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# (Paper) The Sociology of Expectations in Science and Technology

## Notes & Quotes

### Introduction

> By definition, innovation in contemporary science and technology is an intensely future-oriented business with an emphasis on the creation of new opportunities and capabilities. Novel technologies and fundamental changes in scientific principle do not substantively pre-exist themselves, except and only in terms of the imaginings, expectations and visions that have shaped their potential.

- The next part has been quoted elsewhere—I mean it's pretty great, tbh

> Such expectations can be seen to be fundamentally 'generative', they guide activities, provide structure and legitimation, attract interest and foster investment. They give definition to roles, clarify duties, offer some shared shape of what to expect and how to prepare for opportunities and risks. Visions drive technical and scientific activity, warranting the production of measurements, calculations, material tests, pilot projects and models. As such, very little in innovation can work in isolation from a highly dynamic and variegated body of future-oriented understandings about the future.
>
> Expectations and visions are, however, also important for actor groups beyond scientists and engineers. They play a central role in mobilizing resources both at the macro level, for example in national policy through regulation and research patronage, and at the meso level of sectors and innovation networks, and at the micro-level within engineering and research groups and in the work of the single scientist or engineer.[1]

- Going further in describing the effects of shared expectations

> Expectations are foundational in the coordination of different actor communities and groups (horizontal co-ordination) and also mediate between different scales or levels of organization (micro, meso, and macro—vertical co-

> ordination). They also change over time in response and adaptation to new conditions or emergent problems (temporal coordination).
>
> […]
>
> Finally, expectations constitute 'the missing link' between the inner and outer worlds of techno-scientific knowledge communities and fields. At the same time, expectations and visions are often developed and reconstructed in material scientific activities and disseminated in obdurate and durable forms. In a sense, expectations are both the cause and consequence of material scientific and technological activity.

- this is also a good paragraph on the similiarities between *expectations*, *promises* and *visions*—they're all more or less describing the same thing.

> Similar terms, which are commonly used, like technological 'promises' and 'visions' are largely overlapping with 'expectations' but emphasize to a higher degree their enacting and subjectively normative character. They stress that expectations are wishful enactments of a desired future. By performing such futures, they are made real and in this sense expectations can be understood as performative.[2]

- → (Notes) Criti-Hype

> Along with positive promises and hopes of future capabilities, fears and concerns about future risks are parallel features of these kinds of dynamics.[3] Both positive expectations and fears of risk—though different in character and having different dynamics—can be seen to have considerable influence on the discussion technological change.

- well, even in 2006 the authors thought hype was getting worse. I do wonder what they'd think now, esp. with social media in play.
- the argument here is pretty much in parallel with (Book) Who's Driving Innovation core observation regarding the helplessness or more critical actors in the face of hype.

> […] it may even be argued that hyperbolic expectations of future promise and potential have become more significant or intense in late and advanced industrial modernity. This shift in intensity is probably connected with a number of tendencies in the contemporary character of science and technology.
>
> For example, technological and scientific investment has increasingly been tied into strategic rather than say serendipitous innovation. The last half century has seen a 'strategic turn' in science and technology visible in the development of explicit research and innovation policies in many countries and in changes in research and education systems and their funding structures. Technology development and scientific knowledge are considered of central importance for societal development, not least through economic growth and international competitiveness.
>
> Moreover, with the rise of the so-called knowledge society, knowledge has become a central driving element of socio-economic and advanced industrial

> change and thus a key site of strategic focus.
>
> As a result, processes of science and technology innovation have become more complex, with a significant increase in the amount of communication and interaction across institutional and epistemic borders. For example scientists and researchers are increasingly expected to reach beyond the borders of their own specific fields of expertise and establish relationships with wide and heterogeneous networks of potential collaborators.
>
> Firms and policy makers are confronted, even bombarded, with technological promises (and their attendant risks) creating new decision-making demands based on the interpretation and analysis of the expectations environment. Just as often, such actors are confronted with disappointing outcomes and with promises that do not seem to hold.
>
> Therefore, it has become increasingly important to develop a vocabulary and analytical perspectives with which to make sense of the promissory and future-oriented properties of innovation networks, especially given the highly contested character of expectations and futures.[4]

## Approaches within Expectation Studies

- there's actually such a thing as "expectation studies"?
- I ignored most of this chapter because it's not directly relevant to my research about hype, though some paragraphs are pretty interesting here
- I highlited this mostly for the footnotes...

> In STS a number of studies have shown the decisive role of expectations in establishing new scientific and technological fields as diverse as membrane technology,[5] neural computing,[6] gene therapy and pharmacogenomics,[7] nanotechnology.[8] In a similar vein, hype and disappointment dynamics have surfaced as an important element in studies on the develop- ment of specific scientific or technological fields[9] and across a range of case studies.[10]

- This observation is also great. The way actors and users are defined in visions will guide the development (you can see that in the way people construct "users" → User vs. People)

> Of particular importance in all these studies are the explicit or implicit actor roles embedded in expectations. Ideal expectations of future users and their attributes are literally and materially scripted into technologies and socio-technical systems, though these will inevitably be reinterpreted and even subverted in usage.

> great quote claxon

> This shows, for example, that expectations tend to reflect current conceptions of technological utility or, as Marvin puts it, 'the tendency of every age to read the future as a fancier version of the present'.[11] This characteristic is also clearly visible in the genre of science-fiction and the tendency to reflect present day concerns and hopes.

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