

INTERVIEW

The term innovation seems so self-evident in current scientific, technological, or political debates that its historical origins and its changing connotations go mostly unquestioned. However, the concept of innovation has a long history, and over time, it has been imbued with changing meanings. In his research, prolific writing, and in this interview, Benoît Godin argues that today's narrow focus on technological innovation reflects the historical formation of the innovation discourse during the twentieth century and shows the vested interests of those participating in it, in the past as well as today.

TATuP: *Research on the concept of innovation demands a constant engagement between the past, the present, and the future. How would you describe the relevance of history for analyzing present, or even future, technological and social change?*

Benoît Godin: Innovation is a future-oriented concept. It suggests the production of an endless flow of novelties to contribute to changing societies. Yet, the concept of innovation has a past, a history. Conceptual engagement with the history of innovation serves three functions, at the least: First, understanding the contemporary discourses on innovation in general. Second, making sense, in particular of the theories behind innovation. Third, being critical and reflexive about what present writers say.

Innovation has become a hallmark of modern times. However, your research shows that the concept of innovation has a long history prior to modernity.

The concept of innovation goes back to antiquity. Later, around the third and fourth century CE, the concept got into the Latin vocabulary. It made its appearance in everyday vocabulary at around the time of the Reformation. The concept carried both positive and negative connotations for centuries, but the latter dominated our discourses until late in the nineteenth century. Only in the twentieth century did the concept of innovation gain its predominantly positive meaning.

INTERVIEW

The history and politics of innovation

In this interview for TATuP, conducted at the Institut national de la recherche scientifique in Montréal, Benoît Godin responds to Ulrich Ufer's questions about the history of the concept of innovation and its uses in present and past discourses on social change.

Could you give a few illustrations of how the concept of innovation has changed over the centuries?

The Latin term “innovatio” appeared in the fourth century CE in the religious context of the Vulgate. This context brought about a first shift, since innovation from the Christian point of view carried decidedly positive connotations, referring to spiritual renewal. Over the centuries, the meaning of innovation shifted again. It turned pejorative from the post-Reformation period until the late nineteenth century. We can see that by the 1630s, the concept had entered everyday discourse. However, in the particular mix of religious and political strife, it also became much

contested, since novel religious orthodoxies often came part and parcel with new ideas about the political system, or social hierarchies. From the conservative point of view of political and religious authorities, innovators came to equal heretics and enemies to the state. In England, for example, Kings James I and Charles I accused innovators of being impious and of bringing outrages and havoc to the realm. Innovation was then political and forbidden.

How do we get from there to the focus on technology that marks our present understanding of innovation?

Over the course of the nineteenth century, the concept of innovation underwent a third major shift, when it became one of the metaphors for modernity, allowing people to speak about political, social, and material progress. During the twentieth century, then, a fourth shift tied the concept of innovation to an economic instrumentality, in which innovation is defined in terms of the commercialization of inventions – the introduction of new things into the market as commodities. Innovation is an instrument of progress, particularly economic progress. Innovation is the source of profits for firms and for leadership or increased market shares for countries. After the Second World War, policy, management, and business tied innovation even closer to the market, making “technological innovation” the most common meaning today.

Who have been the advocates of technological innovation?

Men of action, or practitioners from the industries and governments, have been among the first to promote the notion of technological innovation. Policy papers from governments began to refer to “technological innovation” by the 1960s, in a context of economic competitiveness and international leadership. Scholars only followed in their footsteps, espousing the technological representation promoted by the practitioners. To be sure, some scholars made use of the concept

before the 1960s, like Joseph Schumpeter did. However, the study of technological innovation really began in the early 1970s.

If innovation is so crucial to modern society, how can we measure the quality and quantity of innovation?

Measurement is central to the modern debates on innovation, but when we look at it in detail, we see that it is a hard thing to do. For most of its modern history, innovation has been measured by the quantitative standards of technology and economics: the number of new goods for the customer, and the implementation of novel industrial processes. In the last decades, measurement has opened to the non-technological: organizational innovation, marketing innovation and the likes. Yet, there are a number of problems with measuring innovation. First, the concept of innovation is highly subjective: what counts as innovation for one firm does not for another. Second, firms do not use “innovation” as a statistical category in their records. Hence, measurement must rely on proxies. Official statistics regularly use Research and Development (R&D) as a proxy of innovation, since at least R&D provides regular series of data. However, innovation is not R&D alone. It is a “total” process running through design, manufacturing, and commercialization.

Given this multi-faceted nature, how has research on innovation been constituted as a pluri- and interdisciplinary field?

Over the twentieth century, the theories of innovation have had diverse disciplinary origins: psychological, cultural, social, organizational, technological, or economic. In fact, the first theorists of innovation after the Second World War were the engineers during the 1960s. They used the discourse on technological innovation to give social relevance to their profession and gain government support. Today, technological and economic theories of innovation dominate. The main advocates of the hegemonic discourse are scholars from “innovation studies”, namely the study of the policy, manage-

ment, and economics of innovation. “Innovation studies” are certainly pluridisciplinary in this sense, but not in another. Many disciplines and fields, like sociology, are often explicitly left out.

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How does this differ from your approach?

The kind of intellectual history I do is a way to tell the (hi)story of how such boundary work develops and why it persists in spite of the critics. Intellectual history tries to understand what innovation means to different actors. Why does it mean this and that to some, and something else to others? What context explains the semantic? For what purpose do scholars (and others) define innovation in a specific way and not in another? As a co-founder of the CASTI Net-

Since the early 2000s, policy makers have recognized a growing need to stimulate innovation proactively by building networks and clusters between the various stakeholders of innovation processes. What are the implications of this “Systems of Innovation approach”?

The holistic or system approach to innovation is much older than its promoters let us believe. It has its roots in the 1960s, at the least. Equally, the approach is far less original than the advocates suggest. In fact, “system” is a very general term for making sense of complexity. This is exactly how engineers, managers, officials, and others tried to describe innovation decades ago. One of the main problems with the system approach is that it was turned into an overall framework for policy. System is so large a concept that it is meaningless most of the time. As the next OECD Oslo Manual will suggest, governments have learned the lesson and are about to abandon the approach as a framework for their innovation surveys.

Over the past decade, politics and industries have been pushing scholars to affect society more immediately, for example through applied and transdisciplinary research. How does this demand reflect the historical relation between innovation, research, the market, and politics?

Our modern society espoused the culture of innovation several decades ago. For economic reasons, innovation is defined



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1 www.casti.org

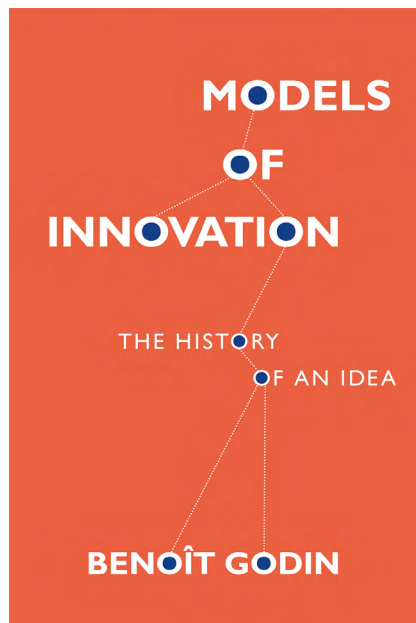
as the application of ideas, or use of inventions in context, and technological innovation as the commercialization of ideas. Technological innovation participates in the market ideology. Government discourses on technological innovation just reflect this culture or ideology. The generation and diffusion of new goods legitimate the public support for research.

Currently, the restricted notion of technological innovation you have been describing seems to open up: “social innovation”, “pioneers of change”, or political and scientific calls for a “great transformation” towards sustainability have been increasingly influential in discourses about the future. How do you make sense of these novel meanings of innovation?

Over the last two decades, innovation has given rise to a series of new terms that I call “X innovation”: social innovation, responsible innovation, sustainable innovation, open innovation, etc. These terms are contestations of technological innovation as a hegemonic term in public discourse. However, some of them have a long history, full of changes in meaning. Take social innovation. Those who herald social innovation as a new term forget that, in fact, it has a much longer history than technological innovation. In the nineteenth century, the social reformer or socialist is called a “social innovator”, as William Sargant puts it in *Social Innovators and Their Scheme* (1858). His aim was to overthrow the social order, namely private property.

How did conservatives react?

For conservatives innovation carried a very pejorative sense, similar to a conspiracy. Innovation was almost synonymous to words like *scheme*, *design*, *project*, *plan*, *plot*, or *machination*. This connotation remained in vocabulary until the twentieth century. Then, social innovation became a synonym for social reform of a specific kind. Yet, due to their ignorance of history, many scholars suggest that the concept of technological innovation preceded social innovation. In fact,



Godin, Benoît (2017): **Models of innovation.** The history of an idea. Cambridge, MA: MIT Press. ISBN 9780262035897.

the term social innovation has simply re-emerged since the 1980s as a reaction to the dominant representation of innovation as technological.

How do these semantic shifts affect culture, politics, and scholarship?

The story is one of appropriation and contestation. On the one hand, scholars invent a new “X innovation” in order to appropriate and to brand a new term in combination with the word innovation. A word with such a polysemy as innovation is a multi-purpose word. At the same time, it is laden with value and it works in

its hegemonic connotation. They coin alternative ones that subsequently tend to become a brand, too.

Your historical analysis shows that over the most part of its long history, the concept of innovation has been highly politicized. By contrast, speaking about, or doing innovation today seems to go mostly uncontested.

At the very moment policy issues entered the semantic of innovation – for example, technological innovation as an instrument of economic policy – innovation became essentially a good thing. Innovation is an *a priori*, a panacea for solving socioeconomic problems. So, essentially, there is a pro-innovation bias in the literature as well as in the public representation of innovation. If there is poverty: innovate! If there is pollution: innovate! Innovation is always good and rational. The non-innovators are the ones to blame for their inertia or neophobia. This is the exact opposite of previous centuries. The concept as such is rarely questioned. Debates on technology in the first half of the twentieth century breathed the optimism of progress and modernity.

What happened when some decades later the concept of technological innovation came into vogue?

It inherited the positive reputation of technology. Therefore, at least in economics, management, and policy studies, it was hardly contested. These disciplines thought that, in the long run, technolog-

For conservatives of the nineteenth century innovation carried a very pejorative sense, similar to a conspiracy.

the public mind and among policy-makers as a positive imaginary. It also contributes to scholars’ citation record. On the other hand, some people contest the term technological innovation because of

ical innovation is always beneficial. To be sure, there has always been a tension, for example, between unemployment and growth, between technology and the social, between the social and the economic.

However, it is my thesis that the tension was resolved early on, namely before the term technological innovation appeared, leaving the latter uncontested – until the 1990s – and free to develop and diffuse.

ber of critical voices and public resistance against technology since the 1960s and later. However, those who emphasize the critical discourse often ignore that scholarship and national policy together have

these discourses have played a major role in the construction of today's predominantly favorable public perception of technology, much more than cultural criticism.

Critical debates on innovation are of a transitory nature. Our culture is fundamentally positive to innovation, and it finds every way to contribute to innovation.

Still, today, some innovations like genome editing, artificial intelligence, or autonomous driving cause very controversial reactions.

Yes, but we have to read those critical voices in the context of the historical discourse on innovation. Scholarly literature on technology stresses an increasing num-

ber of critical voices and public resistance against technology since the 1960s and later. However, those who emphasize the critical discourse often ignore that scholarship and national policy together have largely succeeded in marginalizing these voices. Rarely do critical historians of technology consider the discourses on technological innovation that come from policy, management, and the neo-classical or evolutionary economics of technology. And, with a few exceptions, neither do scholars from these disciplines write their own histories of technology. Yet,

In this sense, the debates you have just referred to are what I call episodic and recurrent debates on technology. In the end, they are of a transitory or temporary nature. Our culture is fundamentally positive to innovation, and it finds every way to contribute to innovation.

What relation do you see between concrete technological innovations and society's visions for the future?

Technological innovations and the discourse on technological innovation are here to stay. They rest on three key pillars: a market ideology, legitimized by public authorities and by consumerism.

Innovation across the millennia

Plato (c. 350 BCE): The Laws. For when the programme of games is prescribed and secures that the same children always play the same games and delight in the same toys in the same way and under the same conditions, it allows the real and serious laws also to remain undisturbed; but when these games vary and suffer innovations[*], amongst other constant alterations, the children [... have no] fixed and acknowledged standard of propriety and impropriety.

[* καινοτομέω: to make changes (in the state); to begin something new; to cut fresh into]

Quoted from Loeb, *Classical Library*, VII, 797b, London (1926).

Aristotle (c. 350 BCE): Politics. [E]ven a small change may cause a revolution. For when they give up one of the details of the constitution, afterwards they also make another slightly bigger change more readily, until they alter the whole system. This occurred for instance with the constitution of Thurii [... where] the whole system of the constitution was converted into a dynasty of the men who had initiated the innovations[*].

[* νεωτερίζω: to make innovations; to make revolutionary movements]

Quoted from Loeb, *Classical Library*, V, vi, 7–8, London (1959).

A Proclamation against Those that Doeth Innovate (1548) by Edward VI, King of England. [H]is Majestie straightly chargeth and commandeth, that no maner persone, of what estate, order, or degree soever he be, of his private mynde, will or phantasie, do omitte, leave doune, change, alter or innovate any order, Rite or Ceremonie, commonly used and frequented in the Church of Englande

[...]. Whosoever shall offende, contrary to this Proclamation, shall incur his highness indignation, and suffer imprisonment, and other grievous punishments.

Quoted in Benoît Godin (2010): "Meddle Not With Them That Are Given to Change". *Innovation as evil*, *Project on the Intellectual History of Innovation*, Working Paper no. 6. Montreal: INRS.

Weeks, Arland D. (1932): Will there be an age of social invention? [S]ocial invention is miles behind mechanical advance. [... But there is] no good reason to suppose that inventiveness would be less fertile for social progress than mechanical invention has been for mechanical advance. [...] The possibilities of social invention are as great as were the mechanical possibilities that lay before the early inventors of machines.

Quoted in Benoît Godin (2012): *Social innovation. Utopias of innovation from c. 1830 to the present*. *Project on the Intellectual History of Innovation*, Working Paper No. 11. Montreal: INRS.

Oslo manual. Guidelines for collecting and interpreting innovation data.

Four types of innovations are distinguished: product innovations, process innovations, marketing innovations and organisational innovations. This classification maintains the largest possible degree of continuity with the previous definition of technological product and process innovation used in the second edition of the Manual.

Organization for Economic Co-Operation and Development (2005). Paris: OECD Publications, p. 47.