COGNITIVE SCIENCE SERIES

RESPONSIBLE RESEARCH AND INNOVATION SET

Volume 7

Business, Innovation and Responsibility

Sophie Pellé

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RESPONSIBLE RESEARCH AND INNOVATION SET

Coordinated by Bernard Reber

Responsible Innovation. For some, this expression is only an oxymoron or, worse, a means of masking with a sheet of virtue economic practices that would otherwise appear selfish and self-interested. For others, theorists and actors of innovation, this expression represents a formidable lever of action and a rich conceptual source from which to draw new ways of innovating.

The articulation between different levels of norms – economic and ethical, to which we can add the legal dimension – is not new, and is the subject of an in-depth reflection, decades old, around the idea of Corporate Social Responsibility (CSR).

By taking up some debates on CSR, most of which are foreign to the current authors of responsible innovation, this book examines the various justifications that CSR brings in order to convince economic players, subject to powerful market forces, of their responsible commitment. But these are not enough.

The book also explores the specific contribution of the concept of responsible innovation to coping with the technological, social and political breakthroughs generated by innovation, and is based on philosophical resources such as the ethics of virtue and the ethics of "care".

Sophie Pellé holds a doctorate in economic epistemology from Panthéon Sorbonne University, France. Since 2010, she has devoted herself to the ethics and governance of new technologies (ANR project, nano2e and European GREAT project) as well as to various aspects of the possible links between economics and ethics.

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First published 2017 in Great Britain and the United States by ISTE Ltd and John Wiley & Sons, Inc.

ISTE Ltd
27-37 St George's Road
London SW19 4EU
UK

www.iste.co.uk

John Wiley & Sons, Inc.
111 River Street
Hoboken, NJ 07030
USA

www.wiley.com

Library of Congress Control Number: 2017945467

British Library Cataloguing-in-Publication Data
A CIP record for this book is available from the British Library
ISBN 978-1-78630-103-1

Business, Innovation and Responsibility

Foreword

By its very nature, the notion of Responsible Research and Innovation (RRI) is focused on the world of research, and more specifically on the allocation of project funding by European or national funding bodies, as in the case of the Netherlands, where considerable importance has been accorded to this theme. RRI expresses new requirements in terms of the conduct of research projects. This is not intended to imply that certain forms of responsibility were not previously considered in the research process. Good science always involves the respect of certain responsibilities from scientific integrity to the respect of discipline-specific standards of excellence. These responsibilities should be seen alongside the desire to protect individuals (both in physical terms and in terms of personal data) involved or affected by certain processes, limit animal suffering or preserve the environment, for example. RRI is different in that it goes beyond the level of research projects and experiments, taking in a broader spectrum of responsibility. This is particularly applicable to certain emerging technologies, where there is a need to anticipate potential consequences. Research should not, therefore, be limited to questions of social and economic impact; it needs to be responsible in a broader sense. This extends from the social and environmental challenges that need to be taken into account (such as the European *Grand Challenges*) to considering the means of responding to these challenges.

Sophie Pellé, economist and philosopher and an expert in the theoretical and applied debates surrounding RRI, has considered these questions in detail in an earlier work [PEL 16a]. In this volume, she focuses on the other side of the coin: innovation. She explores the specific points raised by the context of innovation and by economic activities, viewed from a perspective of responsibility. The European Commission funds a number of mixed

projects, involving university institutions and private companies, and thus has a degree of control over the approaches involved; however, businesses are also major players in innovation. Inventions or scientific discoveries are exploited, transformed, modified and made accessible for the commercial market at the company level.

The present work, alongside forthcoming titles by Pavie [PAV 17], Nikolova [NIK 17] and Lenoir [LEN 15, LEN 17] (who takes a more theoretical approach), tackles the question of responsibility from a business perspective and, more generally, in terms of the economic environment.

This book is a welcome addition to the RRI canon for a number of reasons. First, it provides an accessible presentation of a number of texts and debates, on a number of levels, concerning corporate social responsibility (CSR), a precursor to RRI. CSR combines a number of levels of responsibility, including legal considerations [GIA 16] and a social dimension in the form of stakeholder implication, where the interests of individuals, groups, institutions or even the environment, which may be affected or have an effect on the company, are taken into account. Companies are thus subject to a triple requirement in terms of their economic responsibility to generate profit in a competitive environment, their social responsibility to stakeholders and the political responsibilities arising from reciprocal influences between the firm and the environment.

A rich and dynamic body of literature has developed in the field of CSR over the last 40 years, leading to the emergence of institutionalized practices regulated by robust and recognized international standards, such as the ISO 26 000 standard and those laid down by the global reporting initiative (GRI), discussed in this book.

Certain promoters of RRI refer back to CSR in establishing their definitions of RRI. This allows them to avoid the thorny issue of the meaning of moral responsibility (see [PEL 16a]). In doing so, they fail to consider the conceptual sources of CSR; this is problematic, as there are sizeable differences between CSR and RRI, as discussed in this work.

Second, Pellé's study gives serious consideration to forms of responsibility that are specific and inherent to the corporate context, including the requirement to generate profit and to respect laws, sometimes on a range of different levels. The book directly addresses the requirements of the two different spheres, with their respective standards, and the justifications used to defend, limit or avoid implication in CSR.

Third, the author highlights the limitations of a utilitarist approach, based on the consequences of company involvement in CSR, or of a deontological approach, based on legal considerations. She favors an approach in terms of the ethics of care, either taken alone or, better, in addition to these other perspectives.

Ms. Pellé goes on to consider the question of the foundations of moral reasoning, above and beyond the idea of care for stakeholders. In this, she follows the lines set out by Goodpaster, an author who has done much to develop the understanding of the concrete forms taken by responsibility at company level. Goodpaster aimed to develop a moral praxis designed to balance and synthesize conflicting interests, in a work which combined philosophy and management science, establishing a four-part dynamic of perception, reasoning, coordination and implementation.

This book also takes account of Martha Nussbaum and Amartya Sen's work on capabilities. With certain adaptations in terms of meaning and, notably, in the importance accorded to needs and the idea of vulnerability, the ethics of care and interpretations of CSR from a perspective of virtue provide a rich normative basis for interpreting the idea of responsibility and for developing governance principles for RRI.

Fourth, and more fundamentally, it provides a fertile ground for reflection in terms of recognizing ethical pluralism, and by creating links between different ethical theories, developing a basis for ethical innovation. Ethical innovation is essential in combining legal and social responsibility within a firm, along with the individual responsibilities of employees and executives. These responsibilities play out over several dimensions, including economic, legal, ethical and political aspects. Moreover, they may also be interpreted as roles, capabilities or authorities, all forms of moral responsibility.

The difficulties raised by innovation in terms of our capacities for anticipation and normative evaluation, notably through the acceleration of the chain of technological ruptures that it induces and the accompanying series of social and political ruptures, require us to make use of conceptual forms of innovation. In this sense, the present work complements the final three books in the current series, which approach similar problems using a range of philosophical resources [REB 17, GRU 16, MAE 17].

Fifth, Sophie Pellé considers the question of interrelations and the sharing of responsibilities both within and outside companies. This point is crucial to

an understanding of CSR and stakeholder theory (SHT), and provides a welcome means of moving beyond the simple injunction to take account of stakeholder interests, an element that forms the first pillar of RRI while constituting a new addition to the field of research and innovation ethics. This work gives both plausibility and body to the promises of RRI, essentially through the use of examples. In doing so, it provides a valuable demonstration of ways in which the tenets of RRI (responsiveness, reflexivity, transparency, etc.) can take concrete form, notably through the use of new practices such as open innovation, living labs or social innovation to promote responsibility.

This second book by Sophie Pellé, following on from [PEL 16a], examines the two distinct worlds concerned by the vague but promising notion of RRI, making precious headway in justifying and establishing a more precise definition of the idea, two elements which are essential to its continued implementation.

Bernard REBER

Introduction

The term "innovation", one of the key concepts of the modern economy, is rarely found in conjunction with the term "responsibility". Economic or sociological theories of innovation aim to understand its dynamics and determining factors in order to influence actors in their decisions and to develop public policies to encourage innovation. However, in most cases, these research projects leave no place for normative reflections; innovation is rarely considered in terms of its effects on natural resources, the environment, health and social structures; moreover, the ethical meaning of innovation and the world visions that it promotes or invalidates are seldom thought through. Even in the realm of philosophy, innovation is merely a secondary object of study [MEN 11]. Work on ethics, applied to science and technology, has responded to some of the normative questions relating to innovation, for example ethics for biotechnologies, Information and Communication Technologies (ICT), medical ethics, security, geoengineering and synthetic biology. However, there is no "philosophy of innovation" as such, devoted specifically to the problems raised by a complex, interdisciplinary phenomenon, which combines technological and scientific development with economic constraints and determinants, social and political expectations and a normative element.

The emergence of the notion of Responsible Research and Innovation (RRI) in Europe in early 2010 marked a conceptual turning point in this context. First promoted by the European Commission within the specific framework of European scientific projects [OWE 13, GIA 16, PEL 16b, PELc], the idea of responsible innovation rapidly attracted growing interest in academic, scientific and political circles. An increasing number of publications [OWE 12, OWE 13a, OWE 13b, HEL 03, GUS 06, VON 11, VON 12, VON 13, STI 12, GRU 11, ROB 13, LEE 13, SYK 13, NOR 14,

VAN 14, PAV 14a, PAV 14b, SCH 15, PEL 15, PEL 16a, PEL 16b, GIA 16] have considered the conditions of RRI, its determining factors and the best means of implementation. Building on a long tradition of analysis and recommendations in the field of applied ethics (for example the Ethical, Legal and Social Impacts (ELSI) or Ethical, Legal and Social Aspects (ELSA) approaches) and different forms of technological evaluation (participative, real time, etc.) [OWE 13, PEL 16b, PEL 16c], RRI has opened a critical space for reflection and discussion; while this space is not entirely new, it is unique in terms of its specific focus on innovation, research and responsibility rather than technology, science and ethics.

Very little of this work has concentrated specifically on innovation and responsibility from the perspective of economic actors (in contrast, notably, to that of researchers). With the exception of articles by Pavie [PAV 14b] and Blok and Lemmens [BLO 15], research and innovation has generally been analyzed from the basis of a shared framework. In a previous volume in this series, working alongside Bernard Reber, we examined possible developments of the ethical evaluations currently carried out by the European Commission when selecting research projects to receive funding, moving toward an evaluation process based on RRI principles. The focus of the work was on the way in which responsibility might be envisaged in the context of research.

The present volume may be considered as a counterpart to its predecessor, and is intended to explore specific points raised by innovation and economic activities when viewed from the perspective of responsibility. We shall consider whether or not innovation involves specific forms of responsibility, distinct from those analyzed in the context of research activities, and the nature of these forms of responsibility.

The first challenge in responding to these questions lies in the fact that the notion of "responsible innovation" can be subject to two different readings. In the first case, the terms may be seen to be mutually incompatible, in a situation where innovation is driven by the pursuit of economic success, profitability and growth, independent of ethical reflection [PAV 12]. In the second case [PAV 14, PEL 15, PEL 16b, PEL 16c], economic activities, and thus innovation, are not treated in isolation from the notion of responsibility. This approach is visible in the development of a dynamic field of study on corporate *social* responsibility (CSR) over the last 40 years, resulting in the creation of a body of institutionalized practice around international standards, including ISO 26000 and the global reporting

initiative standards[1]. Skeptical observers have remarked that CSR is often simply a discourse fabricated by companies to add a moral dimension to their practices, with no real deep-reaching effects on their actions or on their indifference to anything that does not generate profit. To paraphrase Ulrich Beck's ironic interpretation (1992, p. 405) of the political and moral dimension of economic activities, CSR is simply a means of sprinkling "the demon of the economy" with "the holy water of public morality, and putting on a halo of concern for society and nature".

From an even more radical perspective, according to which the hegemony of economic, political and cultural liberalism has broken down traditional networks of solidarity, exacerbated individualism, increased pressure on limited natural resources and magnified inequalities, the dynamics created by ideas such as sustainable development or CSR might be perceived as simple window dressing. These ideas might be considered to constitute a form of moral one-upmanship, barely concealing the dominance of private interests and the constant pursuit of profit.

Without ironing out the tensions brought to light by this critical approach, the "moralization of capitalism" – a term borrowed from Ariel Colonomos [COL 05][2] – aims to regulate economic activities and to counteract their most damaging effects. The political and intellectual demise of communism and its avatars, along with the limited impact of alternative ideals such as degrowth[3], has created a space for reformist projects such as CSR or sustainable development, which seek to amend the system from the inside instead of reorganizing production and distribution in a more revolutionary manner. The objective of these projects is to counteract the short-term perspectives of wealth production at the heart of capitalist organizations through the addition of goals linked to social progress formulated in terms of respect for the environment, human rights, or the improvement of working conditions, which cannot be attained solely by wealth accumulation.

By highlighting the idea of responsibility, CSR provides the means of dealing with the blind spots of economic organizational systems based on free enterprise: economic actors are invited to take account of the consequences of their actions on their environment, in the broadest sense of

1 Covered briefly in Chapter 1 (section 1.4.2.2).

2 Colonomos also talks of "the rise of a market of virtue".

3 A heterogeneous set of ideas promoting a reduction in production in order to reduce pressure on resources and the unbridled consumption of non-essential goods [HAR 07].

the term. It shifts the focus on interest onto all entities affected by their actions. CSR thus involves several levels of responsibility, including legal considerations, alongside a "social" dimension, essentially defined by the inclusion of "stakeholder" interests in the balance of decisions, i.e. the interests of individuals, institutions or non-human entities (such as the environment), which affect and are affected by the enterprise[4]. A considerable volume of work has been produced on CSR, stakeholder theory and business ethics, which aim to clarify these concepts, to provide empirical work and form a rich theoretical and practical foundation for an ethical vision of economic activities. How, in this case, can we support the idea that innovation and responsibility are mutually opposed?

However, the ways in which responsibility and innovation can work together still need to be defined. Moreover, responsibility does not necessarily take the same meaning in the case of economic activities forming part of a continual process, and in the case of innovation processes marked by ontological uncertainty. Contemporary technological and scientific progress, touted as an important factor for growth and for human progress, also constitutes a disruptive element, the dynamics and influence of which are hard to predict [SCH 34][5]. Creation and innovation processes need to be considered in the light of a limited rationality, a notion introduced by Herbert Simon in his criticism of rational choice theory [SIM 55, SIM 79]. In cases where individuals are unable to fully predict all possible scenarios and all possible solutions, their decisions are based on routines, and on sets of tried-and-tested decisions that are not necessarily suitable when the context changes. We need to consider approaches to individual responsibility in cases where the possible effects of a technology on the environment, health and safety, social structures and interpersonal relationships are unpredictable, unknown or simply overlooked, in cases where decisions are made in a climate of uncertainty and ignorance. We also need to consider the extent to which individuals can be held responsible when a considerable part of their actions have effects outside of their field of rationality and outside of their control.

Considering these questions, Wynne [WYN 92] makes a distinction between the *risk* associated with a technology, corresponding to cases where several possible development trajectories may be envisaged and assessed in terms of probability, and *uncertainty*, in cases where the probability that

4 A full definition is given in Chapter 1 (section 1.4.2.2).

5 This point is covered in greater detail in Chapter 3.

certain events will occur is unknown. Even limited information relating to these events may be used as the basis for rational decision making. However, contemporary developments in science and technology also involve an element of *ignorance*, defined by Wynne as situations in which neither the course nor the probability of events are known. The success of social networks is a good example of this dual "unknown": in 2004[6], no one could have predicted or probabilized the way in which they have transformed many social practices (networking, recruitment, buying and selling practices, information diffusion and even political communications). The same goes for the many ethical and legal questions raised by these networks, for example in terms of privacy or the possibility of limiting the transmission (or sale) of content by certain parties in connection with practices recognized as morally reprehensible such as terrorism or pedophilia.

Ignorance and radical uncertainty have also shaken up models for decision making based on risk calculation [JON 79, BEC 92, CAL 01]. We must imagine ways to foster research and innovation in nanotechnology, biotechnology, geo-engineering, robotics etc., given that these areas have the capacity to radically transform social organization, but that the degree of disruption and their propensity to benefit society is unknown. Innovation increases uncertainty in day-to-day research practices and political decision making.

This phenomenon, known as the knowledge paradox, has its roots in the finitude of the human being, as explored, notably, by Hannah Arendt: human beings have limited knowledge and a limited capacity for action, a life that is bounded in both time and space, and decision-making capacities that may be impeded by contradicting values (pleasure, justice, efficiency, truth, etc.). Moreover, while scientific innovation and discovery may improve our knowledge and control of the world, they also defy human rationality and reduce the extent of our knowledge as a whole. The latest major discoveries in molecular biology and neuroscience, for example, and the possibilities offered by new techniques such as MRI scanning, have improved our knowledge of the human body and the brain in real terms. However, these tools have also highlighted the extent of areas that we have yet to understand, showing just how much work is still needed in order to understand complex structures such of the human brain. We are thus condemned to "[gamble] that what we know and control is enough for

6 Year in which Facebook was launched at Harvard.

taking effective decisions and what we do not know and do not control is irrelevant" (PEL 04, p. 545, emphasis our own).

This situation is often described using another dilemma, highlighted by David Collingridge in 1980. The management and "control" of a new technology should take place at the outset of the development process in order to exercise the best possible influence. However, attempts at control are made more complex because, at this stage, we only have a limited knowledge of how technology will evolve and what effects it will have. This "pathology" of innovation, to use Jack Stilgoe's term[7], poses a threat to the decision process; there is a risk of intervening too early in the process, when insufficient knowledge is available, or too late, when it is no longer possible to modify the course of events in a meaningful way.

More generally, researchers in the field of philosophy and sociology of science and technology have long indicated the tensions between the wish for human development, built upon economic and technological forces, and the fear of irreversible damage, leading to what Beck [BEC 92] referred to as forms of "organized irresponsibility", i.e. a short-circuiting of any attempt to curb the negative effects of technological progress through forms of reflexivity. On the one hand, there might be a growing awareness of technological risks and uncertainty among social actors. On the other hand, faith in technological progress and economic dynamics, conceptual dependence on models of rationality and the hegemony of a certain kind of expertise would lead to a dangerous denial of collective and individual responsibility.

Finally, scientific and technical progress also hinders the advancement of normative reflections. Faith in progress sometimes creates an illusory belief that the solutions to ecological and sanitary problems (exhaustion of natural resources, damage to human health and to the environment) must, necessarily, be of a technological nature, something that conceals the necessity for normative reflection and the establishment of standards (including legal measures). As Grinbaum and Groves have stated:

> "We have come to rely on scientific knowledge to create the innovations that help us to transform the world, but we cannot

7 Expressed in the context of a workshop held in Paris in May 2013 on the notion of RRI by the European GREAT (Governance for REsponsible innovATion) project.

> expect it to also enable us to calculate the ethically relevant consequences of using it" [GRI 13, p. 125].

It is not necessary to suppose that evaluation is always conceived as a simple calculation of "ethically relevant consequences": It may also include evaluations based on other normative theories (such as deontological approaches, or approaches based on virtue ethics), and, more generally, on an assessment of the value systems underpinning technologies and their associated worldviews. Yet, Grinbaum and Groves rightly indicate that the normative exercise remains essential and should not be subsumed by technoscientific development: it must retain its specific character.

The difficulties posed by innovation in terms of our capacities for anticipation and normative evaluation, alongside the current acceleration of the resulting rhythm of social, political and technological ruptures, create a need for conceptual forms of innovation. Responsible innovation, the latest in a long series of approaches to these questions, responds to this precise need.

In this context, our aim in this book is to analyze the different ways of envisaging responsibility in innovation, starting with the idea of CSR, which has been used surprisingly little, to date, by authors working on RRI[8], despite the theoretical proximity of the ideas involved in both frameworks. We shall consider the essential elements provided by CSR in terms of approaching responsibility in innovation, and whether CSR provides a sufficient response to the challenges posed by innovation. If this response is not sufficient, what new elements may be brought by the notion of responsible innovation? The issue is not simply one of theoretical clarification, although this process is always useful. Work on CSR has centered on debates that strongly echo the questions raised by RI, including the forms of responsibility that may be involved in economic activity, the way in which the existence of responsibility itself can be justified, and the question of an ontological opposition (or, on the contrary, entanglement) of economic practices with responsibility. In the context of CSR, these questions are approached from a general perspective of "economic practices", but they may be transposed directly to the specific domain of innovation. While the analytical framework provided by CSR needs to be modified in order to better account for the uncertainty and ignorance mentioned above, it provides something that may be lacking in the defense

8 With the exception of [PAV 14].