avoid "laxity in the use of the term"--Kenneth Sayre, Cybernetics and the Philosophy of Mind, 1976

### definitive

21 Jan: Information and philology

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2 Feb: How much information?

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23 Feb: Information and the public

2 Mar: Legal information

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modern roots

information theory

disciplinary anxieties

ischools

information science

older approaches

information and the law information and economics/business

information unbound



# new fields, new definitions

#### modern roots

information theory

disciplinary anxieties

ischools

information science information and the state

older approaches

information and the law information and economics

information unbound

"The logic of definition is nowhere more crucial than with respect to the name of a field of scholarly enquiry...The name of the field maps out essential characteristics."

Alvin Schrader, "In Search of a Name," 1984

"Science begins when the meaning of the words is strictly delimited."

L. Brillouin, Science and Information Theory, 1962

"Rarely does it happen in mathematics that a new discipline achieves the character of a mature developed scientific theory in the first investigation devoted to it... So it was with information theory after the work of Shannon."

A.I. Khintchin, 1956



## definitive

modern roots information theory

disciplinary anxieties ischools

information science

#### older approaches

information and the law information and economics

information unbound

"Information relates not so much to what you do say, as to what you could say ... a measure of one's freedom of choice when one selects a message" Claude Shannon,

The Mathematical Theory of Communication, 1949

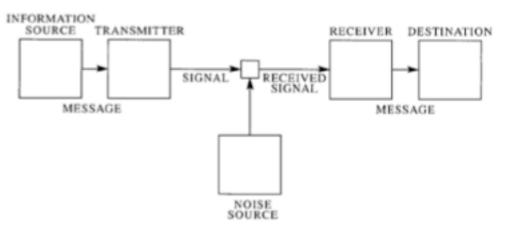


Fig. 1—Schematic diagram of a general communication system.

# )

### definitions

### and antecedents

"[I]nformation is a very elastic term ... a more specific meaning ... the sender mentally selects ... At each selection there are eliminated all of the other symbols which might have been chosen ... more and more possible symbols sequences are eliminated ... the information becomes more precise ... Inasmuch as the precision of the information depends upon what ... might have been .. reasonable to hope to find in the number of these sequences the desired quantitative measure ... desirable ... to eliminate the psychological factors involved and to establish a measure of information in terms of purely physical quantities."

R[alph] V.L. Hartley, "Transmission of Information,"

Bell System Technical Journal, 1928

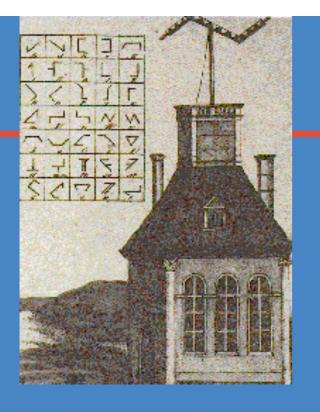
"The word communication will be used here in a very broad sense to include all the procedures by which one mind may affect another. This, of course, involves not only written and oral speech, but also music, the pictorial arts, the theatre, the ballet, and in fact all human behavior ... one which would include the procedures by means of which one mechanism (say automatic equipment to track an airplane and to compute its probable future positions) affects another mechanism (say a guided missile chasing an airplane)."

> Warren Weaver, The Mathematical Theory of Communication, 1949



### hold on

"[B]asic results [of information theory] are aimed in a very specific direction ... not necessarily relevant to such fields as psychology, economics, and other social sciences, . . . not a trivial matter of translating words to a new domain" Claude Shannon, "The Bandwagon," 1956



### information transmitted

### processing and transmission

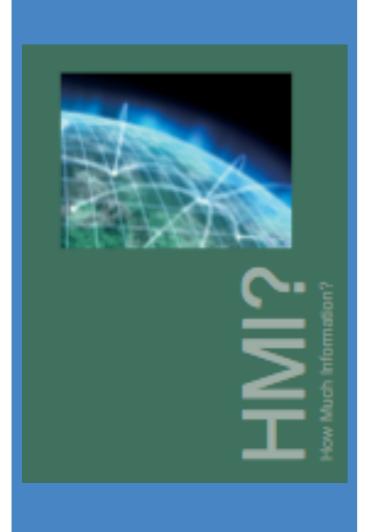
"these machines have generally been established for the purpose of transmitting information during war" Charles Babbage, On the Economy of Machinery and



Manufactures, 1832



### information delivered



```
"Information is a subset of data ....
        "data ... artificial signals intended to convey
                                            meaning ...
   "information ... data that is delivered for use by a
                                               person...
          "... data, the "raw material" of information.
"... we measure as information each time consumers use
                                                     it.
... traditional information ... from media that preceded
                                the home computer era."
   Roger Bohn & James Short, How Much Information? 2009
```

# )

## ischools

#### modern roots

information theory

#### disciplinary anxieties

ischools

information science

#### older approaches

information and the law information and economics

information unbound

"Information is hard to define and impossible to see, but it is every-where. ...

"It is the thing that moves within and between people and technology, making them interesting ...

"The action occurs where people and technology meet because that is where the information exists. "

Wobbrock et al, "Exploring the Future of iSchools," 2010

"Information is no more abstract than law, business, or policy

"We are not about the interactions between people and arbitrary technology: We focus on technology that mediates information use."

Pollack, "Reflections on the Future of iSchools," 2010

Cofl 10 -- Introduction 9



### information science

#### modern roots

information theory

#### disciplinary anxieties

ischools

information science

#### older approaches

information and the law information and economics

information unbound

### ancestral voices

First use [?]: "Computer and Information Sciences Program"
University of Pennsylvania, 1959

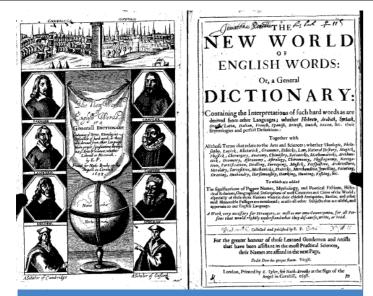
"Information ... is a category word, for there are many kinds ... [information is] recorded marks" Symposium on Education for Information Science, 1965

"Information ... is a process which occurs within a human mind when a problem and data useful for a solution are brought into productive union"

A.G. Hoshovsky & R.J. Massey, "Information Science: Its Ends, Means, and Opportunities," 1968

"[data] that which is recorded as symbols from which other symbols may be produced" ... [information] "the result of processing of data, usually formalized processing."

R.M.Hayes, "Information Science in Librarianship, "1969



# coming into the language

modern roots

information theory

disciplinary anxieties

ischools

information science

older approaches information and the law information and economics

information unbound

### process

Information, (lat.)

an informing, telling, or making known.

Informatus non sum, a formal answer, made by an Atturny, that is commanded by the Court to say what he thinks good in defence of his Client

Edward Philips, The New World of English Words or a General Dictionary: Containing the Interpretations of Such Hard Words as are Derived from Other Languages ..., 1658

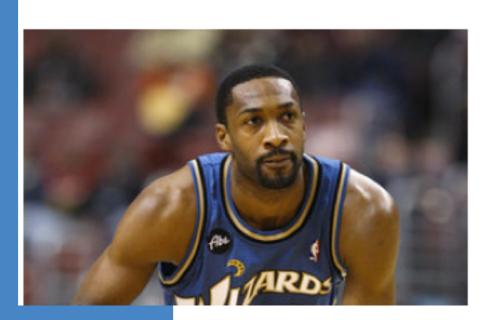


### 'formal answer

### legacy issues

### **NBA's Gilbert Arenas Charged With Gun Felony**

by THE ASSOCIATED PRESS



January 14, 2010

text size A A A

Washington Wizards guard Gilbert Arenas has been charged with a felony in connection with last month's locker room confrontation with a teammate.

Arenas was charged Thursday with one count of carrying a pistol without a license.

The charges were filed in D.C. Superior Court in an "information," a document that generally signals a plea deal.

His lawyer had no immediate comment.



## legal information

Results 1 - 10 of about 23,200,000 for "legal information". (0.24 seconds)

#### modern roots

information theory

#### disciplinary anxieties

ischools

information science

#### older approaches

information and the law

information and economics

information unbound

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#### Legal Information for U.S. Business Organizations

General Resources (sites with multiple areas of legal information) ... Nonprofit -Specific Legal Information (NOTE: most other topics apply to nonprofits, ... managementhelp.org/legal/legal.htm - Cached - Similar

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# legal information

#### modern roots

information theory

disciplinary anxieties ischools

information science

older approaches
information and the law
information and economics

information unbound

### self evidence?

### Legal advice

From Wikipedia, the free encyclopedia

Legal advice is distinguished from **legal information** which is the reiteration of legal fact. Legal information can be conveyed by a parking meter, sign or by other forms of notice such as a warning by a law enforcement officer. Printed legal materials, such as directions and how-to manuals, are generally not considered legal advice. Accordingly, directions on how to fill in a motion form and other court documents do not constitute legal advice. [citation needed] On the other hand, application of legal rules and principles to a specific set of facts is almost always held to constitute legal advice by the courts.

- NB. R. Berring, "Legal Information and the Search for Cognitive Authority,"

  California Law Review 88(6) 2000: 1673-1709
- R. Richards, "Definition of 'Legal Information,'" http://home.comcast.net/~richards1000/Definitions.html

### decisive

modern roots

disciplinary anxieties

older approaches

information and economics

information unbound

"I propose we get rid of the duplication of 'knowledge and information.' There are those who insist on distinguishing 'information' from 'knowledge' ... The specialist in 'information theory' [ie Shannon] uses the word, as he frankly admits, in a 'rather strange way' ... but it is not what is commonly meant by 'information.' ... Webster's Dictionary defines 'information' as 'knowledge communicated ....' Hence, in the ordinary uses of the word, all information is knowledge"

> Fritz Machulup, Production and Distribution of Knowledge, 1962



### business antecedents

#### modern roots

disciplinary anxieties

older approaches

information and economics

information unbound

### scientific management

"the science of management [comprises] organization, communication, and information" and information is "recorded communication"

> Henry Varnum Poor, American Railroad Journal c1849

cp Alfred Chandler & James Cortada A Nation Transformed by Information, 2000

directions of the wind is that the (reduced) high-level barometric reading exceeds the (reduced) low-level reading when the wind blows at about the rate of 5 miles an hour. The reverse is always true when the speed of the wind exceeds that rate, on the one hand, or is extremely small, on the other. This seems to indicate an increase of pressure in air-currents which ascends the mountain, and so may explain the fact that the top of the mountain is frequently clear, while dense cloud is being constantly formed at a short distance above it.

 On June 27 a scientific expedition, headed by Professor Lee, instructor in biology at Bowdoin College, sailed from Rockland, Me., for Labrador. Of the seventeen members of the party with

necessity less than the true average rate per day, because every day that a bottle lies undiscovered on the beach counts on its time of drift, the apparent elapsed time being thus too great and the average drift per day too small. It is proposed to continue the publication of bottle papers as often as possible, not only for the Atlantic but for other oceans, and masters of vessels and others interested are urged to co-operate with the hydrographic office in collecting as complete data as possible regarding this general subject. Any reliable reports of long drifts of bottle-papers, or an other floating objects, will be of interest in this connection, and the accumulation of such data may add considerable useful information to our knowledge of the general drift of ocean currents.

# economy/society

#### modern roots

disciplinary anxieties

older approaches

information and economics

information unbound

"information is a pattern or design that rearranges data for instrumental purposes, while knowledge is the set of reasoned judgments that evaluates the adequacy of the pattern for the purpose ...

"knowledge and information are becoming the strategic resource and transforming agent of the post-industrial society

Daniel Bell, "Social Framework" 1979

cp "Such data may add considerable useful information to our knowledge" Science, 1891



# information economy/society

#### modern roots

disciplinary anxieties

older approaches

information and economics

information unbound

The endless cycle of ideas and action Endless invention, endless experimentation Brings knowledge of motion, not of stillness Where is the life we have lost in the living? Where is the wisdom we have lost in knowledge? Where is the knowledge we have lost in information? T.S. Eliot, "Choruses from 'The Rock,'" 1934



# information's progress

#### modern roots

information theory

disciplinary anxieties

ischools

information science

older approaches
information and the law
information and economics

information unbound

"A crucial distinction is made by Mr.

Roszak [in the Cult of Information]

between information, or data, and knowledge, that semantic embarrassment which computer zealots at best ignore and at worst disguise, calling it by such misnomers as 'knowledge systems.'

Computers may excel at processing data. But, unlike humans, they are incapable of the original thought of which knowledge is created."

New York Times, 1987



# popular wisdom

modern roots

information theory

disciplinary anxieties

ischools

information science

older approaches
information and the law
information and economics

information unbound





"For national decision makers, no better alternative is at hand than to accept the unifying concept of information ..."

William H Read, 'Information as a National Resource,' 1978.

## information unbound

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"The logic of definition is nowhere more crucial than with respect to the name of a field of scholarly enquiry...The name of the field maps out essential characteristics."

Alvin Schrader, "In Search of a Name," 1984

1. form of energy

2. form of property

3. form of commodity

4. a process of change in internal mental state

5. mathematical property which reduces uncertainty

6. knowledge

7. scientific knowledge

8. scientific information

9. science information

10. data

11. facts

12. communication

13. meaning

14. message content

15. perception

16. consciousness

17. mental impression

18. physical transmission signals.