

# information, economics, development

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**concepts of information**

**March 22, 2012**

# overview

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**why economics?**

**Stiglitz & Romer**  
readers respond

**economics & information**  
a historical account

**economics, information, & development**

# why economics?

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**information age gurus?**

# why economics?

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## **information age gurus?**

Charles Hamlin  
William Harding  
Daniel Crissinger  
Roy Young  
Eugene Mayer  
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\*"veritable rock-star economist"



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"politically the nation's identity was established by the government; economically it was vested in the central bank"

20-Cofl-Economics 3 --Polanyi

# economics & the public sphere

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## **econopundits**

*New York Times*: Paul Krugman

*New York Times*: “the economic scene”

*New Yorker*: Malcolm Gladwell

*New Yorker*: James Surowieki (*The Wisdom of Crowds*)

## **econoblogging:**

Brad deLong, Tyler Cowan, Matthew Yglesias,  
Marginal Revolution, Crooked Timber ...

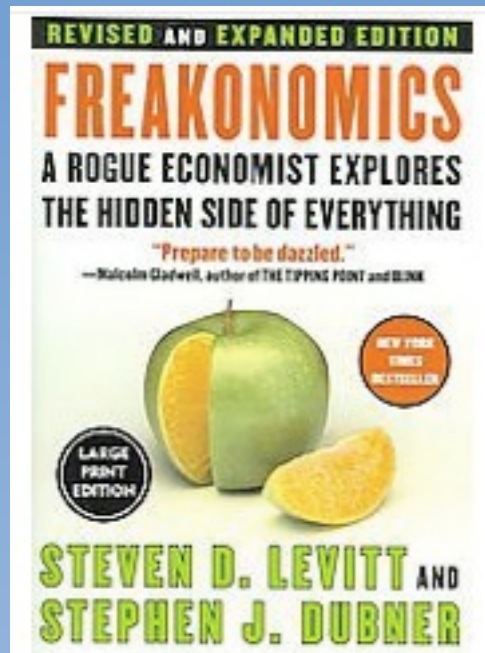
# economics & the public sphere

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## **economic argument & contrarian glee**

Steven Levitt & Stephen Dubner,  
*Freakonomics*, 2006

*Superfreakonomics*, 2009



# wisdom about crowds?

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"Economics has come nearer than any other social science to an answer to that central question of all social sciences, how the combination of fragments of knowledge existing in different minds can bring about results which, if they were to be brought about deliberately, would require a knowledge on the part of the directing mind which no single person can possess."

--Hayek, "Economics and Knowledge," 1937

# the social science

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"Economics is far more versatile than its critics believe. It is a method of analysis and not just a field of study. The method is to combine two core assumptions—individual optimization and equilibrium—with various sets of specific assumptions adapted to different fields of application. **The method is applicable not only to the market system but also the social and political environment within which this system is embedded.** Social and psychological insights can be encapsulated in the specification of interdependent preferences, which hold the key to modelling all kinds of institutional behavior in rational terms."

--Buckley & Casson. "Economics as an imperialist social science" 1993

# neither irony nor shame?

---

"Economics is not only a social science, it is a genuine science ... refutable implications. ...By almost any market test, economics is the premier social science. The field attracts the most students, enjoys the attention of policy-makers and journalists, and gains notice, both positive and negative, from other scientists. In large part, the success of economics derives from its rigor and relevance as well as from its generality. The economic toolbox can be used to address a large variety of problems drawn from a wide range of topics."

--E.P. Lazear, "Economic Imperialism," 2000

# attractiveness

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## **broad explanatory power**

## **robust modelling**

"the competitive model virtually made economics a branch of engineering" -- Stiglitz

## **whiggish history**

- Mandeville's "harlot & highwayman"
- progress: rising height, weight, gdp, equality

## **pareto efficiency**

## **de-centralized, self-regulating systems**

-information the key ingredient



# a field in step

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## **political economy to economics**

law and economics

## **academic consensus**

## **conceptual consensus**

markets, preferences, equilibrium & rationality

## **modelling consensus**

"do the math"

## **repelling monsters**

the decline of "high-development theory"

# 2008 -- end of empire?

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## **a field in crisis?**

freshwater vs saltwater

## **old rebels**

Stiglitz, new Keynesians

## **new rebels**

Greenspan?

Posner??

## **return of the repressed?**

marxists

behaviorists

Samuelson

Richardson?

# forgotten monsters

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Mississippi Scheme

South-Sea Bubble

Tulipomania

...

Dot.com boom?

...

sub-prime mortgages

MEMOIRS

OF

EXTRAORDINARY POPULAR DELUSIONS

AND THE

Madness of Crowds.

BY CHARLES MACKAY, LL.D.

AUTHOR OF "EGERIA," "THE SALAMANDRINE," ETC

1852

# ZOMBIE ECONOMICS

HOW DEAD IDEAS STILL WALK AMONG US



The Great Moderation  
Efficient Markets  
Trickle Down  
Privatization

## back in step?

"The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist."

--Keynes

"The ideas of the ruling class are in every class the ruling ideas"

--Marx

20-Cofl-Economics 13

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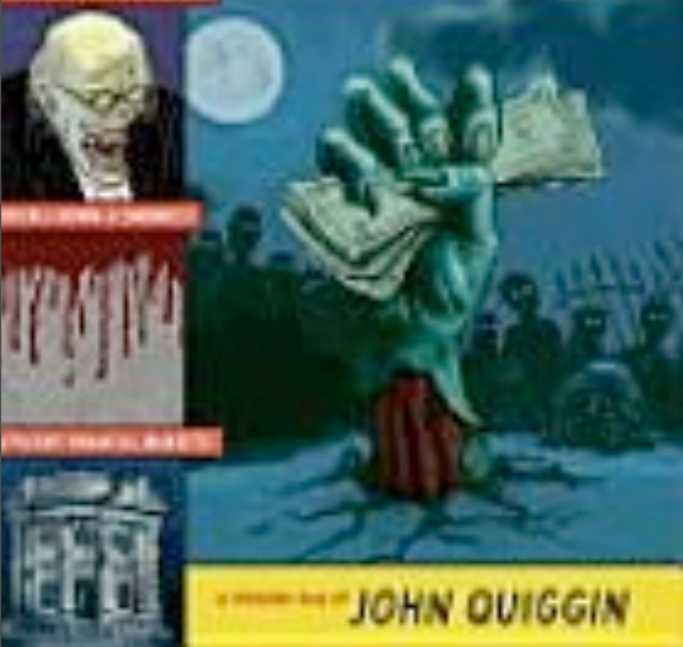
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The Great Moderation  
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## Budget 2012: IFS criticises 'hotch-potch' of tax reforms

George Osborne's third budget 'may turn out to be less fiscally neutral than intended,' says Institute for Fiscal Studies

Katie Allen

guardian.co.uk, Thursday 22 March 2012 09.18 EDT

[Article history](#)

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20-Cofl-Economics 13

## an appalling vista...

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[dissent from methodological individualism] "implies that the behavior of men is directed by mysterious forces that defy analysis and description."

--Ludwig von Mises,

*The Ultimate Foundation of Economic Science*, 1962

"Many resource-based theorists reject formal modelling altogether, and adopt the nihilistic stance that in a complex world any model of the firm will distort more than it illuminates."

-- Mark Casson, *Information and Organization*, 1997

"The costs of rejecting normality ... are substantial"

Fama, 1970

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## re-recantation?

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"But the notion that somehow my views on regulation were predominant and effective at influencing the Congress is something you may have perceived. But it didn't look that way from my point of view."

--Alan Greenspan, testimony, 4/7/2010

"Today's competitive markets, whether we seek to recognise it or not, are driven by an international version of Adam Smith's "invisible hand" that is unredeemably opaque. **With notably rare exceptions** (2008, for example), the global "invisible hand" has created relatively stable exchange rates, interest rates, prices, and wage rates."

--Alan Greenspan, *FT*, 3/30/2011

Economics 15





# overview

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**why economics**

**readers respond**

**economics & information**

a historical account

**economics, information, & development**

# *information* in economics

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**is that what we mean by *information*?**

**is it something we can speak to?**

education

insurance

development

# overview

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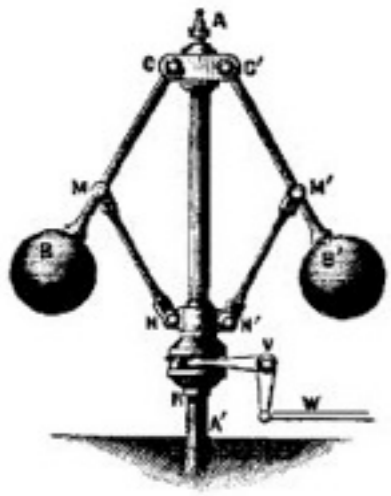
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## engine or camera

---

"Systems in many respects resemble machines. A machine is a little system, created to perform, as well as to connect together in reality, those different movements and effects which the artist has occasion for. A system is an imaginary machine invented to connect together in fancy those different movements and effects which are in reality performed."

--Adam Smith, *Astronomical Enquiries*

# *principia*

---

"When I first saw the plan and superstructure of your very ingenious and very learned Treatise on the Wealth of Nations, it gave me the compleat idea of ... A System, that might fix some first principles in the most important of sciences, the knowledge of the human community and its operations. That might become *principia* to the knowledge of political economy as Mathematicks are to Mechanics, Astronomy, and the other Sciences."

--Thomas Pownall, *Letter...to Adam Smith*, 1776

camera

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**no state regulation**

*The Road to Serfdom, 1944*

*The Fatal Conceit, 1988*

**knowledge & information**

“Economics and Knowledge,” 1937

“The Use of Knowledge in Society,” 1945



Friedrich von Hayek  
1889–1992



# economics & knowledge

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"Clearly there is here a problem of the division of knowledge which is quite analogous to, and at least as important as, the problem of the division of labour. ... instead of showing what bits of information the different persons must possess in order to bring about the result, we fall in effect back on the assumption that everybody knows everything."

--Hayek, "Economics and Knowledge," 1937



# info, knowledge, data

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"the so called "data", from which we set out in this sort of analysis, are (apart from his tastes) all facts given to the person in question, the things as they are known to (or believed by) him to exist. ... any change which leads him to alter his plan, disrupts the equilibrium relation between his actions.

"'data' ... [as] the objective real facts, as the observing economist is supposed to know [or] ... the subjective sense, as things known to the persons whose behaviour we try to explain."

--Hayek, 1937

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# info, knowledge, data

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[price is an] "index ... in which all the relevant information is concentrated...

"prices can act to coördinate the separate actions of different people  
"... The whole acts as one .... because .... individual fields of vision overlap so that through many intermediaries the relevant information is communicated

"equilibrium analysis ... seems to have so extraordinarily little to say about the institutions, such as the press, the purpose of which is to communicate knowledge. ... a peculiar blindness to the rôle played in real life by such institutions as advertising. ...

That an economist of [Prof S] standing should thus have fallen into a trap which the ambiguity of the term "datum" sets to the unwary."

--Hayek, 1945

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# advertisement and information

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Chambers	ADVERTISEMENT: an Intelligence or Information, given to Persons
Bailey	ADVERTISEMENT: Advice, intelligence, Information, Warning
Johnson	ADVERTISEMENT 2: Intelligence, information; 3 Notice of anything published in a paper of intelligence
Wesley	ADVERTISE: to inform APPRIZE: to inform

# still information

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"it is neither necessary nor useful to attribute to advertising the function of changing tastes ... advertising affects consumption not by changing tastes, but by changing price"

George J. Stigler & Gary S. Becker "De Gustibus Non Est Disputandum," 1977

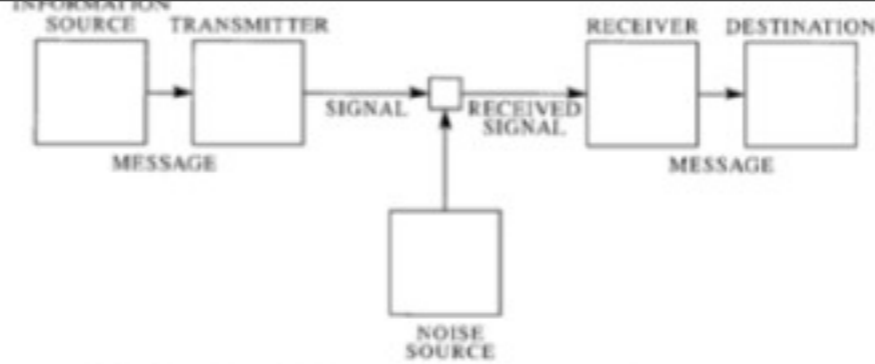
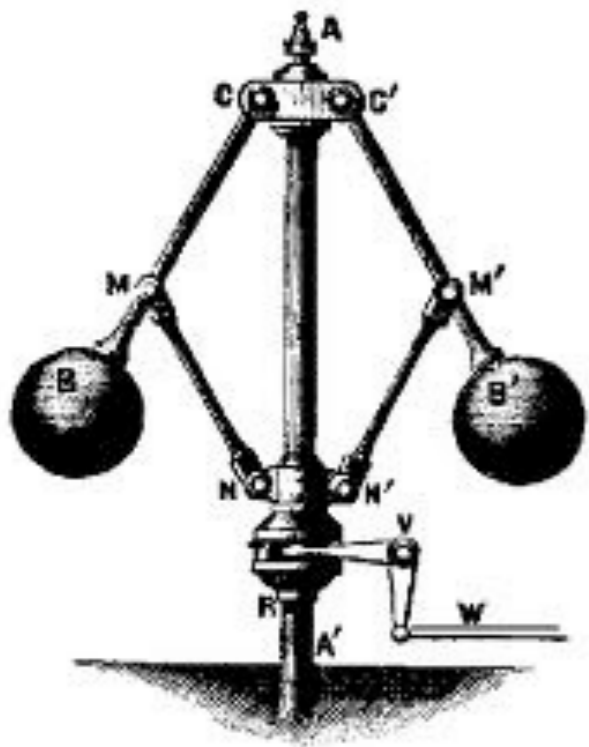


Fig. 1—Schematic diagram of a general communication system.

# machine dreams

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## **Babbage to Wiener**

*Cybernetics, or Control and Communication in the Animal and the Machine, 1948*

## **von Neumann & Morgenstern**

*(Theory of Games, 1944)*

"perfect information"

# finance and fama's prices

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"A market in which prices always "fully reflect" available information is called efficient ...

"Three relevant information subsets:

*"weak form:* the information set is just historical prices ...

*semi-strong form:* in which the ... prices efficiently adjust to other information that is obviously publicly available ...

*"strong form ...* groups have monopolistic access to any information relevant for price formation."

-- Eugene Fama,

"Efficient Capital Markets," 1970  
footer 29

# less principled?

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"information as that which is being communicated becomes identical with 'knowledge' in the sense of that which is known"

--Fritz Machlup,  
*The Production and Distribution of  
Knowledge, 1963*

# becoming established

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"One should hardly have to tell  
academicians that information is a  
valuable resource: knowledge is power"

information, search, uncertainty,  
advertising, signalling

-- George Stigler,  
"The Economics of Information," 1961



# information's place

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"Stigler ... argued that once the real costs of information were taken into account, the standard results would still hold. Information was just a transaction cost. ... Stigler was wrong."

--Stiglitz

"As the market grows in these dimensions, there will appear a set of firms which specialize in collecting and selling information. They may take the form of trade journals or specialized brokers ... there is a strong tendency towards monopoly ... a 'standard' source for trade information".

--Stigler,

"The Economics of Information," 1961

## moreover

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"perfect information ... free, complete, instantaneous, and universally available ... [is] one of the defining features of the perfect market ...

"at the same time, both the perfect and the actual market structure ... depend on information being a commodity, ... costly, partial, and deliberately restricted"

--James Boyle,

*Shamans, Software & Spleen*, 1996

20-Cofl-Economics 33

# goods

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"I will think rather of information as a general descriptive term for an economically interesting **category of goods** which has not hitherto been accorded much attention by economic theorists....information is like a commodity ... But ... only to a limited extent"

--Arrow, 1973

# shannon's view

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"When there is uncertainty, there is usually the possibility of reducing it by the acquisition of *information*. Indeed, information is merely the negative measure of uncertainty. ...

--Kenneth Arrow

"Information & Economic Behavior," 1973

# individual to organization /information to signal

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"Economy arises only if the signals transmitted are summaries of the information received . . . the costs of transmission are much lower than those of acquisition, and it is possible that joining the observers into a single organization can represent a net economy. . . . Once learned, however, it is cheaper to reuse the same system than to learn a new one . . . If external conditions change, an originally optimal communication system may no longer be the one that would be chosen. . . . Eventually the communication system may be very inefficient at handling signals, and the firm may vanish." -- Arrow

# more problems?

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"There is an incentive for sellers to market poor quality merchandise ...

The difficulty of distinguishing good quality from bad is inherent in the business world.

**An asymmetry in available information** has developed: for the sellers now have more knowledge about the quality of a car than the buyers ... Gresham's law has made a modified reappearance."

--George Akerlof,  
"The Market for Lemons," 1970  
20-Cofl-Economics 37

# signalling

OP-ED CONTRIBUTOR

## Why I Am Leaving Goldman Sachs

By GREG SMITH

Published: March 14, 2012

TODAY is my last day at Goldman Sachs. After almost 12 years at the firm — first as a summer intern while at Stanford, then in New York for 10 years, and now in London — I believe I have worked here long enough to understand the trajectory of its culture, its people and its identity. And I can honestly say that the environment now is as toxic and destructive as I have ever seen it.

[Enlarge This Image](#)



To put the problem in the simplest terms, the interests of the client continue to be sidelined in the way the firm operates and thinks about making money. Goldman Sachs is one of the world's largest and most important investment banks and it is too integral to global finance to continue to act this way. The firm has veered so far from the place I joined right out of college that I can no longer in good conscience say that I identify with what it stands for.

It might sound surprising to a skeptical public, but culture was always a vital part of Goldman Sachs's success. It revolved around teamwork, integrity, a spirit of humility, and always doing right by our clients. The culture was the secret sauce that made this place great and allowed us to earn our clients' trust for 143 years. It wasn't just about making money.

# information plugs a gap?

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"I was struck by the imperfections of information ... asymmetries ... between those governing and those governed.

"peculiar implications of the model ... it seemed not to address issues such as incentives and motivation. But much of the research was directed not at these big gaps."

--Stiglitz



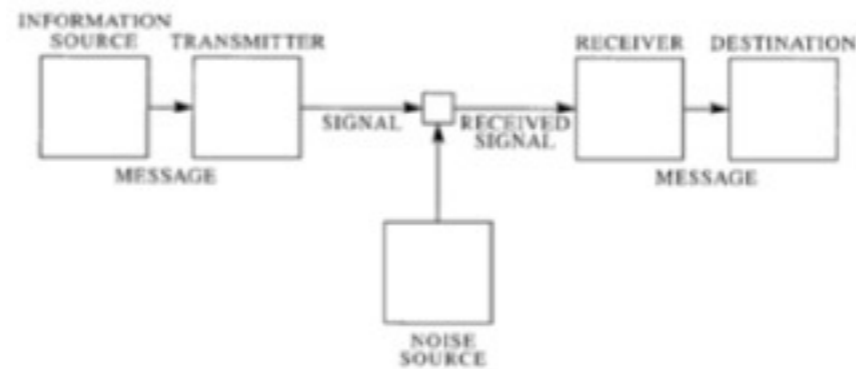


Fig. 1—Schematic diagram of a general communication system.

# perfection

**what do we mean by**

*full, im/perfect, in/complete, or a/symmetrical*

information?

and how do we perfect, complete, or make full or symmetrical?

"it is hard to imagine what a world with perfect information would be like"

--Stiglitz

# range or binary?

---

"While there is a single way in which information is perfect, there are an infinite number of ways in which information can be imperfect."

Stiglitz



U.S. Federal Reserve, via Reuters

A Federal Open Market Committee meeting on March 28, 2006.

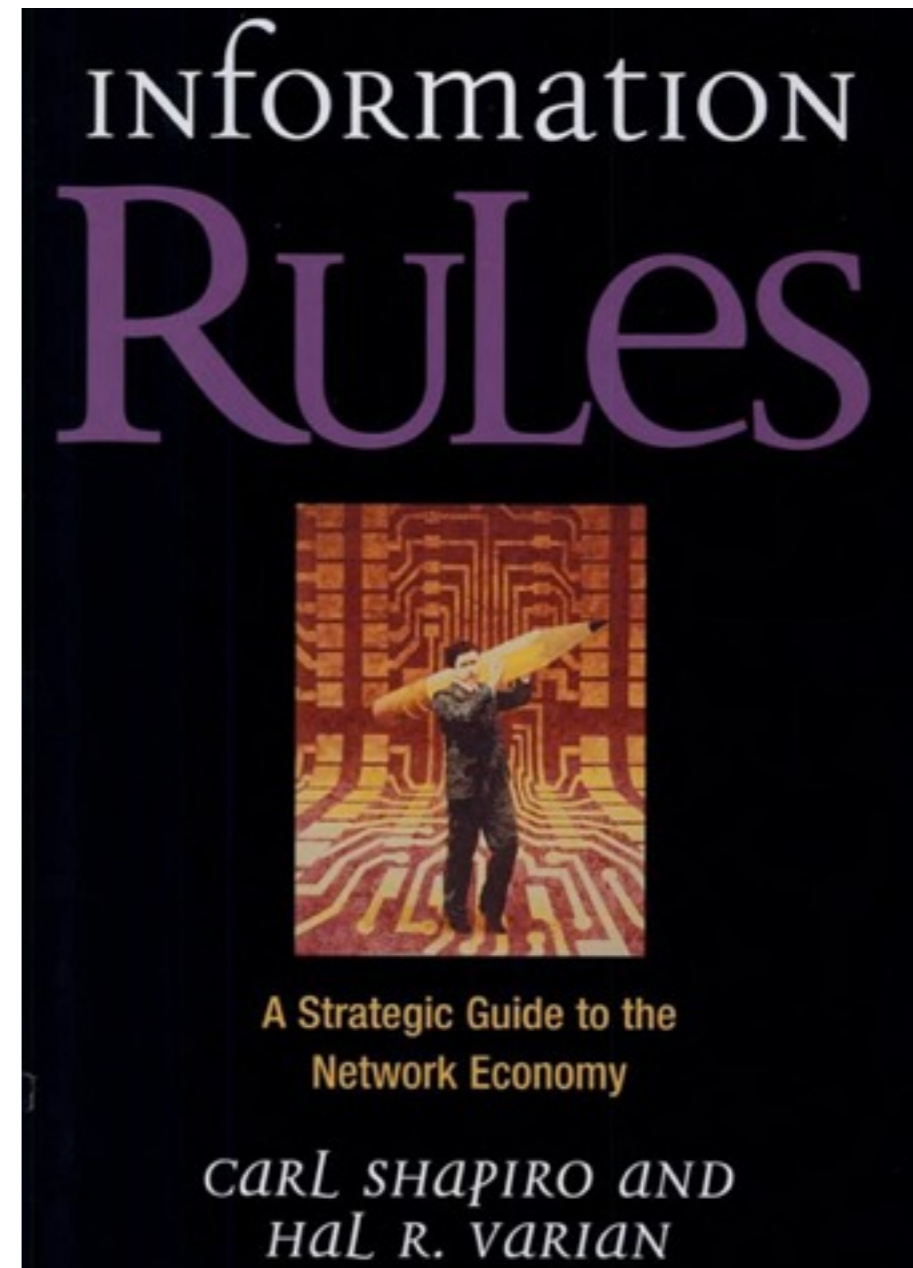
By BINYAMIN APPELBAUM  
Published: January 12, 2012

## comprehension?

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"The transcripts of the 2006 meetings, released after a standard five-year delay, clearly show some of the nation's pre-eminent economic minds did not fully understand the basic mechanics of the economy that they were charged with shepherding. The problem was not a lack of information; it was a lack of comprehension, born in part of their deep confidence in economic forecasting models that turned out to be broken."

# economic information?

The Google logo is displayed in its characteristic multi-colored font (blue, red, yellow, green, red) on a white background.

# overview

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# spatial divisions

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"somewhere in the world a new opportunity for the use of some raw material, say tin, has arisen ..." --Hayek, 1945

## **divisions of**

- commodities
- labor
- knowledge

# gaps

---

"human capital .. could be studied using the economic tools developed for objects"

"Must economic theory recognize a different kind of good--ideas--if it is to explain .. growth?... If there are only object gaps, the implications for poor countries are much more pessimistic than if there are also idea gaps"

--Paul Romer

# gap bridging

---

"Idea gaps, in contrast are relatively easy to solve. ... an important fraction of worldwide poverty may be due to an idea gap that can be reduced at relatively low cost. ... the world already possess the knowledge needed to provide a decent standard of living for everyone on Earth ... crucial pieces of specialized, highly trained human capital can be put to work domestically by inviting in managers and technicians."

--Romer

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# gap bridging

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## **the object gap disappears?**

"Access... through unimpeded flows of the capital goods that are produced in industrialized nations."

..."absorption capacity ..."

# it's just information



**Grandfather:**  
Well, I finally finished my  
doctoral thesis.

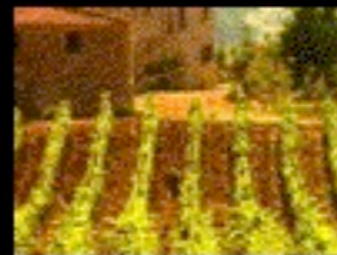


**Woman:**  
Way to go, Gramps.



**Grandfather:**  
Did my research at  
Indiana University.

**Woman:**  
Indiana?



**Grandfather:**  
Yup. IBM took the  
school's library...and  
digitized it. So I could  
access it over the Internet.

*She cocks her ear to take  
this all in.*



**Grandfather:**  
You know...It's a great time  
to be alive.



**Tag:**  
IBM. Solutions for  
a small planet.

# *kinds of distance?*

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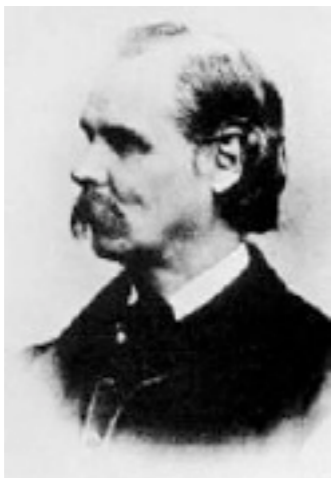
## **geographical**

extension courses

## **social**

correspondence degrees

the Open University



# Localization

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[T]he mechanical faculty of Lancashire is said to be due to the influence of Norman smiths who were settled at Warrington by Hugo de Lupus in William the Conqueror's time. And the greater part of England's manufacturing industry before the era of cotton and steam had its course directed by settlements of Flemish and other artisans; many of which were made under the immediate direction of Plantagenet and Tudor kings. These immigrants taught us how to weave woollen and worsted stuffs, .... They taught us how to cure herrings, how to manufacture silk, how to make lace, glass, and paper, and to provide for many other of our wants.

--Alfred Marshall, *Principles of Economics*, 1920 [1890]

# mysteries

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When an industry has thus chosen a locality for itself, it is likely to stay there long: so great are the advantages which people following the same skilled trade get from near neighbourhood to one another. **The mysteries of the trade become no mysteries; but are as it were in the air,** and children learn many of them unconsciously. Good work is rightly appreciated, inventions and improvements in machinery, in processes and the general organization of the business have their merits promptly discussed: if one man starts a new idea, it is taken up by others and combined with suggestions of their own; and thus it becomes the source of further new ideas. And presently subsidiary trades grow up in the neighbourhood, supplying it with implements and materials, organizing its traffic, and in many ways conducing to the economy of its material.

-- Marshall

# limits to localization?

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**Every cheapening of the means of communication, every new facility for the free interchange of ideas between distant places alters the action of the forces which tend to localize industries.** Speaking generally we must say that a lowering of tariffs, or of freights for the transport of goods, tends to make each locality buy more largely from a distance what it requires; and thus tends to concentrate particular industries in special localities: but on the other hand everything that increases people's readiness to migrate from one place to another tends to bring skilled artisans to ply their crafts near to the consumers who will purchase their wares.

--Marshall

# mobility

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## ***The Great Transformation***

*im/mobility*

commodities

finance

people?

ideas, ethics

nationally (19c)

# disequilibrium?

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**economic discourse**

**communication theory**

**information/knowledge**

**just plain information**