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What is This?
The Concept of Information

Tiziana Terranova

Although the first appearance of the word information in English can be traced back to the 15th century, the term rose to prominence in the second half of the 20th century as a result of its increasing centrality to the natural sciences (Segal, 1998). In the aftermath of the Second World War, information was seen as a key element in the process of reification of different branches of science under the umbrella of cybernetics or the theory of messages. Cybernetics identified information (together with communication, command and control) as a central element in the organization of living organisms and physical systems (Wiener, 1961). In this sense, the term signals a convergence of the new paradigm of molecular biology with the systemic approach elaborated by cybernetics. Identified by Claude E. Shannon with the content of a communication act, and given an appropriate logarithmic function, information is also identified in molecular biology with negentropy, that is with that physical force which runs against the natural tendency of life to disorganization. As negentropy, information explains how organized systems persist in the face of surrounding entropic forces (Campbell, 1982). This tendency culminates in the identification of information with DNA and thus signals a conceptual shift in biology towards a kind of hylomorphism (a new dualism of form and matter) or even a neo-Platonism (where life is reduced to the expression of a pattern that can be abstracted from a physical body and replicated across a number of media).

In a parallel but connected development, the term information becomes central also within sociology, where it is seen as the controversial marker of a qualitative shift in the mode of production from industrial to post-industrial societies. Theories of the information society maintain that we no longer live in industrial societies organized around the production of material goods in factories, but in post-industrial or information economies.
societies centred around services and knowledge work, trading and extracting value out of knowl-
edge-as-information. The term information society
is thus often used polemically as a critique of
Marxist political economy which is seen as based
around the outdated characteristics of industrial
production and thus not able to take into account
the radical implication of this shift to information
as source of added value (Bell, 1976).

A critical perspective on the informatization of
knowledge in post-industrial society was also intro-
duced by Jean-François Lyotard who made infor-
mation central to his analysis of postmodernity.
Lyotard identified information with a shift in the
status of knowledge as such, where the latter is
increasingly wrested away from its status of grand
explanation or narrative and bent towards the
technical requirements of performativity. For
Lyotard, information refers to a mode of knowl-
edge that is no longer reflective or contemplative
but performative and pragmatic (Lyotard, 1989).
This shift to knowledge-as-information is also
confirmed by the discipline of economics where
the latter is identified as a quantitative measure
that determines, for example, the different value
of goods or as a factor to be considered in the
temporal dynamics of markets.

In media and cultural studies, the term infor-
mation is identified first by Roland Barthes’
cultural semiotics as a basic level of meaning or
denotation – the raw perceptual material out of
which the work of connotation or ideology is done
(Barthes, 1993). The term ‘information’, however,
is later marginalized because of the problematic
implication that such raw perceptual input can
actually be separated from the work of signification.
Information is thus generally dissolved in the
subsequent discursive constructionism which
remained the basic paradigm of the field in the
1980s and 1990s. In the 1990s, feminist science
and technology studies also elaborated a critique
of the paradigm of informationalism in computer
science and cyberculture. Informationalism is
identified with a discursive construction of the
body that reduces its phenomenological quality of
embodiment to an abstract and reproduceable
pattern of data. This analysis also draws on earlier
feminist critiques of molecular biology and its
tendency to identify DNA with the deterministic
basis of life (Hayles, 1999).

The feminist critique of information resonates
with accounts of cyberculture and global
communications that emphasize their destructive
impact on embodied forms of experience. Infor-
mation is thus seen as an abstract force that, by
virtue of its instantaneous transmission and its
immateriel characteristics, undermines the
phenomenological basis of perception as framed by
localized space and time (Virilio, 2000). Other
sociological perspectives, however, have pointed
out how within contemporary societies, informa-
tion is the new mode of power and hence a
critique of information is as important today as
that of ideology and discourse was within
modernity (Lash, 2002).

From a philosophical perspective, Gilbert
Simondon’s work provides us with a useful
alternative to the phenomenological critique of
information as an agent of disembodiment and
alienation. He argues that the concept of infor-
mation needs to be rescued from two different but
equally reductive perspectives. On the one hand,
it needs to be saved from the hylomorphism of
Ancient Greek philosophy which conceives it in
terms of a dualism of form and matter; on the
other hand, it needs to be rescued from the tech-
nical theory of information which reduces it to a
message exchanged between a sender and a
receiver. For Simondon, the communication of
information does not involve either a dualism of
form and matter or an exchange between two pre-
constituted individuals, but it is an aspect of the
ontological process of individuation or becoming,
of being understood as existing in a condition of
meta-stability. When seen from the perspective of
processes of individuation, Simondon argues that
the concept of information problematizes our
understanding of the adaptive relation between an
individual and its environment (as framed by
cybernetics) and that of a knowing subject with a
known object (as understood by phenomenology)
(Simondon, 1989).

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