



Taking care of invisible technology

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Scholars with any significant experience in the field of organisational change know that the subject cannot be reduced to a single chapter in an introductory book on organisation or even to an entire work on management. Moreover, those who adopt a social studies perspective in relation to information and communication technology do not see themselves as involved in the investigation of just a single aspect of the life of companies and organisations. On the contrary, they know perfectly well that their endeavours, alongside those of other scholars, consist in the elaboration of an analytical approach that extends from a description of the relevant organisational phenomena to the development of a general theory of social life. In particular, they are aware that the essential difficulty of their task stems from the fact that the expression 'organisational change' cannot just refer to a limited set of objectively identifiable phenomena but rather must constitute one of those notions through which one conceptualises the concrete experience of a set of meaningful actions and behaviours.

Claudio Ciborra chose to adopt a phenomenological perspective in his study of the interaction of technology and organisation. In advancing this unconventional and highly courageous approach he emphasised repeatedly – passing with ease from one discipline to another – the dangers of a deterministic relationship between technology and organisation. Stressing the need to reconsider 'the underlying assumptions of our conventional ways of studying and designing organisations' (Ciborra, 1999, p. 87) and to abandon every artificial attempt to separate the technical and the social environment, he proposed that researchers seek possible responses 'by following the actors' at the moment *when* and in the places *where* the relevant artefacts are realised and used. He warned against applying formulas that were 'structured and reassuring' (and, hence, inevitably illusory) and advised against seeking at all costs to identify 'success factors' that, in point of fact, cannot be isolated by virtue of the fact that they are inextricably bound up with the organisational context with which they are associated. Claudio's message was to put aside the haste that 'obstructs one from viewing things more clearly from within their complexity' (Ciborra, 1996, p. 11).

It would be possible to view such a varied and rich body of work from various points of view. In this short piece, however, I would like to make a few observations in relation to just one feature of Claudio's thought, namely, the concept of *care-taking*. Recently, I had occasion to reflect on this theme when, in the course of an analysis of a case of organisational change within the context of an Italian public body, I was induced to ask why – in spite of the fact that the body in question had gone to considerable lengths to pursue an approach that was both 'rational' and attentive to the needs of the users – the computerisation project had produced results that were considerably below expectations. Turning to my personal library, I found myself hitting upon a range of references a number of which bore the name of Claudio. It was these that led me to focus on the particular theme of care-taking. Without endeavouring to engage in a systematic treatment of Claudio's academic publications, then, I shall simply limit myself to offering some reflections on one theme that played a central role in the development of his thought.

Claudio developed a conception of organisation which involved an extreme diffidence towards determinism and technocratic approaches. He qualified BPR (Business Process Reengineering) as an '(...) incredible melange of propaganda, ideology and elements of method' (Ciborra, 1998b, p. 9). In particular, he was highly sceptical about the so-called 'critical success factors' that so many writers on management have been so enamoured of. The only possible characteristic of a technological artefact that can invariably be viewed in terms of success, he used to say, is 'invisibility'. Paradoxically, an information system would seem to be successful only to the extent that it blends into its surrounding context and is not actually noticed by the actors who use it. The success of a technology is all the more marked to the extent that it forms an integral part of everyday organisational practice even to the point of disappearing within it. How can we explain all this?

Urging us, as always, to suspend our judgement, Claudio advises us to recognise the importance of what he defined as 'care-taking'. Actors, he maintained, do not limit themselves to interacting with technological artefacts but, rather, take an active role in relation to them – that is they take care of them. This process is manifest in the introductory phases – that is when new operative practices are adopted – but also in the subsequent phases (whether programmed or not) that make up the everyday management of them. To illustrate the different ways in which the process of care-taking takes shape, Claudio made use of a phenomenological perspective (Heidegger, 1970; Dreyfus, 1994), distinguishing three components: perception, circumspection and understanding:

1. *Perception* is that form of care-taking that deals with objects, models and artefacts from a rational perspective. A computer application is viewed by the designer, the user and the manager as a model or an artefact that has a very well-defined form. Isolating the model or artefact from its context, perception forms a picture of its characteristics by way of processes of analysis and abstraction that are guided by preordained objectives and plans. In this way, it becomes possible to develop in relation to these objects rational methodologies of analysis and design that involve a uniform meaning at least in the mind of the people who formulated them or in that of anyone else who, as an external observer, chooses to use them as a measuring stick for classifying organisational phenomena and behaviour. While Claudio recognised how widespread such methodologies had become, nonetheless, he did not hesitate to expose their inadequacies, pointing out that they furnished an unrealistic vision in which objects became decontextualised entities torn apart from the world to which they belonged (sanitised, unworlded entities).
2. *Circumspection* consists in the capacity to confront the practical problems that accompany any computerisation project. Its sphere of operation is that of implementation and use. When a given technological

application is brought into use, it becomes evident what its capacity, limits and implications are. While care-taking, understood as perception, fails to take into account the unforeseen and the exceptional, circumspection actually takes form thanks to breakdowns, surprises and shifting effects. Unforeseen events such as crashes, technical breakdowns or malfunctions – all occurrences that are very common especially in the case of technology that is not long-established – reveal another characteristic of technology, fragility. When a breakdown occurs, it often happens that the users, irrespective of what caused the problem, decide to abandon the new artefact in favour of alternative media or, in other words, instruments that are capable (or are thought to be capable) of replacing the ones that have turned out to be no longer usable. The ease with which new technology can be replaced by instruments that users consider more familiar is an indicator of its fragility. Fragility derives from the ubiquitous presence of substitutes at the automated workplace, 'usually tools that are better "understood"' (Ciborra, 1998b, p. 14). Circumspection develops from the bottom up and in an incremental manner by way of trial and error. This is due to the fact that the introduction of a new technology often requires that the actors exercise a capacity to improvise, create and overcome established patterns of behaviour.

3. *Understanding* is the domain in which artefacts and technology acquire that distinct value that invests them with meaning and importance. Artefacts and technology end up merging perfectly into the work context and even disappearing within it at least up until the moment that crucial and unforeseen occurrences interrupt the everyday flow of events. While in the previous two cases of care-taking the system is always clearly visible and at the centre of attention (because consciously introduced into the project environment and into the practices of the users), in this case the system itself takes on meaning and, at the same time, it becomes part of 'the world to be used'. It becomes an instrument that is perfectly comprehensible and for that reason is often taken for granted. Its presence is not considered problematic but rather takes its place in a context in which each actor implicitly places his trust. 'Technology (...) recedes in the background of our conscious, goal-oriented work behaviour' (Ciborra, 1997, p. 74).

In short, Claudio maintains – not without the support of a range of empirical research – that there are no 'critical success factors' and that, at the very most, there exist only conditions that may favour the effective introduction or use of technology (Ciborra, 1998a). The process of introduction and use is never automatic and can never be taken for granted. Rather, it is of a composite nature and is characterised by the simultaneous presence of numerous variables that are of an individual,

organisational and cultural character. Within this perspective, the capacity to take on and take care of a new technology or solution, all the while coming to grips with an environment characterised by uncertainty and ambiguity, constitutes ever more frequently the real challenge for organisations. The task lies in managing to absorb technology progressively within everyday work practices up to the point that it becomes internalised by people and hosted by the organisation (Ciborra, 2004).

The phenomenological perspective and, in particular, the concept of care-taking provides us with the opportunity to reflect on what are two of the most important issues for large and complex organisations:

- *Care-taking and strategic alignment*: This does not involve the pursuit of mere adaptation on the part of the organisation, organisation being understood in a limited way as a set of objects (as opposed to systems), data (as opposed to bodies of knowledge), business processes (as opposed to work practices) and abstract executors and decision-makers (as opposed to flesh and blood people at grips with everyday problems). 'The driving force behind alignment in-action, as opposed to alignment on-paper, is a great amount of care-taking performed by the various actors involved in the design, implementation and use of IT applications' (Ciborra, 1997, p. 73). Technology requires an active approach to care-taking. Only in these conditions are IS applications 'so "aligned" with the execution of daily tasks that they disappear and become part of the world' (Ciborra, 1998b, p. 13).
- *Care-taking and resistance to change*: Claudio was one of very few scholars to have emphasised the importance of the fragility of technology – the characteristic that requires that people exercise an even greater amount of circumspection and comprehension in order that a new artefact may be integrated into the texture of the organisation. At the same time, however, he stresses that technology is also highly ambiguous. Far from being a pliable instrument subject to the control of human beings, it can give rise to unexpected and

unforeseen effects that at times generate forms of hostility (or of resistance, whether active or passive) capable of slowing down the advance of innovation. Resistance is a dynamic process deriving from a subjective 'reading' of a situation involving change. Only when care-taking in its various forms arrives at the point of expressing itself fully and in a continuous fashion does resistance give way to integration.

In 1997 in an article provocatively entitled *De profundis? Deconstructing the concept of strategic alignment* Claudio expressed the hope that the academic community return to a pursuit of the true objectives of research or, more precisely, to questioning and thinking, understood as means to counter the continual emergence of seductive managerial fashions that added nothing to concrete scientific thought. Regrettably, Claudio's work and adventure came to an end far too soon. There can be no doubt, however, that the huge variety of the research he conducted demonstrates in itself the reality of the multi-faceted nature of what he studied as well as the fact that it is not amenable to a single all-encompassing research approach. Even though it is highly artificial to isolate the concept of care-taking from the other components of Claudio Ciborra's theoretical framework, I trust that the short account that I have outlined here goes some way towards revealing the great originality of the man's thought. Indeed, it is difficult to deny that in relation to the theme of organisational change there are very few other scholars who could boast a comparable degree of originality or depth of understanding.

Quite apart from its broader import, for me Claudio's thought has been of enormous help in enabling me to construct my own personal interpretation of the case of organisational change which I mentioned in the initial paragraphs of this piece. I can only hope that the great daring displayed in the source of my inspiration also enables me to find the courage – in the course of my next meeting with the public body in question – to warn the relevant managers about the fragility of the very technology upon which they continue to pin such high hopes.

About the author

Maddalena Sorrentino researches in Information Systems and Organizational Change. She teaches Information Systems and Public Sector at the University of Milan (Department of Social and Political Studies). She has published in academic proceedings, such as ECIS, DEXA

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References

- CIBORRA C (1996) *Lavorare assieme*. Etaslibri, Milano.
- CIBORRA C (1997) De profundis? Deconstructing the concept of strategic alignment. *Scandinavian Journal of Information Systems* 9(1), 67–82.
- CIBORRA C (1998a) *Infraglobe*. Etaslibri, Milano.
- CIBORRA C (1998b) Crisis and foundations: an inquiry into the nature and limits of models and methods in the information systems discipline. *Strategic Information Systems* 7, 5–16.
- CIBORRA C (1999) Notes on improvisation and time in organizations. *Accounting, Management and Information Technologies* 9, 77–94.
- CIBORRA C (2004) Encountering information systems as a phenomenon. In *The Social Study of Information and Communication Technology* (AVGEROU A, CIBORRA C and LAND F, Eds), Oxford University Press, Oxford.
- DREYFUS HL (1994) *Being in the world*. MIT Press, Cambridge.
- HEIDEGGER M (1970) *Essere e tempo*. Longanesi, Milano.