

Un paper de la Universidad de Connecticut acerca del mismo tema, pero más aterrizado (o menos elegantes). Les paso la liga por si quieren ver todo el ensayo, pues este es sólo un extracto. Trae un punto relevante.... antes se pensaba que tecnología y conocimiento venían como maná del cielo, ahora se plantea que éstas se construyen como si fueran plátanos o llantas.

<http://www.lib.uconn.edu/Economics/Working/Structure.html>

Knowledge, Consumption, and Endogenous Growth Richard N. Langlois
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ABSTRACT

The recent efflorescence of interest in "endogenous" theories of economic growth has focused attention on the nature and role of knowledge in the growth process (Romer 1986, 1990; Grossman and Helpman 1990, 1994). Unlike earlier models of growth (Solow 1956; Swan 1956) in which technological change appeared as an exogenous parameter, this New Growth Theory (NGT) has sought to endogenize" technical change by folding its production more fully into the neoclassical positive heuristic. Knowledge no longer appears as manna from heaven, but is now produced just as are bananas and tires: as the result of the rational optimizing behavior of economic agents. These agents invest resources in Research and Development (R&D), a sausage machine whose output is new technological knowledge. For reasons that Kenneth Arrow (1962) long ago articulated, however, the good called knowledge has certain peculiar properties in that, once created, it can spill easily into the hands of others at zero marginal cost. This process of spillover (and the nonconvexity it implies) is the source of the increasing returns that generate economic growth. While not questioning some essential truth to this story, students of the process of technological change — especially those who have not restricted themselves to theoretical models — have expressed considerable doubt about the this picture of technological knowledge and its creation. Those who study the historical processes of technical change have found that knowledge does not always — and perhaps does not usually — take the form Arrow assumed (Nelson 1992). Much technological knowledge cannot in fact be transmitted easily to others; much technological knowledge is inarticulate and tacit (Polanyi 1958), and can be transmitted only at a cost through imitation and apprenticeship. This observation creates a difficulty for knowledge-based theories of growth. To the extent that knowledge is tacit in this way, it behaves like an ordinary private good, and its role in generating increasing returns is lost.

One response to the problem of tacit knowledge among sophisticated students of innovation has been to create a clear distinction between knowledge that is tacit and knowledge that is codified. Codified knowledge is knowledge that has been (or can be) converted into symbols for easy transmission, replication, and storage (Boisot 1995; Saviotti 1998). Such knowledge thus partakes of Arrovian public-good properties, which makes it a potential source of increasing returns. Under this stratagem, the large place of tacit knowledge in social learning does not invalidate growth theory so long as there also exists codified knowledge in suitable quantities.

Some writers would even go further, suggesting that technological change and economic growth have had the effect of tipping the balance between tacit and codified knowledge (Arora and Gambardella 1994; Cowan and Foray 1997). “More” knowledge is becoming codified, implying (and perhaps explaining) an accelerated pace of social learning and economic growth. This essay takes a more skeptical view of the proposition that we are experiencing greater codification hand in hand with modern technology and economic growth. But such skepticism need not have dire implications for (the theory of) economic growth. The essay will take an equally skeptical view of the proposition that only codified knowledge, and never tacit knowledge, can generate economic growth.