

Information is not Objective, The Relevance of History for Understanding Information as Sociocultural

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Two roots for the management styles focusing on improving the efficiency and effectiveness of business processes can be identified: On the one hand, scientific management established in the early 20th century is grounded in the idea of improving the efficiency of labour processes. Frederick Taylor is the figure closely associated with the idea of scientific management, hence this way of managing is sometimes also referred to as Taylorism. However, there are several other important proponents associated with the scientific management movement. For instance, Hoof (2020) *Angels of Efficiency* looks closely at the work of Frank and Lillian Gilberth. On the other hand, there was also a movement that started in the 19th century described by JoAnne Yates (1989) as systematic management, advocating the use of office technology such as typewriters, vertical filing systems or carbon paper for improving clerical procedures. Yates (1989) *Control Through Communication* offers a thorough analysis on the use of office technologies to advance managerial control in organizations that made modern forms of management possible. Office technologies that systematic management build on did not only change the way how organizations manage their communication and control structures, but they are also an important part of developments that lead to the modern digital stored program computer (Martin Campbell-Kelly et al. 2014).

In the same way as Taylorism is rightfully critiqued as reducing labour to bodies required for the execution of tasks, proponents of IT can be critiqued as reducing clerical workers to information processing apparatuses. For instance, the idea of workers as devices for information processing is prevalent in the notion of using artificial intelligence and machine learning to replace so called white collar work (Riemer and Peters 2020).

The purpose of this paper is to develop the empirical foundation for critiquing the de-humanizing perspective that results from the systematic management perspective regarding information as objective. The dominating conception understands information as existing independently of humans and the wider sociocultural circumstances they find themselves in (Boell 2017). To develop a forceful critique of the forms of management and work advanced

by the use of modern IT it is important to advance an understanding of information as a phenomenon grounded in social and cultural practices.

Henceforth, this research investigates how information provided by modern IT is the result of wider social and cultural developments as it answers the research question: How do sociocultural aspects come to bear in what is regarded as IT enabled information? Historical analysis is useful for answering research questions involving culture as the effects of culture are more clearly visible in long-term investigations (Kieser 1994). The research draws from an analysis of archival material tracing how information enabled by the development and deployment of IT can be understood as a response to wider sociocultural processes. We collected and analysed material from the University of Sydney Library (USL) created between 1963 to 1979, including, annual reports by the librarian describing events regarding systems in the library throughout the time period investigated, regular staff circulars offering an additional level of details on events of interest, and articles published in magazines and research journals to investigate how sociocultural aspects shaped the formation of IT related information over time. The research followed a pragmatic and hermeneutic approach described by Staudenmeier (1985) and Porra et al. (2014) where the empirical material and the conceptions of the empirical material build on each other in iterative cycles. Hence the formulation of the research question, the identification of empirical evidence and the analysis build on each other in iterative cycles as it became clearer what evidence was available and what questions this evidence could answer.

As USL faced increasing number of loans in 1964 it introduced the Brooklyn Circulation System, developed by IBM. This system used punched cards to create machine readable data that could be easily sorted. Apart from reducing labour required for processing loans the intent of the system was also that it allowed USL to effectively identify overdue loans for books not returned to the library. Using card sorting equipment USL identified on a weekly basis borrowers returning books late. Late returns were then charged 10 cents per day for the late return of books. However, in 1966 the situation was perceived as unsustainable as more than 90,000 “book days” were lost due to books being returned late. Hence USL sought a substantial increase in overdue fines to 40 cent to act as deterrent for users to return books in time so that they could be accessible to others.

However, this increase was met with fierce objection by parts of the university’s student body. The student union newspaper ‘Honi Soit’ ran a cover page story with the title

“Executed without Trial” where it argued against the fines and the way in which the fines were introduced. Presumably for a shock effect the cover page underlined its headline with a picture showing four dead children as victims of the Vietnam War. While the use of such shocking images may seem an unreasonable comparison, it was part of a wider social context at universities at the time. Likewise student protest also involved sit-ins at the Library where students refused to leave the library at closing time.

The resulting confrontations and sit-ins at the library had a lasting impression on USL management (Bryan 1968) and for more than a decade increase in fines was no longer regarded an appropriate deterrent. When the USL started to develop its own microcomputer based circulation system its attention was on using IT enabled sanctioning of users as better deterred for achieving compliance than an increase in fines. When the USL started to work on computerizing its loan process it stated that blocking users with outstanding books from making any further loans is an “essential requirement of the on-line computer borrowing system which the Library hopes to develop”. When work was undertaken between 1973 to 1975 to computerize the loan system to an on-line system information necessary for identifying borrowers with outstanding items at the point of borrowing became important so that eventually blocking of users instead of fining them would be possible. The ability to block users as a deterrent was achieved in 1979 when the “long-awaited blocking of delinquent borrowers” was implemented.

By demonstrating the importance of the sociocultural dimension of information this paper develops a critique on the conception of information as objective. Using historical analysis this paper shows that an essential requirement for information in the USL developed circulation system was motivated by an unexpected forceful resistance from students to increased late return fines. This analysis thus demonstrates that information provided by IT is not an objective output provided as a result of algorithmic processing of data, but the consequence of a wider sociocultural context that shapes what is considered to be information. By demonstrating that information is not merely an objective outcome of IT but a sociocultural phenomena this paper seeks to re-centre humans as social beings in our understanding of IT, thereby contributing to a literature questioning the objective nature of data processing, machine learning and artificial intelligence (Marjanovic et al 2021).

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