, and only slowly progresses to actual serious use. A mindset that only aims to innovate in the "serious" realm might thus sabotage many innovation trajectories by not allowing sufficient frivolity.

This is a complex way of saying that we simply do not know. The future, even when we can guess at some of its probable paths, is exceedingly likely to surprise us. In fact, the one thing we do know about the future is that it will look different from how we think it will, as this has always been the case. With innovation, the case is weirder still. Here, we can only look to the genius of Arthur C. Clarke, who used science fiction to peer into the future. We sometimes speak of his three "laws," cobbled together from various of his pronouncements, and they represent a guide as good as any for the weirdness of innovation's future:

> *Clarke's First Law:* "When a distinguished but elderly scientist states that something is possible, he is almost certainly right. When he states that something is impossible, he is very probably wrong."
>
> *Clarke's Second Law:* "The only way of discovering the limits of the possible is to venture a little way past them into the impossible."
>
> *Clarke's Third Law:* "Any sufficiently advanced technology is indistinguishable from magic."

So, for a vision regarding the space mining, hyper loops, and synthetic biology that I mentioned before, do visit your local bookstore and buy new releases in science fiction, as well as some of the classics. Never hurts.

THE MANY FUTURES OF INNOVATION

So will there be innovation in the future? Most certainly. Great and small, fast and slow, serious and frivolous. Rather than speaking of a singular future, we should think in multiples and pluralities, and cherish the unknowability of the future. What I have suggested here should only be seen as food for thought, some preliminary trajectories into the great unknown of innovations yet to come… It's going to be a wild ride.

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Afterword

Alf Rehn and Anders Örtenblad

All books on innovation remain incomplete, by necessity. There is always one more thing that could be said, one more perspective that could be deployed, more depths to explore. Further, it is in the nature of books on innovation to never manage to be as radical and as interesting as the phenomenon in itself. No matter how revolutionary a book one tries to write, innovation will come along and redraw the world in a manner that makes what seemed so radical now look positively quaint.

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In this, writing and editing a book that debates innovation has been a humbling experience. There were debates we wanted to include, but couldn't find people to write either the pro or the con. There were forms we wanted to explore but had to cut due to lack of time and the length of the manuscript. Still, we believe we've managed to bring in some interesting voices, some give and take, some openings for the innovative incursions of others.

Innovation will keep developing and mutating, extending and exploring. To be a researcher of innovation is to accept that there is no final word, no point where it all is said and done. Even as we finish this book we do so well aware that it only gives us a single moment to breathe and to rest, for tomorrow the journey continues. New things to explore, new trajectories to follow, new debates to get into. *To infinity, and beyond!*

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