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## Conclusion

## Book Section

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# Chapter 12

## Conclusion

*David Chapman and Magnus Ramage*

Hans Christian von Baeyer described ‘information’ as the new language of science (Von Baeyer, 2003). That idea is witnessed by Chapter 10 of this book, where Nixon has discussed some ways in which quantum mechanics brushes up against information concepts. The language of information is used increasingly in fields outside science, however, and other chapters of this book have explored a number of them.

There is today a research effort directed at deriving a unified theory of information (see, for example, Hofkirchner, 2010) but this book has no such ambition. Our aims in this book are somewhat more modest: our goal is to share insights between disciplines in the hope of learning from one another so that we can speak the language of information more fluently.

Information is in a curious position academically – many different disciplines feel that they ‘own’ the concept, yet there is little common dialogue between the disciplines. It is our contention that any common view of information can only arise through the study of the multiple perspectives on information found in these many disciplines that hold it to be central. Rather than seeking a grand theory, therefore, this final brief chapter draws attention to a few ‘family resemblances’ between the disciplinary perspectives described in the different chapters, that might provide some helpful insights into what it is people mean when they use the language of information.

Four broad themes that arise in several of the chapters are: context; meaning (and thus the centrality of human beings), dialogue (in many cases as part of a game), and the dynamic nature of information. It is worth noting that the different chapters do not treat these themes in the same way, and in some cases do not agree with each other – there are ongoing debates in a number of areas.

### Context

Perhaps the most universal theme is the importance of **context**. Ramage in Chapter 2 emphasises the role of context as one of the distinctive features of the soft view of information, distinguishing it from the hard view. According to Chapman in Chapter 4, however, context is fundamental to the hard view too, albeit a ‘hard’ context of, for example, an ASCII code. The contrasting soft context includes meaning, people and mental processes. Chapman makes a link between hard information and semiotic signs, which is also the starting-point of Monk in Chapter 5. Monk points out that Saussure’s signs are arbitrary, held in place by accustomed use – another aspect of context.

In Chapter 3, Bissell quotes a definition of information from an Open University course which is ‘data in context’. Context in Bissell’s chapter however is important on a different level as well, since his historical perspective draws attention to the way in which the concept of information has developed over time. The need to take account of time is explicit in the definition of

information quoted in Chapter 6 by Holwell: data plus meaning (interpretation) in a particular context at a particular time. Within that definition position in time is distinguished from context, but from another perspective time is merely another dimension of context.

Likewise, the concept of exformation in Chapter 7 by Lefrere arises from the fact that communication takes place within a context. The context holds the exformation, and communication is not understood by an onlooker who lacks the exformation.

Ramage talked about Hayles' image of information being "simultaneously disembodied and reified", and Foster-Jones' exploration of the changing role of libraries and librarians in Chapter 8 is in effect a case study of that process. The physical books and libraries that housed them provided information with a 'body' which it no longer needs, but libraries and librarians still deal in information: it is just the context that has changed.

Piwek in Chapter 9 presents three principles of information flow, the first two of which are explicitly about context: "Information flow = context change"; and "Information flow is context-dependent". For Piwek, information is inextricably bound up with context.

The issues of information policy making addressed by Corrigan in Chapter 11 have come about because of the changing context of information, the disembodiment and the consequent freeing of information explored by Foster-Jones.

One of the most counter-intuitive insights of quantum mechanics is the way in which the observer influences the outcome of observation, as explained by Nixon. This makes a qualitative change in how we can understand the concept of 'context', since the context can now never, even in principle, be a passive backdrop. The information and the context are parts of the same system.

## Meaning

We have noted that **people** are often part of the context, but it is worth noting explicitly that information in all of the chapters somewhere along the line involves people and, has something to do with **meaning**.

Monk says that "information needs people" and that information in contexts other than that of human intercourse is used in an anthropomorphic sense. Similarly, Holwell says in the context of her "data, capta, information, knowledge" schema: "the act of creating information is a human act". Shannon information, hard information in the language of Ramage, at first sight has no need of people, and Bissell points out that this distance from people, and therefore from meaning, was a reason for some people to object to Shannon's use of the word 'information'. Chapman however argues that we can use the language of meaning even for hard information. Perhaps this is an anthropomorphic use of the word, but in that case what we have done is brought people back in to the picture.

Ramage's soft information is explicitly about people. For Bissell, aspects of the very concept of information is socially-constructed; Lefrere embeds information in communities; and the contexts of Piwek are the people who populate the dialogues he presents.

Foster-Jones writes of the people of libraries – the librarians and customers – but could the information of the books have an independent existence? Could we envisage a library with books that are never read? Perhaps that thought-experiment is sufficient to discard the idea of a library without people. Certainly Chapter 8 is about people and information. A similar comment might be made about Corrigan’s look at information policy making. The issues are very much human issues, but does that mean that information involves people? Maybe, in fact, the changes of technology that have unleashed the issues addressed by Corrigan precisely because information involves people.

Perhaps, though, it is in Nixon’s chapter about quantum theory that the idea of information ever *not* involving people is finally banished for good. The inextricable involvement of the observer in the physical (quantum-mechanical) world simply doesn’t allow for information – for anything – that doesn’t involve people.

## Dialogue and games

It has been taken for granted from the start that information is about communication, and there is no need to explore that further. Of more interest, however, is the extent to which information is associated with **dialogue** of some sort, and/or with **games**.

Piwek’s chapter was explicitly about dialogue and games, but they are also mentioned in passing or are implicit in a number of other chapters. Monk talks about Wittgenstein’s language games and Lefrere of von Neumann’s use of the metaphor of a game. In all cases, meaning is communicated through the use of dialogue, and the aspect of a game comes about because of the semi-formal rules surrounding the dialogue.

Of particular interest to Foster-Jones is the impact and opportunities of ‘web 2.0’ on libraries. Web 2.0 is about the creation of a ‘return channel’ on the web, so that the user of the web can have participate in a dialogue rather than be the recipient of broadcast information. In this sense, a library used to one-way, broadcasting information but how has the possibility of entering into a dialogue with the user.

Dialogue and games – often of a particularly confrontational nature – also characterise the development of information policy as recounted by Corrigan.

It is interesting to note that ‘mechanical’ dialogue is a requirement of all but the most trivial of digital communication systems. The set-up of a communication channel invariably involves what is referred to as a ‘handshake’ when the two ends of the channel establish the basic parameters of the communication. The procedures needed to establish secure communication using quantum cryptography as described by Nixon involve a handshake of this nature.

## Information as a dynamic concept

Several chapters discuss the **dynamics** of information – the way in which its nature changes over time. The dimension of **time** is explicit in the Holwell’s definition of information (“*data plus meaning* (interpretation) in a particular *context* at a particular *time*”). The dimension of time is inherent in dialogues and games, indeed in any communication.

Foster-Jones, with her broad historical overview of the changing role of libraries as store-houses and gatekeepers of information, shows that, within this area, the way information is understood has changed significantly over time, and in particular has become more clearly seen as an entity in its own right rather than a property of a physical object such as a book. Corrigan presents an overview of a much shorter time period, but likewise looks at the way understandings of information have developed significantly, through the interaction between the creators and users of the Internet, government bodies, and copyright owners.

Ramage and Bissell both present intellectual histories of the development of information within particular academic fields – cybernetics and communications – and both discuss the way the concept of information has changed over time. Interestingly, Bissell argues that the *rhetoric* around changing information technologies has remained remarkably constant – the techno-utopian view, that the world is changing rapidly and miraculously. Nixon also presents a historical overview of a changing intellectual history that is inexorably bound up with information – the perplexing and paradoxical developments in quantum theory.

Each of these chapters, in their different ways, show that information is frequently not a static concept, but rather something that changes and develops over time within the particular social and historical context of an academic field.

## Other themes

Some further notable themes that are important to more than one chapter, although not universally, are the concept of **difference** and **making a difference**, the idea of information being for a **purpose**, and the **primacy of language** in information.

Ramage quoted Bateson's famous definition of information as "the **difference** that makes a difference". While difference has not been discussed explicitly in other chapters, difference is key to a number of topics, and is intimately associated with context. We might, for example, talk in terms of difference for the sets of messages described by Chapman or for the eigenstates of Nixon.

The other part of Bateson's definition, **making a difference**, has arguably figured even more prominently in several chapters, and links with the idea that information is associated with **purpose**. This theme was most explicit in the Holwell's discussion of information systems, which she described as existing to support purposeful action. There is also a parallel between Holwell's distinction between data and *capta*, and Lefrere's concept of exformation. Both sets of concepts are to do with identifying the part of data that is useful – the part that can make a difference or has a purpose. We can also equate 'making a difference' to context change, we can see this theme in Piwek's chapter too. Corrigan, with his focus on the role of information to change society, likewise clearly can be seen in terms of making a difference – as he eloquently writes about copyright (which is nothing more than a regulatory mechanism of the transmission of information), it has "become a default regulator of access to education, employment, government and commercial services".

Piwek's chapter is about **language**, and most of the chapters implicitly assume that they are concerned first and foremost with language. The possible exception is Nixon with his focus on quantum information. Certain other chapters have their focus on language but could be considered to have extension to other areas. In particular, the information systems of Holwell could be concerned with numerical information, and while the layer model of Chapman is described in terms of conveying words, it works equally well for numbers, images or sounds. Nonetheless, for most of the chapters, information is taken as something that is expressed through language, and which in turn represents and supports language. In many ways, language is as much as an information technology as the computer has ever been.

It is perhaps worth observing that many of themes discussed in this book are ones that might be found in texts from the field of **semiotics**. In this book Chapman and especially Monk have made links between information and semiotics. It is certainly not a new insight, but maybe it is a reminder of one of the intellectual resources that might have increasing importance if we find the language of information permeating an ever-widening range of disciplines.

We began this book by observing that “everything is information, and information is everything”. Through the chapters in the book, we hope we have shown that information is also *everywhere* – in very many different academic disciplines and pervasive throughout society; but also that information is a contested and complex concept, which simple and single-discipline models are insufficient to understand. We need diversity of perspectives and ways of thought if we are to make sense of this ultra-familiar yet curiously elusive concept of information.

## References

Hofkirchner, W. (2010) *Twenty Questions About a Unified Theory of Information*, Litchfield Park, AZ, Emergent Publications.

Von Baeyer, H.C. (2003) *Information: the new language of science*, London, Weidenfeld and Nicolson.