

The Unintended Consequences of Innovation Studies ¹

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Innovation has a long history. In fact, men have innovated from the very beginnings of humanity. Similarly, the word “innovation” is very old, dating back to antiquity. One finds early thoughts on innovation among Greek philosophers and historians, then among the Romans (Godin and Lucier, 2012). The word came into widespread use in both religion and politics after the Reformation. Yet at the time, innovation had a meaning totally different from that of today. In the second half of the twentieth century, innovation came to be studied in the context of economic progress and was theorized about. This gave rise to what is now called “innovation studies”: the economic, management and policy study of innovation (Fagerberg and Verspagen, 2009).

This paper takes a critical look at innovation studies and its representation of innovation. While innovation has been understood for centuries as “introducing change in the established order”, particularly the political order, it came to mean commercialized invention (technological innovation) in a matter of decades. This has had important consequences on the place innovation holds in society. This paper highlights three characteristics of innovation as a concept over the centuries, then discusses some assumptions of innovation studies and their consequences on the study of innovation generally and on policy.

Intellectual History of Innovation

For 2,500 years, innovation was an eminently **contested** idea. It was pejorative and negative (Godin, 2012). An innovator was a deviant: one given to popery (in England), a

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revolutionary, a socialist. Gradually over the nineteenth century and twentieth century, the study of innovation gave rise to a totally different representation. Innovation became an object of praise and fashion. The representation gave rise to almost exclusively **positive** assumptions about innovation. From a vice innovation became a virtue. To most people, including researchers, innovation is always good. “Researchers have implicitly assumed”, claimed sociologist Everett M. Rogers in the first edition of his classic book, “that to adopt innovations is desirable behaviour [rational] and to reject innovations is less desirable [irrational]” (Rogers, 1962: 142).

Yet, for centuries innovation was essentially a **political** concept, regulated by Kings and laws. In 1548, Edward VI in England imposed punishments and imprisonment on “innovators” (Godin, 2010). In contrast, in the twentieth century innovation started being looked at from a **policy**-oriented framework (Godin, 2012). Innovation is now considered instrumental to national progress. Government should play a role and stimulate innovation, many claim. Such a representation made innovation into a panacea for solving every socioeconomic problem.

For most of its history, the concept of innovation has had a **fuzzy** meaning. Innovation has meant different things to different people. From the eighteenth century onward, it served accusatory purposes: denying an enemy the right to change things. Then in the twentieth century, the concept acquired a dominant and spontaneous meaning. Innovation became “restricted” to **technological** innovation – a representation that many actually try to broaden with still-fragmented conceptual schemes (e.g.: social innovation).

Innovation Studies

What role does innovation studies play in these conceptual developments? Three assumptions deserve mention, for they have been influential both on our current representation of innovation and on policy.

Normativeness. Innovation studies' representation of innovation is essentially normative – and un-reflexive. It evolves around a key ideology of modernity, namely economic issues and the “positive” contribution of innovation to economic growth. As a consequence, there is little if any questioning of what innovation really is, but a normative perspective is offered from the start.²

Performativity. In contrast to scholarly disciplines like history and sociology, innovation studies is a policy-oriented field. It studies innovation as a phenomenon but also works to persuade policy-makers (and others) of the desirability and inevitability of innovation, said to be the latest or more recent stage of development (e.g.: the knowledge-based economy). Together with national governments and international organizations like the OECD and the European Union, social researchers develop narratives, conceptual frameworks and “models” aimed at supporting innovation as THE solution to socioeconomic problems.

Technology/Market-Centeredness. Innovation studies' representation of innovation is essentially technological – and market-oriented: innovation is the commercialization of technological inventions. Invention is not innovation unless it is commercialized. Imitation (adoption of existing technological innovation) is not innovation because it is not original (first introduction to the market). The study of types of innovation other than technological (cultural, social and political) is relegated to the residual, if discussed at all, and “societal” studies are excluded from the field as it is defined (constructed) in recent bibliometric studies.

² Very few researchers stop to examine what innovation means, starting rather with their preferred definition. In the 1960-70s, this led people from many different horizons to criticize the concept and to suggest abandoning it. “Every change becomes an innovation simply because it has not been done before ... Such a definition sterilizes the term innovation” (Becker and Whisler, 1967: 463); innovation “has come to mean all things to all men” (Ames, 1961: 371); “we shall do better without the word innovation” (Machlup, 1962: 179); “the use of the term innovation is counterproductive” (Roberts and Romine, 1974: 4); “One of the vogue words these days is innovation. For some people it is even more – it is a value word that implies something good and positive. As with most popular words, it is misused and has different meanings for different people” (Holt, 1971: 235).

Alternative Visions

What would a different representation of innovation look like, and what policy would ensue? Let's conduct a thought experiment, namely imagining alternative views of innovation and discussing the policy issues that logically arise from a different perspective on innovation:

- What policies would we have if innovation studies had been critical and reflexive instead of normative?
- What policies would we have if innovation studies had started with the study of social problems rather than presenting innovation as the *a priori* solution?
- What policies would we have if innovation studies had included in their analyses a broader range of innovations than only the technological?

A Different Regime of Incentives and Appropriability

Currently, the theory of innovation makes a contrast between innovation and imitation. Imitation is not innovation but rather an undesirable way of deriving profit from an innovation developed by another firm. Such is the essence of David Teece's much cited article: "Innovating firms often fail to obtain significant economic returns from an innovation while customers, imitators and other industry participants benefit" (Teece, 1986: 285). As a consequence, theories of innovation are concerned with ways of preventing imitation or "keeping imitators/followers at bay" (Teece, 1986: 290), that is, how can firms get the full benefit of their innovation: "how the "innovator is to avoid handing over the lion's share of the profits to imitators" (Teece, 1986: 292). Teece discusses the "strategies the firm must follow to maximize its share of industry profits relative to imitators and other competitors" (Teece, 1986: 300-301).

Such a theory of innovation neglects a few important things. First, imitation is part of the competition game. It gives other firms a further incentive to innovate. Furthermore, economic growth occurs because of diffusion (imitation) as much as innovation. As

Edwin Mansfield put it long ago: “an innovation will not have its full economic impact until the imitation process is well under way” (Mansfield, 1961: 762). Second, there may be legitimate reasons for (some) firms not to innovate. A firm may not (always) need to innovate; imitation may suffice. In this sense, what is missing in the literature is studies of imitators and non-innovators. Studies narrowly focus on innovators and best practices. The focus on an *a priori* solution (innovation) to growth rather than on the diverse issues firms face explains this “bias”.

One has to turn to a different literature for the study of imitation (diffusion). From Gabriel Tarde in the late nineteenth century to Everett Rogers, imitation has been the sociologists’ definition of innovation. The innovator is someone who adopts a new idea, thing or behaviour – regardless of the fact that someone else uses it already. The innovator may simply imitate, but at the same time he innovates with regard to his own past behaviour. Unfortunately, such a definition is perhaps too subjective for the economist.

A New Type of National System of Innovation

Despite its focus on “cultural” factors, the very popular idea of a National System of Innovation (NSI) remains quite restricted. It evolves around or centers on the suppliers of innovations, namely the firms, around which the other sectors (government and university) evolve or to which they (should) contribute. Technological innovation is the ultimate and uncontested aim of the system. Take for example the OECD’s recent strategy of innovation on the issue of development – the strategy claims its debt to the idea of NSI (OECD, 2010a). To the OECD, “the last half-century has seen different approaches to development which have achieved varying degrees of success” (OECD, 2010a: 14). In their place, innovation should now be considered a strategy for development: “most current social, economic and environmental challenges require creative solutions based on innovation and technological advance” (OECD, 2010a: 30; 32). But is this really the case and how exactly? The document, as with most of the literature on innovation, starts with innovation as a panacea, not with problems of

development or the extent (and limitations) to which innovation is or is not a (THE) solution.

What would the idea of a NSI be if the study of problems or demand (social needs) rather than supply (innovation) was the focus of interest? Paradoxically, innovation may appear not to be the universal solution. The majority of developing countries are, first of all, and for better or worse, consumers of knowledge and technology produced elsewhere (imitation). There is therefore a need to emphasize these countries' efforts to absorb (imitate) what comes from outside as much as their own inventive and innovative efforts. To this end, one must shift his attention from an exclusive focus on firms as innovators.

Usually, there is little concern for “people” as innovators (doing things differently) in theories and policies except, again, as introducers of new inventions to the market or as buyers of new inventions. Certainly, the consideration of people as innovators in the larger sense gets some hearing in the OECD document, like the discussion of the informal sector. However, the issue is discussed entirely in terms of the market. As if every solution to health, poverty and education needs a firm, a technology, a market. How do people change their behaviour in response to new knowledge (like AIDS)? How do organizations (schools, hospitals, etc.) contribute to people adopting new behaviours?

In the past thirty years or so, demand was transformed to mean economic demand, and was stripped of any relationship to social need (Godin and Lane, 2013). Yet, supply (innovation) would play a different role than it currently plays in theories and policies if theories placed the emphasis on needs and the beneficiaries of innovation. Rather than the dichotomy of either universities or firms being the drivers of innovation systems around which other participants play the role of “context”, the emphasis would be on 1. consumers, citizens and their community associations, 2. public managers and programs, 3. government departments, public organizations and policies (see Appendix 1).

More Refined Policies

Over the last sixty years, governments and international organizations have promoted the idea of innovation policy as horizontal policy: a policy encompassing broad, integrative and common issues, including those common to different government departments. Recent innovation policy has now embraced still more horizontal issues: those relating to globalization. Yet, innovation policies have failed with regard to the sectoral department or various government departments. Innovation policies are essentially technological policies, because the dominant ideology of innovation is technological. But not every department needs a technology policy. It may need to innovate in other dimensions of its activity, or may need to stimulate other types of innovation than the technological.

Innovation policy makes no sense. Currently, theories on which innovation policies are based are too macro and not detailed enough to address the needs of specific sectors. This reminds me of theories of “social change” before 1970: too general, too theoretical, with few applications.³ Today, such theories have more or less disappeared from the literature.⁴ Yet in its place, social innovation – the new buzzword, although an old concept – has appeared. Theories of social innovation seem to correct many of the above limitations. First, they concern a broader range of innovation than just technological innovation – although this is not a novelty: many of these types of innovation have been studied under other names for decades (e.g.: organizational innovation). Second, social needs define what social innovation is: “new ideas that work in meeting social needs” (Mulgan, 2007: 8). Other participants and government departments than those linked to the economy are thus invited to join the fashion of innovation.

³ As Wilbert Moore put it long ago: “a ‘pure’ theory of social change, independent of substantive identification of the patterns undergoing transformations [is] uninteresting” (Moore, 1960). Similarly, to Raymond Boudon: “the sociology of social change ... suffer[s] from a *misplaced* conception of generality”. To Boudon, the general and formal models, frameworks and systems of concepts of theories of social change can be applied to no specific social process (Boudon, 1983).

⁴ For better or worse, many theories of social change have instead embraced the concept of innovation. For example, modernization theories have adopted innovation as a central concept (Hill, 1974; 1975; Himmelstrand, 1982; Zapf, 1991).

Yet most of the theories on social innovation are far from serious to date (Godin, 2013). They follow (adapt) the dominant innovation paradigm (models, etc.) to their own cause, with very few conceptual “innovations” or novelties. They remain normative, as normative as theories of technological innovation. The theories include every change – social change! – but have nothing to say about particular change. Social innovation is a slogan like innovation *tout court* is. It allows a new class of researchers to catch the attention of policy-makers.

Conclusion

Innovation studies, its assumptions and its representation of innovation have had unintended (are they really unintended?) consequences on policy. Innovation policy is entirely concerned with technological innovation, with firms and the market and with innovation as originality (first commercialization)⁵ rather than imitation. Furthermore, it focuses on innovation as a universal, uncontested and *a priori* solution rather than studying the specific problems (needs) of society. Social problems are taken for granted. At best, they are studied as an afterthought to the study of innovation, and the problems studied are those that arise due to innovation: social problems as a result from a lag between innovation and society (like unemployment and skills) and the need for society to adjust to innovation.

Given the “naturalness” of these assumptions (they have become a given, part of the *credo* of innovation studies) one may identify and study them only if one takes a comparative (historical) and critical view of the concept of innovation, as I have done here. This is certainly a fruitful lesson to be learned from the intellectual history of innovation, a field that is vastly understudied today.

⁵ On the (paradoxical) absence of statistics on “commercialized invention”, see Appendix 2.

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Appendix 1.

What Would a Policy of Innovation Look Like If One Starts With a Demand View?

- It would address and focus on specific and precise problems (social needs) or **areas of development**, not innovation in general and broad terms (“percentage of enterprise that introduced innovation”).
- It would concern **end-users**, not just producers.
- It would cover **individuals, groups and organizations** as well as firms.
- It would measure diverse kinds of innovation: **ideas, behaviours and things** (and compare the new to the old) and their sources.
- It would ask what **use**, if any, is made of the innovation and by whom?
- It would identify the mechanisms through which innovations **diffuse** and their presence or absence in a country: How does knowledge about X gets into country Y? What lags occur? Why?
- What are the **effects**, including the negative ones? To what extent is the innovation adapted to a country’s needs?
- Evaluate the role of **government as innovator** in matters of policy (not just as a hindrance): what infrastructures, policies and programs exist in country Y to support innovation?

Appendix 2.

On Innovation as Commercialized Invention

Technological innovation has for a long time been defined as the commercialization of discoveries and inventions in the form of new or improved products or services. To the OECD Oslo manual, “an innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method (in business practices, workplace organization or external relations)” (OECD, 2005: 46). In the case of products (technological innovation) implementation means “introducing to the market” or commercialization (OECD 2005: 47).

Given this official definition of technological innovation, one would logically expect to find some indicators of commercialization in the statistical series addressing innovation. What one finds instead is everything but commercialization. Take the OECD as example again. In the recently published *Measuring Innovation: A New Perspective*, there is one and only one indicator on commercialization (or rather one indicator *called* commercialization): patents. Yet, a patent does not at all represent commercialization. It is a national certification of ownership over a claimed invention. The OECD states that patents are included for the “likelihood of [a patent] being commercialized” (OECD 2010b: 104-5). But probability is not certainty. The OECD ignores its own basic definition of technological innovation as the actual commercialization of technological invention. It offers no direct indicators on commercialization in its statistical scoreboard.

Since the 1990s, the OECD has professed an intention to broaden the scope of this representation of innovation by articulating a systemic approach (NSI). “It is necessary”, claims the OECD, “to analyse the role of public policies, economic incentives, organisations, market structure, foreign trade and investment, and other institutional factors, along with the complementarities and synergies (OECD 2010c: 29).” Right. However, in practice the organization is only adding indicators of activities peripheral to

commercialization. The systemic approach shifts (unconsciously?) the study (and measurement) of technological innovation away from market commercialization. To be sure, commercialization is not everything. But it is surprising that, given the decades-old definition of technological innovation as commercialization, there exists not one direct indicator of commercialization in the OECD statistical toolbox, and that little effort is devoted to improving the situation.⁶

Despite all the limitations of the early surveys of technological innovation, like the OECD's *Gaps in Technology* in the late 1960s (counting the origin and diffusion of technological innovations from a selected list), the statisticians of the time were truly measuring technological innovation as production and commercialization. The measurement of innovation today should perhaps look back to this example for inspiration and in order to further develop the statistical series.

⁶ Some possible indicators on commercialization are mentioned in the OECD Oslo manual as factors (objectives and effects of innovation activities), but not as indicators of commercialization. Above all, these factors rely on subjective reporting from managers, including yes/no answers or ordinal multiple choice scales (OECD 2005: 107-8).