

The Liberal Arts of Data Science

“... we are concerned with information in society, in everyday human experience. So we may call this *realistic* information science ...”

Information and Society, 1

Realism

- Start with everyday human experience, rather than simplified abstract models
- Take a phenomenological approach, grounded in sensing, perceiving, and reacting
- Producing and interpreting documents always occurs in that everyday world
- Yet through those sign-using acts we create intersubjective worlds that transcend it

“... the We-relation ... belongs to a finite province of meaning other than that of the reality of everyday life and can be grasped only by symbolization.”

Alfred Schutz, *The Phenomenology of the Social World*, 318

“Photographers know what f64 signifies, Czechs know about the Battle of the White Mountain in 1620, physicians know how to diagnose illnesses, Christians know that Christ died to redeem mankind, and so on.”

Information and Society, 54

Knowledge

“... a convenient way of describing what is known by all, by most, or, at least, by many individual members of a community.”

Information and Society, 54

- The collectively imagined product of communication in pursuit of a shared project
- Neither “justified true belief” nor the transformation of information into action
- It has social, individual, and material aspects not easily separated from one another

“On a semiotic view in which meaning is constructed in the mind of the viewer, any object might be perceived as signifying something ...”

Information and Society, 48

Meaning

- Signs (including documents) are material objects usable to construct meaning
- An ongoing process of responding to signs and observing others responding
- Skepticism about claims to fix meaning, measure relevance, or extract knowledge

“... the meaning I give to your experiences cannot be precisely the same as the meaning you give to them when you proceed to interpret them.”

Alfred Schutz, *The Phenomenology of the Social World*, 99

“...information selection systems can be viewed as one or more interconnected *processors* ... at least one of which is a *partitioner*, operating on one or more sets of input objects, and producing one or more sets of output objects.”

Michael Buckland and Christian Plaunt, “On the construction of selection systems,” 16

System

- The various information professions build open, complex systems of people and machinery
- Selection systems transform and partition documents, producing new documents
- “Information” is a generic label for the output of these systems

“...systems thinking arises historically as an attempt to cope with the kind of complexity—whether in natural or in human and social phenomena—which defeats the reductionism of the classic scientific method.”

Peter Checkland, *Systems Thinking, Systems Practice*, 245

“.. if information science is concerned with what people know, then it is a form of cultural engagement, and at most, a science of the artificial.”

“What kind of science can information science be?”, 1

Science

- Neither formal science nor social science
- The art and science of developing and operating selection machinery
- A trading zone of techniques and theories about applying those techniques

“... the central concepts which belong to our understanding of social life are incompatible with concepts central to the activity of scientific prediction. When we speak of the possibility of scientific prediction of social developments of this sort, we literally do not understand what we are saying.”

Peter Winch, *The Idea of a Social Science*, 88

“Increasingly, there is a shift from individuals deriving benefits from the use of documents to documentary regimes seeking to influence, control, and benefit from individuals.”

Information and Society, 176