I

Encountering information systems
as a phenomenon

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Introduction

When dealing with the deployment and management of complex information and communication infrastructures, managers at the turn of the twenty-first century seem to lack the words to describe, let alone capture, the multiplicity of unexpected consequences, serendipitous occurrences, and emergent, disappointing features of the new technological systems they are busy installing. In this, they sound very much like the early twentieth century poet, dramatist, and essayist Hugo von Hofmannstahl (1995) in a letter to Lord Chandos: 'Briefly, my case is this: I've completely lost the ability to think or speak coherently about anything ... The abstract words which the tongue has to employ in order to express any kind of daily opinion decompose in my mouth like rotten mushrooms.'

A key reason for managers' bafflement and uncertainty lies in the ungrounded expectations created by widely-used managerial and consulting models. Leveraging on the belief that ICT is a powerful means to control processes, people, and resources, these business models and systems methodologies promise a variety of ways in which top managers can 'align' ICT with strategy by re-engineering processes and creating entirely new, competitive e-businesses. And that's not all: even knowledge can now be formalized and managed; workflows centralized; transparency enhanced; and data mined wherever they hide within the enterprise's procedures and the departmental files.

The vacuity and boastfulness of these promises should not fool anyone. They are not the result of just another managerial fad. Business schools are filled with industrious Ph.D. students busily trying to measure 'ICT strategic alignment', or the variables correlated with the successful implementation of ICT infrastructures, and the like. Then, with neo-positivist ardour, they are obliged by the leading faculty to test hypotheses and identify success factors. This results in an incredibly consistent outcome that cuts across the rigorous quantitative analyses of the Ph.D. candidates and the sleek PowerPoint presentations of the consultants. The one panacea that invariably emerges is the need for 'managerial foresight' and 'top management involvement', including bringing the Chief Information Officer into the top management team. In short, the recommendation is: 'more command and control'.

Sadly, our latter-day von Hofmannstahls know in their bones that, although these sorts of factors might be necessary (justified at the limit by sheer common sense), they are definitely not sufficient. Model systems often do not roll out as planned, leaving managers with an array of puzzles and a myriad of related issues, which make it hard to make any sense of what went wrong during the implementation. When practitioners next attend an executive course or hear about the latest consulting methodology, initially they are likely to feel their own usually problematic case is an exception, as others have succeeded—or will soon triumph—thanks to the most recent, ultimate methodology. But this game has been going on for so long now in the ICT field that managers typically fall into an even deeper frustration in these sessions. This is a sign of crisis (Ciborra 2002), and this chapter's starting point in addressing it goes back to a series of lectures and conferences more than 70 years ago by the founder of phenomenology, Edmund Husserl.

The importance of the everyday

Husserl (1970) discussed the 'crisis of European sciences' in a way that is highly relevant for the dilemmas many of the management disciplines have been facing recently. He talked about science and method in a way that offered a number of insights into how to address the operational dilemmas which ICT practitioners are currently stumbling into more and more frequently. Husserl's relevant contribution lies in his analysis of the origins and motives of the crisis; his way of dealing with the trade-offs between objectivity and subjectivity in the sciences; his valuable reflection upon the emergence of the modern scientific method; and, critically, his highlighting of the central and foundational role played by everyday life practices.

The very definition of information systems as a set of technical/scientific and human resources devoted to the management of information in organizations spells out the composite nature of the field. The same could apply to a frequently-used definition of information as 'data': physical or logical signs (natural-scientific) endowed with interpretation by a user (human or social-scientific). What should concern us here is that a common, unified paradigm has been adopted in the IS discipline to deal with its human, social, and natural dimensions, despite the hybrid and—at the limit ambiguous—nature of the problem. The common solution is the paradigm of the natural sciences and the relevant methodologies of measurement, formalization, and calculation. However, some aberrations are encountered by most of the consultants and academics who try to adopt, extend, and sometimes mimic the natural-science way of proceeding. This arises because business organizations get analysed in the same fashion, and even using the same means of representation, as the physical computer systems or quasi-mathematical abstractions of their data flows, entity-relationship graphs, or object-oriented languages.

The consequence is that disciplines, such as IS, that are inspired by the paradigm of the Galilean method tend to disregard the fundamental role of the everyday 'life-world' of the relevant agents, users, designers, and managers—and of the messiness

and situatedness of their acting. At the same time, such disciplines privilege the geometric worlds created by systems methodologies and business process models. It is in this way that a key element is neglected: human existence, which is an essential ingredient of what information is, how the lifeworld gets encountered, defined, and reshuffled, and—last but not least—how technology gets used every day. Ironically, the main lesson that could be extracted from the major developments sustaining the current success of the Internet is that strategic importance precisely in the ordinary modes of operation, such as bricolage, heuristics, serendipity, and make-do, rather than in the idealizations of the scientific method.

As an antidote to the prevailing emphasis on formalization and reification of business and systems, Husserl's phenomenology urges us to go back to the basics and encounter the world as it presents itself in our everyday experience. We rely on evidence, intuition, and empathy. We listen to practitioners and we participate in their dealings with puzzles and riddles; on the other hand, we do not confer any particular relevance to words like 'strategy', 'processes', 'data', or 'system'. In so doing, and in putting aside the models and methods of management science, we come closer to the everyday life of the manager, which is made up of frustrations, accomplishments, gossip, confusion, tinkering, joy, and desperation.

If we are able to accept the messiness of the everyday world's routines and surprises without panicking, we may encounter business phenomena that deeply enrich the current 'objective' and reified models of organization and technology. We can then start to build a new vocabulary around notions closer to human existence and experience. As an invitation to this phenomenological style of reflection, this chapter discusses some key metaphors, such as bricolage, drift, hospitality and care, improvisation, and moods as a fresh way of revisiting the well-known management issues of strategy, technology, project management, knowledge management, and business processes.[1]

Strategy: the virtues of bricolage and improvisation

The Internet, e-business, and e-commerce have made many organizations aware of the strategic role that ICTs can play in restructuring their internal processes, and in establishing better and new links with suppliers, customers, and the public at large. Since the early efforts in the 1970s in building strategic information systems, methods put forward to design strategic ICT applications have generally contained a standard set of prescriptions and guidelines on:

- supporting the business *vis-à-vis* the competition, together with an approach to planning and implementation;
- obtaining top management awareness and commitment;
- aligning ICT applications with the business strategy; and
- implementing applications that may generate competitive advantage.

Unfortunately, strict adherence to the prescriptions, guidelines, and strategy models included in the methods leads to a series of conceptual paradoxes. To begin

with, since imitation has always been the driving force behind the diffusion of any technological innovation, any competitive advantage evaporates if every major player in the industry adopts the same or similar applications, such as the spread since the late 1990s of enterprise resource planning (ERP) systems. Only normal economic returns can be generated by systems that can be copied and built by a large number of firms in an environment where no firm enjoys any distinctive or sustainable advantage in implementation. Small firms, in particular, are likely to lose out in applying standard planning methods and solutions because, as they do not set prices in their markets, they will find it very difficult to manipulate the industry structure to their advantage through the strategic use of ICT.

Some inter-organizational systems, for example electronic data interchange (EDI), require the interconnection of all the major firms in an industry, which undermines the competitive advantage to an individual firm claimed by advocates of such systems. More generally, market analyses and the identification of strategic applications are research and consultancy services that can be purchased: they are carried out according to common frameworks, use standard data sources, and—if performed professionally—will reach similar results and recommend similar applications to similar firms. In sum, competition tends to force the standardization of solutions and equalization of production and coordination costs among participants. These dynamics will certainly unfold, unless a firm's strategy cannot be imitated perfectly, as the more difficult it is for other firms to imitate a successful system or application, the longer can a firm obtain increased returns.[2]

Hence, two alternative ICT strategies can be compared, which contain different sets of ideas about business strategy and competition relevant to designing a strategic information system. According to the first, strategy gets formulated before the fact, is based on careful industry analysis, and consists of a series of moves that can be planned and implemented to gain advantage through manipulation of the industry structure. According to the second, strategy formulation is difficult to plan before the event, and competitive advantage stems from the exploitation of unique, intangible characteristics of the firm (including its networks of relations), and the unleashing of its innovative capabilities. We have seen that the first package is bound to encounter a deadlock. We need, then, to explore the second one further.

To avoid easy imitation, the quest for a strategic application must be based on intangible, even opaque, areas such as organizational culture. Thus, it is the enactment of unique sources of practice, knowhow, and culture at firm and industry level that can be the source of sustained advantage, rather than the structured analysis of internal assets and market structures. This departs from the world of strategy to enter the workaday world, in particular what people actually do every day.

As soon as we leave the realm of method, procedure, and systematic ways of organizing and executing work according to rational study, planning, and control, we enter the murky world of informal, worldly, and everyday modes of operation and practice. It is the realm of hacking; practical intelligence; the artistic embroidery of the prescribed procedure; the shortcut; and the transgression of the established organizational order as embedded in systems and formalized routines. 'Bricolage',

'improvisation', and 'hacking' are terms that are often used to describe such modes of operation in various domains of activity. The terms differ slightly in meaning, but they have many aspects in common, of which these modes are among the most important. Since these approaches diverge from the formalized, preplanned ways of operating, their outcomes can well lead to serendipity and to the possibility of finding something valuable that was not sought for at the outset, as exemplified by many of the key technical choices made during the development of the Internet (Abbate 1999).

Another characteristic of these modes of operating is that they have an uncertain status, always at the boundary between highly competent behaviour and incompetence. As this is at the margins of the formalized procedures, improvisers are granted an added element of liberty, and sometimes of play, in the choices made about which resources to harness and how to do it. These approaches might look rough compared to neat and tidy formal procedures, but they are highly situated. This means they tend to include an added element of ingenuity, experience, and skill, which belongs to individuals and their communities of practice (Brown and Duguid 1991) rather than to the organizational systems. They also all seem to share the same way of operating, by unfolding in a dance that always includes the key aspects of: localness and time (the 'here and now'); small forces and modest interventions; and add-ons made on-the-fly, but deeply rooted in personal and collective skill and experience. When performed skilfully and with close attention to the local context, the dance leads to momentous consequences, unrelated to the speed and scope of the initial intervention. Last, but not least, these activities tend to be invisible, because they are both marginalized and unfold in a way that is small in scope. The results are modes of operating that are latent and not easy to imitate. Thus, the smart bricolage, imaginative improvisation (Weick 1993), or the good hack cannot be easily replicated outside the cultural bed from which it has emerged.

If one considers many strategic applications—ranging from the Internet, to airline reservation systems, to new operating systems such as Linux—the phenomenological perspective helps us recognize and value the importance of bricolage versus the over-inflated role of method and planning in strategic applications. Practices that are considered by the positivist school of thinking as marginal play a strategic function, and *vice versa*. What is put forward as structured, top-down planning approaches appear to lead to non-sustainable strategic solutions which, in general, end up playing a marginal role in organizational innovation.

Between procedure and drift

The phenomenological gaze at what happens in organizations, outlined in the previous section, has unveiled the strategic importance of the ubiquitous processes of tinkering, hacking, and improvisation around the implementation and use of new technology. Given the naturally-occurring, or triggered, learning processes surrounding any innovation, and the unavoidable breakdowns that punctuate the trajectory of any complex system when deployed, one main outcome of all these

practices and events is that the technology does not seem to work completely according to plan.

For example, consider the results of a qualitative empirical study in a sample of large multinationals using groupware, software providing support for teams of people working collaboratively (Ciborra 1996). The researchers found that the development and use of groupware in large, complex organizations is variable and context-specific. In particular, in almost all the cases considered, groupware presented itself as a technology that tended to 'drift' when put to use. Drifting here describes a slight—or sometimes significant—shift of the role and function of usage in concrete situations. This contrasts with the planned, predefined, and assigned objectives and requirements that the technology is called on to play in more structured perspectives. Drifting should not be considered as a negative phenomenon per se, as it can occur both for applications that are seen as successes and for those that are not.

For example, an extensive application of a Group Decision Support System (GDSS) within the World Bank led to a surprising result in use. The initial goal of the application was to improve collective decision making during important policy meetings within the complex environment of the Bank, where different cultures and political interests have to converge on highly sensitive investment decisions. The GDSS system offered a range of possible uses, besides its voting functionality. Note, however, that in the daily dynamics at the Bank, highly sensitive decision making is usually being prepared outside the meetings where the decision has to be formally deliberated. Users of the GDSS tacitly agreed to keep the present practice, while using the facility only to brainstorm and focus on issues. So, the system was successful in being heavily used, but not as a decision support system.

Drifting can be looked at as the outcome of two intertwined processes. One is given by the openness of the technology: its plasticity in response to the reinventions carried out by users and specialists, who gradually learn to discover and exploit features, affordances, and potentialities of systems. On the other hand, there is the sheer unfolding of the actors' 'being-in-the-workflow' and the continuous stream of interventions, tinkering, and improvisations that colour the entire system life cycle. The outcome of these two processes led the researchers on the groupware research project to the surprising conclusion that 'what groupware is' can only be ascertained *in situ*, where the matching takes place between plasticity of the artefact and the multiform practices of the actors involved. Such a matching is open, situated, and continuously unfolding.

The previous section on bricolage showed that the use of applications is always shaped by hacks, short cuts, and twists, or is punctuated through unpredictable processes of re-invention. Drifting is the result of these processes, which range from sabotage, to passive resistance, to learning by doing, to astonishing micro discoveries and radical shifts—or just plain serendipity. Usage, maintenance, redevelopment, and continuous—or sometimes fortuitous—improvements take place simultaneously in these processes. Schön (1983) suggests that those who promote or adhere to methodologies have a view from the high ground, and tend to ignore what

goes on in the daily 'swamp': the fluid territory of actual projects and everyday life where such an unfolding takes place in organizations. Drifting characterizes life in the swamp. It denotes the dynamics of an encounter, of pasting up a hybrid composed of technology, organizations, people, and artefacts. Drifting is a way of capturing the unfolding of the intrinsic openness of such an encounter.

We are therefore confronted with the methodological challenge of interpreting drifting in terms of the swamp, not of the high ground. The human dimension of drifting belongs to the world of everyday practices: ubiquitous but anonymous; made of ruses and short cuts; improvised; marginal; relying on age-old, timeless skills. As such, it needs to be captured. Plans and methods belong to the high ground dominated by the notion of space, where time is clock time. It is in this space that the flow diagrams, and the activity and sequence maps, are currently expressed. In contrast, drifting is made of bricolage and improvisation. These can hardly be 'hosted' by, or find a meaningful context in, the large, chilly spaces of the high ground. They are local, short, and sudden, and do not exist outside the specific situation where they appear. They belong to the opaque, shapeless 'boxless' world of the swamp, where time is fluid or out of joint (such 'extemporary' is also discussed later in the chapter).

Procedures, on the other hand, unfold according to clock time and their execution relies upon prepackaged knowledge, which is placed in front of the actor as deadlines, goals, and planned actions. Models and methods of military more than scientific origin belong to those strategies that focus on the space dimension in multiple ways, since they want to pursue:

• neatness: by establishing proper space for activities to be performed in an orderly fashion;
• structure: by elaborating theoretical places through systematic discourses; and
• articulation: by identifying appropriate physical spaces, from overhead transparencies to the estate of screens throughout the office buildings and laboratories.

In this way, the models and methods 'attempt to reduce temporal relations to spatial ones, through the analytical attribution of a proper place to each particular element and through the combinatory organization of the movements specific to units or groups of units' (De Certeau 1988: 38). However, the tactics, ruses, and improvisations that lead to drifting as the outcome are contingent procedures indexed by the here and now, and meaningless outside a specific time-tagged situation. Given a linear, preplanned procedure made of a sequence of actions, then tactics are precisely those scrambling interventions, multiple variations, and fleeting creative acts which transform the expected neutral situation into one perceived as favourable or pleasant. In a nutshell: from command and control to the aesthetics of systems and organizations.

In general, the plans and stable procedures that comprise models and methods want to defy time by their robustness and stability, that is they want to announce organizations as 'Pyramids'. Tactics, instead, are rapidly moving, with their mobile interventions being dictated by, and forcing, the seizing of the moment. The

models and methods bet on space and order, tactics on the appropriate time and the contingent situation; models adhere to a fixed structure, tactics are condemned to be ephemeral and transformative.

The practices found in drifting also tell us something about knowledge in organizations. Drifting stems from those mundane, invisible practices that, compared to the crisp world of procedure and method, could be seen to represent the dark side of organizational work. They are intelligent practices, the expression of a practical intelligence (Scribner 1984). Far from what has become the conventional distinction between tacit and explicit knowledge, practical intelligence is the *metis* of the Greek—the intelligence of the octopus: flexible, polymorphic, ambiguous, oblique, twisted, circular. This is the opposite of the straight, direct, rigid, and univocal character of the knowledge embedded in method. To orient oneself in the complex and changing world, dealing with forces that are too strong to be fully controlled, one needs to leverage the situation at hand by zig-zagging behaviour, which never faces such forces up-front but accomplishes the project at hand with a sudden move of improvisation.

Of course, these two modes of operating can be, and have been, coexisting and complementary, at the same time excluding each other (e.g. business process re-engineering wanting to eliminate improvisation) and supporting each other (e.g. when tactics grow like lichen over procedures and models when put in use). Large systems and models seem to be able to take off only when surrounded by a regimen of tactics that fills the gaps between complex formalized procedures and the floating world of complex organizations and turbulent economies.

Systems development: hospitality

The notion of 'hospitality' offers the opportunity to explore further what the buzz is all about in the design, development, and implementation of ICT platforms, where technology and local practices intertwine in organizations. This new perspective is consistent with recent findings from the social studies of technology, in particular the symmetric role played by humans and non-humans (Latour 1999).

Rethinking what is known about IS development and use

Before jumping in to find better ways of improving, streamlining, and re-engineering what we think is known about systems development and implementation processes, it is necessary to 'put in brackets' what is already known about them. This is a first step toward grasping systems development (and more generally our relationship to technology and design) from a phenomenological perspective. Bracketing what we tend to take for granted allows us to dispose of those apparently self-evident appearances—such as goals, plans, control procedures, measurement techniques, and the vaguely pervasive and seductive notion of technology as a familiar, domesticated tool—which often serve to obscure our understanding of the phenomenon under investigation and discourage any alternative approaches. Most probably, this phenomenon will not actually be like its appearances.

On the other hand, we need to reflect upon the puzzling evidence provided by the continuous apparitions that punctuate any IS development effort and the system in use. These include: unexpected consequences and the drifting of the technology resulting from frequent tinkering and improvisations; and partial acceptance or even resistance to continuous improvement methodologies, if not open critique of their scientific foundations—even by specialists and practitioners. Such apparitions are symptoms of a malaise in the current ways of understanding and approaching systems development and use.

The phenomenon to which we want to come closer generates both the (false) appearances and the apparitions (the actual symptoms), but itself usually remains hidden. A way to unveil it is to start from what both managers and practitioners have carefully left out of current approaches to systems design and management: human existence. This relates to the designers' and users' practical dealings in the lifeworld of systems in development and in use, particularly to their concerns as humans being thrown into situations facing uncertainty; the intertwining between their personal trajectories and the project execution; their identities as subjects; and the unavoidable openness of any project or innovation, which rarely fails to resonate with the existential openness of the participants' own life projects. Indeed, the successful completion of any initiative may well depend upon the marrying up of such existential traits with the objectivized characteristics of the project.

Human life as a whole cannot be separated from what one can achieve during an innovation, the launch of a project, or a new development. Although such initiatives are all future-oriented, and the accompanying methodologies put exclusive emphasis on the management and execution of the 'in-order-to's of the project, they inevitably share a lot with the participants' experience and personal history. The injunctions of the in-order-tos are supposed to mobilize the attention and resources of the project members towards a future state of affair, but it is the members' biographic, historic, and ethical 'because-of' motives that can endow the innovation or the project with meaning and momentum.

If the project goals and plans do not make sense to those called on to implement them, only perfunctory or distracted compliance will follow. To disregard the complex chemistry and balance between the because-of and in-order-to motives of action may lead to much of the unexpected consequences for both successful or failed innovations. But such an existential balance is extremely precarious, if not contradictory. On the one hand, any development is supposed to lead along a carefully planned trajectory to a better future state. It is expected that any deviation can be controlled and the course restored or improved by feedback and learning. Thus, it is an endeavour full of rational promises laid out in front of the actor by the structured methodologies. On the other hand, the actor's personal past experience and life trajectory remain blurred, and the actor has to cope with the fact of being 'thrown' into the project or use situation almost by chance, or by a series of circumstances largely outside the actor's control. Furthermore, the actor's past is made up of cognitive frames and scripts that can hamper the person's ability

to learn, in ways the individual is hardly aware of. As a result, any development will result in an inextricable mix of failure and success, with many minor or major unintended consequences that can trigger new learning and innovations, or just lead to frustrating vicious circles. The sense of achievement and discovery will always be intertwined with the anxiety of failure, falling, and drifting.

Alas, none of these preoccupations that are closer to our being human gets featured in the countless methodologies developed by software engineering organizations all over the industrialized world. This opens the door to the notion of hospitality (Derrida 1997), which was first deployed as a promising notion in this context as a way of interpreting the case of a surprising evolution of a groupware system in a multinational consumer goods company (Ciborra 1996). The case dealt with a fairly large application of Lotus Notes used for new product development within a worldwide team-based organization. Dedicated Notes applications were built to allow multidisciplinary and multinational teams to work jointly on common projects, regardless of distance between locations. Implementation of the new system was carried out according to a participative methodology, an incremental introduction of the system, and comprehensive training. Usage was immediate, ubiquitous, and successful. One day, however, a cheering message broadcasted over the network by a top marketing manager in London made every user realize that the new transparent platform could be deployed by headquarters as a powerful controlling eye, able to access any working document and local bulletin board of all the distant teams. Such a possibility made usage fall immediately and significantly. Attempts to revamp the system succeeded only when the applications were redesigned to replicate the pre-existing routines and organizational structures, thus losing much of the original innovative design, transparency, and collaboration opportunities.

This case provides evidence, among other things, about the ambiguity of new technology. Despite the careful planning and design, and the extensive training, the new groupware technology appeared to the user suddenly as an ambivalent, threatening *stranger*. The latent tensions between the professional dimension and the existential one exploded as a consequence of a small incident; underlying anxieties about the new ways of working and the new powerful tool could not be tamed even by an advanced design concept and a careful project management plan.

Reaching out to technology as a guest

Hospitality describes the phenomenon of dealing with new technology as an ambiguous stranger. Hospitality is a human institution. It is about being receptive and adopting, and about managing boundaries between what or whom is known, and what or whom is unknown. Hospitality is a first step in accepting the Other.

This existential knot is carefully avoided by methodologies too abstract and high-flying to deal with such a human and worldly moment, lest the methodologies risk being caught by surprises when such events and forces creep in and burst out unexpectedly—and when sudden apparitions, such as apparently irrational users'

reactions, appear from nowhere to disrupt irreversibly the carefully crafted appearances of rationality, planning, and control. This raises the possibility that hospitality is the hidden phenomenon generating both the false appearances of systems development methodologies and the array of symptoms pointing to the limited role such methodologies ultimately play in actual systems development, despite their claims to the contrary.

Hospitality is about crossing a boundary, reaching out to the Other, the Stranger—but without abolishing such a boundary. The host must deal with the ambiguity of the stranger, who can be a friend or an enemy. If hosting is about weakening one's own identity to enrich it, reaching out to the Other means establishing the new symmetry: recognizing and accepting the identity of the Other, at least on a temporary basis. Hospitality is the human process of making the Other a human like oneself. Hosting the new technology is then seen to mean accepting a paramount symmetry between humans and non-humans (Latour 1999). This is exemplified by considering systems development as a process by which the organization hosts the technology. Such a perspective of hospitality reveals a number of surprising features of this process, which is usually looked at as a structured technical activity or as a political struggle:

- Being able to host the technology will redefine our identities.
- Unexpected consequences signal only that any attempt to control the technology fully are doomed to failure; at best, hospitality involves intelligent servicing of the new technology.
- Different cultures prescribe different codes, norms, and rituals for hospitality, which the guest must accept. When systems development is conceived of as hosting the new technology, methodologies are seen to constitute today's rituals imposed by humans on the technology.
- Following Kant's (1972) discussion of the universal right to hospitality, humans should grant a set of rights to technology, such as the right to visit—but not necessarily the right to stay. This also recalls Heidegger's (1992: 28) idea of being able 'to say yes and no' to modern technology, or the injunction by Weick (1993: 632) to 'be able to drop our tools' in an emergency.
- If the guest is perceived as hostile, the host will treat the guest as an enemy (as during the Industrial Revolution, when the Luddites attacked the machines that threatened their work).

Technology as a guest presents itself to the host as endowed with affordances. Affordances trigger a network of commitments by the host: they define the contours of the host's role as designer, sponsor, or user (Norman 1988). That is just the beginning of an open-ended process. The guest-technology also possesses its own dynamics, and will begin to align the host according to certain needs and constraints. In this way, hospitality diverges from unilateral command and control as prescribed by structured methodologies because, in order to remain the master of the house, the host must release control and serve the guest. Service is in the first instance

compliance with affordances. The consequences for the guest-technology are:

- technology is rendered human through hospitality, and the humanization of systems can be a more intriguing project than the virtualization of reality;
- technology can consider the hosting organization as being at its own service, but it should not dominate the host;
- when technology turns into an enemy, it will exploit the organization and its members, finding allies among certain groups in the organization while, at the same time, dropping them when it no longer needs them (Ciborra 2000).

Hospitality involves the risk of misunderstanding, since it typically has to deal with communication across different languages and cultural modes. The guest is intrinsically ambiguous, and can turn into an enemy. Both can become hostages of each other. It is thus a relationship which has to be based on a certain amount of trust, although this is a trust that can be cultivated only across communities or clans, not within the boundaries of one community or clan. If the host becomes a guest in his own home, then the guest becomes a sort of host. Thus, technology hosts the humans thanks to its own array of affordances, and systems development becomes the intriguing business for humans of finding ways to be hosted by the technology—as in Stanley Kubrick's movie 2001, where the astronauts slowly discover that they are powerless guests of the spaceship's computer, HAL. Enduring standards, legacy systems, interfaces, and old-fashioned languages can be now looked at as the rituals imposed by the ICT infrastructure on humans as guests.

In summary, seeing hospitality as the main phenomenon of the encounter between technology and organizations shows that systems development methods are just the external appearance of a ritual imposed by the human host. Methodologies may be carefully planned and deployed, but cannot dispose of the unpredictability and ambiguity of the guest. Understanding hospitality as a phenomenon we have to deal with when designing, implementing, and using new technologies is not a purely intellectual exercise. We can transcend the programme and priorities set by the rituals of methodologies through such an understanding. We will then be ready to explore new ways of rearranging our commitments towards ourselves as designers and users, and towards the technology as a non-human, ambiguous guest. This enables a different agenda to be set out to deal with new technologies. Trust and friendliness must be coupled with a release of control, as it must be remembered that the host must play the server. Part of the practical ways of coping with technology should become acceptance of the guest's intrinsic ambiguity and mystery, for which Ciborra and Lanzara (1994) borrow poet John Keats' phrase 'negative capability'. An effective host must certainly be able to exercise various forms of care, depending upon the unpredictable circumstances in the unfolding of hospitality. Finally, host and guest will most probably be engaged in forms of reciprocal cultivation by sharing and enriching the respective culture and practices.

Understanding the domain of application: knowledge management, improvisation, and moods

The final topic in this chapter to be exposed to a phenomenological discussion is the very domain of application of many information systems, that of decision making and procedure, planning, and routine. Consideration is also given to the more general domain of knowledge, covering expert systems, Artificial Intelligence (AI), and knowledge management systems (Winograd and Flores 1987). In most of the relevant literature, a difference is acknowledged between structured and unstructured decisions (Simon 1961); between established routines and emerging ones (Nelson and Winter 1982); between tacit and explicit knowledge (Polany 1962; Nonaka and Takeuchi 1995)); and between planning and situated action (Suchman 1987). All these topics, models, and approaches represent the core drive for a cognitive understanding of organizations and their information systems. What can the phenomenological approach deliver in this domain, and what difference does it make?

Differences between cognitive and phenomenological approaches

The study of improvisation is a good candidate to illustrate the difference between cognitive and phenomenological approaches. Improvisation is needed to fill the gaps of planning, cope with unexpected consequences, and, in general, face emergencies. For instance, Hayek (1945) is unsurpassed in interpreting the price system as a way of coordinating local, highly-situated decisions made on the spur of the moment by market agents. Even within hierarchical work organizations, several studies have shown the highly *ad hoc* character of many actions coping with events and situations that do not immediately fit planned, hierarchical procedures (e.g. Suchman 1987; Brown and Duguid 1991).

Improvisation can be looked at as a special case of situated action: highly contingent upon emerging circumstances; unifying design and action; and quick, sudden, and extemporaneous. Indeed, improvisation, like situated action, is now seen in the management literature from the privileged standpoint of cognition as a way to solve problems in the context of emerging circumstances, on the spur of the moment. Improvising is usually linked to the exploitation of tacit knowledge. Such cognitive study of improvisation has concluded that any entity which can reasonably be thought of as planning or executing action can also be thought of as improvising. But here we encounter a dead end. If improvisation is just quick problem solving that takes into account emerging circumstances by some sort of ongoing feedback on the very design of the action being undertaken, then it isn't clear what is new, or so special, in comparison to the more planned or procedural

Weick (1993) has shown in his vivid account of the Mann Gulch fire disaster how improvisation can be an antidote to panic and, more generally, to those forces, whether natural or psychological, that can bring about the collapse of sense making and organization.[3] More common activities, like making choices on a market, also show many of the characteristics of improvisation.

problem solving (Vera and Simon 1993). To overcome such an impasse, we need to step back and revisit the intellectual roots in phenomenology of situated action, of which we consider improvisation a special case.

Improvisation is currently treated in the management and organization literatures as a form of situated action, where the emphasis is placed on its temporal dimension and its description is based largely on a cognitive perspective. It is seen as an activity in which composition and execution, thinking and doing converge in time, or occur simultaneously. Thus, there is a situation, and it is emergent. The trick of improvisation, as opposed to scripting and planning, is to capture all the latest circumstances in the emergent problem solving. However, with regard to the temporal dimension, it is important to recall that the Latin term for improvisation is *extemporalis actio*. This is still used today, and 'extemporaneous' is one of the attributes most referred to when describing improvisation, both in music (e.g. jazz) and managerial literature. The managerial literature also seems to be concerned with the simultaneity of different activities, such as thinking and doing, and the speed of knowing and acting. But extemporaneous does not mean just fast and simultaneous.

Interestingly, the literature mentioned above generally takes no notice of this. Weick (1998) rightly points out that if speed is the main characteristic of improvisation, then in many circumstances coping with a faster tempo would condemn the agent to using preplanned, repetitive procedures to keep the performance going. In other words, higher speed may not encourage improvisation, but a sudden reversion back to old ideas and routines. This leaves us with a conceptual inconsistency: on the one hand, improvisation being advocated for fast product development, prompt market decision making, and successful organizational performances; on the other, it is promoted for carrying out the very activities that seem to require simplification, accelerated production, and less slack, thereby forcing people back on older ideas and away from adaptive improvisation. In short, gaining speed may actually undermine spontaneity and extemporaneity.

A key limitation of situated action approaches

A way back to finding the required alternative to the cognitive view of improvisation can be opened by looking again at the study of situated action versus planning carried out by Suchman (1987). She defined the situation studied as the full range of resources that the actor has available to convey the significance of his or her action, and to interpret the actions of others. Specifically, in analysing how employees deal with photocopiers—and their expert systems, Suchman (1987: 119) suggests that 'the situation of the user comprises preconceptions about the nature of the machine and the operations required to use it, combined with moment by moment interpretations of evidence found in and through the actual course of its use'. Note here the ingredients of the theory of improvisation: on the cognitive side, they are preconceptions, interpretations, and evidence; on the temporal dimension, it is the moment-by-moment activity. Suchman (1987: viii) adds: 'Action

is contingent on a complex world of objects, artefacts and other actors located in space and time. And this is an essential resource that makes knowledge possible and gives action its sense'. Thus, the situated action paradigm states the importance of the fleeting circumstances on which making sense of the action relies, but which these accounts of action routinely ignore. Plans might provide sense or meaning to an action through a formalized representation of events, resources, and interactions over (clock) time, but do not help to cope with unexpected breakdowns and more generally emerging circumstances.

It is interesting to compare this with the planning approach developed in Artificial Intelligence. In this, a physical AI system interacts with the external environment by receiving sensory stimuli, which it converts into symbol structures in its memory. The system then acts upon the environment in ways determined by symbol structures, in which the memory is an indexed encyclopaedia where representations of external situations are stored. Stimuli coming from the environment invoke the appropriate index entries. According to Vera and Simon (1993: 15):

Sequences of actions can be executed with constant interchange among (a) receipt of information about the current state of the environment (perception), (b) internal processing of information (thinking), and (c) response to the environment (motor activity). These sequences may or may not be guided by long-term plans (or strategies that adapt to the feedback of perceptual information).

In other words, the proponents of the more traditional AI approaches based on representations and symbol processing argue that one can design and build symbol systems that continually revise their description of the problem space and the alternatives available to them. This mimics one of the key ideas of the situated action perspective: the importance of moment-by-moment capture of the full situation of action. Plans can be seen not just as symbolic representations of fixed sequences of actions, but as strategies that determine each successive action as a function of current information about the situation. Here, we come full circle, with the AI perspective coinciding with the definition given above of improvisation as 'situational decision making'. The two approaches contain the same ingredients: symbols, goals, means and ends, plans and actions. They differ only in terms of high speed and fine adaptability.

But what if the view of situated action and improvisation as cognitive enterprises is actually the source of the impasse in the debate, and also the reason why the descriptions discussed so far are not able to address innovatively the issue of the temporal, or better the extra-temporal, dimension of improvisation? Once again, we need to put into brackets the prevailing cognitive view of organizations, information systems, problem solving, and knowledge. Phenomenology can come to the rescue by pointing out that there are at least four different terms for describing and interpreting a 'situation' (Heidegger 1962, using the original German expressions): *Stelle*, meaning position and place; *Lage*, for condition and disposition; *Situation*, as the culminating limit situation of making a choice; and, last but not least, *Befindlichkeit*, which is the term that can help us in opening new dimensions.

Befindlichkeit is derived from the common expression '*Wie ist Ihre Befindlichkeit?*', a courteous way to ask, 'How are you?'. *Befindlichkeit* is the situation one finds oneself in. But what situation? The loose arrangements of resources in the environment? The emerging physical and social circumstances? The answer is none of these. The expression refers to the existential situation of the actor: 'How do you *feel* today?' Thus, *Befindlichkeit* combines the ideas of situatedness and of feeling and faring, of where and how one finds oneself.

The term *Befindlichkeit* significantly captures the common way of inquiring about the situation of the people we encounter in everyday life. Although this is such a routine and ubiquitous a habit, it is still totally absent not only from the symbolic AI-based representations of human problem solving, as one might expect, but also, fatally, from the situated action approach. Indeed, both AI and situated action seem to consider the actor as a cognitive robot. The discussion between these two approaches is about how the robot solves the problems, learns about circumstances, and plans or reacts to emergent conditions. Later appeals to 'situated and embodied knowledge' still evade a reply to the ordinary question, the how-are-you of the actor, his moods, feelings, affections, and fundamental attunement with the situation. What is missing from this situated action literature is precisely an enquiry into the situation of the actor, specifically her or his moods.

The vital need to take account of actors' moods

The original intuition of phenomenology has been to bring into the picture the situation of the actor—those fleeting personal circumstances captured by the term 'mood', not only the situatedness as defined by emerging environmental circumstances. Unfortunately, concern with moods has been lost even in the alternative accounts of situated action, such as the one put forward by Suchman (1987).

Any actor enters into the situation with a mood that is elusive: fear, anxiety, happiness, panic, boredom. This can hardly be controlled, designed, or represented in symbols to be fed into and analysed by computers. Moods are the uncontrollable changing skies of the otherwise flat world of cognition and action, whether planned or situated. According to Heidegger (1962), it is precisely because moods come and go like the weather that they are very close to who we are in the situation. They are ephemeral, sometimes superficial and unexplained, but they precede or, better, ground any mental representation of the situation and action strategy. But moods are far from being just private states. They also disclose the world. When we encounter the world in a situation, certain things, people, or circumstances matter. This 'mattering' is grounded in how one is affected, and this affectedness discloses the world in an intrinsically social way as a threat, as boring, or as exciting. It sets the stage for shaping the problem's definition, solution, design, and action.

Our openness to encountering the world, our being amidst people and circumstances—and the related intentional projects of planned or situated action—are constituted within a fundamental attunement: the mood. These moods can change, but we are never without one. In this respect, not only is symbolic

representation not primary, but neither is cognition. Note that if moods provide the ground in which our encountering the world and defining the situation take place, we can seldom choose such a ground. Rather, we are thrown from it into the situation. Moods colour indelibly our being in the situation; unless I am in a mood, I will not be affected, touched, or interested by anything. It is precisely because a mood is not a mere consequence of our actions that its essence and origin tend to remain concealed. Moods are the fundamental ways in which we are disposed in such and such a way; they are not the direct consequence of our thinking, doing, and acting. Instead, they are the presupposition, the medium within which those activities take place. The most powerful moods attune us with the situation so strongly that it almost seems there are no moods at all. And this is the trap into which even those who write about 'embodied knowledge' seem to fall, by failing to put moods at the centre of attention.

The way we care about the world unfolds according to the passing moods that attune us with the situation. Intentionality, the reading of circumstances, the in-order-tos of projects, the selection of appropriate means and ends, are all rooted in the ground of our basic attunement. The study of situated action in general, and of improvisation in particular, has focused so far only on the later stages of this process: on the encounter between intentions and situations. But it has systematically failed to bring the (moody) situation of the actor into the reckoning.

Looking at improvisation as a special disposition or attunement with the situation, a special way of being amidst the world—and of being thrown into it—opens up 'improvisation as mood' as a different point of access to the phenomenon. However, this complicates our enquiry. The cognitive approaches of symbolic representation and of plans or situated actions show how actions can be studied as the carrying out of projects, plans, or intentions, or as emergent responses to circumstances. Moods, on the other hand, often cannot be forcibly brought about and are not necessarily linked to a plan or an action; they are the ground or the medium for them, but not the other way round. As we slip into moods unaware, it is difficult to make an attunement into an object of analysis.

The best approach might be to compare moods in order to single out the characteristics of one in particular—improvisation—by contrasting it with others germane to it. But deciding which of these should be chosen for this comparative exercise is not easy because psychologists suggest there are hundreds of moods. As already mentioned many times, improvisation strikes us because of its sudden, extemporaneous, and full impact. We should therefore contrast it with affections characterized by their negligible or null effect, and by their being stuck close to clock time. Good candidates for such comparisons are panic and boredom. Both have problematic relationships with any form of effective action and with the passing of clock time, though in different ways and for different reasons.

When the fundamental attunement of panic sets in, the ordinary way of understanding and acting in the world stops. The world overwhelms us. It ceases appearing as a set of tools ready for use and we lack the time to implement our projects. Resources are not at hand; in particular, time is not available. We quickly

come to inaction or engage frantically in whatever activity comes to hand, after considering possible options and jumping to the conclusion that none will be successful. Angst for the lack of time in pursuing further exploration of alternatives then blocks decision-making. This is the structure of panic as mood. Care is aimless. The world is unusable. Intentionality has nowhere to go except to consider the supreme alternative of death. Time is lacking.

In contrast to panic, which implies that time and other things matter too much (the world overwhelms us), in boredom nothing really matters: the world is indifferent and time never seems to pass. If in panic we fall victim to the world and time, in boredom we try to kill time while being immersed in a fog of indifference. Starting from the superficial ways in which we deal with boredom in everyday life, we can encounter the inextricable relation of this particular mood with time. At first, it takes the form of whatever pastime we engage in to overcome boredom; we pass the time in order to master it because time becomes long, for example when waiting for a train that is late. When we are bored, our attunement, our way of being-amidst, is characterized by being in a time that is hanging and amidst a world that does not offer many resources to fight the slow pace of time.

Moving back to our phenomenological intuition of improvisation as mood, consider a more profound form of boredom: when one feels empty and wants nothing from the world. The whole situation becomes indifferent. The peculiarity of this form of profound boredom is that there is no pastime in sight. Time does not drag us, neither we make it stand still. Rather, one feels removed from the flow of time, indifferent to time—not time deprived, but timeless. This profound indifference is linked to the complete time horizon that encapsulates the refusal of the world as a whole. What is striking of this form of boredom is that all dimensions of time (clock time, past, future, now, etc.) seem not to matter. There is no determinate time-point when this boredom arises. We do not worry at all about the clock, as we do not worry about beings and the world; we are not annoyed by any 'stretched now', that is the time span during which this boredom holds us. Actually, the profound boredom can take hold of us in an instant like 'a, flash of lightning'.

Our analysis here suggests that the opposite of improvisation is not planned action, but profound boredom. In such a form of boredom, unarticulated time and the refusal of beings lead to inaction, while in improvisation there is the 'moment of vision': the look of resolute decision in which the full situation of action opens itself, and keeps itself open to our initiative of re-registering, recombination, and intervention. The cognitive perspective focuses on how smart improvisers can quickly re-register the world and recombine world and its resources and people matter resources. This is possible only because, suddenly, the world and its resources and people matter differently, so that they can be singled out and recombined differently. Here, quickness is far from implying rigidity and the opposite to the already-known. Improvisation is that particular mood where reconfiguration takes place of the ground in which we encounter the world, and in which we devise and carry out those projects and actions, which form the objects of the cognitive perspective.

Conclusions

When encountering information systems, before action and before design, there is our being thrown in a world of possibilities (Introna 1997). The mood situates one in respect to these possibilities, discloses some and conceals others. Those which are revealed will matter and will be objects of the simultaneous planning and actions of the improviser. Improvisation is that moment of vision and self-revelation where all the possibilities linked to the being-in-the-situation emerge out of the fog of boredom. Improvisation is the antidote to panic and boredom because it is 'extemporaneous', that is it ruptures the way time entrances us in both situations, either by being completely missing or totally undifferentiated. Thus, once again, the phenomenological understanding reaches a different conclusion to the prevailing cognitive and managerial views, according to which any entity capable of planning or executing can improvise. In the new perspective evoked here, we can rephrase that cognitive science statement as follows: any entity existing, being able to reflect on its existence and endowed with moods, feelings, and emotions, is able to improvise.

The original phenomenological understanding of improvisation as the moment of vision suggests that key decisions are much rarer than perhaps appreciated so far. Many forms of improvisation celebrated in the American Academy of Management sessions dedicated to it appear as pastimes against boredom. Few may be actually antidotes to panic in emergencies. In particular, if we accept Heidegger's (1995) statement, formulated in the late 1920s, according to which profound boredom defines the modern condition, a sombre shadow is cast on the last sixty years of management and organization science. Preoccupation with programming, planning, and rational choice possibly conceals what goes on most of the time, in most organizations, for most people: boredom. Emphasis on rational decision making entrances and distracts us from appreciating that important decisions occur very seldom, while what prevails are all sort of pastimes (programmes, methods, models) that punctuate colourfully and irreversibly the life of workers and managers alike.

Hopefully, phenomenology can still offer us today a series of metaphors, such as bricolage, hospitality and moods, which may lead to a new aesthetic appreciation of information systems, very different both from the positivist management concepts and those anthropological alternatives still suffering from a disguised cognitivism.

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Notes

1. A more comprehensive discussion of these and other metaphors can be found in Ciborra (2002).

2. This point, originally made in Ciborra (1992), has been recently debated anew in the management journals (see Carr 2003).

3. The Mann Gulch fire disaster, in which several smokejumpers died, took place in Montana in August 1949. Weick (1993) provides a rich interpretation of why a highly select group can fall apart in an emergency. In particular, by analysing the practices of the few survivors of the accident, the author is able to identify potential sources of resilience that make groups less vulnerable to disruption: improvisation is one of these survival factors.