Tor Hernes

UNDERSTANDING ORGANIZATION AS PROCESS

THEORY FOR A TANGLED WORLD

Understanding Organization as Process

Organization takes place in a tangled world, intermeshed by changing markets, products, standards, technologies, institutions and social groups. Coming to grips with the complexity and fluidity of organization and management is a persistent problem for scholars and practitioners alike, which is why process studies have received renewed interest in recent years. This book, aimed at scholars and higher level students, frames some of these issues in novel and instructive ways.

Process views have existed since before the early Greek philosophers and have made a decisive mark in all sciences. Alfred North Whitehead's classic work is a landmark in process philosophy, and his thinking provides renewed impetus to social scientists in search of an expanded framework of process thinking. Theorists such as Niklas Luhmann, Bruno Latour, Karl Weick and James March have contributed significantly towards a process view of organization. In this book, central aspects of their thinking are interpreted and discussed with the help of a broader canvas of process thinking provided by Whitehead. From the analysis, ideas are suggested for a framework for process-based organizational analysis.

Advanced students and academics in sociology, organization studies and management studies will find this book useful in its discussion of such subjects as organization theory, process philosophy and process studies.

Tor Hernes is Professor at the Norwegian School of Management, where he is also Head of the Department for Innovation and Economic Organization.

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Routledge
Taylor & Francis Group
LONDON AND NEW YORK

First published 2008
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

Simultaneously published in the USA and Canada
by Routledge
270 Madison Avenue, New York, NY 10016

This edition published in the Taylor & Francis e-Library, 2007.

"To purchase your own copy of this or any of Taylor & Francis or Routledge's collection of thousands of eBooks please go to www.eBookstore.tandf.co.uk."

Routledge is an imprint of the Taylor & Francis Group, an informa business

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

Library of Congress Cataloging in Publication Data
Hernes, Tor.
Understanding organization as process: theory for a tangled world/ Tor Hernes.
p. cm. – (Routledge studies in management, organizations and society)
Includes bibliographical references and index.
1. Organization–Philosophy. 2. Organizational sociology. I. Title
HM786.H473 2007
302.3′5–dc22 2007013316

ISBN 0-203-93452-0 Master e-book ISBN

ISBN10: 0-415-43305-3 (hbk)
ISBN10: 0-203-93452-0 (ebk)

ISBN13: 978-0-415-43305-1 (hbk)
ISBN13: 978-0-203-93452-4 (ebk)

To Tania and Maya, with love

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Preface and acknowledgements

In a general sense, process thinking observes the journey between immaterial events and material entities. In one sense, a book is a material entity that enters libraries, databases and some private bookshelves. On the other hand, a book represents also the many non-material events on its journey towards completion. To be sure, some events are rather *uneventful* in the sense that they are mere occurrences that fit into the overall process; they become part of the process, neither energizing it in any particular way nor really altering its course. Then there are events that are more significant, reflecting what Bateson (1972) called 'the difference that makes the difference'. Such events include, in my case, my reading of Whitehead's work, which initially grew out of my interest in Niklas Luhmann's autopoietic systems theory. And they include my reading of the works of Bruno Latour, James March and Karl Weick. Their works represent more than just incisive understandings about the world of people, organization and technology. They also open the Pandora's Box of a fluid and complex world while simultaneously providing frameworks for navigating in this fluid and complex world. In a sense, they all show the difficulty of coming to grips with this world while at the same time providing inspiration and boldness to engage with it.

Eventful events also include encounters, and a number of people have been very influential for this book. I am grateful to Tore Bakken and Elke Weik, with whom I have shared many ideas in the crossroads between philosophy, sociology and organization. I also extend my thanks to various scholars with whom I have worked or been in contact with over the years and who have been sources of inspiration, including Robert Chia, Barbara Czarniawska, Christina Garsten and Giovan Francesco Lanzara. Colleagues at the Norwegian School of Management BI have provided much impetus to the work, especially Thomas Hoholm, Anne Louise Koefoed, Per Ingvar Olsen, Gerhard Schjelderup and Anne Live Vaagaqsar. I am grateful to Tore Bakken, Kajsa Lindberg, James March, Mona Solvoll and Elke Weik for reading and commenting on parts of the manuscript. Thanks also to the informal Llorg group in the Geneva area for providing stimulating occasions for discussing process and management. Many thanks to John Cobb and John Quiring for receiving me at the Center for Process Studies at Claremont, California.

Introduction

All that counts is the facts!
And, of course, intuition!
(Peter Sellers as Inspector Clouseau in the *Pink Panther* movie)

Organization takes place in what may appropriately be described as a tangled world, a world where there are discernable elements, but ones which are twisted together, entwined in ways that add up to an untidy mass. The mass has contours which may have names, but it is a matter of definition as to where and when one contour stops and another begins. The mass twists and unfolds continuously, which is why practitioners experience it as an unfolding process, a flow of possibilities, and a conjunction of events and open-ended interactions occurring in time (Tsoukas and Chia, 2002:572). Still, in this mass, we can identify and give names to separate strands in the form of processes, such as a sequence of actions, a set of rules, a collection of narratives or a flow of resources. We know to a lesser extent, however, how the different strands interact and influence one another. Over time and space, strands mesh with other strands and produce together something that we may sense the contours of, but not the full contents. Such a tangled mass may be what we see as an organization, knowing that it is under continuous modification and reproduction. It is for this reason that Martha Feldman applies the very appropriate term 'ongoing accomplishments' to organizations.

Tangled processes cannot be undone and their complexity defies analysis. They become what Latour (1999a) refers to as 'black boxes' or what Whitehead ([1929]1978) referred to as 'complex unities'. Nevertheless, we can follow separate strands for some of their lengths which yields some insight into how they evolve and connect. Organizing implies attempts at creating a meaningful and predictable order out of a tangled world. It implies bringing together strands of a tangled whole according to some coherent model of expectations. Programmes of actions, for example, may be connected to achieve an innovation or a brand. As these models enter the mass of a tangled world, they change and produce new realities in turn. They change the part of the tangled world out there that we are in

touch with and, as we learn from how they fare, they change our ways of coping with the situation in turn.

I have chosen the term 'tangled' to illustrate that there is a world that is not just complex, but one where entities – such as actors, technologies, brands and rules – emerge and co-evolve. Actors, for example, are made from what they do to other actors. In other words, they are what they are through the way that they relate to others. Cooper (2005a) suggests that relating is the continuous work of connecting and disconnecting in a fluctuating reality. Hence, because the world around an actor is fluid and eludes attempts at fixation, what an actor 'is' at one instant in time is not the same as what that actor 'is' at another instant in time. Actors may appear more or less stable over the time that we study them, but the point is not to treat them as fixed entities.

I could well have chosen other words than 'tangled', as a number of other terms come close to what I want to express. Law (2004) mentions a number of possible words such as 'slippery', 'indistinct', 'complex', 'elusive', 'diffuse' and 'messy'. Throughout his book he sticks to the term 'messy', taking care to point out that using such a term, rather than defining a particular way of seeing the world, is merely a means of remaining open to the idea that, whatever we study, it is important to assume that it is indefinite, open, complex and unformed.

The reason for my attraction to the word 'tangled' is that I find that it conveys an imagery illustrative of how processes may be both distinguishable and indistinguishable, how they relate more in some ways and less in others. It is also descriptive of how a shape is temporarily formed while at the same time it is unformed, because a tangled mass may continuously be on the move to becoming something else.

Tangled processes may evolve and interact to form various entities including political parties, brands, services, institutions or products. The time dimension is important because what we perceive of them at the moment is the result of how they have developed over time. In a sense they 'are' their histories, which makes it difficult to get access to the processes that shape organizations and institutions. Their histories are tangled and do not evolve neatly, apart from each other. Consequently they elude the models that we use to understand them, and also the models we use to create them, because their histories far exceed the models used to decipher their complexity. The phenomenon of Nike shoes, for example, cannot simply be reduced to an organization producing shoes. Instead there are multiple processes that operate to stabilize Nike as an idea that forms part of modern culture, for better or for worse. Would Nike be what it is without the cult of American basketball? Without the stories of its founders? Without its logo? And would its logo be the same without the cult of American basketball, without the stories of the Nike founders? Sure, there might still be Nike, but not Nike as we experience it. And that is the point. Every organization and institution is a unique product of circumstances and a unique producer of circumstances in turn.

Nor is the European Union, for example, simply an organization that produces legislation, rules and projects. The European Union is a project that has evolved partly in response to two disastrous wars in Europe, perhaps accelerated by the

Balkan wars in the 1990s. It is also a project for rationalizing economic and industrial activity, such as by the introduction of the Euro. And it is constituted by the idea of a European identity. But wars, economies and identities are not things in themselves. They constitute processes of becoming in their own right that get entangled with one another to become something that we recognize temporarily as the European Union (EU). As to the EU itself, it is and always will be in the making. We can see it as a project, a set of ideas, around which processes interact and stabilize – even if only temporarily. Moreover, the idea of the EU influences things in turn. It becomes entangled with processes of a more global nature such as disarmament, the problem of terrorism and Third World poverty. As the EU interacts in other processes, often through the hard work of individuals, it does remain the same EU. I, for one, would be hard pressed to believe that the EU is the same today as it was before the events of 9/11. Nor can the EU be the same after the 2003 invasion of Iraq; nor will it be the same after the (possible) inclusion of Turkey as a member state.

You might ask if this amounts to simply describing histories of organizing, whether they relate to seemingly trivial tasks, to institutions, or to organizations. Or worse – am I slipping into historical determinism, which tells us that if we were to trace precedents we would be able to explain how events could have been predicted with some degree of certainty? Was the Second World War a necessary event that led to the creation of the EU? Yes and no. The EU would not be the EU as we know it today without the Second World War for two reasons. First, the Second World War is necessarily one factor that triggered the EU. It is no coincidence, for example, that an important axis of the EU consists of France and Germany, two countries that have been at war with each other several times in the last two centuries and which share a border. Second, even if the composition and the internal story of the EU had hypothetically been the same without the Second World War, the EU would still not be the same, simply because its significance could not be the same without the occurrence of the Second World War.

So, yes, the EU as we perceive it today could not be the same without the Second World War. Are we therefore back to historical determinism? No, because the EU is not something that occurred in a vacuum. Over the decades that it has existed, the EU has shaped the forces that have shaped it. The EU as a process has reproduced itself through its relations with other processes. In fact, not only has it reproduced itself, but it has reproduced its relations with other organizations and institutions which have, in turn, reproduced the identities of these other organizations and institutions. This is what is meant by a tangled world. When we abandon the assumption of there being stable entities out there (such as organizations), we venture into deep water indeed. What have been foundations for analysis become mere quicksand. Wherever we tread in our analysis there is no fixed point that can be said to be 'true'.

Nike and the EU are big actors. They are institutions in their own right, like many others around the world. But process thinking is not reserved for the analysis of only the big actors. To organize is a process, whether it is a matter of fixing a door, writing a letter or restructuring a large corporation. It does not really matter

in terms of analysis whether we fix a door or restructure a corporation. If we delve for a moment into the microcosmos of organizing, it is possible to see what is meant by the tangling of processes, even at a seemingly trivial level. To organize implies the transition from a situation of many opportunities in a complex world to one where we apply models of organizing to solve a problem. Fixing a door, short of giving it a kick with our foot or slamming it to put it right, normally involves the use of tools. To retrieve the tools we depend on some system of placing and ordering them. In other words, we 'call up' our home-made system to fix the door. The system of placing and ordering our tools has been established some time in the past. It consists effectively of a process that has been initiated and modified over time. Or, looking at my own system of ordering my tools, it has frequently broken down into *dis*order. But whatever the efficiency of the process, it has evolved and it connects to another process: that of fixing the door. But fixing the door, as mentioned above, could be done in numerous other ways, including buying a new one. I choose to do it this way because of my model of how to go about fixing it. This model of mine enters a world of many other possibilities. Depending on the outcome, my model may well change after the encounter with that world. Maybe I will even change as a person. Perhaps I even change from being a business school professor to becoming a door repair specialist. Very unlikely, but who knows?

Thinking processually about organization means, as I wish to develop it in this book, to study the dynamics surrounding the imposition of different models of organization. Latour (1999a) makes such a point in his study of how soil scientists work in the Brazilian jungle. He observed how they translated their findings on the ground into some medium of representation and storage, via a set of intermediaries which represents their understanding of the complex world that they experienced on the ground. It is not so far-fetched to compare soil science analysis with organization. To obtain a picture that can be extended over time and space we need to inscribe what we experience into some kind of medium (or model) that allows the experience to be conveyed to other actors and allows them to compare it with other experiences. If groups are going to make any sense in relation to each other in an organized setting that involves several groups, some form of common representation is needed. Similarly with soil science, when an area of some size is to be studied, results from different locations need to be transcribed into some comparable medium. Whether we see this as tension, reflexivity, recursiveness or dialectics is open to question. The point is that it is a process of transitions that may be thrown off course, it may stabilize again or it may emerge in another form altogether.

Fixing doors and sampling soil may seem highly specific – even odd – examples in relation to organization and management. However, they illustrate the very principles of process found in any attempt at organizing and managing. They show in particular how something perceived as stable, even if only temporarily, may emerge from something that is inherently unstable and where many possibilities exist for what might follow. I have mentioned that Feldman (2000) uses appropriately the term 'ongoing accomplishments' for organizations to point out how seemingly stabilized states are the result of painstaking processes with

uncertain outcomes. They are ongoing in the sense that they are always in a state of creation, of emergence, of becoming. They are also accomplishments in the sense that they are forged by historical processes that could have turned out quite differently, but that made them just what they are. In other words, what we see as an organization is one of many possible outcomes, and that is why it is so important to study the processes by which it becomes rather than just the outcomes (Aldrich, 2001).

To those who seek comfort in numbers or fixed points, this may seem discouraging. They may even reject it as belonging to the world of social science riddled with social constructivist thinking, laissez-faire logics and 'anything goes' attitudes. They may be partly right; but if we go to the other end of the spectrum of the family of sciences and visit mathematicians, who should, at least in the eyes of a student of the social world, hold the key to certainty, we may be surprised. The mathematician George Spencer Brown, whose calculus of form has proved to be a breakthrough in mathematics, worked precisely from the assumption of indeterminacy, from the assumption that we simply have no firm basis of knowledge, numbers included. In the preface to the 1994 edition of his book *Laws of Form* he states (p. ix): 'All I teach is the consequences of there being nothing. The perennial mistake of western philosophers has been to suppose, with no justification whatsoever, that nothing cannot have any consequences'.

Many works on organization and management theory have tried to search for certainty and stability where there is not much but uncertainty and instability. They have produced regularity when what seems regular is a mere illusion because the world is fluid; each situation is unique, even if it looks similar to other situations. But uniqueness does not mean that we have to reconstruct our theories every time we study a new situation. We can, with a bit of creativity and modesty, provide useful and interesting explanations to many situations. We may, as John Law formulates it, apply a modest kind of sociology that does not assume certainty but that, to the best of its ability, pursues uncertainty, cautiously untangling an otherwise tangled world. Law (1994:9) puts it better himself:

> And when [sociology] has done better, this has often been because it has concerned itself with the description of social processes. Such descriptions simplify, for to tell a story about anything is already to simplify it. But they are less prone to heroic reductionism than some, for they also tell, or at any rate they assume, that they are incomplete. And they tell that they are incomplete not because they haven't quite finished sorting out the order of things, but rather because they know that it is *necessarily* that way: they will *always* be incomplete. Such sociologies are relatively modest, relatively aware of the context of their own production, and the claims that they make are relatively modest in scope.

Once we recognize that the world is tangled and not limited to isolated, linear and ordered processes, we recognize by implication that it is infinitely complex, and moreover, that our ability to understand it really is very small compared with the

complexity that surrounds us. This was recognized by Whitehead as a justification for coming to grips with how anything becomes in a world of so many possibilities. This is also why modesty, as Law suggests, is so important.

To understand how stability emerges from something essentially unstable involves understanding how something *becomes*. Nike, the EU, or ways to fix a door are not inscribed in the world as natural facts. They evolve as a few possibilities among a large number of other possibilities. In other words, they are examples from among many other candidates that might have emerged as well, but which did not. Herein lies an important preoccupation in process studies, namely producing plausible explanations of how something becomes what it is. Evolutionary theory would postulate that entities emerge and endure because they perform better than other entities. If that were true, technological solutions that dominate in the world would always prove to be better than their competitors. Alas, such a postulate is hard to maintain as an absolute fact. Studies of technological innovations suggest that there are factors other than solely performance that make solutions stabilize and endure. Latour (1987), for example, suggests that the Diesel engine's popularity has more to do with the ability of stakeholders to commit authorities, other technologies, communities and others to the innovation than the sheer performance of the engine itself. According to Latour, there were several other competitors at the time that were technologically as sophisticated as the Diesel engine. Hence the explanation of the dominance of the Diesel engine does not lie in superior technology. Its apparent success does not lie in the characteristics of its *substance*. The explanation lies instead in the way that the concept of the engine is related to other factors. The explanation is relational, not substantial. It *becomes* what it is through its various encounters with other technologies, communities and actors. It has moved from being something unstable, even unlikely, to being a stable and dominant technology.

To say that the Diesel engine is stable is not really saying anything other than that it is more stable than other emerging technologies. Perhaps more precisely, it is perceived as sufficiently stable for it to form part of models with which actors organize the world around them. Attempts at organizing are rooted in what March (1981) calls 'models of the world'. Models are what human actors can operate with. We cannot fathom the complexity of the world that we engage with so we 'enact', to use Weick's term, a reality based on what makes sense to us. But we do not escape unchanged from enactment. Experiences change the way that we enact again in the fluid complex world around us. It is the journeying between the world and the attempts to model the world that is seen as the process.

Journeying is attempted in this book with the help of process thinking, largely inspired by the work of Alfred North Whitehead. Process thinking seeks to shed light on the developmental nature of the world, emphasizing 'becoming' rather than static 'being'. Rather than studying how entities influence one another, it stresses the inter-relatedness of entities, how they transform each other. Because entities are in a perpetual state of change, they can never 'be' anything; they change and they are largely indecipherable. Nevertheless, we can have experiences of the world, and the experiences also change the world in turn. In the case of organizations,

for example, Czarniawska (2004:780) points out that 'Humans [. . .] construct[ed] this machine but, once constructed, the machine continues to construct them'.

Whitehead's work forms a canvas against which the contributions of Weick, Latour, Luhmann and March are interpreted in this book. The attempt is ambitious and not without its flaws. Whitehead's work is a vast philosophical project which, through process metaphysics, aimed at explaining fundamentals of how the world evolves. His work spans the realms of the metaphysical and the physical, merely skirting the social. In this vast project, the question of the social actually gets little attention. Societies, in Whitehead's work, are particular phenomena where actual occasions, or events, display similarities. Social systems are mere subspecies of what he would term 'societies'. Whitehead's work thus took place at a long distance from social systems such as organizations, although he did bring up the subject of social systems, business and also that of routines (Whitehead, [1933]1967).[1] Routines, according to Whitehead (1911:61) are crucial because they enable us to rationalize and thus experiment with other things:

> It is a profoundly erroneous truism repeated by all copybooks, and by eminent people when they are making speeches, that we should cultivate the habit of thinking of what we are doing. The precise opposite is the case. Civilization advances by extending the number of operations which we can perform without thinking about them. Operations of thought are like cavalry charges in battle – they are strictly limited in number, they require fresh horses, and must only be made at decisive moments.

His lack of treatment of the specifics of social systems, however, has not deterred scholars from drawing inspiration from his work in the study of organization, although attempts are at present few and far between. Probably his most important contributions in this respect lie in his thoughts concerning consciousness and experience, and in how he thinks about ways in which human experience comes to be embedded and extended through abstractions. According to Whitehead, experience comes prior to consciousness; we experience through intuition, whereas cognition and consciousness are derivatives of experience produced through abstractions (Dibben and Smallman, 2005). Most students of organization will recognize that organization studies is an ever expanding field of abstractions, which opens questions about how abstractions emerge, how they are reproduced and how they become embedded in social discourse.

The potential for organization studies to benefit from Whitehead's work would depend on a better understanding of the implications of taking the radical stance of viewing the world as process. When there is no stable substance and nothing ever stays the same, we theorize on quicksand rather than from foundations. What to do when there are no real facts to start with? Whitehead's response is to study how anything can become. Everything emerges from a fluid world, and anything that persists and becomes something is in itself an accomplishment. Conventional theorists might be dismayed by the existence of disorder; they should instead be inspired to marvel at the existence of order. And rather than just looking at the

'big orders', they should look at how seemingly trivial orders emerge. Maybe Whitehead ([1929]1978:5) was being ironical when he wrote: 'It requires a very unusual mind to undertake the analysis of the obvious'. In any case, applying process thinking to seemingly obvious organizational phenomena can inspire some new ideas about how things are and how they become. An example is the study of routines which, if seen as standard solutions, may appear obvious and thus of limited interest for research. However, if routines are seen as connected sets of actions that may lead to various constellations, including organizations, the phenomenon of routines takes on a different meaning altogether.

Whitehead's work does not provide answers, but invites reflection. He offers a canvas of possibilities, and this canvas is broad enough to enable a useful discussion of the ideas in organization studies. There is already a distinguished history of process thinking in organization studies, but much process thinking is based either on evolutionary theory or on the idea of organizations as things, or both. Weick contributed towards shifting the focus from what an organization or structure is to how it is accomplished. March and colleagues have similarly worked from a process perspective and have produced insights into flows of decisions and learning in organizations, but without assuming that the organization is a context-dependent, circumscribed entity. From outside the field of organization studies, Luhmann and Latour have extended and deepened process thinking in different directions. Luhmann worked from a broader social systems perspective, and applied his autopoietic perspective to organizational decision making (Luhmann, 2000). His thinking seems useful for extending understanding about the notions of time, events and contingencies. Latour has not applied his actor-network theorizing to organizations per se. However, his work on relating the social to the technological, showing how the two emerge together, holds great promise for organizational theorizing, especially if organization is perceived as acts of connecting rather than circumscribing, the former being the view put forward in this book.

This book is an attempt at translating the ideas of these writers into some form of rapprochement over a process theory of organization. It is an attempt at organizing a meeting between them, with process on the agenda, chaired by Whitehead. The attempt may have its flaws; some of them may even be unacceptable to some readers. It is highly unlikely in particular that I have fathomed the full implications of Whitehead's work. Kant commented that it would be a strange coincidence if the complexity of the world were matched by the human mind's understanding of it. Well, it would be equally strange if the complexity of Whitehead's work were matched by my understanding of it. In my self-defence, though, this is my interpretation of the theorists as I try and hold them up against each other, which is not the same as interpreting them entirely separately. It is based on my selection from their work.

The theorists on whose works this book is based (Whitehead, March, Weick, Latour, Luhmann) are all giants in their respective fields. The only way to write the manuscript was to climb onto their shoulders. Anybody who has tried something similar will probably confirm that climbing onto the shoulders of giants is

a dizzying experience. But climbing onto the shoulders of giants is perhaps a bit like climbing mountains. It would be a shame to give up before getting to the top. Still, standing on the shoulders of giants is certainly no guarantee that you will be able to see as far as they do. It provides only possibilities for seeing further. What you do with them, well, that all depends on you.

Philosophers might find my use of Whitehead's work too selective, or superficial, or both. His thinking extends way beyond the treatment in this book. The richness of his texts is related to the aims of his philosophical work, which were to provide a framework for understanding the world's evolution. His work builds on, while also extending beyond, the works of Aristotle, Plato, Lucretius, Locke and Descartes. Its fundamental aims, located in cosmology, put it at a great distance from social science. As mentioned already, in Whitehead's work, social systems have no privileged place; they are a mere sub-species of a more complex universe. He mentions social societies as but one possible type of society among many. Societies only become societies when they are able to reproduce themselves; when 'they become their own reasons'. When he treads close to the world of organization, notably by bringing up the subject of routines, he seems more interested in how ants endure, through organization, in the natural world, than in the role of routines in human society. Notwithstanding, Whitehead's preoccupation was to explain how human experience is made durable, which could well be an element in a generic definition of organization. But here lies perhaps the main usefulness of Whitehead's work: his ideas become an exciting reservoir for thinking about the social and process. For example, his contention that process cannot be 'just' physical or 'just' mental provides impetus to thinking about the roles of technologies in the unfolding of processes, something that has been pursued for several years by Latour, Callon, Law and other writers associated with the actor-network tradition.

The use of Whitehead's ideas in the present text has been dictated more by their utility for expanding on the use of process in relation to organization than by any obligation to explain as much about them as possible. Thus an attempt has been made to synthesize and siphon off the most succinct insights that appear useful for illuminating the process side of organization. Most people who have engaged with Whitehead's work will confirm that it is not to be read linearly from A to Z with the intent of summarizing it in clear and unambiguous terms. On the contrary, his writing is very much alive and full of surprises; I feel that it is like revisiting an exciting place that never looks quite the same. It gives inspiration in spurts and helps illuminate questions that I grapple with at the moment, and at another moment the same sentences may illuminate different questions altogether. Thus, there is some comfort in reading Latour's (2005b) description of reading Whitehead, who likens it to whale-watching on the coast of San Diego in the winter: 'You stay on a boat for hours, see nothing, and suddenly "there she blows, she blows!" and swiftly the whale disappears again'.

In conclusion, this book is a meeting between selected ideas in the works of Luhmann, Latour, March and Weick, the principal aim being to illustrate how their works cast light upon a process view of organization. The meeting is chaired

by Whitehead, but with Whitehead as a somewhat discrete chairman. The chapters in the book are meant to bring out differences while connecting themes that are of interest in the study of organizations. To do that, the book is structured as follows:

Chapter 1. Organization in a tangled world

Looking *for* organizations as entities poses some problems in that it leads us to ignore processes by which they are formed. A concrete problem of looking *for* an organization may be exemplified by the search for the al-Qaeda terrorist network in the wake of the invasion of Afghanistan, where no 'organization' was found, but rather a phenomenon that corresponds to a number of successive metaphors. Organization, rather than being an entity, is a process of formation, although it may be described in terms of metaphors, or models of the world, by which we organize. The challenge lies in analysing organizations as relational phenomena rather than as correlation between entities.

Chapter 2. Process views of organization

Process thinking has a long and distinguished history in organizational analysis. Relatively recent developments, partly fuelled by renewed interest in the works of process philosophers such as James, Bergson and Whitehead, have led to an increased focus on the meaning of process in relation to organizational analysis. Recent contributions as well as the early works in philosophy are discussed. The discussion suggests that process views may be interpreted according to an understanding of the process of 'entification'.

Chapter 3. Alfred North Whitehead on process

This chapter looks at central terms and reasoning in Whitehead's process philosophy. The radical stance of working from a view of the world as process rather than as substance has important implications for how we go about organizational theorizing. The purpose of the chapter is to show how some of his profound thinking can form a canvas against which the contributions of Latour, Luhmann, March and Weick may be discussed. The chapter ends with the following foci extracted from the review: events and structure, heterogeneity, abstraction and concrete experience, potentiality, stabilization, and connectivity. These foci are brought into the discussion of the theorists in the chapters that follow.

Chapter 4. Bruno Latour: relativizing the social, and the becoming of networks

Latour's use of actor-networks is an intriguing analysis of how large actors (networks, institutions, products) emerge through relations between smaller actors. Latour sees networks as processes where relations are shaped and reshaped. His work is of particular interest because of the way that he bridges the social and the

material worlds, insisting on the ideas of circulation and translation. A key insight is that actors, when acting upon a material world, are changed by that material world in turn.

Chapter 5. Niklas Luhmann on autopoiesis and recursiveness in social systems

Luhmann's autopoietic framework brings up the importance of how structure and process interact. Luhmann's discussion about the role of contingencies in social systems is particularly helpful; it explains how events and structures interact in forming a basis for what may happen next, but without determining what will actually happen. Such thinking has important implications, not just for how processes are understood, but also for how we go about studying processes.

Chapter 6. James March on decision processes and organization: a logic of streams

James March's work on learning and decision making has typically concentrated on how acting and making sense are intertwined processes in organizations, and particularly how they may be loosely coupled with attempts at organizing. Related to the loose coupling is the topic of incoherence: how organizations operate in a world ruled by incoherence, and how organizational design consists of ways of coping with incoherence.

Chapter 7. Karl Weick on organizing and sensemaking

The chapter discusses how Weick's work provides insight into organizing processes in tight situations, where behaviour may switch rapidly between stable models and organizing, on the one hand, and locally emergent actions on the other. Weick's use of the term 'organizing' (verb) as opposed to 'organization' (noun) is discussed in a process perspective, where it is the oscillation between verb and noun that is of primary interest.

Chapter 8. A scheme for process-based organizational analysis

This chapter proposes elements in a framework for process-based organizational research. Organization, instead of being a stable entity, is seen as a process of connecting entities which may be more or less disparate and initially unrelated. The scheme put forward in the chapter is based on four basic ideas: first, the idea of the primacy of organizing as connecting; second, the idea of organization as reiteration and novelty; third, the idea of the plot or organization; and fourth, the idea of actuality versus potentiality.

Chapter 9. Some implications for organizational analysis

This chapter takes a look at the dilemmas and challenges of seeing organization as process. In the absence of real things there is no certainty in numbers. Still, the outcomes of processes can be explained; the fact that several outcomes are possible does not mean that processes are wholly arbitrary. Manoeuvring in this space, where uncertainties and probabilities exist side by side, requires a reflexive approach to research.

1 Organization in a tangled world

Looking for the organization

In the wake of the terrorist attack on the Twin Towers on 9/11, President George W Bush decided to invade Afghanistan to eliminate the al-Qaeda organization and root out Osama Bin Laden, the presumed leader of the al-Qaeda organization. There was much talk of eliminating what they called the 'terrorist organization' led by Bin Laden. When the forces moved into Afghanistan they found no organizations. It seems that they were looking for something that resembled a formal organization with infrastructure, staff and technology. Had that been the case, whatever was the al-Qaeda organization could probably have been eliminated. Foran (2004) suggests that their error in judgement was rooted in what he calls 'state-centric assumptions' that view al-Qaeda as an organization (a solid target, like a state), rather than the transnational social movement it is. Shortly after the forces arrived, however, spokespersons were quick to point out that al-Qaeda could not be understood as an organization, that it resembled more a network. Worse, it resembled a loosely coupled network, with cells in many countries. Worse still, it seemed that many of its cells could not be traced through their activities because they had the capacity to lie dormant for years until springing into action again. A network of local cells is evidently much more difficult to eliminate than an army organization because no domino effect exists, owing to the fact that interdependence between the cells is weak and changing.

It remains to be seen if the term 'network' is even adequate, although Foran (2004) suggests that al-Qaeda most resembles a network. Typically, networks are seen as phenomena consisting of nodes and links. Classical thinking gives attention to nodes that are seen as central and links that are seen as stronger. A central node may be a social actor who has frequent connections with other actors. For example, more social power is attributed to a person whose advice is often solicited by others, such as found by Blau (1954) in his study of social interaction among government officials. Others have pointed out that ties that appear strong may not be so, and that ties that appear weak in a network may prove to be strong (Granovetter, 1973). But whatever criteria are used to assess strength and centrality, the notion of networks is based on there being actors who can be seen as existing entities. Moreover, links are seen as functional, in the sense that members adhere to the

network because being part of it is more productive than not being part of it. Seen from this perspective, the way to eliminate networks such as al-Qaeda would be to cut off all functional supply lines that channel money, technology, information and training.

But what if we assume that whatever supply links and existing actors we see through functional eyes comprise nothing but a state at a given point in time? A snapshot of a much more complex reality that is emergent rather than static? What if we work from the assumption that it is something that may lie dormant for many years, even decades or centuries, and then spring into action in unexpected places and for no obvious reasons? If we are to understand the fluent and emergent nature of a movement such as al-Qaeda, we probably need to look beyond the snapshot view of the world and assume that it is an elusive phenomenon that has no substance other than certain actors and links at a given point in time. And what if we assume that whatever it is that is called al-Qaeda (if it can indeed be said to exist at all), is part of a fluid complex set of processes that form, nest and reform? What happens is that the notion of a network is fed into the complex fluid world of Islamist movements (whose activities are mostly unrelated to terrorism). What is taking place is movement between the intangible and the fluid, on the one hand, and the adopted models of organization on the other. The intangible and fluid may be represented in what Danner (2005) calls 'Al Qaedaism', which is what may happen when a conspiratorial organization mutates into a worldwide political movement driven by a set of perverted ideas. Danner suggests that we might be talking about 'viral Al Qaeda', which he suggests may be carried by next-generation followers who download from the Internet's virtual training camp their tradecraft in terror. What this illustrates is that a movement may have central elements of rational organization, but connecting organizational processes and ideological processes in various forms may lead to outcomes that go well beyond the power of organization. Danner's point also underscores how there may be a range of mechanisms which, when connected, represent a latency for something that is not readily expected. The BBC documentary series, *The Power of Nightmares*, for example, advances the hypothesis that al-Qaeda is more like a fictitious monster myth that has spread unquestioned through politics, the security services and the international media, created by Western politicians to restore their power and authority in an age of political disillusionment.

The 'in-here' and the 'out-there'

Al-Qaeda may be a good example of a tangled phenomenon, being an organization that reproduces itself through actions involving many actors. Once 'tangledness' is accepted as a term, it becomes possible to circumvent the long standing distinction in the social sciences between the 'in-here' and the 'out-there'. Such a distinction rests on the assumption that only the in-here can be experienced whereas the out-there can only be there, awaiting discovery. Both sides of the divide appear immutable, unable to engage with each other. The entire imagery is rooted in the idea of science being about disconnected, even disinterested, passive entities.

In-here lies the subjective, out-there the objective, in-here the soft, out-there the hard and wired.

'Tangledness' helps avoid an a priori division between in-here and out-there. 'A tangled perspective', as the term is used in this book, assumes that the world out-there may be activated, related to, in some form or other. Rather than representing an actuality, it represents a reservoir of *potentialities* for how we think and act. These potentialities exist in the form of people, technologies and institutions. Most of them are beyond our immediate reach, in the sense that we cannot do much about them. In fact, most of them cannot be seen or sensed by us; they exist elsewhere in timespace, beyond our field of vision and beyond our experience. Some potentialities, however, can be perceived, although we may not be able to influence them. They may, however, be accessible to us through association and thus brought into the world that we can influence. Having been activated by association, they are thus brought into the realm where we can influence the way that we go about organizing our lives.

For example, while this part of the manuscript was being drafted (September 2005), Hurricane Katrina had just struck the southern US states of Louisiana, Mississippi and Alabama. Its devastating effects are enormous in social, political, economic, material and human terms. Few of us could have done anything about Katrina and its effects in the USA. However, as we observe its aftermath, we translate the situation as we see it into the world where we exercise influence. For example, there are numerous organizational actors, such as political parties, NGOs, commercial companies, financial institutions, disaster relief organizations and many others, who observe the Katrina aftermath with a view to participation. To be sure what these organizational actors observe out there are a number of realities (such as the rising water levels, the inadequacy of relief resources, etc.) because they represent a range of potential courses of action for those actors. In other words, they are real insofar as they represent potentialities that these actors can relate to and possibly translate into their own spheres of operation. What they observe as rising water levels and material damage is about as real and 'objective' as it gets. What may differ greatly between actors are those speculations, inferences and conclusions that they draw about the consequences of Katrina, as well as the hypotheses they develop about the effects of choosing particular courses of action. Such activity may be called 'educated guesswork', shaped partly by calculation, partly by past experiences, partly by hope. Nevertheless, it is armed with these calculations, experiences and hopes that the actors may act (or choose not to act) in the Katrina aftermath.

Individuals and organizations have at any time a number of possibilities for engaging with a world of different factors, in which connections may be made in different ways. Over time, what the organization becomes is a result of how it brings external realities into its realm. It 'is' in many ways all the various connections it makes, internal as well as external. Thus, organizations are a result of how events have evolved over time, and therefore they 'are' the processes that have shaped them. Maybe for this reason, Inspector Clouseau (cited in the Introduction) realized that, without intuition, murder cases cannot be solved.

Moving between the models of reality and the complex world in which the models are applied is a journey of incessant interactions between the accessible and the inaccessible.

We commonly use metaphors to understand organizations (Morgan, 1986). To say that metaphors are widespread in organization theory would be an understatement; to say that they form the staple diet of organization theory might be more to the point. Metaphors are terms that cast light on a phenomenon by virtue of association with something familiar to us. Organization theory has accumulated numerous metaphors over the past few decades, such as 'garbage cans', 'networks', 'learning', 'loose coupling', 'organized anarchies' etc. Morgan (1986) says about metaphors that, although they may be regarded as devices of embellishment, their significance is in fact much greater. The use of metaphors, in Morgan's view, implies ways of thinking and seeing that pervade how we understand our world generally. Morgan (1986:13) argues further that 'many of our taken-for-granted ideas about organizations are metaphorical, even though we may not recognize them as such'.

Metaphors are useful because they are manageable ways of coming to grips with the complex and paradoxical phenomena that organizations are. When actors observe a situation they see tangled processes that at the outset have no definite form, but that offer a range of possible interpretations. We may observe the rising water levels in the wake of Katrina, the arrival of rescue teams, the social mechanisms at work, and many other things. And there are the more hard-core facts, such as technical data, money and climate. These may seem individual factors, but they may all be connected to one another by the observer to form a composite picture.

So we are faced with a dual situation which is of our own making. On the one hand, there is a complexity out there, with which we may connect in a range of different ways, and which exists as possible interpretations to us. On the other hand, there is a language (of metaphors) that is largely based on our imagination and habits, which is at our disposal for interpretation. Assuming that this duality is a divide, how do we relate to it? Is it a divide where one side behaves as if the other does not exist? Or is it a divide where the two sides engage with one another? If so, how is that mutual engagement to be depicted?

In organization studies it sometimes seems that only one side or the other is speaking. On the 'realist' side, for example, the organizational world is seen to speak through what are referred to as 'real happenings'. Real happenings are seen as decisive and involve sufficient attention or emotion to have a bearing on what happens in the organization. Accidents, successes, inventions, mergers or failures become occasions for making sense of what happened and, moreover, for constructing a shared understanding of what happened, why it happened and the implications it has for those affected by it. This is how, through narratives for example, organizational identities are constructed (Humphreys and Brown, 2002).

Particularly at early stages of an organization's life, when there may be less shared and embedded understanding, events may speak directly to participants;

they surface from a complex and fluid world that is not yet readily moulded by ready-made metaphors. Carlsen (2006:28) provides a good example in his study of the professional service firm Calculus:

> […] it is important to note that the life enriching drama found in Calculus is a *continuous telling rooted in practice*. There is no emotionally charged understanding of a 'we' here that does not have practice as its referent, and the qualities of unity, purpose and engagement actualize themselves not as much in that which is authored as they do in the process of authoring.

Let us move to 'the other side', where socially constructed – and legitimized – models of organizing are assumed to take on increased importance. As organizations grow and become more complex, they take on importance in society and come to depend on the acceptance, support and approval of financial stakeholders; hence, striving for legitimacy increases. It is no accident, for example, that large companies tend to have departments of communication, whereas small companies do not. Legitimacy relates to size and visibility, both of which are results of formalization. At this stage, models of organizing may be adopted and become more influential. This is the stage where recognized metaphors to a greater extent take over as models of organization.

Organizations may be seen to evolve from the small, intimate and localized mode of operating to becoming larger formalized systems with different modes of operating. But when we take a closer look at them, we see both modes taking place continuously; there is always an emergent, nascent, 'here-and-now' world alongside a more formalized world governed by metaphors and models of organization. In practice, organizations oscillate between these two modes, between on the one hand the realms of action, experimentation and intuition, and on the other hand the realms of modelling. Latour (1999a:71) argues that we should investigate how the two sides engage in mutual transformation:

> Our philosophical tradition has been mistaken in wanting to make phenomena the meeting point between things-in-themselves and categories of human understanding. Realists, empiricists, idealists, and assorted rationalists have fought ceaselessly among themselves around this bipolar model. Phenomena, however, are not found at the *meeting point* between things and the forms of the human mind; phenomena are what *circulates* all along the reversible chain of transformations, at each step losing some properties to gain others that render them compatible with already-established centres of calculation.

As a basis for his philosophy, Whitehead assumed that the divide is one between what he called 'concrete experience' and 'abstraction'. Concrete experience, he argued, is of the essence; there is nothing beyond it. However, progress does not come about with concrete experience alone; we need abstractions for

experiences to make sense. Hence, much of his efforts were directed at explaining how concrete experience evolves into abstractions. The movement between concrete experience and abstraction is, as Latour points out, a reversible transformation, in the sense that abstractions influence concrete experience as well. Whitehead's point, however, was that abstractions have a nasty way of taking over from concrete experience, in the sense that they may be mistaken for concrete experience.

For a number of reasons, these two spheres have largely operated separately from one another. Yet, as argued above, organization cannot but be a process of multiple movements between the two – numerous movements between concrete experience and abstraction. This is one reason why Whitehead is central to understanding organization as process.

But the process is not just about the difference between the two worlds. The two worlds do not stay apart; they are brought into contact with one another as the models of organization, or the words and vocabularies, enter and re-enter a world of tangled processes. Therefore the process is not just a matter of translation between two worlds in a linguistic sense. It is about movement and journeying between the two worlds, where the vocabularies or models are entered and re-entered into a fluid, complex and ambiguous world. The relationship between the models and the world is a tangled one.

It is time that we develop a better understanding between what we see as organizations and what we see as phenomena different from organizations. The following description by Rokkan and Urwin (1983:69) of the history of education and work in Europe serves as an example of how organizations become entangled with developments in society, such as technologies, skills and standardization:

> In Western Europe these processes of standardization advanced between the eighth and twelfth centuries. The alphabetization of vernaculars in the monasteries and church schools tended to stabilize standards and to prepare the ground for the unification of national languages. The first standard languages owe much to Gutenberg and the early printers: their decisions on orthography, arbitrary and historically questionable, tended to freeze standards. At least in the Protestant countries, the introduction of compulsory mass education later increased the pressures of standardization. These developments in the cultural infrastructure paralleled changes in the economy. The commercial revolution increased the demand for competent communicators, and the growth of both administrative-juridical and military establishments created a territory-wide market for professionals skilled in the arts of reading and writing: the universities, once important agents responsible for the maintenance of Greek and Latin, also began to produce professionals in the vernacular languages. In the next round, the Industrial Revolution generated a demand for workers able to read instructions and manuals, and to learn new skills and techniques through literacy. These changes in the economy produced increasingly open markets for personnel across the entire territory of political systems and across a wide variety of occupations, and moved large numbers of people out of

> their peripheral or marginal conditions and into increasing contact with a territory-wide culture based upon written communication.

The excerpt illustrates how, over long periods of time, attempts at organization feed into a larger whole of actors and connections. For example, education, represented by schools and universities, increases pressures for standardization, while schooling people in languages other than Greek and Latin facilitated the reading of manuals and instructions created by the industrial revolution. The capacity to read put people in contact with a cultural context that took them across larger space. Today this space is almost the entire world, which can be reached with a few clicks on a mouse. We can even use our computers to organize people on the other side of the globe.

One example of a phenomenon with which organizations get tangled is that of standards which, although Rokkan and Urwin describe it as being central since the Middle Ages, is becoming an important focus for social scientists today. Brunsson and Jacobsson (2000), in their book *A World of Standards*, make the interesting observation that standards may actually substitute for organizations. Standards, as Brunsson and Jacobsson see them, are rules on a global scale that regulate activities in organizations; they are essentially instruments of control and harmonization. Examples are standards issued by organizations such as the International Standards Organization (ISO), the International Labour Organization (ILO), the International Women's Rights Action Watch (IWRAW) and the International Federation of Football Associations (FIFA). What is interesting about Brunsson and Jacobsson's ideas is that they do not assume that standards are necessarily adopted by organizations. Standards may be seen as means that exists beyond organizations. They may be championed by organizations (what Brunsson and Jacobsson refer to as 'standardizers'), but they do not constitute organizations in the sense of goals, staff, etc. Brunsson (in the same book) points out that standards may exist in the place of organizations, just as they may exist in the place of markets.

Standards constitute attempts at bringing some predictable order to a complex world. What then becomes interesting to study is how standards and organizations, for example, get entangled and how they co-evolve over time and space. But before we get to tangledness and theories for dealing with it, let us look at how organizational analysis has avoided the problem of tangledness rather than dealing with it.

A correlational view and some problems

How do we analyse something that is as elusive as an organization? Let us first be honest with ourselves: we cannot analyse any organization in its entirety. The statement is trivial but the implications are not, because it means that we have to make choices about what to see and, more importantly, what not to see. Furthermore, we have to make choices about the *importance* of what we choose to see and not to see. We have to bracket out things that we concentrate our study on.

Just as Weick uses the expressions 'bracketing' and 'selection' for organizational behaviour, bracketing and selection are also worlds of study.

Bracketing is analytical in the sense that it shapes the platform from which we make sense of organization. Maybe the most basic analytical choice we can make is in what we assume to be entities and what we assume not to be entities. Next, what do we assume about the relations between the entities that we choose? The dilemma is old and persistent in social science, as it is in philosophy: If I choose to look at something, an actor say, and I use the actor as my unit of analysis, how do I then account for change in the actor? On the other hand, if I assume that the actor changes over time, how can I operate analytically with something that is changing when I am unable to say that it 'is' something (e.g. an actor)?

A common approach in organization studies is to say that the organization changes, while at the same time assuming that it is stable over some time. The reason for this inconsistency is analytical: in order to talk about the organization we need to assume that we relate to the same phenomenon for the time that we refer to it. Consequently, the change that we describe is not continuous change, but stepwise change; in other words, we look at how the organization has changed between the point in time that we began to observe it and the time that our observation stopped. Hence, it is important to realize that it is not the change per se that we then measure, but rather the difference between two states that we have assumed – for analytical reasons – to be stable between the changes. To be sure, we know that change is ongoing, so the assumption is made to facilitate analysis, not to capture the actual process of change. But such an assumption may be deceptive, because it lends the impression that what we are looking at *is* the change, whereas what we are doing is merely to analytically impose a stepwise change upon a fluid world. Tsoukas and Chia (2002:570) expose the limitations of such a 'stage model' as a means of representing change, arguing that 'a conceptual framework for making sense of change (namely, the stage model of change) cannot deal with change per se, except by conceiving of it as a series of immobilities; it makes sense of change by denying change!'.

Dilemmas of representing a fluid world remind us that whatever we do in terms of analytical assumptions is bound to be incomplete. Perhaps the best we can do is to be explicit about what we choose as a platform of analysis, and then try to be faithful to whatever is chosen. I suggest that there are differences between two basic sets of choices, what I refer to as correlational and relational views, respectively. A correlational view is based on entities, assumed to represent states, and correlation analysis consists of studying the correspondence between the entities studied. A relational view, on the other hand, explores how entities combine in the processes of becoming.

According to Whitehead ([1929]1978:7), there are essentially two ways to comprehend the world: 'One side makes processes ultimate; the other side makes facts ultimate'. Let us take the latter first. To make facts ultimate means that we assume that the world is made up of entities. The way we go about it is that we observe the world, then we freeze it like in a still photo, then we chop what we see in the photo into pieces – entities. These pieces then become, through association, categories

for what we see elsewhere. The fact that they are things makes them amenable to analysis. The marvellous thing about entities is that they can be compared. When they are seen as belonging to categories, the comparison says something about the categories in turn. As we carry on comparing, the categories are allowed to change and they become more or less complex depending on how we change them.

Categorization implies seeing organizations analytically as circumscribed, internally coherent composite systems. But, primarily, they are seen as things in the physical sense because of their boundaries that are seen to circumscribe the system's internal behaviour and at the same time form a border line against the outside world. As entities, organizations either change or stay the same, because any discussion of them must refer to the organization, both as a point of departure and as a product, as alluded to above – in other words, as something tangible and available for assessment, ready to be judged for what it is, there and then. It resonates with a view by which an essentially fluid and complex reality is sliced into pieces for analytical convenience in order to be put together again as the 'total reality'.

Classification is commonly associated with an Aristotelian view of the world. Aristotle was, among other things, a botanist, and for him classification was important. Linné, too, was a botanist who carried on the project of classification. The very idea of classification is rooted in the idea that something is a simple, definable, stable, element in timespace. The idea on which Newton's work was based is powerful, and has shaped science as well as the understanding of science in Western culture. Chia (1999:215) formulates it thus:

> For Whitehead (1925), this apparently unproblematic assumption of the simple location of matter, was what enabled commitment to the ontology of being. By postulating the prior existence of discrete and isolatable entities in space-time, it allowed Newton to formulate his now famous Laws of Motion. It also enabled the associated concept of *causality* to become, therefore, an invaluable conceptual instrument for relinking these (initially assumed) isolated entities so that their observed behaviours could be adequately accounted for in a coherent system of explanation. Moreover, according to this Newtonian view, the state of 'rest' is considered normal, whilst movement is regarded as an essentially transitory phase from one stable state to another.

In mainstream organization theory, classification has been something of a mainstay. We classify bureaucracies, informal organizations, virtual organizations, knowledge firms and many others, assuming that they are entities of what Whitehead called 'simple location'. Each of these is a category, comprising a number of specimens. Classification allows for grouping and hence recognition. An organization is a bureaucracy when we decide to see it as a bureaucracy. When we see it as belonging to the category of bureaucracies we look for its rules, regulations and associated inertia that we can use to compare it with other organizations. The method is powerful because it allows us to say something that is

open to generalization. It means that we can step off a plane in India, Denmark or Peru and recognize similarities between organizations. In fact, they may be even more than similarities; they may be regularities. Thus, when we are concerned with classification we are essentially looking for similarities. Even when we find that things are dissimilar, the finding is couched in a broader assumption of there being some similarity.

Comparison depends on there being entities, otherwise there would be nothing to compare. Not just that, it depends on the entities conforming more or less to the categories that we have established. Again, Chia (1999:215) makes the point succinctly:

> A 'correspondence theory of truth' is thus assumed, in which linguistic terms are taken to be accurately representing an external world of discrete and identifiable objects, forces and generative mechanisms. This *representationalist epistemology* also implies that it is more important to focus on the *outcomes* of change rather than on the process of change itself. Change, according to this view, is merely that transitory phase which is necessary for bridging the various *stages* of any evolutionary process. Underlying this intellectual attitude is an unshakeable assumption that reality is essentially discrete, substantial and enduring. It is this fundamental ontological assumption which provides the inspiration for the scientific obsession with precision, accuracy and parsimony in representing and explaining social and material phenomena, since these are now regarded as relatively stable entities.

This is why, when entities become difficult to disentangle, we say that it is because their boundaries are blurred. But it should not come as a surprise that organizational boundaries are blurred. The ambiguity of boundaries has been pointed out by different scholars. Weick (1979) characterizes boundaries as changing, Scott (1992) and Pfeffer and Salancik (1978) claim that they are ambiguous, whereas Perrow (1986) and March and Simon (1958) point out that they are permeable. In fact, it is probably more true to say that organizations do not have boundaries if we see boundaries as stable unambiguous lines that circumscribe organizations. In process terms, at least, they cannot have boundaries, because entities can 'have' things which processes cannot. It seems more appropriate to say that organizations perform various types of demarcations, such as expressions of identity; demarcating self from other. But it is not the fault of the organizations that their boundaries appear blurred; it is our categorization that expects clear boundaries for analytical reasons, which makes us characterize them as being blurred. The blurredness is more the result of wishful thinking that organizations are clear cut entities than it is the result of a pragmatic appreciation of the actual complexity and fluidity that surrounds organization.

A correlational view as described above assumes that each substantial thing is conceived as complete in itself (Whitehead, [1933]1967:132–3). According to a correlational view, the thing does not exist through its relations with other things, but rather through its own qualities. Things (which may be persons, groups,

organizations, etc.) are seen as bundles of characteristics. They are, for all intents and purposes, ready-made entities, ready to be analysed. Analytically, this enables correlation between entities. Because things are attributed exclusive qualities, they enable the identification of context-dependent patterns. They enable us to say, for example, that organizations operating in turbulent environments, such as some consulting firms, tend to have more complex patterns of decision making than firms that operate in more stable environments.

An example of how context may be used to make sense is found in Swiss sociologist Jean Ziegler's (1998) book about organized crime. Ziegler makes the point that organized crime in Europe has – since the fall of the Soviet Union – taken on dimensions so important that it threatens democracy. He points out that probably the most dangerous of the emerging mafias in recent decades is the Russian mafia, which is organized in such a way that not only does it control important parts of Russian society, including the economy, but it also controls substantial criminal activities in other countries, including Western Europe.

In his explanation of factors that explain the 'success' of the Russian mafia, Ziegler employs a correlational type of argument, relating the adaptability of the mafia to the different contexts through which it has evolved. A general explanation for why organized crime is able to spread and dominate sectors of society, he claims, is that Western societies suffer from 'immunitary deficiencies', such as a lack of collective norms and corresponding control systems. The absence of such systems has in the last decade provided a relatively easy arena for the mafia to expand and consolidate. But the key explanation lies in the far more difficult times under the Stalinist regime, where the mafia adopted some of its impenetrable structure.

The mafia originated under the Tsarist rule in the last decades of the nineteenth century, during which it enjoyed a relatively easy existence. Easy, that is, relative to what was to come: under the Bolshevik regime crime was deemed deviant and severely sanctioned. Under Stalin the state police executed criminals summarily often without any form of judicial process. Soviet society under Stalin was extremely tightly controlled, but despite the extreme control and harsh sanctions, some criminal organizations did survive and, according to Ziegler (1998:119), the mafia developed a remarkable organization that enabled it to survive under Stalin's regime, with its highly efficient secret police. In the Stalinist period the mafia – or at least the surviving parts of it – developed a rigorous system of 'firewalls', enabling it to exercise secrecy in every aspect of its actions. When a more lenient and corrupt political system took over, in particular under Brezhnev (1964–82), the mafia, drawing on its organization for survival, was able to penetrate the Soviet political system. In fact, it acquired some support among the population. With corruption came shortages of various sorts, and the mafia 'helped out' by facilitating black markets in all major cities (Ziegler, 1998:81–2). The Perestroika and Yeltsin periods were marked by two factors; first, immense market opportunities and access to natural resources were up for grabs; and second, there was an absence of efficient judicial and fiscal systems to control the rapid expansion of opportunities for criminal activity. The combination of these two factors left

great opportunities for the mafia, which was already established as an effective organization, to expand its activities. Ziegler argues that globalization has to take its share of the blame because it makes the movement of people, goods and money across borders much easier.

If we read the Russian mafia's story from a correlational perspective, we can see how a dexterous organization, evolving under a repressive regime, may find it very easy to seize opportunities under more lenient regimes. If we read the Russian mafia's story from a correlational perspective, we can see how the same qualities that enabled it to merely *survive* under a repressive regime enable it to *thrive* under a lenient one. In other words, we see the mafia as one organization that is moulded by its environment in such a way that, when the environment changes, the organization may expand. The view rests on the assumption that there is an entity – the mafia – with recognizable boundaries and elements.

A relational view

The Russian mafia's story briefly related here exemplifies a correlational view whereby content varies with context, where the mafia is ascribed certain qualities because of the oppressive conditions under which it first emerged. For the analysis to be viable, a separation has to be drawn between content (the mafia) and context (the state apparatus). As pointed out above, a correlational view is made possible by chopping the world into pieces that the researcher can handle with some degree of accuracy. It also allows predictions to be made for what may happen under such and such conditions.

However, it is easy to forget that the world, in its 'brute' form, does not come ready-partitioned. We choose the categories into which we partition it because they suit our analysis. The world really couldn't care less about our categories. This goes for the separation between the human and the material, for example, which is a notable separation that is drawn to analyse organization processes. Bateson (1972:318) illustrates the dilemma of distinction by referring to the blind man and the stick:

> If you ask anybody about the localization and boundaries of the self, these confusions are immediately displayed. Or consider a blind man with a stick. Where does the blind man's self begin? At the tip of the stick? At the handle of the stick? Or at some point halfway up the stick? These questions are nonsense, because the stick is a pathway along which differences are transmitted under transformation, so that to draw a delimiting line *across* this pathway is to cut off a part of the systemic circuit which determines the blind man's locomotion.

The distinction between human and machine is one that has come to be accepted as a natural distinction. The distinction makes sense in one way. When we see a photograph of a worker operating a machine, it seems a perfectly legitimate thing to draw a line between the two. After all, the worker can switch off the

machine, adjust it, and can even (with the help of management) dispose of the machine.

The distinction between the worker and the machine is based on a snapshot view of the world; however, it has limited validity. If we were to follow the process of building the conceptualizing and building the machine, with the interweaving of humans and technology over timespace, the separation would become – to say the least – problematic. It would, for example, lead to over-simplifications, such as those arising from attempts to allocate blame to humans or materials in the wake of accidents.

Relational views, on the other hand, may be done differently. Orr (1990), for example, who studied photocopier maintenance technicians, found that they did not just use the technology. They actually interacted with it and each other. Instead of just acting upon their materials, they used their tacit knowledge to let the materials 'speak'. Thus, the technicians also formed small communities (communities-of-practice) where collaborative work acted as a powerful medium of transmission of knowledge. Orr talks about how entities – technicians, materials and communities – interact with one another. From a process view, this means that they cannot be analysed as merely acting upon each other because their interaction changes what they 'are'. Thinking in terms of process, an implication would be to assume that, when a technician works with materials over time, that technician 'is' not the same as what he was at the beginning. In the meantime, the materials have done their work on him, just as he has done his work on them. March (1981) makes a somewhat similar point in his discussion about organization and innovations. The problem, says March, is that while adopting an innovation, the organization changes character, and during that time the innovation also changes its character.

Still, some might argue, the line might be drawn to make sense of something that would otherwise not make sense. Entities may need to be treated analytically as being different and distinct, although the boundary between them may be both fluid and ambiguous. A machine may be regarded as a machine even if it is made by humans, for humans, and operated and changed by humans. If we don't drive a wedge between things, how can we then reconnect them? The machine may be seen as a technological 'ideal-type', just as humans may be seen as human 'ideal-types'. Where the material and the human come together is in the reconnection of the two.

The problem is, as Latour (1999c) points out, that the wedge is driven between problematic connections to understand what happens when the connections are made; but how can we then know that reconnecting the entities enables us to explain a world which is never really disconnected?[1]

The act of disconnecting is like surgery. We may reconnect a severed finger surgically and expect it to function more or less as it did before. But can we do something similar in the social world? The question is, mildly speaking, debatable. From a correlational perspective it is possible, even necessary, to disconnect in order to reconnect. From a relational (process) perspective, it does not make sense, a point which lies at the root of Latour's (1999c) criticism of science studies;

that is, that they drive wedges between elements. Ciborra (2002:16) argues that this driving of wedges derives from the model pursued in the natural sciences and reflects a quest for objectivity, an exercise based on applying essentialist foundations to social organization:

> Natural sciences proceed by describing nature on the basis of observation of empirical facts. They provide and order such facts, to make claims to discovering the essential laws of causality connecting the spatio-temporal facts yielded by observation. They proclaim themselves to be objective: that is, they can describe the essence of nature as it is, regardless of the subject. This objectivity determines the procedure or method by which they proceed: the world gets experienced as an object. Within the IS field most of the consultants and academic experts try to adopt, extend, and sometimes mimic the natural science way of proceeding, stumbling, however, upon some aberrations. For example, social systems, like business organizations, are observed and analysed in the same fashion – even using the same means of representation – as the physical system (the computer) or the quasi-mathematical abstractions of the data flows of entity-relationship graphs.

From a process point of view, the idea of the world consisting of things 'in themselves' becomes problematic. Because process thinking rejects absolute substances, it rejects by implication categorization of the world. It rejects the assumption that entities of different natures cannot but operate separately from each other. It also would tend to reject the dichotomies drawn between, for example, subject and object. Most distinctions assume that there is something acting upon something else and that this relationship is one-sided (Law, 1994). The implication is that one entity is active and the other is passive. For example, the subject is the knower and the object is known (Whitehead, [1933]1967:175). Much mainstream management theory, for example, is premised on the idea that managers act upon workers in trying to achieve change. Roughly speaking, this means that workers are seen as a passive mass that may be moulded through certain techniques applied by managers. Managers choose techniques and apply them to workers, who change in turn. Analytically speaking the entities act upon each other, yet they are separate from one another.

The idea of things as entities is based on the assumption that they have somehow emerged as ready-made entities, ready to be analysed, as pointed out above. Thus, we analyse an organization as and when it can be classified as an organization. From the example of a correlational analysis above, the Russian mafia can be studied over a long period of time because (it is assumed) it has remained a mafia-like organization for that time. Czarniawska (2004) takes issue with such an assumption, pointing out that when studying 'organizing', researchers mostly encounter processes that have already come to a happy kind of end; that is, they have become reified into 'organizations'.

This is something that continues to puzzle me in organization studies: why do stories always seem to stop when the organization is formed or has ceased to exist?

To be sure, stories have to stop somewhere; but why do they all tend to stop where the organization is seen to cease to exist as the organization that we chose to study? Because we tend to study organizations as entities whose lives end when they are dissolved, we overlook the continuation of the organizations in other forms. For example, people, technologies and ideas move into other organizations. When a commercial firm stops existing, there are usually many spin-offs because people either move elsewhere to launch new firms or suppliers (or competitors) pick up some of the firm's activities in one form or another. A process view of organization should be just as interested in the transition to other forms of organized activity as in what goes on within the forms themselves.

Thus, if we assume that phenomena both start and stop with organizations, it is less likely that we will be able to explain the very processes by which organizations come about in the first place. We are a little bit like the proverbial drunk who returns home after a night at the pub, realizes that he has lost his keys, without which he cannot get into his house, and goes looking for them in the only place where he can see, which is under a lamp post.

Some major organizations grow out of social movements. Organizations such as the International Labour Organization (ILO) represent stabilized states of social movements. As Giddens (1984) argues, studies of social movements have been underrepresented in the social sciences. Social movements are broad political associations that focus on specific issues. They consist of organized efforts (such as meetings, demonstrations, media coverage) that aim either to change existing practices or to resist attempts to introduce new ones. Thus, social movements are broad politico-social contexts in which organized action is located. Early social movements include the labour movement at the end of the nineteenth century. In Giddens' (1984:205) words, 'Labour movements have their origin in the forms of 'defensive control' whereby workers seek to achieve some measure of mastery over the circumstances in which they are denied rights of participation in decisions that affect them'. Late nineteenth century labour movements led to several kinds of organizations, such as trade unions and political parties. At the international level they led to the creation of the ILO in 1919. Trade unions, political parties and the ILO are organizations in the sense that they are relatively stable structures.

But although an organization such as the ILO represents a stabilized state of a social movement, it also participates in social movements in turn. The ILO is one attempt at stabilizing part of the social movements that existed prior to its founding. During its existence since 1919, it has connected to a host of other social movements, some of which would not have existed without its existence and some of which have operated quite independently of the ILO. So the organization takes part in reproducing and modifying that which created it.

The relational alternative to correlational thinking is to see things as being in the making. From this angle there is no external fixed reference point; about the only thing we can see is the transformation that is ongoing. Therefore, from a process perspective, organizations are forever emergent phenomena emerging through ongoing connecting operations by actors. Organization is reproduced by the means

which actors use to maintain those connections. Over time, some connections are modified, suppressed or ignored or others are made in their place. There is, however, no apex or vantage point from which we can understand why and how all these connections are made.

A question of locus of selection

Whether we see things as entities or process, a question lurking in the background is: how can we explain how things come to be what they are? The main difference between the two approaches lies in what we might call the 'locus of selection'. In organization theory it is possible to see a split between external explanations, on the one hand, and internal explanations of how something becomes and persists, on the other.

The former – external explanations – reflect an evolutionary approach, and suggest that an organization exists because it corresponds to demands in its external environment. The argument is Darwinian and places the selective power in the external environment (such as the Stalinist regime in the example above). An external evolutionist view is central to important schools in organization theory over the last few decades, such as organizational ecology (Hannan and Freeman, 1989), new institutionalism (DiMaggio and Powell, 1983, 1991), resource dependence theory (Pfeffer and Salancik, 1978), evolutionary organization theory (Aldrich, 1999) and economic sociology and business systems (Morgan *et al*., 2005). The main thinking behind these schools is that things become because they *are selected*. They are selected primarily by fitting in with their external environments, such as by adopting structures that are deemed legitimate or timely, which is a tenet of new institutional theory. This is why in new institutionalism, for example, forces such as imitation and coercion are seen as strong influences in the adoption of management ideas. Both imitation and coercion are located outside the organization. For those who are less interested in the symbolic side of adaptation and more interested in economic performance, external criteria such as competition and regulation replace the influence of norms and needs for legitimacy. There is ample literature on business performance that aims to understand how competition works as a mechanism of selection on the basis of performance. So, criteria of selection vary according to the school of thought. Nevertheless, a common basic assumption that ties the mentioned schools together is that emergence and endurance of organizations are explained largely in terms of their ability to fit in with their external environments.

This being said, selection is not limited to passive processes of the environment simply selecting the fittest. Selection happens, according to some studies, by an organization actively maintaining relations with actors in the external environment. An important number of works have looked at how individuals, such as so-called 'boundary workers', work in the interface between an organization and its environment. Trice and Beyer (1993:310), for example, in their important analysis of work cultures, argue that: 'In order to adapt to them, organizations must learn about environmental demands. Members of organizations must scan their

environments for information that may be relevant to their activities and welfare'. Hence, organizations that survive are good at scanning the environment, and such scanning is done by alert semi-autonomous boundary workers. Others who have studied boundary workers, such as Crozier and Friedberg (1980), observe that they are active in negotiating contingencies between the organization and actors in its external environment.

But even when the processes of individual boundary workers are introduced into the analysis, the locus of selection remains largely with the external environment. The organization is still seen to be at the mercy of other more powerful factors such as social norms, regulatory bodies, financial actors or competition.

An internal locus of selection, on the other hand, assumes that it is the organization that does the selection, not the external environment. In fact, it seems that in the absence of wanting to understand a system in the light of externally generated criteria, the only alternative is to understand it in the light of how it relates to itself. In studying the behaviour of firms in the market, Cyert and March ([1963]1992:1) write:

> If the market completely determined the firm's economic behaviour, [the firm's internal attributes] would be little more than irrelevant artefacts. But the market is neither so pervasive nor so straightforward. The modern firm has some control over the market; it has discretion within the market: it sees the market through an organization filter.

Moving the locus of selection from the outside to the inside turns almost everything on its head and has profound consequences for how we conceptualize an organized system. It means that we need to look at the system's internal dynamics of learning, acting and communication. Such a perspective is found in the principle of autopoiesis, applied by Luhmann (1995) to social systems, which will be discussed in more depth in chapter 5; it is also found in Latour's idea of enrolment (chapter 4), in March's treatment of organizational learning (chapter 6) and in Weick's notion of enactment (chapter 7). Each of these four theorists discussed in this book explains how relations between entities stabilized through internal dynamics, and not so through adaptation to an external reality.

Becoming in the place of change

Under the heading 'A correlational view and some problems' above, I mentioned how it has been common in organization theory, when explaining organizational change, to assume change to be stepwise for analytical reasons. This way of looking at change is to view it as output rather than as process. Tsoukas and Chia (2002) remind us that the stepwise way of looking at change, as illustrated in Lewin's (1951) model of 'unfreeze – change – refreeze', is to see change as a series of immobilities, thereby denying the change it is supposed to explain. By explaining the changed immobilities, it is possible to say something about what has changed. If, for example, the staff of an organization are generally happier

after a new boss's arrival than they were before, something is manifestly different from what it was before. But the observation then records what has changed (as an output of processes), not the change processes themselves. Some might see the change of bosses as a cause of the changed condition (happier staff), but such a conclusion would seem myopic, to say the least. In this case, change is assessed by assuming that the organization stays the same although the boss and the mood of the staff have changed. A process view, on the other hand, might see the change of bosses as an event among other events leading to the changed condition, without attributing causality to one event only. Rather than assessing the change that is produced, it would try to understand the complexity of the processes surrounding the change.

Correlational views of organization assume that the organization is an entity that is stable for the duration of the study. An alternative way to think of entities is to say that whatever we think 'is there' is not there, but is rather in formation and will forever be in formation. Consequently, when we look at the European Union (EU), we do not see the EU but rather the continuous formation of it. The subtlety of the point is that, if the EU is in formation (becoming), it cannot change because change means changing from something that 'was' to something that 'is', i.e. the stepwise view of change referred to above. This is why the idea of change is rooted in the idea of 'being' (like being something different from what was earlier), while process thinking is rooted in the idea of becoming, where nothing is limited to being in one state there and then. Hopefully, the example of al-Qaeda illustrates how an organization is always being formed – while one form may appropriately characterize it at one stage, something else is in the making simultaneously. The point is that it does not move from being one form at one stage to being another form at the next stage. On the contrary, whatever form it is characterized by at one stage harbours the formation of something different.

2 Process views of organization[1]

Early and recent debates

The word 'process'[2] has been used in many ways in connection with organization. In ancient times, long before organization studies emerged as a distinct field, process was probably seen as that which was provided by logistics. It is inconceivable that the pyramids were constructed without some notion of flow of materials, provisions, manpower or information. It is also inconceivable that the emergence of cities, warfare, public administration and organized trade could have been accomplished without notions of process. Today the word 'process' is tagged on to a number of key words associated with organizations, such as communication, administration and production. For what it is worth, combinations such as production processes, communication processes and administration processes account for millions of hits on Google.

Yet there appears to be a 'process turn' in organization studies at present, represented by attempts at deepening the meaning of the term 'process'. Interestingly, in the present debate, ideas are brought forward from early philosophical works and later sociological works, the aim being to explore the ontological and epistemological implications of taking different process views. Whereas mainstream writings in organization theory have tended to view processes as flows occuring within the confines of organizational goals and structures, emerging views treat organization as *constituted by* process. In other words, there is a shift of balance between process and organization which is created by renewed efforts to explore different interpretations of process. It seems important to get an idea, both of the various works that have appeared over the last few decades and of the more salient differences between them. This chapter begins by mapping relationships between some works of relevance to process and organization and earlier works in philosophy and sociology.

Table 2.1 presents some process-related works that have appeared over the last decades. The table suggests an increase in recent years in the frequency of works that focus exclusively on process and perhaps, more importantly, on the implications of process views in terms of organizational interpretation and methodologies. There is at present a tendency to bring back into the debate views of process from

Table 2.1 Selected recent works related to process and organization

Authors	*Fields*	*Aspects of organization*	*Key points of relevance to a process understanding of organization*
Cyert and March (1963)	Organization studies	Decision making	The nature of search, learning and decision making
Silverman (1970)	Organization studies	Unfolding over time	Evolving actions and interpretations
Cohen *et al*. (1972)	Organization studies	Decision making, learning	The loosely connected nature of decision processes
Cooper (1976)	Organization studies		
Weick (1979)	Organization studies	Organizing	From noun to verb
Sztompka (1991)	Sociology	Agency and structure	Potentiality and actuality
Law (1994)	Organization studies	General	Organization as heterogeneous assemblage
Weick (1995a)	Organization studies	Sensemaking	Nature of sensemaking, review of literature
Luhmann (1995)	Sociology	Communication and decisions	Relating process and structure
Rescher (1996)	Philosophy	N/A	Review of process philosophers
Holm (1995)	Institutional theory	Historical analysis	Introducing the idea of nesting of institutions
Chia (1999)	Organization studies	Change	Contrasting being and becoming
Latour (1999a)	Technology and science studies	Actors and networks	Dynamics of connecting heterogeneous actors
Langley (1999)	Organization studies	Method of study	
Pentland (1999)	Organization studies	Method of study	Building process theory with narrative

Feldman (2000)	Organization studies	Routines	Routines as sources of stability and change
Poole *et al.* (2000)	Organization studies		
Orlikowski and Yates (2002)	Organization studies	Time	Time understood as temporal structuring
Ciborra (2002)	Technology studies	Information and technology	Use of metaphors to understand complexity
Tsoukas and Chia (2002)	Organization studies	Change	Pervasiveness of change, change as becoming
Law (2004)	Organization studies	Method of study	The study of messy systems
Dibben and Cobb (2003)	Organization studies	Process thinking and organization	(Special issue of journal)
Styhre (2004)	Organization studies	Knowledge	Applying Bergson to tacit knowledge
Czarniawska (2004)	Organization studies	Actions and actors	Action-nets and their making of actors
Van de Ven and Poole (2005)	Organization studies	Method of study	Distinction between narrative and variance approaches
Clegg *et al.* (2005)	Organization studies	Organization and learning	Organization and learning as becoming
Cooper (2005a)	Organization studies		Nature of
Carlsen (2006)	Organization studies	Identity	Temporal construction of identity
Hernes and Weik (2007)	Organization studies	Review	Endogenous and exogenous process views
Bakken and Hernes (2006)	Organization studies	General	Discussion of Weick and Whitehead

philosophers and social thinkers that have not previously been central to organization studies, such as William James, Henri Bergson and Alfred North Whitehead. For example, James is referred to by Weick (1979:44), and importantly so in his discussion of process thinking and verbs versus nouns. James and Bergson figure prominently in Tsoukas and Chia (2002), Styhre (2004) draws upon Bergson in his discussion of knowledge and Carlsen (2006) draws largely upon James. Chia (1999) draws upon Whitehead in his paper on organizational transformation and change.

Table 2.1 also illustrates that process thinking is not confined to one part of the world, but rather is on the rise among organization theorists worldwide. For example, articles have appeared in various scholarly journals in Europe as well as in the USA which, although they may treat the subject differently, clearly exhibit a common interest and fascination with the potential offered by a deeper understanding of process. Examples of such works are Tsoukas and Chia (2002) and Carlsen (2006) in American journals, and Cooper (1976), Chia (1999), Van de Ven and Poole (2005), Clegg *et al*. (2005) and Styhre (2004) in European journals.

A process view was pursued early by Mary Parker Follett (1941) who argued for a view of leadership and administration in which every situation would be seen as a process in itself. Situations, she said, arose from the relating of different factors which changed as the situation evolved further. In fact, Parker Follett, in her influential writings, made reference to both Whitehead and James, although it is not obvious how either of them actually influenced her process thinking. The following quote demonstrates how she saw means of formal organization as mere elements of processes; how attempts at formal organization emerge from flows and re-enter flow in turn (Parker Follett, 1941:149–50):

> An order or command is a *step* in a process, a moment in a movement of interweaving experience. We should guard against thinking this step is a larger part of the overall process that it really is. There is all that leads to the order, all that comes afterwards – methods of administration, the watching and recording of results, what flows out of it to make further orders.

A peculiarity of the present development is to draw inspiration from works of process philosophers such as Bergson, James and Whitehead. The revival of these thinkers in organization studies clearly serves as an extra source of conceptual energy to the field. Hence, some interesting contributions have appeared lately which debate the significance for organization studies of process thinking in philosophy. These contributions do much to heighten the awareness of students of organization to the more profound meanings of process, as well as to conceptual and methodological implications for study.

In mainstream organization theory, Silverman's (1970) study of Gouldner's (1954) 'wildcat strike' is an early example of a process view, where he applied a perspective of organization as evolving processes of actions and interpretations. Processes are created as actions, lead to interpretations, spurring new

actions, leading to new interpretations and so on. Combinations of events and unintended consequences of actions make the processes non-deterministic, but still contingent.

Since Silverman's study, a number of works debate the nature of process views and their implications for organization and management theory.[3] However, there is seldom a clear cut line between the understandings of process. With some exceptions (e.g. Tsoukas and Chia, 2002; Van de Ven and Poole, 2005; Bakken and Hernes, 2006), the word 'process' is used merely to emphasize that movement and flux are taken into consideration. Sometimes a processual twist is performed by merely changing terms, such as replacing 'strategy' by 'strategizing', drawing inspiration from Weick's urge to replace 'organization' by 'organizing'. Such attempts serve to sensitize readers to the idea that things move and change rather than stay in the same place, unchanged. However, adding 'ing' to a noun, however much it turns the noun into a verb in linguistic terms, does not much influence either how we conceptualize process or how we formulate all the important questions that come with that conceptualization.

Presently, positions are hardening over the status and meaning of 'process'. Arguments in favour of an entirely different understanding of process tend to belong in what Whitehead called an 'ontology of becoming'. One might say the understanding of organization and management is influenced by the extent to which process is seen as central. One way to illustrate this is to consider a weak versus a strong view of process (Chia and Langley, 2005; Van de Ven and Poole, 2005). A weak view, according to Chia and Langley, treats process as important but ultimately reducible to the action of things, which in a sense serve to objectify process. A weak view gives ontological primacy to actors. A strong view, on the other hand, deems actions and things to be instantiations of process complexes. Whereas, according to a weak view, processes form part of the world under consideration, according to a strong view, the world *is* process. According to a strong view of process, actors are not prior to process, but rather are created and changed by process. The implications of a strong view of process are substantial.

Differences in the understanding of process have implications for how processes are studied. Langley (1999) draws the distinction between what she calls 'variance theory' and 'process theory' and, focusing on process theory, she suggests seven different sensemaking strategies. Langley's analysis is useful because she discusses systematically some implications of pursuing different strategies, notably in terms of simplicity, generality and accuracy. Van de Ven and Poole (2005) build partly on Langley's analysis and focus more explicitly on how combinations of variance studies and process analyses may be performed. The contributions of both Langley and of Van de Ven and Poole are interesting and relevant to process analysis. They do, however, tend to treat analysis as a rather classic approach to making sense of data, where the 'what' of the flow is implicitly already determined and defined by the analyst at the outset.

A different contribution is made by Law (2004) who argues for a better understanding of how the analysis gets entangled with a messy world and becomes part

of it. A cornerstone of his argument is that science does not just describe realities, it also *produces* them. Whereas Langley and Van de Ven and Poole tend towards a view of process as more or less regulated flows of relatively homogeneous entities, Law reasons from the assumption of a heterogeneous contingent world. While for Langley and Van de Ven and Poole method is instrumental in producing clarity and simplicity, Law problematizes the very meaning of method and its corresponding implications of 'truth'. Instead of working with utility notions, Law tries to unravel the distinction between, on the one side, traditional academic criteria and, on the other side, aspects such as politics, aesthetics, justice, romance, the spiritual, the inspirational and the personal.

Slightly modified, a debate between Langley, Van de Ven and Poole on the one side and Law on the other might well have taken place between thinkers in Athens more than 2000 years ago. Such differences of interpretation have existed since the early Greek philosophers' arguments over nature and reality. They split over whether the world exists as flow or entity. Recent writings refer to the Greek's debate. In fact, Chia (1999), referring to the debate between Parmenides and Heraclites, suggests that ever since, the history of Western thought has therefore been little more than a series of footnote attempts at synthesizing these two great but apparently irreconcilable intellectual traditions, one emphasizing an 'entitative' view and the other emphasizing an inclusively processual view.

The very early thinkers

Parmenides insisted upon the permanent and unchangeable nature of the world. He argued that we cannot know what we cannot see, and that therefore what we see must be something, otherwise language would boil down to nonsense. This 'something' remains the same whenever we speak of it. If I saw a tree yesterday I spoke of it then and I speak of it today, which means that it was, is, and *must always* be the same tree at all times. Hence, Parmenides reasoned, there can be no change, there is no such thing as change. The postulate is perhaps 'violent', as Russell (1946) puts it, and hard to defend. It does, however, point to the problem of assuming the existence of entities and simultaneously assuming that they change. This, as pointed out in the section entitled 'A correlational view' in chapter 1, relates to the discussion about organizational change: if we assume that an organization changes, what remains constant, allowing us to speak of it at all, and what changes, allowing us to speak of it changing? It seems risky to assume that anything about an organization remains constant because, even if something does such as, for example, the organization's name, such things nevertheless somehow change when things related to them change, such as the organization's structure. The problem lies with the fact that we assign names (like 'organization') to entities and then assume that a constant (unchanging) name implies a constant entity.

Heraclites, commonly seen as the main opponent of Parmenides, is seen as the founder or process thinking in the Western intellectual tradition (Rescher, 1996). 'All things flow' is frequently cited from Heraclites' work (which does not exist

in its original form, but rather as interpretations and translations by his Greek contemporaries). The sentence simply tells us not to expect anything to stay in its place. However, whereas 'all things flow' serves as a convenient way of sensitizing us to the idea that nothing ever stays the same, its meaning is ambiguous. We may ask, for example, 'What flows?' – opening a debate about substance versus non-substance. Heraclites subscribed to a substance view where fire was the primordial element, out of which everything else had arisen (Russell, 1946). Perpetual change takes place in the transitions between fire, air, soil and water.

But the question 'What flows?' is not necessarily tied to the flow of substances. About stepping into the river he says, 'You cannot step twice into the river, for fresh waters are ever flowing in upon you' (Russell, 1946:52). The question we *might* ask is whether the world is really different every time whether we feel it as different or not, which is implied by 'fresh waters'. Does the allusion to fresh water suggest that the world is different and we feel it that way, or is the world essentially the same (water, although fresh), but it only feels different because the river has already been stepped into once? Thus he may be hinting at the novelty of experience; it *feels* different to step into the same river. He says similarly, 'The sun is new every day'. The sun is in effect the same, but we may infer that having looked at it once, looking at it again is not the same experience.

According to a process view, even repetition is not static. Therefore, repeating an act is not, in effect, to do the same thing again because every repetition means that the number of times that it has been done before has changed, however incrementally. This may be what Heraclites meant by 'The sun is new every day'. But when something is repeated, two things happen. First, there is a reproduction of something, a reminder that what is repeated is part of a larger pattern. By brushing your teeth you reproduce the hygienic system of your life. By listening to your children you reproduce the family system of bringing up children responsibly. Second, the repeated action creates new possibilities by making something possible which was not possible before. Of course, it may connect to an identical action, thus upholding an existing pattern; however, it may also possibly connect to something else, thus producing the start of something new (which does not prevent the existing pattern from remaining as well).

Heraclites' imagery concerning the impossibility of stepping into the river twice lends itself to different and not necessarily contradictory interpretations. On one hand, it may signify that nothing stays the same because, once the river has been stepped into, the water – the world – flows on and the water that one steps into next is not the same. Another not necessarily contradictory interpretation is that the water may change but the river as form stays much the same. In the latter case, we assume that the river banks form unchanging outer limits for the water flow. The first interpretation of Heraclites' dictum is non-contextual, whereas the second is contextual.

Whitehead drew inspiration from the Roman poet and philosopher Lucretius who subscribed to a view of the world as streams of invisible particles, called atoms, which flow but come together to form substances such as trees, water and humans. We might expect Lucretius, with his flux-like view, to be sympathetic to Heraclites.

He did side with Heraclites on the principle of movement, but he was rather scornful of Heraclites' view that the world is made of flow and transition of substances. For Lucretius, movement takes place through the changing patterns of eternal particles rather than through the transformation of a priori defined substances. Something must be unchangeable which, according to him, eternal particles are. The following extract from *On the Nature of Things* illustrates his view (Lucretius, 2004:23):

> Since an immutable somewhat still must be,
> Lest all things utterly be sped to naught;
> For change in anything from out its bounds
> Means instant death of that which was before.
> Wherefore, since *those* things, mentioned heretofore,
> Suffer a changed state, they must derive
> From others ever unconvertible,
> Lest all things utterly return to naught.
> Then why not rather presuppose there be
> Bodies with such a nature furnished forth
> That, if perchance they have created fire,
> Can still (by virtue of a few withdrawn,
> Or added few, and motion and order changed)
> Fashion the winds of air, and thus all things,
> Forever be interchanged with all?

For Lucretius, there were no a priori directive forces of processes such as Heraclites implied the banks of a river were. Instead, Lucretius imagined atoms flowing in unbounded space and things forming from the coming together of flows of atoms. The line 'That, if perchance they have created fire' suggests that the making of things is neither determined nor completely arbitrary. Lucretius' view is based on probabilities of occurrence, and where contingencies lead to the emergence of flows that possess their own attraction. Using Lucretius' insight, it is possible to see organization, for example, as a nexus of heterogeneous elements (Clegg *et al*., 2005), a view inspired by the science and technology studies and pursued in organization studies by Law (1994, 2004). The 'coming together' view derived from Lucretius is suited for viewing organization as continuous attempts at connecting elements of different natures coming from different parts of timespace (Hernes and Weik, 2007).

Enter the twentieth century science and philosophy

The question of 'what flows' may also refer to something less tangible than substances, such as Weick's idea that sensemaking is about flows, and even more so if we turn to James' idea of the world as streams of experience and Bergson's streams of consciousness. Whitehead speaks of flows as flows of energy. He suggests a replacement of 'static stuff by the notion of fluent energy' (Whitehead,

[1929]1978:309), the static stuff being, for example, Lucretius' atoms. Energy turns actuality into potentiality, enabling novelty in processes; therefore, according to Whitehead, we must dismiss the idea that things are passive entities. We are better off, he suggests, considering whatever entities we look at as living organic things.

The replacement of focus on matter by focus on energy corresponds to the emergence at the beginning of the twentieth century of the theory of relativity and of quantum mechanics. These developments provided intellectual impetus for process thinkers in philosophy who were arguing against views of substance as inert mass neatly organized in a linear timespace, the Newtonian doctrine that had dominated philosophy and the natural sciences for over two centuries. Whereas the Newtonian system was dominated by the three-dimensional space, developments such as the theory of relativity added a fourth dimension, time. In fact, Einstein's contribution demonstrated that, as the speed of an object increased toward the speed of light, time became more important than space. Such developments were perceived differently by various disciplines. Whitehead (1925:10) writes about the atmosphere in the Royal Society in London at the time:

> It was my good fortune to be present at the meeting of the Royal Society in London when the Astronomer Royal for England announced that the photographic plates of the famous eclipse, as measured by his colleagues in Greenwich Observatory, had verified the prediction of Einstein that rays of light are bent as they pass in the neighbourhood of the sun. The whole atmosphere of tense interest was exactly that of a Greek drama: we were the chorus commenting on the decree of destiny as disclosed in the development of a supreme incident. There was a dramatic quality in the very staging: the traditional ceremonial, and in the background the picture of Newton to remind us that the greatest of scientific generalizations was now, after more than two centuries, to receive its first modification.

With time as a separate dimension in its own right, different systems could be given their own sense of time instead of having to be correlated with a common absolute source of linear time, as had been assumed by Newton (Neffe, 2005). Instead, every system operates in its own time, and the differences between systems are relative rather than absolute.

The idea that phenomena are more open to development than meets the eye, such as the transition between matter and energy, opened new perspectives about process in the natural sciences. For example, Ilya Prigogine (1996), who studied irreversible processes in thermodynamics, contributed toward recasting the understanding of processes in natural systems. One of his contributions (for which he was awarded the Nobel Prize in 1977) was the discovery of phenomena and structures of new types when systems in states far from their equilibrium states become irreversible. He also discovered the bifurcation of processes which he related to Epicurus' term '*clinamen*', also expressed by Lucretius (Prigogine, 1996:10), which denotes the deviation of processes without any observable

reason for change which Prigogine attributed to probability. As Chia (1999:223) observes:

> For Prigogine, the classical laws of physics describe an idealized, stable and hence predictable world that is quite different from the unstable evolving world that characterizes particularly living systems. It is only through open-ended irreversible processes that nature has been able to achieve 'its most delicate and complex structure. Life is possible only in a nonequilibrium universe' (Prigogine, 1996:27). If we accept these radical claims, it means that the laws of nature can no longer be formulated in terms of certitude, but rather in terms of *possibilities*. Because of the inherent instability of change and transformation, we can no longer chart out a single trajectory along which change will occur.

Back to organization studies

The observation by Prigogine that chemical processes may evolve in ways that cannot be explained causally, provides support for similar thinking in social science. A question of particular importance is that of how human actors operating in the flow are considered in the analysis. Recent writings in organization studies emphasize differences between Bergson and Whitehead in particular. Bergson's view was that humans come to their understanding of the world through spatialization and viewing the world as consisting of static categories which, Whitehead agreed with him, is a rather poor interpretation of a fluid world. For Bergson, as for Whitehead, intuition may capture the evolving nature of things. In organization studies Styhre, for example, draws upon Bergson in his discussion of managerial knowledge. Styhre (2004), arguing for an alternative understanding of tacit knowledge, draws on Bergson's idea of being as becoming, or as 'fluid, discontinuous, ever-changing process' (Bergson, 1988, 1998, in Styhre). Nothing exists per se, but everything is in the making. There are no steady *states* as such, but only states in the making (Bergson, in Styhre), things in their becoming.

In sharp distinction from intuition stands intellect, or understanding, which humans use to order a tangled world, and which arguably has been the most used category of human sensemaking in organization studies. Intellect separates in space and fixes in time, and therefore has a natural inability to understand life (Russell, 1946:716). This, for example, prevents us from getting to grips with what Bergson called 'pure duration', which represents the duration in which we act, as opposed to the duration that we see ourselves acting in. When we see ourselves acting, duration is divided into dissociated elements whereas, in pure duration, states melt into each other. Aligned with Bergson's process views are those of James (1842–1910), who emphasized the importance of working from what he called 'streams of experience'. For James, the world comes in 'drops of experience', and the inclusion of past experiences in present experiences constitutes the relatedness of events (Ford, 1993). An example in organization studies is Carlsen's (2006) study where he draws on the idea of 'streams of experience' found with James in a study

of how identities in an organization, rather than being taken as an achieved state, are enacted 'through authoring' (Carlsen, 2006) in processes of organizational becoming.

It is in terms of how humans make sense of processes, and particularly implications for process theorizing, that significant differences can be found, notably between Bergson and Whitehead. Whereas Bergson thought that the problem should be resolved by improving the ability of humans to think processually, Whitehead went the other way, assuming that a limited processual thinking capacity is something we must live with, and therefore that we should concentrate on how the categories by which we order the world are constructed. In short, the argument is that, yes, the world is fluid, but it is populated by humans whose sensemaking apparatuses pretend that it is not fluid. But, as Whitehead points out, although static categories may be used to enter into a fluid world, they are also *made by* a fluid world and *remade in* a fluid world. In other words, the static categories – or rather, the making of static categories – is part of the process. Thus, Whitehead, although agreeing with Bergson on the penchant of humans for thinking in terms of entities, sought to incorporate the process of entification into his theoretical framework.

In making actors part of the process rather than outside it, not just their scope of influence but the processes leading up to the actors thinking and acting (Clegg *et al*., 2005), the element of power enters the debate. It may be tempting, from the point of view of flux and fluidity, to advance the idea that organization is but flux, and that attempting to control the flux is merely an attempt to wield power. But that would be to conflate things to advance narrow politico-scientific agendas. Whitehead was cautious about the political use of philosophy which would allow arguments to wallow between some form of idealism and extreme rationalism (Halewood, 2005:78). On the other hand, process thought can be used to knock down rationalist straw men, but that does not really do in the real world where some form of rationalism is inevitably present. On the contrary, the openness of process thought allows precisely for a better understanding of actors and their rationality because it places them as parts of processes, without resorting to either determinism or voluntarism.

Orlikowski and Yates (2002) provide a good illustration of how a broad process view allows for understanding actors' predispositions and their entry into a processual world. They focus on how actors enact their notions of linear time in organizations and how they consequently reproduce the linear notion of time. But, as they point out (p. 698), this is something to be reckoned with: 'While a focus on chronological time and closed temporal orientation in organizational activities is not problematic per se, the presumption that such time alone is singularly important *is* problematic'. Because, they say (p. 686): 'The repeated use of certain temporal structures reproduces and reinforces their legitimacy and influence in organizational life. Because such temporal structures are often routinely and unproblematically drawn on, they tend to become taken for granted. As such, they appear to be given, invariant, and independent, creating the impression that time exists externally'.

Although there is no mention of Whitehead in this paper by Orlikowski and Yates, they shed some light on the process by which actors impose abstractions upon a fluid world. There are, in fact, few studies that draw explicitly upon Whitehead, the exceptions being the studies by Cooper (1976), Chia (1999), Dibben and Cobb (2003) and Bakken and Hernes (2006), all of which are purely theoretical studies. It is likely, however, that organizational studies will emerge that address processes of abstracting entities and of organizing.

Entification

The above review suggests that a decisive point of analysis is how to deal with the formation of entities in the analysis. By 'entities' is not meant just physical entities; the term 'entity' applies to anything that can be delimited and recognized in order to be talked about. According to Whitehead, although the world may *be* process, we think about this world in terms of entities. In fact, it seems hard to conceive analysis devoid of any assumption of some form of stabilized entities. Weick (1979) delivered an early attack against the assumption of organizations as noun-like entities. He argued that we are better off replacing nouns with verbs, replacing the noun 'organization' with the verb 'organizing'. However, a separation between process and entity upholds dichotomy rather than contributing towards nuancing (Bakken and Hernes, 2006).

Dichotomies tend to be derived from broader philosophical debates and applied to fields such as organization studies. However, interpretations of early works may sometimes be done too quickly and adopted simplistically. When, for example, Van de Ven and Poole (2005) draw the line between a substance view represented by Democritus and a processes view represented by Heraclites, they omit the fact that Heraclites – although his primary concern may be with the world as flux – also talks of *something* flowing; depending on the nature of the 'something', different views of process are possible, as pointed out above. To be sure, ontological distinctions such as that between process and substance may be important issues in philosophical debate about the nature of things. Such distinctions also guide thinking in fields such as organization studies.

It is time, however, to pay explicit attention to how entities come into being through process, and how they enter into process in turn. In other words, it is time to substantiate types of 'entification' that apply to different forms of organizational analysis. By 'entification' I mean the extent to which something is *seen* to disentangle itself so as to to be *seen* to re-enter process. An entity is not to be taken as analogous to a physical object, although it may also be a physical object. An entity is something that is delimited and recognized as something that can be talked about, such as a concept, a company, a technology, a person or a group of people. An entity may be considered to be a label (Weick, 1995a).

The term 'entification' overcomes the split between process and entity. Rather than asking whether something is process or entity, one should ask how it came to take on entitative properties and, furthermore, how those properties feed into processes in turn. The point seems to be to assume that something is stable for

the sake of analysing it, while allowing the possibility for it to become something else. What we tend to regard as entities, such as humans, artefacts, technologies and organizations, may be seen to become what they 'are' through processes from which they become crystallized into entities that stand on their own, so to speak. Human actors in organizations may well be considered to be in the process of becoming something else than what they presently are. They come to be formed by the relations they form with certain aspects of the organization, through the way they act. Czarniawska (1997, 2004), for example, makes the point that there must be something that precedes the making of actors, and that is actions. In other words, actors, to the extent that they are seen as entities, become 'entified' through their actions, which confer identity upon them. But actions are relational, they do not occur in a vacuum. They connect actors-in-the-making. Moreover, by being relational they create associations that work over time to make what we see as entities, as actors are part of their actions, and vice versa.

3 Alfred North Whitehead on process

> Each fully realized fact has an infinitude of relations [. . .]. We can only conceive it with respect to a minute selection of these relations. These relations, thus abstracted, require for their full understanding the infinitude from which we abstract. We experience more than we can analyse. For we experience the universe, and we analyse in our consciousness a minute selection of its details.
>
> (Whitehead, 1938:89)

Introduction

Alfred North Whitehead (1861–1947), British mathematician, logician and philosopher, collaborated with Bertrand Russell in authoring the landmark three-volume *Principia Mathematica* and thus contributed significantly to twentieth century logic and metaphysics. Whitehead's and Russell's efforts were inspired by the idea that mathematical truths may be transformed into, and represented by, logical truths. Principles from their work in mathematics were carried on in Whitehead's philosophical work, in which he rejected the idea that an object can have a simple, spatial or temporal location. Objects, he argued, are abstractions from process. We may treat them as concrete things, but their metaphysical status is that of abstractions. They may nevertheless be necessary for making sense of a fluid world, chiefly because objectification is an essential ingredient of human sensemaking. Abstractions are useful, but also potentially deceitful for our understanding of the world. They are useful because they enable us to make progress in our understanding of our experiences, which are the primary source of knowing. However, abstractions may also become dangerous because we tend to forget that they are abstractions, and not the things in themselves (Hosinski, 1993). The danger, Whitehead wrote, is that we then become victims of 'the fallacy of misplaced concreteness'. According to Whitehead, it is therefore essential to recognize that, because objects are abstractions, they are never present in a final state but rather are perpetually in the process of becoming. Nothing can ever be as we perceive it, nor can it become as we want it to be. Everything is in the process of becoming, perpetually.

Whitehead worked at Cambridge University between 1884 and 1910, mainly on issues in mathematics and logic, after which he worked from 1910 to 1924 at University College, London on issues in the philosophy of science and the philosophy of education. From 1924 onward he worked as a professor of philosophy at Harvard University. During this time he worked on more general issues in philosophy, including the development of a comprehensive metaphysical system within the field which has come to be known as process philosophy. During this period his works in philosophy appeared, among them the best known and most extensive, *Process and Reality* ([1929]1978). Due to his reputation as a mathematician and a physician, it was sometimes joked that the first philosophy lectures he attended were those he himself delivered at Harvard.

In the years following the Second World War, Whitehead's work fell into relative obscurity which Lucas (1989) ascribes to the rise of logical empiricism, at least in the Anglo-Saxon world. Lucas' book, written in 1989, is entitled *The Rehabilitation of Whitehead*, reflecting an attempt to revive Whitehead's integrative and, at the same time, creative contributions to philosophy. Whitehead was intellectually active during the emergence of the theory of relativity developed by Einstein (in fact, he developed a mathematical alternative to Einstein's theory of relativity), in which the Newtonian view of the world as reflecting linear time and constant mass was refuted. The refutation of the Newtonian view helped shape the development of Whitehead's philosophical ideas, as the contemporary developments in physics gave impetus to seeing nature as something more than a collection of inert masses. The theory of relativity helped him to depict nature and human experience as intertwined. Lucas (1989:6) describes his contribution as follows:

> [Whitehead's] efforts embody an urgent post-modern need to integrate the various, apparently isolated elements of collective human experience and thereby forge a broader perspective through which persons can come to understand themselves, individually and in society, as part of nature rather than as radically distinct from it – and come to understand nature as much more than a mere aggregate of inert, distinct, unrelated, and valueless entities. With Whitehead's assistance, we may at last find a way to move beyond the pervasive relativistic distinction between facts and values that has heretofore characterized one of the most negative, destructive, and misleading legacies of post-Cartesian, post-Newtonian philosophy in the development of Western culture.

Whitehead, although introducing novelty of thought, did so in an undogmatic sensitive way which was respectful of other philosophers. An example may be found in his discussion of abstractions in eighteenth century philosophy, in which his efforts were directed at explaining how concrete experience evolves into abstractions, which led him to warn against relying on abstractions or, worse, letting abstractions replace concrete experience. Abstractions, he argued, were the great triumph of eighteenth century philosophy, which was the '[. . .] age of reason,

healthy, manly, upstanding reason; but, of one-eyed reason, deficient in its vision of depth'. Yet, he added, 'We cannot overrate the debt of gratitude which we owe to these men' (Whitehead, 1925:59).

Besides philosophy, Whitehead has in recent decades made a mark on Anglo-Saxon theology. Little has been seen so far of his explicit influence in social science, although traces can be seen in feminist theory, as represented in the writings of Donna Haraway and in the science of education (Stengers, 2002). However, demands for a more explicit and profound understanding of process have spurred renewed interest in Whitehead's work. In sociology (and organization theory), Luhmann derived inspiration from Whitehead in the development of his autopoietic social systems theory, such as in his conceptualization of events in processes. Traces can be found of Whitehead in Latour's work, such as the refusal to treat matter as purely passive and inert, disconnected from human experience.

In organization studies, references to Whitehead are relatively scarce. Exceptions are Chia (1999) and Cooper (1976), who make a number of references to Whitehead. In most writings he is mentioned in connection with James and Bergson, with whom he shared an event-oriented metaphysics (Lucas, 1989:112). However, he is given relatively little explicit treatment, partly because his scheme of terms remains relatively inaccessible and difficult to synthesize. Lucas (1989:110) suggests that his scheme is so complex that it is sometimes judged '[…] profoundly esoteric, or else arcane or obscure'. Not exactly conducive to enthusiastic organizational research! Perhaps we must accept a degree of obscurity in a philosophical scheme having the ambitious aim to relate consistently and universally elements of human experience, accounting for what he calls 'the complex texture of civilised thought' (Whitehead, [1929]1978:xi).

Yet Whitehead's writings contain ideas that are helpful for improving our understanding of the composite, complex and changing nature of organization. They are helpful if one views organization as a tangled relationship of human and physical factors which shape each other in constant interaction. Moreover, the view of organization as something perpetually becoming is gaining ground and, as it does, a number of analytical questions emerge to which Whitehead provides possible answers. Notable contributions include ideas concerning relationships between concrete experience (the brute facts of relating) and the emerging abstractions that are produced from concrete experience and that influence concrete experience in turn.

To usefully apply his thoughts to expanding organization studies, we should select drops from his writings. Because they are very condensed, drops from Whitehead's writings will go a long way in revealing organization as process.

Ultimate process versus ultimate fact

According to Whitehead, there are three ways of categorizing human experience: by substance, happenings and 'the absolute' (Whitehead, 1938:71). The first implies a view whereby there are enduring substances out there to which phenomena can be related. Whitehead rejected that idea, arguing that substances have no place in the analysis. What we see as substances are processes, and the only

'real' units of analysis are the occasions (happenings) of experience. The third category (the absolute) belongs to questions of God, and will not be pursued here. As to the first two categories, Whitehead insisted that the choice stands between two ultimate sides: 'One side makes process ultimate; the other side makes fact ultimate' (Whitehead, [1929]1978:7).

The world cannot be anything but process, according to Whitehead. Hence there can be no static entities from which we can work, because everything is in a state of becoming. The real world is in a perpetual state of flux which is infinitely complex and cannot be understood as such. Nevertheless, parts of it may be sensed, intuited. It is from this indecipherable world of flux that understanding, represented by models of the world, may be extracted and made objective, scientific and logical. Underlying the work of Whitehead is the idea that the role of philosophy should be to explain the connections between the everyday world of subjective experience (the way we sense the world) and the descriptions of the world (the models of the world from which we act).

The world presents itself to us in the form of 'occasions' of experience. There is no going beyond these 'ultimate occasions', according to Whitehead; they are the ultimate version of reality; they *are* reality because they are actual. The term 'reality', however, needs to be handled with care. Reality, as Whitehead sees it, is not reality in the sense of representing basic 'truth'. Reality is our experience of the world, which is essentially indecipherable due to its tangled nature. (Whitehead does not use the word 'tangled'.) Therefore, the title of his main book, *Process and Reality*, is in a sense ironic. What 'is' reality is how we experience this world of process.

The sensing of the world takes place at actual occasions, which are the ultimate facts; they are the occasions of experience, what he in one place also refers to as 'drops of experience' – 'drops' because they have no real extension in time. Whereas the occasions themselves perish (they cannot be experienced again), they persist in the form of 'data' for new occasions. On new (or present) occasions the data (the 'remains' of past occasions) become subjects. It is as data that past occasions interact to form coherence for the present. Halewood (2005:82) formulates it thus:

> [. . .] there are two main aims of the philosophy of organism. One is to give an account of how it is that all matter, all existence, everything (in the sense of *every thing*) can be described in terms of subjectivity. The second is to describe how the actual reality of such subjects is not to be conceived in terms of fixed, inert entities (i.e. as a mere refiguring of the concept of objects) but in terms of their experience of other subjects. That is, it is subjectivity, or the process of a subject's experience of other subjects, which constitutes reality.

The data ensuing from occasions are essentially subjective; they reside in our consciousness. But because they enter the actual present, our consciousness is not in any way independent of the world of process; it is created from process and it enters process in turn once the actual occasion has taken place. Consciousness is formed from experience, experience being the experience of 'brute facts'; the

'real, individual and particular' (Whitehead, [1929]1978:20). It should be added that Whitehead sees experience not as 'someone experiencing something', which would pretend that we can experience something which lies outside ourselves. Experiencing, instead, is relational; it is an 'inclusive whole', the 'required connectedness of many into one' (Lucas, 1989:171).

When we disentangle experience, we do so by distinction. The distinctions that we make are not distinctions dictated by nature; rather, they are our own distinctions, made to enable us to cope in an otherwise fluid and indecipherable world. They do not entirely reflect the world, because the world out there contains far more possibilities for understanding and action than we can fathom. That we experience more than we fathom is a recurring observation by thinkers such as Whitehead, Bergson (1988), James [1909](1996) and Bateson (1972). Whitehead (1938:89) argues that:

> Each fully realized fact has an infinitude of relations […]. We can only conceive it with respect to a minute selection of these relations. These relations, thus abstracted, require for their full understanding the infinitude from which we abstract. We experience more than we can analyse. For we experience the universe, and we analyse in our consciousness a minute selection of its details.

Consequently we simplify in order to make sense. As Chia (1999:210) writes: 'Representations do not simply correspond to reality. Rather they are simplifying devices which enable us to deal with what would otherwise be an intractable reality indifferent to our causes'. Representations are distinctions that we find useful, whether we are researchers or practitioners. Tsoukas and Papoulias (1996) make the point that, as social systems develop their own cognitive categories and values over time, they engage with their environments from these cognitive categories. Similarly, Cooper (2005b) refers to the system-environment distinction as the 'primal division' at work; introducing divisions generates a marked space. At the same time, the division reveals a space that has yet to be marked. That space is what Spencer Brown refers to as the unmarked space. It is that unmarked space that we mark in some way by language (Cooper, 2005b).

Some of Whitehead's thinking may be appreciated by looking at how he conceptualizes the separation and the coming together of things in space (and time). He applies essentially the same argument to space and time. Human thinking assumes separation of space (and time). For example, what takes place here cannot take place elsewhere. If I am speaking in a lecture hall, then I cannot be speaking in another lecture hall simultaneously (modern technology aside). Seen in this way, what takes place is separated and segmented into as many entities as we would like. Such segmentation of things is by far the most common way for humans to cope with a fluid world.[1]

Similarly, time is segmented in that what takes place here and now is separated from what takes place later. Whitehead argued against such segmentation, while acknowledging that it may be helpful as a means of making sense of things.

He referred to the separation as 'simple location', whereby objects are simply seen as occupying a unique location. A piece of matter would thus be seen as a self-sufficient object. Such a view implies that a bit of matter can be described without any reference to how it came to be what it is, which runs counter to a processual world view. When we segment timespace, we simultaneously introduce boundaries that are transcended by the division that we introduce. According to Whitehead (1938:140), '[…] any division, including some activities and excluding others, also severs the patterns of process which extend beyond all boundaries'.

Nothing can really be here and only here, now and only now, because that would mean accepting that things exist in a unique location in timespace. On the contrary, 'Nature is a theatre for the interrelations of activities. All things change, the activities and their interrelations' (Whitehead, 1938:140). Existence cannot be reduced to a simple location as a finite finished form (Cooper, 2005b) but, rather, as part of a process it becomes a projection in an onward movement:

> Presence is the pre-sense of an absence or gap that invites us to re-cover it as thrownness or projection; it is sense in continuous movement, always supplementing itself in an onward movement of deferral and anticipation. It does not and it cannot appear as a finite, finished form since its thrownness and non-immediacy means that it is neither fully present nor fully absent but forever suspended *between* the two.

The idea of unfinishedness that Cooper brings up is essential to a view of organization as permanently being in the making as opposed to ever existing in a finished state. It implies that organization can never be present; moreover, that organizing aims at creating something that will never really be realized in a final form. Therefore, talking about organizational change does not make much sense because organization never *was* in the first place. Whatever we might call change is the process of becoming – no more, no less. It is the becoming of things that dictates that the present cannot be a sort of punctuated equilibrium but a moment of projection in an onward movement.

Yet it is important to bear in mind that distinction lies at the basis for our understanding, and distinction is drawn between what is and what is not. Acts of organization may be seen as the projection of forms of organization into timespace in the way of ideas and models, thus distinguishing the forms from forms that we do not define as organizations. This comes close to what Whitehead refers to as 'subjective form'. Organization as subjective form is what is becoming, but never actually realized. Striving for the form is what keeps people going in continually trying to organize contexts that enable work to be carried out.

An atomistic view

One of Whitehead's main tenets is that the world is atomistic, and takes shape when it is sensed as acquiring actuality. In an atomistic world there are many (possible) entities and connections; Whitehead's theoretical framework was geared towards

understanding how 'the many' become 'one'. When many become one, according to Whitehead, there is novelty, meaning that something is in the making.

An atomistic view may be traced to Lucretius. The essence of an atomistic view seems to be that entities emerge from non-entities. The view leaves open the possibility that processes may develop into things that were initially not there and, moreover, that impetus for development may come from events that are far removed from the process in timespace. Such a view does not contradict the tenet that nothing emerges from nothing (Whitehead, [1929]1978). It means that something may initially not be seen to exist as something that we are aware of, but that it may become something that we recognize. It may also mean that combinations, connections, have not yet been made to make something into an entity.

For example, a group of people working in the same unit may be seen as just that – people working in the same unit, going about their work. If the unit is perceived as a mere functional cog in the organizational wheel, the people may be seen as that, as people working in a cog in the organizational wheel. If, in addition, the unit belongs to the type of unit that we find in most organizations such as accounting, finance or personnel, there really is not much more to say about them.[2] We may like them or dislike them as individuals, we may find them more or less competent, but they exist largely as representatives of a function. Perhaps in many cases, especially if it is a unit that has responsibility for control and monitoring functions, we even see them as a necessary evil.

Now, imagine that from this 'cog in the wheel' arises a major innovation, an innovation that not merely relates to the organization's business but one that shows promise of becoming the new core business of the company. Imagine that it is an innovation that boosts the image of the company, puts it firmly on the map of the corporate world, making it a prestigious place to work. Imagine that the innovation is the product of that 'functional cog in the wheel' and that it represents the fruits of months of passionate teamwork, hidden from people outside the unit. People who had been seen as mere 'office holders', to use Weber's (1968) term, may all of a sudden emerge as 'champions', to use Peters and Waterman's (1982) term.

The example illustrates how entities may emerge from new combinations. The people were there already, as 'champions-in-the-making', but they had not yet been perceived as the new 'entitites' in the way of creators of a new future for the company. To take the example a little further, the relations between aspects of the company have also changed. We may imagine, for example, that the new reality emerges with a new brand and a new identity, both associated with the people in that unit. From the old reality has emerged a new reality where entities, such as the people in the unit, are different because other things have changed, and therefore the relations between them have changed as well. New relations have turned them into new entities which have, in turn, changed their relations with other aspects of the company.

The explanation of how entities arise out of non-entities is found in the atomistic view adopted by Whitehead, where there are many possibilities 'out there' which

have not been realized. New possibilities emerge, according to Whitehead, through novel and creative combinations. A Whiteheadian conception of organization would be to see organization as the creative combination of factors. The expression 'creative combination' is noteworthy. An atomistic view of the world seems like the ultimate process perspective, whereby the world is perpetually in the making and whereby there are no stable entities forming a repository for what may happen.

According to an atomistic view of the world, anything is possible because there are infinite possible combinations. However, this does not mean that anything can happen, because that depends on the ability of actors to create combinations. Actors are themselves results of previous combinations. Line managers cannot make just any combination of factors when reorganizing a department. For example, their possibilities for acting are influenced by previous decisions to allocate spending for certain technologies. If significant funds have been allocated for acquiring basic technology for railway line administration, managers cannot discard that technology for another.

An example of how an organizational reality may be portrayed as atomistic, in the sense that there are many potential actors – human and non-human – can be seen in Lanzara and Morner's (2005:71) observations from an open-source software project:

> Software artifacts and tools populating open-source environments are legion and are loosely integrated or recombined within and across the ongoing practices and processes. Rather than being a fully coherent set of tools, each having its own specific functional destination, they resemble a loosely connected collection of available objects that happen to be there in a permanent state of flux, being continuously assembled and discarded. Most of them retain a transient character, as they emerge, change or disappear in an ever-evolving process of variation and revision (Lanzara, 1999).

Lanzara and Morner's observations illustrate well what Whitehead says about the nature of an atomistic reality. Whitehead firmly believes that there is freedom to choose and to connect, perhaps more than we realize or are willing to concede. There are always streams of possibilities to choose from and to connect to other possibilities, just as Lanzara and Morner point out that software artefacts and tools are legion, and are loosely integrated or recombined. Yet, once selection is made, it influences what happens later. Whitehead's ([1933]1967:198) concern was merely to understand how things connect, while eliminating what he called the 'fanaticism' of determinism:

> It is not true that whatever happens is immediately a condition laid upon everything else […] The antecedent environment is not wholly efficacious in determining the initial phase of the occasion which springs from it. There are factors in the environment which are eliminated from any function as explicit facts in the new creation.

Thus, choices impose themselves and, in turn, influence future choices. This is also what is meant by contingency (Hernes and Bakken, 2003). The very idea of opting for an atomistic view inspires curiosity about how some things emerge whereas others do not. The world is basically untied but, once selections are made, some things begin to connect more readily than others. Thus when the 'office holders' in the above 'cogs-in-the-wheel' example developed something that became a brand, a connection was made that was initially non-existent. When they were mere cogs in the administrative wheel, they had a certain actuality but the situation simultaneously harboured potentiality. Actuality and potentiality will be discussed below.

The power of becoming

Tsoukas and Chia (2002) devote an article to organizational becoming. Their treatment of 'becoming' suggests how even repetitive stable processes in organizations can be seen as states of becoming. They illustrate that stable states are brought about by change, but that stable states are also in a state of change. Tsoukas and Chia make the point that, through various attempts at organizing, organization is always in a state of becoming. In a way they bring up what we might call, in the spirit of Whitehead ([1929]1978), the 'metaphysics' of organization. This means that organization is never anything in itself, but rather is always on its way to become something intended (which it never really achieves). But such evolution (becoming) is not directionless because the goal of organizing is created from some basis of understanding, some point of reference. Attempts at organizing are based on the idea of a stable state, because human intention in organizing is based on certain models of the world rooted in entities located in timespace. This 'something' is perhaps nothing more than an image of some desired state or a set of ideas and principles.

Seen from the perspective of process thinking, the fact that things do not turn out as expected is perfectly normal because, when we act in the world, we can only attend to what we have in focus, which is a very small selection of what takes place around us. Some readers might argue that we do not attend to 'the whole world', but simply to what is under our control. However, even when we attend to what seems within our control, there are 'fringes', as James (1892, [1909]1996) called them, marking the transition between our field of focus and that which is outside. What we 'see' is within the world of focus, a subjective world, made available to us through our own selection. The point resonates well with Weick's idea of selection as a basis for organizing. But the selection is made on the basis of what we *think* we can control, not necessarily what we can actually control. Writers on reform such as March, Olsen and Brunsson might go further and claim that it is based on what we would *like to think* we control, implying an element of superstition (March and Olsen, 1975) in organizing. Whatever the degree of self-delusion, because the world within the fringes is based on subjective selection, nothing stops the outside world from inviting itself in, especially during attempts at organizational change when expectations of multiple stakeholders

are at stake. This is precisely when attempts at organizational change may be thwarted.

Much organizational literature, and especially that on strategy and change, is concerned with intentions. To be sure, there may be no social organization without intentions, even if things do not turn out as intended. The very fact that there is intentionality is likely to lead to some results of a collective nature, even if no collective intentions lie behind the results. But change also happens unintentionally; that is, it may also happen when people carry on doing what they did before.

Contrary to what is commonly assumed, doing the same thing is not synonymous with sticking to the status quo. The point has been made in chapter 2 that even repetition of seemingly identical actions is not static because, when an action takes place at another time, it cannot be the same simply because the outside world has moved on since the last seemingly identical action. Chapter 2 also pointed out that something new is produced through the repetition because new connections may be possible that were not possible before. In other words, the action produces a new reality in which reside possibilities for something new. The occasion does not necessarily constitute a new reality as such, but it may enable the emergence of something new.

Whitehead's (1925) use of the term 'reiteration', by which he means remanifestation or reappearance rather than endurance, helps avoid the impression that sameness means being in static. Reiteration is not remanifestation of a stable thing. Reiteration, in Whitehead's thinking, refers to successions and contrasts of patterns (Whitehead, 1925:133). Patterns may reside in the subjective realm, implying that organization involves the reiteration of patterns of organization. Patterns consist not only of connections in the social realm, but also of related heterogeneous factors such as humans and technology. In a similar vein, Cooper (2005) writes that relating '[…] is viewed as the continuous work of connecting and disconnecting in a fluctuating network of existential events'. Therefore, continuing to act, even if it means doing the same thing, creates opportunities for connections. Consequently, what was intended in the way of organization may not happen. Likewise, what was not intended to lead to anything may in fact materialize into something novel. This describes how organization is perpetually a process of becoming.

Potentiality and actuality

One of the more fascinating pairs of concepts Whitehead uses is that of actuality and potentiality. The same pair of concepts was used by Aristotle. Potency, or potentiality, for Aristotle, referred to the capacity or power of a virtual reality to become actuality. In other words, he saw potentiality as a capacity and actuality as its fulfilment. According to Whitehead, every state has actuality in the sense that it exists itself, it is given. Its givenness is reflected in the direct experience of the situation. But, in addition, what is actually experienced has potentiality for what is experienced at another time, in another place. This brings us back to the notion of simple location.

Simple location, as mentioned above, means that an entity exists by virtue of being here and now in timespace. In other words, it does not exist beyond being there and then; it is essentially a 'vacuous actuality', devoid of inherent qualities (Whitehead, [1929]1978:167). A prime example is Newton's idea about the nature of entities as discrete and isolatable in timespace, an idea which Whitehead ([1933]1967:131) somewhat ironically characterized as 'very easy to understand and very hard to believe'. Nevertheless, Newton's assumptions about entities have been hugely influential in physics. But the Newtonian influence is not restricted to physics. As Chia (1999:214) points out, the consequences for organizational theorizing (of Newton's work) should not be underestimated: 'Indeed, it has instilled a set of instinctive 'readinesses' (Vickers, 1965:67) among Western management academics to construe organizational change as a "problem" which needs to be "managed"'.

For Whitehead, the assumption of simple location is an analytical reduction that we might make, but which strips a fluid, complex and living world of one of its most important characteristics – the transition between actuality and potentiality. One of the fundamental tenets of Whitehead's thinking is that 'it belongs to the nature of a being that it holds a potential for every becoming', which means that what is experienced here and now also holds potential for what may come. It is the potential of occasions to lead to other occasions that makes it possible for what Whitehead calls 'creative advance', the achievement of novelty.

The dimension of actuality-potentiality represents a solution to the problem of simple location. It embodies the fact that nothing exists as a mere passive entity; whatever takes place embodies potential from the past which it carries into the future. The basis of processes lies in the actual, that which is experienced. Everything else is abstraction.

Potentiality might be seen to simply represent the fact that resources, such as people and technology, at a given point carry in themselves the potential to influence processes beyond what they are seen to represent there and then. However, the perspective of becoming takes things further. Potentiality is not limited to what can be observed embodied in the present and thus having potential for the future. Organizational actors and researchers observe a selection of the organization's history, from which present qualities may be inferred and future impacts hypothesized. The point, however, is that potentiality is also created by events that lie outside what can be observed, not just by what is actual at one point in timespace.

When, as pointed out above, the world is perceived as events rather than substances, events are connected in the sense that one event embodies other events. All events are actual events which form 'data' for future events. But they also embody the potentiality of other past events and, in so doing, they come to embrace the actual past and the potential future (Whitehead, [1929]1978:72). This means that events have potentiality for future events beyond their actuality. Note that the actuality-potentiality dimension works both ways. On the one hand, actual events embody actuality-potentiality for other events while, on the other, the potentiality of past events is turned into the of future events.

The potentiality-actuality concept is, according to Whitehead, a general principle of processes. Maybe at first sight the idea of something potentially coming to represent something quite different elsewhere in timespace seems a bit like counting on hidden forces and delving into the occult. However, to scientists in other fields, potentiality represents merely that which is not available for assessment here and now. In physics, Ilya Prigogine (1996) uses the terms 'potentiality' and 'actuality' in referring to energy levels in waves. Wave functions in quantum physics, he says, contain potentialities which are waves in their pure state. The challenge lies in arriving at the actual 'mixed states', *actualities* that are open to direct assessment.

In developing a process view in sociology, Sztompka (1991) considers the potentiality-actuality dimension as a difference between that which is manifest in conduct and that which is produced by earlier conduct, respectively. In a sociological interpretation which strikes some parallels with Whitehead's philosophical framework, Sztompka (1991:95) suggests that:

> Potentialities (capacities, abilities, skills, facilities, resources, etc.) are manifested in conduct, but they are not given. Rather, they are shaped by earlier conduct (experience, training, learning, etc.), themselves produced by actualizations. In turn, their actualizations reshape the potentialities for future conduct (enrich tradition, resources, possibilities).

Sztompka's sociological interpretation and Prigogine's physical interpretation are slightly parallel regarding the difference between potentiality and actuality, in that they both express it as the difference between the manifest and what may be assessed. But the parallel is only slight. A crucial question is whether the difference boils down to measurement. According to Sztompka's definition, it would seem that if we could assess things like capacities, abilities, skills, facilities and resources, we would be able to represent potentiality which would point towards a measurement problem. Prigogine, the physicist, is not convinced, however, that it is purely a measurement problem. To be sure, he says, the human element of measuring counts for something because by measuring things we become co-producers of facts. But that does not mean that potentiality can be measured; for how can we measure our own measurement?

The potentiality-actuality relationship is best seen as real, open to investigation, but closed to assessment, and this is why the terms used by Sztompka (such as 'skills' and 'resources'), while serving as useful pointers, should be seen as examples of only one level of possible factors. It seems risky to imply any sort of determinism, which makes Prigogine cautious; the main reason for Prigogine's caution is that he studies the effects of irreversibility on processes. Irreversible processes, even without the participation of humans, set out on their own paths, with their bifurcations, and enter phases of either stability or disequilibrium. They are subject to contingencies that make for choices (yes, non-human systems make choices), but the actual choices made may not conform to a given pattern. The unfolding of processes, he points out, involves both determinism and probability

(Prigogine, 1996:69), but the main point is that irreversibility means that processes do not obey laws of causality and prediction.

If randomness is a feature of physical processes, then what to say of organizations which are strongly affected by socio-technical processes that exist far removed from them in timespace? The way organizations evolve is not entirely random; rather, it is still given to surprise, and the surprise is created by potentiality, which makes for novelty. The actuality-potentiality dimension points to opportunity for novelty or, put differently, it *provides* opportunity for novelty. Novelty comes about through the potentiality provided by processes that operate outside the timespace of the processes themselves. Novelty, represented by the potentiality-actuality dimension, is perhaps what makes organization possible – and necessary. Although organization aims at order, if the act of organizing were to bring about the intended order, the world could well come to an end as too much would be determined by human intentions. Prigogine (1996:55) remarks that:

> If the world were formed by stable dynamical systems, it would be radically different from the one we observe around us. It would be a static, predictable world, but we would not be here to make the predictions. In our world, we discover fluctuations, bifurcations, and instabilities at all levels. Stable systems leading to certitudes correspond only to idealizations, or approximations.

The quote could be echoed by Whitehead, for whom novelty is the essence of processes, and for whom potentiality is unspecifiable, which marks a considerable difference from Sztompka's thinking. 'Potential' is just what the word suggests – a potential. It is by definition not actual or real because it lacks a number of attributes that define being (e.g. quantity).[3]

Events

In the absence of substance there seems, following Whitehead, no other way of conceptualizing the world than as consisting of events, or what Whitehead refers to as 'actual occasions'. In this he was echoed by James, who made it clear that he saw experience as made from unitary events. Influential works in organization theory have also emphasized the importance of events, although they might not have specified events as unique, or even privileged, units of analysis. March and Simon (1958:163), for example, brought to attention the importance of events as triggers of organizational programs:

> When an event occurs that calls for some kind of organizational response, the question is asked, in one form or other: 'What kind of *event* is this?' The organization has available a repertory of programs, so that once the event has been classified the appropriate program can be executed without further ado.

Organization writers who take a process view focus on events, although they may see events differently. Events are seen by some as the basic building blocks of a

process view of organization. Weick (1995a) refers to occasions of sensemaking. March (1988) and March and Simon (1958) refer to decisions, as does Luhmann (1995, 2000). But Whitehead pursues a more radical view of events than these organizational thinkers. In his view, in the absence of substance, all that we can actually say 'is' anything are events, or experiences. Objects, he argues, exist, but they exist as abstractions from events.

I use the term 'events' although Whitehead referred mostly to occasions in his works (the exception being in an early book, *The Concept of Nature*, published in 1920 in which he refers to events rather than occasions). Actual occasions, according to Whitehead, are the basic units of experience, and there is no way of penetrating beyond them. They are what he called 'event particles' (i.e. the basic units) of processes (Whitehead, 1920:172). Whereas event particles (actual occasions) are point-flashes of instantaneous duration, events were seen by Whitehead to be mere happenings of finite duration that we can discriminate as overlapping as well as separate. I will proceed with the notion of events rather than actual occasions.

But what are events? Are they points along a line that describe a process? Or are they occasions that propel the process forward? Or are they steps along the line that embody the histories that precede them? To Whitehead it seems inconceivable that events are simply points along a line. Events cannot be mere 'dead data' (Lucas, 1989:168). Events *make* processes, and they can make processes only by connecting to other events. Also, they can make up processes only by embodying the past, the present and the future. In other words, for events to make up processes they have to form transitions. In this lies an inherently process view, however difficult it may seem for practical research. Whitehead extended this thinking to arithmetic as well, arguing that there is no such entity as a static number; numbers only make sense as playing part in processes of which they form part, i.e. as transitions. Events, according to such thinking, cannot be mere points; they must connect the past, present and future. If they do not, the process will break down because there will be nothing to embody the past while projecting the process into the future (Whitehead, [1933]1967:193):

> In this sense, the future is immanent in each present occasion, with its particular relations to the present settled in various degrees of dominance. But no future individual occasion is in existence. The anticipatory propositions all concern the constitution of the present occasion and the necessities inherent in it. This constitution necessitates that there be a future, and necessitates a quota of contribution for re-enaction in the primary phases of future occasions.

Events convert experiences into bases for further actions, which account for the constitution of events as transitions.[4] Actors, however, need to base their actions on an understanding of reality, which is the datum (Whitehead, [1929]1978), the objectively perceived content of present experience. The datum forms again a basis for subjectivity (Hosinski, 1993:56). So, in a sense, events provide both a basis for acting and a direction for the action that ensues.

Events, according to Whitehead, are intimately connected to potentiality and actuality. For him (1938:99–100), events drive processes by transforming actuality into potentiality:

> The notion of potentiality is fundamental for the understanding of existence, as soon as the notion of process is admitted. If the universe be interpreted in terms of static actuality, then potentiality vanishes. Everything is just what it is. Succession is mere appearance, rising from the limitation of perception. But if we start with process as fundamental, then the actualities of the present are deriving their characters from the process, and are bestowing their characters upon the future. Immediacy is the realization of the potentialities of the past, and is the storehouse of the potentialities of the future. Hope and fear, joy and disillusion, obtain their meaning from the potentialities essential in the nature of things. We are following a trail in hope, or are fleeing from the pursuit in fear. The potentialities in immediate fact constitute the driving force of process.

All this may seem a tall order for events, and that is why a differentiation of events is warranted. Obviously, there are countless events daily in organizations, but they cannot all be important transitions that keep things going. For example, not all events involve consciousness. Whitehead draws a distinction between experience and consciousness, saying that we may experience events without being conscious of them. Taking this into an organizational setting, it is possible to say that we experience routinized activities, for example, such as switching on the computer in the morning. Our many actions – such as switching on the computer, crossing the corridor, taking a glass of water – are events, but their consequences do not really go beyond mere unconscious reproduction of the structure around us. We may be aware of going through a central hall at our school several times daily, but most of the time we are not conscious of the fact that we actually reproduce an order, that of maintaining the hall as a place where people meet.

Note that although an event may appear inconsequential, it is not a non-event because inconsequential events serve to uphold and reproduce the overall structure of which they form a part; if nobody were to cross the hall, it would not exist as a significant social space; it would be a place 'devoid of life and motion', to use Whitehead's phrase again. The main point is that we may be aware of reproducing an order, with all the complexity that comes with reproducing that order. However, we do not become conscious of reproducing the order until we think about it. This is when sense awareness is transformed into thought, involving the simplifications that the transformation entails. Whitehead (1920:13) illustrates the distinction between sense awareness and thought as follows:

> No characteristic of nature which is immediately posited for knowledge by sense-awareness can be explained. It is impenetrable by thought, in the sense that its peculiar essential character which enters into experience by sense-awareness is for thought merely the guardian of its individuality as

> a bare entity. Thus for thought 'red' is merely a definite entity, though for awareness 'red' has the content of its individuality. The transition from the 'red' of awareness to the 'red' of thought is accompanied by a definite loss of content, namely by the transition from the factor 'red' to the entity 'red'. This loss in the transition to thought is compensated by the fact that thought is communicable, whereas sense awareness is incommunicable.

In organization studies, processes that lead to something new seem to receive most attention because they embody consequential events. The more consequential type of event needs, like all other events, to both embody the past and provide a basis for the future. Consequential events are distinguished from the great majority of events because they form a transition to something else; they alter the tune for future events. Following Whitehead, a consequential event would have to involve conscious thought. Although an important event may be experienced, it does not become consequential until it enters consciousness. It might also become consequential by connecting the past to the future. An event that does not in any way represent the past cannot form a basis for making sense, and cannot therefore form a basis for action. A consequential event also needs to connect to future events; otherwise, the process breaks down or continues unchanged.

Studies of innovation may show how events play a role in processes. The story of the Post-it® note has become something of a classic in the innovation literature. In the mid-1970s Art Fry, technologist at 3M, was a tenor in his church's choir; to his frustration, his scrap paper bookmarks kept falling out of his hymnal when he leafed through it. He tried several alternatives without much luck. Hymnals have very thin paper that is easily ripped. The solution called for bookmarks coated with adhesive strong enough to keep them in place when the reader leafed through the hymnal, yet not so strong as to rip the page when they were removed and repositioned. Moreover, the bookmarks needed to be sufficiently durable to be used several times. Coincidentally, others at 3M were then attempting to produce several types of adhesives for self-adhesive applications. Indeed, 3M research scientist Spence Silver had, in 1968 (several years earlier) while looking for ways to improve 3M's acrylate adhesives for tapes, developed an adhesive that was both strong enough and 'repositionable'. However, 3M did not see a commercial application for such adhesive. In a moment of pure 'Eureka', Fry realized that Silver's adhesive could make for a wonderfully reliable bookmark (3M web page). Eventually, Silver's adhesive on paper – the Post-it® – solved Fry's problem.

If we take a closer look at what happened, we can say that Fry's participation in the choir was reproductive of the choir, which happened every time he turned to a new hymn. On the 3M side, attempts to produce adhesive paper were also reproductive of the 3M system's long evolutionary tradition involving audio and adhesive tapes. But the actions taken by Fry in his church's choir and his fellow scientists at 3M not only *re*produced something, but also *produced* something novel. Fry's frustrations when turning his hymnal's pages turned into a novelty product. But the novelty product did not result from planning. Fry was not looking

for the Post-it® per se, but rather for a solution to his problem. Nor was Silver looking for the Post-it® per se, because he was not aware of Fry's problem. The novelty came about through the connecting of things that were in the making, mediated by events.

The Post-it® case is perhaps an example of large-scale change. Post-it® has become not just a product, but a way of communicating and learning. One might say that it came about through Fry's 'Eureka'. On the other hand, there were perhaps hundreds of events without any form of 'Eureka'. Perhaps all these were necessary for one to become Fry's 'Eureka'. Who knows? But what we may say, without running too much of a risk, is that most events resulting in something being produced (and not merely reproduced) result in only a marginally different something. There is a reason for this. Man-made configurations such as organizations need to be relatively stable; consequently, most events, to count for something, need to connect in some way. Without such connection between events, the process comes to a stop.

If events embody the past while projecting a process into the future, such events connect. Importantly, such events connect to form some sort of structure, a meaningful pattern, over time and space. Moreover, the stages in a process at which events occur are significant in relation to a process's outcome. The utterance of a sentence may be an example of how the importance of events may vary with the stage at which they occur. A sentence consists of the expression of letters, then words, then the entire sentence. In the split second that the first letter (event) of the first word is pronounced, it is as yet open to what event (letter) comes next. Once the entire first word has been said, much is still open, but many options are also eliminated. To start a sentence with 'When …', for example, makes it likely that the sentence will be in the form of a question (a large number of other options are still open, such as 'When you come home, don't forget to switch on the heating'). However, if the word 'When' is followed by a verb such as 'are', the probability of the final sentence expressing a question becomes very high. Moreover, the word 'are' signifies that the person is not talking about herself, because then she would say 'When am …?'. As more letters and words are expressed, the range of possibilities is gradually narrowed down and the sentence becomes gradually less ambiguous. If we see the letters and the words as events, they fall into a pattern that becomes increasingly fixed and with fewer possibilities of alternative interpretation as the sentence gets nearer the end. The closer it gets to the end, the tighter becomes the margin of interpretation and the stronger becomes the association between the letters and words.

The example of the sentence may also serve to illustrate how events may *seem* decisive, while in fact they fit closely into the pattern or structure into which they enter and take part in reproducing. A question mark at the end of the sentence marks the fact that the sentence is a question. The same could be said about the first word 'When …'. Both these 'events' might seem decisive, but if we look at them more closely, their decisiveness is more appearance than fact. When the sentence reaches the question mark, the question mark is but a marker of a question that has been gradually building up. In fact, the question mark embodies the preceding

words and letters. In much the same way, events are seen to embody other past events. The arrival of a new leader may be seen as decisive for the subsequent development of an organization, but it is decisive in the sense that it embodies the events that led up to her arrival.

Formation of meaning and the changing subject

In a world seen as constituted of events, the crucial question becomes – what serves to connect events into recognizable patterns? The coming together of events (what Whitehead refers to as 'concrescence') enables new events to take place. In the presence of subjectivity, events are not mere occasions; they take on qualities of meanings and feelings which enable them to connect over timespace. Whitehead also sees feelings as having a 'vector character' (Whitehead, [1929]1978:231), by which an event becomes agency for the unfolding of new events. Added to this is the important aspect of intensity of feeling, implying that higher intensity gives a feeling a stronger agency in shaping events. In an atomistic world, a stronger intensity of feeling makes it more probable that events reach out and connect under the influence of that feeling.

The assumption is that events connect to form patterns which are more durable than the events that form them. Once formed, they become complex entities such as models of organizing. As such, they may be mere labels, loose prescriptions or elaborate models. However, they might prove unstable when applied. Nevertheless, they form a basis from which actions are taken to organize. The models, however flawed, unstable and biased they may be, form the means by which actors navigate and connect entities in a fluid and complex world.

Events are not events unless we make sense of them. This point tallies with Weick's work on sensemaking, which is why he emphasizes events as important for sensemaking. But what do we make sense of? The event, you might say, but bearing in mind that process thinking presupposes relationality (Cooper, 2005a), events are not 'just' events. An event cannot 'just' be made sense of as an event; its significance lies in its association with something that transcends the event. Stengers (2002) points out that events, according to Whitehead, are connected to other events in a structure. Whitehead (1920:167) formulated it thus: 'This long discussion brings us to the final conclusion that the concrete facts of nature are events exhibiting a certain structure in their mutual relations and certain characters of their own'. In other words, events become constitutive of process as and when they have relevance for a broader set of relations. By being relevant, events may not just reproduce or reinforce existing relations, but they may also change them. Relevance is a subjective quality, and events become significant through association.[5] In a more Whiteheadian reading of process, the idea of association is equally useful, but association may be seen to take place between events rather than between actors.

The structures that enable events to connect are themselves may, I suggest, be seen as patterns of associations that are continually produced and reproduced as actors engage with other actors. Models of organizing may be seen as one such

pattern of association where models, understood as patterns of labels, are enacted as organizing processes.

Whitehead, working from an event-based view of the world, used the generic term 'prehension' (Whitehead, 1938:105; [1929]1978:18–20) for the force that connects events in timespace. As mentioned above, events reproduce the past and carry it into the future, which is how more stable configurations develop. Once certain patterns are set in motion, they tend to enrol other events into a configuration. In a sense, prehension means that events 'grasp' for each other,[6] and relates to the propensity of an event to connect to another event with which it has common aims. Each event, according to Whitehead, takes in all the frozen data from its predecessors and adds novel feelings of its own. The occasion does not passively copy the past; rather, in the act of self-creation it refreshes the design of the past, thereby inventing its novel present and preparing for its possible futures.

The idea of becoming may be applied to values and institutionalization. Whitehead (1925) emphasized the importance of values, suggesting, for example, that value is inherent in any consequential event. Values connect to theories of institutionalized models of organizing such as bureaucracy, which spread in timespace because they are legitimized by social values. Paradoxically, Weber's impersonal ideal type of bureaucracy may be something that we feel strongly about, especially if it is not there to save us from getting into trouble. The imposition of rules arises often from the inability to cope with disorder, or the fear of impending chaos. Whitehead's warning, however, would be that any process such as organizing is unique, local and has its own unique history. What it becomes – be it a routine, a firm or a project – is based on a coming together of many endogenous as well as exogenous events. The atomistic view imposes such an argument: what something 'is' lies in the coming together of preceding events. Also, what something 'is' is but a basis for becoming something else. In other words, there is no finality, nor can there be any a priori equilibrium state towards which something will converge. This implies that nothing – no innovation, firm or institution – is a final state; rather, everything is merely a stage forming (potentially) other processes.

Models of organizing exist in the subjective world, which merits a brief discussion of the use of 'subjectivity' in relation to processes. The notion of subjectivity opens for the entry of subjects into the process. The subject, however, is a tricky entity with Whitehead. It cannot be a substance, such as individual persons, as substance is rejected as a basis for analysis. The subject does produce processes, but is also itself outcome of processes. Whitehead also sought to avoid the human centred view that he criticized Kant and Descartes for. Whitehead presented his process philosophy as the inversion of Kant's philosophy. Kant saw process as flowing from subjectivity towards apparent objectivity, whereas Whitehead tried to explain process as moving from objectivity towards subjectivity (Sherburne, 1966:152). Whitehead's project is about understanding how facts emanate from flux, from a tangled world in which operate material and social factors. He argued, for example, that 'The doctrine that I am maintaining is that neither physical nature nor life can be understood unless we fuse them together as essential factors in the composition of "really real" things whose interconnections and individual characters constitute the universe' (Whitehead (1938:150; [1929]1978:18–20)).

Hosinski (1993:56), discussing Whitehead's ideas, suggests that the subject is to be seen more as a centre of activity, a functioning, a process. Hence, a process view applies not just to events, but also to the subject that experiences events. Events embody both an objective 'datum' and a subjective experience which gives form to the objective datum. It is subjectivity that enables what Whitehead calls 'creative advance'. But it is fundamental to Whitehead that the notion of the subject as an unchanging entity is abandoned. This is also why process thinking derived from Whitehead subscribes to a 'strong' process view, discussed in chapter 2.

This implies, for example, to say from a process perspective that 'the organization learned from its mistakes' becomes problematic, because we are not talking about the organization as if it were the same thing before and after the learning process. The connecting of events in a social world necessarily involves the subject, but not the same subject. The subject, like everything else, is not an entity per se, but forms part of the process, being shaped by the process, while shaping it in turn. Thus, in relation to organizational theorizing, the subject cannot be boiled down to an individual, a group, a function or the organization. The subject may be any of these, or most likely a combination. The point is that the subject is not an entity that stays the same.

This is where a process view based on Whitehead differs from other views, notably in organization studies. Van de Ven *et al*. (2000:40), in their discussion of a variance view versus a process view, suggest, like Whitehead and others, that *events* are what they call the 'natural units' of processes. Whereas a variance approach, they argue, focuses on the correlation between variables, a process approach focuses on events because of the inherent complexity of developmental processes. However, the process approach assumed by Van de Ven *et al*. is based on narratives. Therefore, they argue, for the narrative to have some consistency, the narrating subject must be taken as a constant. In other words, central subjects are seen as constant. Such an assumption may be legitimate in view of the choice of the kind of narrative method used, but it should not be seen as a universal assumption underlying all process approaches. On the contrary, it is perfectly possible that anything can change, including the central subjects, precisely because central subjects intervene in processes and are changed by their intervention.

The subject changes because it is part of the process. The subject, it should be noted, is not a mere observer, nor is it the exclusive architect of the process. The subject is that which attaches meaning, takes part in the process and is shaped by the process in turn. It is a product of the process and it becomes part of the process. Points have been made to this effect in organization studies, especially in studies of innovation processes. March (1981), for example, suggests that studies of innovation and organization have persistently pointed out that both innovations and organizations tend to be transformed during innovation processes. March (1988:175) formulates it thus:

> Seeing innovations as spreading unchanged through organizations helps link studies of innovation to models drawn from epidemiology; but where a fundamental feature of a change is the way it is transformed as it moves

> from invention to adoption to implementation to contagion, such a linkage is not helpful.

The subject is often assumed as a constant in organizational analysis, although some process writers take a different view. Czarniawska's (1997, 2004) term 'action nets', for example, is important for understanding that there is something that precedes the making of actors, which in the case of action nets is seen as actions. Actions connect into nets rather than into networks, according to her. Networks, and in particular actor networks, may form as a result of action nets (Czarniawska, 2004:782).

Events and entities

It could be argued that, when seeing processes of becoming with the subject as part of the process rather than outside it, organization theory is better adapted to the complexities of social and economic life. When the subject becomes modifiable, it allows for a freedom of analysis which studies that lock the subject into individuals, groups or organizations do not possess. As Weick (1976:59) points out, the specification of elements in organizational theorizing is not a one-shot activity. We might then also ask that, if organizing is not a one-shot activity, why should the theoretical models of organizing have any elements specified on a one-shot basis? A classic demarcation to make is the drawing of organizational boundaries to specify the organization as an entity apart from its environment.

On the other hand, the suspension of levels of analysis and the rejection of the constancy of the subject make it harder to get away from some basis for human activity that is perceived as sufficiently stable to form a basis from which to act. From a Whiteheadian perspective, such a basis is formed from the coming together of events to form a structure of related events. It remains a fact that as analysts we work with entities, although a 'strong process view' ideally builds from events. The 'true' ontological premise may be one of events, but Whitehead's main point, as already pointed out, is that humans make sense on the basis of entities.

Can we work with entities and still adhere to an event-based view? It should be noted that Whitehead's argument for events as the basic unit of analysis formed part of a larger argument against substance-based philosophy, a viewpoint which he shared largely with James and Bergson. To be sure, the idea of *static* entities stands in the way of taking an event-based view. But is working with entities incompatible with an event-based view?

Combining an event-based view with an assumption of there being entities demands that we work from three assumptions. First, entities change. We may work from the idea that there are entities, such as technologies, humans and policies, while also allowing for – even assuming – that they change. Second, events are the points in timespace where relations happen between entities. They are points which the analyst defines as significant for the analysis, serving as markers of processes. But events also serve as 'generators' of processes, besides

serving as markers. Events influence the evolution of processes, both by providing 'data' for what is to come, and by being occasions at which actors aim, such as the realization of goals. Third, entities do not stay discrete; rather, they may come together ('concresce') as hybrids, or composite or complex units. Thus, we assume that entities not only change but also transform into something qualitatively different.[7]

Organization between concrete experience and abstraction

The theory of formal organization triumphed because of its power of abstraction, such as the abstraction of people into roles and functions. It is probably also fair to say that conventional organization theory has been instrumental in empowering the use of abstractions. Weber has been seen to epitomize abstractions in developing the bureaucratic ideal type, where roles and functions could be removed from the person and, hence, the person's interests. Generally speaking, when writers talk of organizational models they are referring to models of organizing that are abstracted from the world of actual people, actions and technologies. Little wonder, therefore, that Parsonian thought has so influenced organization studies, because Parsons (1951) developed a powerful framework describing how functions (a form of abstractions) relate to the equilibrium of social systems. In Parsons' (1951) thinking, individuals would adapt their behaviour to their roles in upholding a social system's norms. His thinking has enabled much of that which underpins contingency theorizing such as reflected by Scott (1992:9) who sees organization theory as 'an area defined at a level of *abstraction* sufficiently general to call attention to similarities in form and function across different arenas of activity'.

In much organization theory, abstractions have tended to reflect elements of organizational form, making up contexts for people's work. Within these abstracted forms, however, we may find the concrete realities of people; the throbbing life of work, relations and emotions. These 'concrete realities' may be seen as the 'brute facts'; the actually felt. 'Brute facts' belong in the realm of the intuitively experienced, the directly sensed. It is what Whitehead (1938:72) refers to as 'the realization of our essential connection with the world without, and also of our own existence now'. Actuality represents facts that are real, individual and particular (Whitehead, [1929]1978:20). In organization studies, ethnographic studies in particular attempt to penetrate towards concrete realities of people, where organizational abstractions are to some extent put aside. Examples in American journals may be found in Orr's (1990) study of photocopier maintenance technicians and Barley's (1983) study of funeral directors. In Europe, works related to technology and science include a number of 'close-up' studies of which Latour's (1987, 1999a) laboratory studies are an illustrative example. Latour's account and analysis of Pasteur's discovery of lactic acid are good examples of how concrete situations can be articulated by the cautious use of terms, thus largely avoiding the freezing of the actual situations into abstractions.

It would be unfair to say that organization theory has not dealt with concrete experience. For a start, the Hawthorne experiments brought attention to the undercurrents of organizational life such as informal norms, what Burns and Stalker (1961:98) refer to as the 'logic of sentiments'. The 'discovery' of informal norms enabled many years of studying organizations 'backstage', notably through the study of informal groups. A number of streams have found stimulation in concrete experience, several of which belong to the more general label of post-structuralist organization theory. Foucault's work has been a definite source of inspiration for works, largely due to its ability to connect bodily experience to concepts of power and structure (Clegg, 1989). A whole stream of works has also emerged under the label 'practice-based studies' (e.g. Gherardi, 2000).

However, due to the way distinctions have been drawn between formal and informal organization, the two have not been allowed to interact and shape one another. The world of abstractions (predominantly the formal organization) and the world of concrete experience (predominantly informal organization) have been considered separate worlds, possibly because they are assumed to operate according to different logics and hence are not easily included in the same analysis. What has been overlooked is that concrete experience and abstraction are necessary for each other. Concrete experience can never be fully self-explanatory; it needs abstraction to be meaningful (Whitehead, 1920), just as abstraction needs concrete experience to be meaningful.

The power of abstractions often fails to connect them back to concrete experience, frequently mistaking the abstractions for the concrete reality. Taking the abstractions for the concrete experience has led to the sort of conflation that Whitehead ([1929]1978:2) termed the 'fallacy of misplaced concretion'.[8] Abstractions make it possible for concrete experience to extend beyond the here and now because by abstraction we make sense of experience so that it can be carried on to other occasions. Lindberg (2002) illustrates this in her study of interorganizational collaboration in the Swedish health care sector, where she shows how patients were described at various levels of abstract representation. At the level of the care units, focus was on care practices whereas, moving up the chain, focus was put on medical treatment and, at the interorganizational level, abstraction took the form of flow charts. Lindberg notes how the representation in the form of a 'care-chain' actually came to obliterate the local experienced conditions.

Much of Whitehead's writing relates to the movement between the concrete and the abstract. The Western philosophical project has consisted of the development of abstractions. Abstraction is the means by which human thinking – be it scientific, literary, religious, artistic, poetic or practical – draws sense from the full concrete reality (Hosinski, 1993:5). As pointed out by Dibben and Smallman (2005), abstractions help us navigate the world we inhabit; sometimes we make abstractions to stable forms so frequently that we assume them to be real. Organization, for example, is developed using abstractions such as roles, functions and plans, which are combined into models of organizing such as bureaucratic forms of control; these models are taken for granted, almost like natural phenomena that transcend or encapsulate concrete experience.

Extracting foci from Whitehead

The aim of this book is to discuss the works of Latour, Luhmann, March and Weick against a coherent framework process thinking. The breadth and depth of Whitehead's work provides such a framework. To be sure, there are several ways in which his work could be synthesized to form a background for discussion. Nevertheless, from the preceding discussion, some main foci of thought may be extracted that are useful for focusing the discussion. The foci discussed below are composed of aspects of his work discussed thus far in this chapter.

Events and structure

Events are, as suggested above, not an obvious unit of analysis for research. Events evidently form part of processes, and some events may be decisive for the unfolding of processes. The arrival of a new leader, the sudden change in oil prices, the emergence of a new technology, are all events that unquestionably influence how the organizing process unfolds. But how such events enter into the flow of other events is almost beyond the possibility of analysis.

Nevertheless, organizations represent relative duration of sets of practices, and therefore events connect to things that are more durable than individual events. It is hard to make sense of the impact of a new leader's arrival without some perception of how the organization has operated and how its operation might change in the future with the new leader at the helm. As Carlsen (2006:8–9) writes: 'Events in the flow of experience do not happen in isolation from each other, but make up sequences, habits, clusters, routines, capabilities, activity systems and vectors, all of which are invoked patterns that one may choose to call "practice"'. Hence, events connect to other events because they are proximate, and the proximity is provided by structure whereby events are connected by association.

As suggested in the section on 'Events and entities', the analysis needs to proceed with the notions of events and entities, with the assumption that entities are in the making rather than static. The term 'entity' may harbour numerous types including persons, ideas, technologies and plans. The key is that entities change through interaction and that their change may include their coming together as complex unities. Events are seen as points in timespace serving to mark the process of the becoming of entities. As markers, events function like data for what is to come. Events may also serve as markers in the way of aims of processes, such as when deadlines are stipulated in planning. In both cases, events are markers of processes while taking an active part in shaping them.

Heterogeneity

A second idea to be retained from Whitehead's work is that of *heterogeneity*, bearing in mind his doctrine quoted above, that neither physical nature nor life can be understood unless we fuse them together as essential factors in the composition of 'really real' things. Whitehead's process philosophy is based on the idea of

becoming, which signifies that nothing ever really *is* in the way of substance. A chair can never be just a chair, although we see it as a finished object once manufactured. To be sure, we may say that a chair is a chair in the sense that we can recognize it as a chair wherever we see it. But a chair does not exist in a vacuum. Even a chair left alone in an empty space will change over time due to its contact with air. In other words, it will be modified by the flow of air and the presence of humidity, and therefore cannot escape unchanged from these factors over time. But more decisive things happen to chairs. They relate to tables, to meals, to comfort, to rituals and to status. A particular chair may take on importance because we sat on it as toddlers. For example, it has different meanings in different cultures, where sitting on a tall chair may confer social status as opposed to someone sitting on a low chair.

The point is that a chair, like any other entity, is always in a state of becoming in relation with other entities. Similarly, organizational actors are perpetually in a state of becoming something else as they enter into relations with other actors. The manager of a unit is a person occupying a managerial role, but she is only *that* manager because she heads *that* particular unit at *that* time. She 'makes' the unit, just as the unit 'makes' her. Moreover, if the unit is actively involved in pursuing the development of a technology, the unit makes the technology, just as the technology makes the unit. This is like what Whitehead calls complex unity (Whitehead, [1929]1978:211), which is a complex of related entities (Whitehead, 1920:25). The point is that a complex unity is formed by its history of relations over many occasions.

The idea of heterogeneity has two major implications for organizational analysis. First, it challenges the assumptions of levels of analysis, whereby organizations are assumed to embody levels between individual, unit and organization. The manager is made sense of in relation to the unit and the technology, and does not exist as a manager without them. Hence, she cannot really be seen analytically as being at another level of analysis. Second, there is a time aspect to the assumption of heterogeneity. A complex unity (such as the manager, the unit and the technology) 'is' its relations, just as it 'is' the evolution of its relations over time. The manager, the technology and the unit form a whole that continues to evolve over time.

The principle of heterogeneity suggests, for example, that organization cannot be seen as wholly social, and that there will always be some physical artefact or technology that mediates social interaction. It so happens that technology and artefacts provide more enduring stabilization than do social relations. But, more importantly, heterogeneity implies that the physical and the social are not seen as two worlds that influence one another from two opposite sides of a divide. On the contrary, they *make* each other. Just as people make technology, technology makes people.

Abstraction and concrete experience

As discussed above, abstractions are central to organization theory. The world is an entanglement of processes of becoming in which social actors attempt to

create some sense of continuity. Every event exists for only an instant, and then disappears. The richness of the event may, as pointed out above, be sensed by the actors. Once the event has taken place, however, it is evoked through abstractions. Hence, abstractions allow for experience to transcend the here-and-now experience, although simplified by thought processes (Whitehead, 1920:13). Experience takes place all the time in organizations, but not in isolation. Experience, as Whitehead points out, depends on abstractions. The dimension of concrete experience versus abstraction captures a central activity of organization. The notion 'organization', along with numerous notions such as manager, role, and technology, is an abstraction used to talk about organization. Simultaneously, there is concrete experience which is shaped by abstractions, and it could be argued that interplay and dynamics between abstractions form the essence of process theorizing about organization.

Potentiality

The idea of potentiality, discussed above, holds that everything existing in timespace as actuality – or as actual experience – holds potentiality for actual experience elsewhere in timespace. As mentioned above, potentiality relates to an atomistic view whereby processes take place in timespace rather than linearly. From such a perspective, seemingly disconnected events may hold potential effects for each other. A technology developed at one end of the world, for example, may influence greatly what people do at the other end of the world, and it may consequently influence the social identity of the same people, which may change through their adoption of the technology. The idea of potentiality allows for discovery of the unexpected, for understanding the effects of that which lies outside the frame of reference of the analysis.

Stabilization

As discussed in chapter 1, in mainstream organization theory, organizations have commonly been conceptualized as passive entities adapting to the environment. Consequently, they are seen as stable entities, which implies that what needs explaining is how they change from their stable states. Therefore, organizational change has commonly been seen as a stepwise adaptation to changes in the environment. From a process perspective, the focus is the inverse; stability, not change, needs to be explained because the world is continually changing, and organization is an attempt at stabilization in a changing world. Similarly, Whitehead, working from the idea of the world as process, seeks to explain how something can approach stabilization.

Although Whitehead's thinking may be seen to represent an atomistic view of the world, he stressed the importance of there being some basis for the convergence of processes. Nothing can emerge from nothing, he insisted. There is always something that forms a basis for working towards something else, and that 'something else' is the point of convergence of processes. For example, he stressed the

importance of routinization of activity, forming a basis for creation (Whitehead, 1933). Routinization serves essentially to provide 'fixity' of process by binding moments together into iterative patterns. Giddens (1984:72) formulates it thus:

> […] what from the angle of the fleeting moment might appear brief and trivial interchanges take on much more substance when seen as inherent in the iterative nature of social life. The routinization of encounters is of major significance in binding the fleeting encounter to social reproduction and thus to the seeming 'fixity' of institutions.

But it is not just routinization that serves as a mechanism of stabilization. As mentioned above, meaning and feelings enable events to connect in timespace. In an atomistic timespace, events tend to 'look for each other'; they incorporate previous events while anticipating future events that connect to the past and the present.

Whereas stability is normally associated with sameness and would thus seem to be the antithesis of novelty, Whitehead takes the opposite view. He argues that, through stabilization amid a sea of flows, something new is formed. An organization formed is thus novelty, especially if it is stable. In a sea of flows, stability is the exception, which means, paradoxically for some, that a high degree of stability signifies high novelty.

Connectivity

Stabilization (as well as novelty) happens through the connection of events in timespace. Connectivity is one way to approach the study of process. Without connectivity, nothing can proceed from something else. Hence connectedness, argued Whitehead, is the essence of all things. It represents the coming together of heterogeneous elements to form new complex unities. It corresponds to a relational view, as argued in chapter 1, whereby elements come together to form something different. Connectivity relates closely to stabilization, but I prefer to see them as distinct from one another. Whereas stabilization tends to represent a strengthening of something that is connected, connectivity refers to formation of the tentative, the possible and the contingent, and the potentially unstable in processes. Hence, whereas stabilization allows for degrees of stability to be explored, connectivity allows for possible forms of stabilization to be studied.

4 Bruno Latour

Relativizing the social, and the becoming of networks

> If the traditional picture had the motto 'The more is connected a science the better', science studies says 'The more connected a science the more accurate it may become'. The quality of a science's reference does not come from some *salto mortale* out of discourse and society in order to access things, but depends rather on the extent of its transformations, the safety of its connections, the progressive accumulations of its meditations, the number of interlocutors it engages, its ability to make nonhumans accessible to words, its capacity to interest and convince others, and its routine institutionalization of these flows […]
>
> (Latour, 1999a:97)

Introduction

Latour's main field of work may be called the sociology of science. His tenet is that the world belongs neither to technology nor to sociology, and that it is the distinction between the two that gets us into trouble. A hardening of either side removes us from the real world in which scientists and technologists go about their work, where the social and the technological are entangled. His concern about sociology is that it should not retreat into the social; it should extend its understanding to the sphere of materiality, technology and artefacts because, he argues, there is no durable social system without material means to keep it together. In a similar way that Whitehead devoted his work to understanding how complex unities come into being, Latour devotes his work to explaining how human and non-human actors are assembled to form durable wholes (Latour, 2005a:68). This has been perhaps the fundamental implicit question behind much of organization theory, as well. Whereas most organization theory has been locked into an entitative view of organizations, the originality of Latour's contribution lies in the way that he conceptualizes connections and associations between actors, thereby dispelling the extensive use of levels of analysis in organization theory.

The distinction between human and non-human actors is approximate at best, but it is a basis from which to talk about a complex and fluid world. Latour takes the argument further by suggesting that the world is made of what connects human and

non-human actors, and not so much what they are in themselves. Latour suggests that 'To speak of "humans" and "non-humans" allows only a rough approximation that still borrows from modern philosophy the stupefying idea that there exist humans and non-humans, whereas there are only trajectories and dispatches, paths and trails'. Latour's thinking here is similar to that of Whitehead, who held that nature does not deliver us anything readily sorted into categories: 'No things are "together" except in experience, and no things *are*, except as components in experience or as immediacies of process which are occasions in self-creation' (Whitehead, [1933]1967:236). Any sorting that we do is due to our own propensity for making order out of something that is not inherently ordered that way. The ordering is a result of the way that we construct our fields of inquiry. When we draw a distinction between economic and social behaviour, for example, it is of our own choosing; it is done for our own convenience.

Although his work does not address organization theory per se, Latour's thinking about the becoming of humans, collectives and technology applies very well to understanding organization as process. For example, his thinking is interesting because he does not privilege organization as a level of analysis. Instead, organizations may emerge as a result of connections and endure through their technology-aided reproduction of those connections. Formal organizations, in Latour's thinking, become what he calls 'megamachines' (Latour, 1999a:207):

> But where does industry come from? It is neither a given nor the sudden discovery by capitalism of the objective laws of nature. We have to imagine its genealogy through earlier and more primitive meanings of the term sociotechnical. Lewis Mumford has made the intriguing suggestion that the *megamachine* – the organization of large numbers of humans via chains of command, deliberate planning, and accounting procedures – represents a change of scale that had to be made before wheels and gears could be invented (Mumford, 1966). At some point in history human interactions come to be mediated through a large, stratified, externalized body politic that keeps track, through a range of 'intellectual techniques' (writing and counting, basically), of the many nested subprograms for action. When some, though not all, of these subprograms are replaced by non-humans, machinery and factories are born. The non-humans, in this view, enter an organization that is already in place and take on a role rehearsed for centuries by obedient human servants enrolled in the imperial megamachine.

The quote brings out an important observation about organization – namely, the interaction between what he refers to as the various subprogrammes of action, which include a wide assemblage of processes taking place in the context of work, and those mechanisms into which the subprogrammes become inscribed. The inscription into technologies allows for reproduction of *types* of subprogrammes, representing what Whitehead refers to as rationalization (the transition of processes into abstractions). Abstractions then come to represent the subprogrammes, which therefore are less dependent on the persons who operate them.

Much as, according to Weber, bureaucracy emerges, organized systems take on machine-like aspects. The substitution of humans by machines is a necessary rationalization for local programmes to extend in timespace. Hence, it is the programme as an idea that travels. However, rationalization dehumanizes something that is inherently human. Therefore, the transitions between the human-mediated and the technology-mediated warrant careful attention.

Latour's work constitutes an innovative analysis of the becoming of relations between the material and the social worlds. Perhaps the most central tenet of his work is described by the sentence 'Neither nature nor mind is in command', a phrase he borrows from Isabelle Stengers' (2002) book on Whitehead. Latour argues against the realist notion that there is a wired nature 'out there' which gives context to what goes on 'in here'. He thus shares Whitehead's scepticism towards the 'subject-predicate' type of dualism which, according to Halewood (2005), has led much of philosophy and science astray. Halewood (2005) writes:

> And, as Latour has also pointed out, the adoption of the subject-predicate mode of thought within the social and human sciences has led to a tacit acceptance of the distinction between nature and society whereby, once the scientists have carved out 'real' objects and things for themselves, social scientists have been left with only the 'social' aspect of existence to explain (Latour, 1993).

Perhaps one of Latour's most important contributions is his persistent argument against slicing the world into levels of analysis, whereby a higher level is seen to give context to lower levels. For example, to view an organization as constituted of a structured level that gives context to a lower level of human interactions is a way to imprison analysis, and thus to curtail opportunities for discovering connections that make up the tangled configurations that organizations represent. His charge against much social science, in fact, is that it is based on settling the question of scale in advance, such as deciding on macro versus micro levels (Latour, 2005a). Rather than looking for context, he argues, we are better advised to follow connections and associations made between heterogeneous actors.

He does not, however, reject context outright. He acknowledges that actors operate by framing things into context. The different ways in which human actors spatialize the world is discussed by a number of writers (see Hernes, 2004b). Weick (1995a:176), for example, suggests that sensemaking takes place within boundaries within which 'explanations hold and outside of which they do not hold'. When Latour warns against contextualization, however, his point is that the context belongs to the actor; it is part of the actor's framing activity, and it is this framing activity that should be brought into the foreground (Weick, 1995a). Framing should not, however, be a privileged lens fabricated by the researcher away from the world of the actor.

Latour also argues strongly against what he refers to as 'social sociology', which focuses exclusively on the social to the exclusion of the material. Such a focus becomes a view something like what he calls 'a mind in a vat'; a view by which

we (humans) are cut off from the world, operating from laws made by ourselves, without help from anyone else (Latour, 1999a:6). Instead, what takes place is that we act upon the world, which acts back on us but, as it acts back on us, we become something different in turn. We act upon the world, but the world creates us in turn. Thus 'we' cannot be something constant that engages with a world that changes.

Latour's work has largely focused on the interactions between human and material actors, the production of science and knowledge. Relations are formed and reformed as actors intervene, but neither the object of the intervention nor the actors themselves escape unchanged by the intervention. Although there are stabilizing processes going on, the world will forever be in a state of becoming. Things cannot be assumed to exist as constant entities because they will never stay the same. Anything that exists is emergent through its relations with something else, and as things are being affected, they re-enter the set of relations in a changed capacity. But rather than just assuming that the world is made of relations between entities, Latour pursues the question of what the relations are made of. Relations, although they are seen in a network fashion, are not links, such as what we find in mainstream network theory. Latour uses the notion of referencing to explain the emergence and reproduction of networks. Referencing enables meaningful interaction to take place between actors. He draws upon the idea of 'circulating reference', which replaces the bipolar model of reasoning that he sees as having reigned in social science. Circulating reference denotes the process whereby phenomena evolve through chains of transformation, mediated by humans as well as non-humans.

The idea of circulating reference helps circumvent dichotomies such as those between subject-object and global-local. As Lee and Hassard (1999) note, within actor-network theory the analytical focus shifts from structural prescription to processual deconstruction. However, this challenges researchers to establish their own space of interpretation because the choice of what to include in the network evidently influences the outcome of the analysis. Thus, actor-network theory places greater responsibility on the analyst. On the other hand, it provides freedom from established categories of phenomena. In other words, it frees the analysis from existing theoretical discriminations (Lee and Hassard, 1999).

At a general level, Latour provides alternatives to the micro-macro distinction in organizational analysis, which he sees as hampering rather than facilitating the understanding of what happens in the social world. Rather than projecting actions and interactions onto macro level constructs such as norms and culture, he argues, we would do better to come to grips with the networks of human and non-human links that we form to provide some stability to the world around us. These networks begin to be perceived as the 'macro-actors' (Czarniawska and Sevón, 1996; Czarniawska and Hernes, 2005), which are actors that are seen to represent the collectivity of actors that make up the networks. In the absence of stable constructs such as structure and norms, theory cannot be deterministic, hence Latour rejects both technical and social determinism (Latour, 1987:141).

Experimentation as organization and vice versa

Some of perhaps the best known parts of Latour's work refer to experimental settings such as Pasteur's laboratory. In fact, much of his work discusses how actors engage experimentally with other actors, and how this engagement impacts on the actors in turn. In a similar vein, organization may be seen as experimentation in a complex and fluid situation in an attempt to make some tentative connections that may develop into a stabilizing configuration. How connections develop, and how they feed into the surrounding world, cannot be determined at the outset, nor can they be fully controlled by those involved. Such thinking is very different from the assumptions behind much literature, which seem to be that organizational models, once developed, remain constant until changed and, moreover, that their change is informed by changes in the external environment. The reasoning behind the latter assumption is largely rationalist, assuming that decision makers are in control and act from understanding of cause and effect.

Examples can be found in the literature on corporate mergers. If, for example, globalization dictates that competitiveness comes only through size, companies will tend to merge in order to control more of the market and thereby benefit from economies of scale. The market situation is seen as a given fact imposed upon companies. However, the managers' reading of the situation may make it appear like a fact. For example, the reality of mergers has been shown to be far more complex than the mere joining of resources, although the ways that mergers and their outcomes are reconstructed in retrospec, tend to be simplistic. Such simplification is observed by Vaara (2002) and colleagues (Vaara and Tienari, 2002), who have studied critically how mergers are reconstructed discursively by companies. Much discourse, they argue, is managerialist, and not enough critical attention has been paid to how the facts of mergers are understood by the actors involved. Managers tend to describe failures and successes according to categories that appear prefabricated and grossly simplistic. Vaara (2002) found, for example, that when managers described a successful merger, they attributed it to 'strategic fit', whereas when they described a failure the explanations typically turned towards explanations such as cultural differences.

The world in which choices are made consists of multiple connections that are made between various factors. Although a merger consists of some central choices such as the choice of partners, it involves many other choices, relating more or less directly to the merger, such as choices involving technology, branding, finance and ownership. The web of activities of which the functional part of a merger forms part is constantly renewed and adjusted.

Because many activities and choices are involved as opposed to a few, and because continuous adjustments rather than a few irreversible actions are involved, the act of organizing may resemble that of experimentation. Put differently, organizational actors engage in a continuous process of experimentation and testing, almost like playing a game with the situation. The process allows for making adjustments and trying out connections among different entities. The process allows for choices to be made while remaining open to the possibility that the outcomes will

not be as expected. A parallel may be drawn with how professionals behave in action, which Schön (1983:150–1) describes as follows:

> Professionals proceed through testing of hypotheses in-action. Their hypothesis testing is a game with the situation. They seek to make the situation conform to their hypothesis, but remain open to the possibility that it will not. At the same time, because it is in-action, they remain in conversation with the situation, so that their models are also shaped by the situation.

The dynamics between the actors and the situation is illustrated by Latour's account of Louis Pasteur's 'discovery' that lactic yeast causes fermentation. 'Discovery' is purposely placed between inverted commas because, contrary to widely held assumptions that scientific facts are lying out there waiting to be found, Latour's discussion shows vividly how Pasteur interacted recursively with the substances involved in his experiments. Sometimes he would experiment from hypotheses of what might happen. Other times the experiments would 'speak back at him', forcing him to alter his course of experimentation. Sometimes he would be in charge, at other times the substance seemed to be in charge. Together they formed processes that separated, then blended, then emerged as something altogether different.

Latour thus works from the assumption that Pasteur and lactic yeast engage in a process whereby they mutually create each other. He refuses to tell the story as if the great scientist were moving systematically towards a discovery waiting to be made. Instead, his account is about the emergence of scientific facts from something that was initially a non-entity. Lactic yeast did not 'exist' as a living organism prior to Pasteur's research; it emerges through experimentation by proceeding through 'propositions', a term that Latour borrows from Whitehead. In a similar vein to Whitehead's tenet of working from non-entities, his analysis works from something that at the outset is not recognized as existing, to something that grows into a discovery and subsequently into a recognized entity. Once Pasteur can prove the role of lactic yeast, it becomes an entity that subsequently enters the stream in biological and chemical research.

The process is one of experimentation in which the substance, the scientist and his institution (The Pasteur Institute) are all changed. As a result of Pasteur's work, the Pasteur Institute became recognized internationally as an authority on hygiene. The example illustrates how events and actors connect in the development of an institution. The evolution may be understood in retrospect, but it would have been impossible to predict before it happened. In no sense was Pasteur's discovery of lactic yeast inevitable. The 'complex unity', to use an expression from Whitehead, consists of Pasteur and lactic yeast. Someone else might have arrived at the discovery, but that would not have made the discovery the same fact, although the chemical side of the discovery might have been the same. For example, the process of institutionalization would most likely have turned out differently.

Actor-networks and their theory

'Actor-network theory' is commonly used in the studies of organizational actors. The term itself is potentially deceitful, especially for those who go searching for networks 'out there', lying ready to be discovered. Networks seen as nodes and links, which is the traditional way to see them, are not what actor-network theory tries to convey. First, actor-networks are forever in the making, although they may be stabilized into so-called macro-actors, black boxes or institutions (Czarniawska and Hernes, 2005). The term 'macro-actors' is useful when speaking of organizations and institutions. Macro-actors emerge from actor networks and 'spokespersons' on behalf of those actor-networks (Callon and Latour, 1981). A key quality of macro-actors is that they represent the many. Over time they become regarded as acting entities, and the traces of how they were formed by the many are wiped away. In other words, the tangled world that created them is left behind and forgotten as they emerge as supposedly coherent unified actors. In Whitehead's words they become 'stubborn facts'.

But even their stabilized states are imagined; they are a way to hypothetically freeze processes to be able to talk about them. And actor-networks are inherently relational; actors exist through their relations with other actors. Moreover, the relations are contingent as they are reproduced and renegotiated between humans and technologies. Artefacts form part of actor-networks, but exist primarily through their association with human actors. The dividing line between what is human and what is technological is a blurred one; relations are not limited to people, but include artefacts. Latour's contention against sociology is that, although it has explained relations between humans and also explained how humans make objects (such as technology), it has not explained how objects make humans in turn (Latour, 1993:82). There is a parallel here to Whitehead's important tenet that subjects are the results of processes rather than the other way round. Subjects take part in the process that makes them, and the process is neither purely physical, nor purely human.[1]

According to Latour, subjects (or actors) do not create the reality from a supreme vantage point; therefore, he distances himself from social constructivism which places too much power on the side of the social. To be sure, human actors are indispensable for the becoming of networks, but they do not just make them and then escape unchanged themselves. Lindahl (2005:62), for example, who studied the effects of a company manufacturing and installing a 250-tonne machine, made the following observation, drawing on actor-network theory:

> […] the engine as a tool or a component in a rational construction process has to be replaced with a more totemistic image. The engine is not only a component among other components, although bigger, heavier and more complex. It carries the raison d'être of the company and of its employees. In this company, in this context, the engine makes the people engineers.

The analysis has to do with how much the technology organizes people around it. It seems to be an overlooked point in organization studies (with some exceptions, such as Zuboff, 1988) that, although humans are active in making technology, technology organizes them in turn. Lindahl (2005:63) observes how the machine eventually works as an active selector of which activities were important and which activities were less important:

> It is true that an engine does not 'draw' cables, pipes and other machines in the full sense of the word, but it 'draws' attention. Performing an installation with an engine as a point of reference means that some actions, or action sequences, become more likely than others. They also become more or less likely if the reference point had been defined as the generation of 30 MW or as the transaction of 600 MSEK.

Making something requires time and, over time, entities change from being in contact with other entities, be they human or material. In fact, over time, as human and material objects get tangled, the boundaries between them get blurred. After some time operating a machine, a worker is no longer the autonomous decision maker that he may once have been, detached from the machine, because once in operation, the machine makes him part of itself. People make machines, but machines also make people, and there is an entanglement that makes them both 'actants' in the making of the history of the machine-worker constellation.[2] Tryggestad (2005a:47) offers the following description of the human-machine interface in strategy research, where he argues against mainstream strategy research as 'technicist dreams' which consist of drawing neat lines of distinction between humans and technology:

> There are very few limits to strategy in the technicist dream. The material entities of technology are not allowed to make a difference. They are just instruments and strategic means to facilitate strategic ends as defined by humans. The essentialist conception of strategy assumes likewise, that the 'strategicness' and the 'controlling' are given properties of the technology – stable attributes of the entity to be introduced. […] [O]ne limit of strategy is defined by the extent to which people exit or enter the machine interface. The case also suggests that people can be transformed into objects when they enter the interface, and back into subjects when (and because) they exit it. The same machine is therefore 'able' to give or to take away the 'humanness', depending on the kind of interaction. It is therefore not a property of the machine, but an outcome of the chain of events at the interface.

From this perspective, a tangled (Latour, 2003; 2005a) world would appear to be one where actors do not keep their original form. Because the world is fluid, relations change, and because actors are shaped by relations, they become shaped in turn. Hence the idea of the unchanged actor does not make sense because the

actor, in making the web, becomes part of the web in turn, what Whitehead refers to as 'the principle of relativity'.

Actor-networks are thus seen as relational constellations, as pointed out above; what takes place in networks is anything that activates or deactivates relations. To see networks as relational rather than as consisting of neatly delineated actors adds fluidity and freedom to the notion of networks. But relations must not be seen in a structural sense, the way that social anthropologists see kinship. Instead of relations, Latour uses the word *associations* for what ties actors together (Latour, 1987; 1999a). Most readers will presumably ask what these associations are made of; what is their nature? Latour (1987:127) circumvents the question altogether, simply saying that what matters is what the associations do in terms of creating something sustainable, not what they 'are':

> We always feel it is important to decide *on the nature of alliance*: are the elements human or non-human? Are they technical or scientific? Are they objective or subjective? Whereas the only question that matters is the following: *is the new association weaker or stronger than that one*.

The citation illustrates how networks are seen as 'phenomena of becoming', to use a term from process language. Rather than departing from theoretical distinctions between different natures of things, the analysis is guided by empirical questions of how networks become – without assuming that they 'are' anything in terms of substance. Processes of becoming are eternal and never 'get there'. Whatever we see as stabilized is temporarily stabilized at best. To assume that something is stabilized is simply a way of talking about a world where nothing is ever stabilized in a final form. The question is how some associations make something possible whereas others do not, how some make networks robust whereas others do not.

An important point seems to be that associations are not necessarily either real or imagined, either objective or subjective. Actor-network theory is foremost a pragmatic way of exploring empirical phenomena. Network, emphasizes Latour (2005a:131), is first and foremost a concept, a tool to describe something, not *what* is being described. Hence, if the concept works, fine. If it does not, well, *tant pis*. The question is not so much whether actor-networks exist as entities, but whether we can understand phenomena through the lens of actor-network theory. Hence the word 'theory' is not to be seen as a model of causal relations, but a way of seeing a world which is essentially seamless, complex and fluid. In short, the tangled world remains outside our grasp. Exploring actor-networks is therefore a way of seeing part of the world, and in a partial way. Methodologically, it connects somehow to Law's (1994) urge for a 'modest sociology', one that attempts to come to terms with some aspects of the world while knowingly leaving out some others.

Some readers may rightfully object that in actor-network theory there seems to be no actors (because they do not stay constant), no networks (because they are constantly being created), and no theory really (because there is no prescription of causal relationships). Latour admits to these apparent inconsistencies, saying that

'There are four things that do not work with actor-network theory: the word actor, the word network, the word theory and the hyphen' (Latour, 1999b:15). It almost looks as if these discrepancies are wilful. In any case, it seems that by calling the theory something which it is not, there is room for it to move, to travel, just like actor-networks. What is more fitting, therefore, than a theory in the becoming for studying the becoming of phenomena?

In fact, it is the possibility to travel that actor-network theory is meant to provide. Latour's contention against sociological theory is that it has locked society into units, preferably large ones (such as organizations), from which there is no possibility to return to understanding the processes that make up the units. The entities, such as organizations, institutions and societies, are 'Leviathans' (Callon and Latour, 1981) which are not to be undone because they stand out as achievements of the universality of the social sciences (Latour, 1993:120). Thus, when the big entities (such as organizations) are to be distinguished from the little ones (such as people), they are distinguished as belonging to a 'higher' level of analysis.

The fallacy of levels of analysis

The idea of levels of analysis is widespread in organization studies. It goes back to Weber's work on bureaucracy, but it is also reflected in Chester Barnard's (1938) classic. Barnard argues that humans are emotional and potentially irrational, but that rationality is reflected in organizational goals. In other words, at the level of the individual there is potentially irrationality, whereas at the organizational level there is rationality. Managers, according to Barnard, were both the coaches of workers to make them participate in decision making and the guardians of the centrally held rationality. The world of management studies may have developed quite a bit since Barnard's time, but it is striking how much organizational theorizing is based on the idea of levels, especially the three levels individual, unit (or group) and organization. Some tempting questions, which lie outside the scope of this book, are: What came first, the organization in terms of levels, or the theory that saw both the organization and its development in terms of levels? Did decision makers, to remain in control, 'order' a theory that suited their need for hierarchical levels in order to remain in control? Behind these two questions lurks yet a third: Can organization be anything but levels?

Yes, replies Latour. The levels stuff is part of the modernist settlement's need for grand projects with grand theories. It treats entities as the starting point, ignoring all the intricacies of how they were built up in the first place or, alternatively, how we came to treat them as entities at all. And if some entities are big and global, then presumably some have to be small and local, otherwise 'the others' could not earn the label 'global'. He uses the example of a railway line, asking if it is global or local. It is global in the sense that it connects countries. The stations along the line, however, are local in the sense that they serve as local stops. But they are also connected to the 'global' via the railway line. The line connects the local to the global (Latour, 1993:117), but rather than dwell on the distinction between the two, we may be better off following the lines that connect them.

The railway example is instructive and, furthermore, illustrative of Latour's thinking, precisely because it is meant to give phenomena the opportunity to travel, meaning that they can transgress the limits stipulated by the notion of levels. In fact, argues Latour (1993:121), we can study far-reaching phenomena while staying 'local':

> What, for example, is the size of IBM, or the Red Army, or the French Ministry of Education, or the world market? To be sure, these are all actors of great size, since they mobilize hundreds of thousands or even millions of agents. Their amplitude must therefore stem from causes that absolutely surpass the small collectives of the past. However, if we wander about inside IBM, if we follow the chains of command of the Red Army, if we inquire in the corridors of the Ministry of Education, if we study the process of selling and buying a bar of soap, we never leave the local level. We are always in interaction with four or five people; the building superintendent always has his territory well staked out; the directors' conversations sound just like those of the employees; as for the salespeople, they go on and on giving change and filling out their invoices. Could the macro-actors be made up of micro-actors? (Garfinkel, 1967) Could IBM be made up of a series of local interactions? The Red Army of an aggregate of conversations in the mess hall? The Ministry of Education of a mountain of pieces of paper? The world market of a host of local exchanges and arrangements?

Latour's observation tells us that once we begin to study the inside of organizations, we are not likely to see 'the organizations' because that level remains a construct for facilitating analysis, if anything. We do see a lot of interconnected actions and people, interconnected largely through associations, in ways that make their connections more or less robust. The strength of the associations depends largely on the technologies, which serve to make the tangled processes more or less plastic.

Working from a process perspective implies assuming that the world is a moving complex of multiple opportunities and possibilities. Analytically speaking, though, it is necessary to work from things that seem to matter more than others, what Bateson (1972:459) refers to as 'the difference that makes a difference'. Clearly, in Latour's conception of networks, it is necessary to single out those elements that seem to influence what is going on. Latour's answer is to award the status of 'actant' to an object or a person, or a person-object hybrid that has survived history, one that, as far as the network is concerned, has stood its test of time.

An actant is a list of answers to 'trials of strength', a list which, once stabilized, is hooked to the name of a thing, which acts as a subject to all the predicates – in other words, it is made the origin of actions (Latour, 1992:122). Actants have stood their test of time in that they have survived several tests over time. In a way, then, time selects those elements that are sustainable. Moreover, robust actants are those that have survived a series of different tests; in other words, actants that have been exposed to variation – and survived. An example of this may be found

in Lanzara and Morner's (2005:75) study of open source software projects, where they suggest that software that has managed to stabilize amid much variation of sources tends to develop into high quality software:

> Variation […] comes mainly through human agency and is at the core of basic learning processes in organizations and social systems (March, 1991; Aldrich, 1999). It works as an unbalancing mechanism that tends to *push the system off its path*. Innovation in practices would hardly be possible without variations. For example, in a highly competitive industry such as software development, better or high quality software is software that has successfully encoded multiple sources of variation. Indeed, in large-scale open source software projects the pressure of variation is so high that one is obviously led to raise the questions: How can the system handle so much variation? How can stability be granted to products and processes? Selective and stabilizing mechanisms are needed to balance for variety. (italics added)

Patterns emerge in a network-like fashion, whereby actors and actants make sense seen in relation to each other. Making sense of relations that tie actors together, rather than making sense of the actors themselves, thus becomes constitutive of actor-networks. Networks, then, do not consist of stable nodes and links, but consist of relations that shape actors recursively. Actors become actors through their relations with other actors. In other words, an actor-network is perpetually emerging. Relations are formed and reformed to obtain a stabilized system that serves some purpose. However, purpose is not taken in the sense of being a stable set of goals. Instead, purposes emerge as do relations and actors. What may have been purposes of forming relations at some stage may be invisible and subject to 'black-boxing' at another stage. What is interesting is the view by which relations are formed. According to Latour, some relations are denser than others, and therefore become more important to the network. These may be relations that are formed through alliances in such a way that other relations are added to the network. New relations are formed by existing ones and serve to reinforce existing ones in turn.

Translation, inscription and stabilization

As discussed in chapter 1, seeing things as substances implies a correlational view of the world whereby each 'thing' consists of a substance which can be compared with the substance of other 'things'. A relational view, on the other hand, is based on transformations whereby something exists through its association with something else. Process thinking, as it is considered in this book, is relational in the sense that things are understood through the reproduction of their relations. A recursive view implies that these relations, in order to uphold the network, need to be continually reproduced.

Latour views the social as being evanescent. That which we call social primarily involves momentary associations. The social, then, is only visible in events

taking place within a larger fabric of relations between humans and technology. Human interactions are too short-lived to provide a basis for stability (Latour, 2005a). Therefore, organizations, for example, cannot sustain themselves in the absence of material means which provide the glue of the overall fabric (Latour, 2005a:66):

> Left to its own devices, a power relationship that mobilises nothing but social skills would be limited to very short-live, transient inter-actions. […] When power is exerted for good, it is because it is not made of social ties; when it has to rely only on social ties, it is not exerted for long. So, when social scientists appeal to 'social ties' they should always mean something that has great trouble spreading in time and space, that has no inertia and is to be ceaselessly renegotiated. It's precisely because it's so difficult to maintain asymmetries that, to durably entrench power relations, to enforce inequalities, that so much work is constantly devoted in shifting the weak and fast-decaying ties to *other types* of links. If the social world was made of local interactions, it will retain a sort of provisional, unstable, and chaotic aspect and never this strongly differentiated landscape that the appeals to power and domination purport to explain.

The transition from the social to the material takes place through what Latour calls *translation* from one medium into another. In his study of how scientists analyse soil conditions in Brazil, Latour (1999a) pursues this question of what constitutes stabilization of processes. He observed how the scientists plotted the local in-situ conditions onto paper and stored them as records and files. To make analysis possible, they have to translate their findings into some medium of representation and storage via a set of intermediaries which represents their understanding of the complex world that they experienced. The results from different locations were translated into a medium that allowed for storage and for access by other scientists who had not been present. Thus it would seem that the material robustness of the medium serves as a source of stabilization.[3]

A question could equally well be posed about what circulates inside a group, a company or a public organization. We ordinarily associate process with the flow of objects, be they information, goods, people, money or other things. When I receive an email from my superior, for example, the email is an object that connects us (for better or for worse). The email is one drop in an ongoing flow that I associate with our school, and it will have an impact on what I do. But what is this object? Surely it is not the same for him as it is for me. For example, for him it may be a mere reminder of how things should be in our department. For me, on the other hand, it may appear to be a mail specifically addressed to me. In other words, what is for him a mail that stresses the collective is for me a mail that focuses on me as an individual. Can one then say that the mail – its contents – is that which circulates? Not really, because we have different experiences with that particular mail. We see the content differently, we *inscribe* (Latour, 1987) different meanings into it. But something circulates, otherwise

nothing would happen. This 'something' that circulates is the mail, on which we inscribe our separate meanings. The mail is an object, but not an unambiguous object. As Middleton and Brown (2005) point out, an 'object' is then more than a thing; it is rather a thing that makes us wait, that inserts itself into our relationships and lends them a form of stability.

We need a different language to articulate the process that takes place here. The philosopher Michel Serres, who has served as an inspiration for Latour's work, refers to what he calls 'quasi-objects' which, according to Serres, are like jokers in a pack of cards; they are indeterminate (Brown, 2002). When they circulate they make the collective as opposed to the 'I'. When they stop, they make the 'I'. The indeterminacy of quasi-objects makes it possible to communicate via them. They are blank white spaces; furthermore, we do not really know the consequences of putting them into play. In a sense they are 'wild' (Brown, 2002:20). But because they are blank, they enable the making of the collective. The email from my superior, because it allows for different interpretations, allows us to function collectively, although he may stress the collective whereas I focus on my own situation. Serres' idea of quasi-objects is difficult to grasp, and it is certainly not treated the way it deserves in this book. Still, the idea, in a simplified form, is useful for understanding that organizational processes are processes of inscription into objects. Middleton and Brown (2005:319) provide an intriguing example of a quasi-object in their study in a neonatal clinic:

> We argue that in neonatal care, it is the baby rather than any other entity who truly acts as a quasi-object. It is the neonate around which the whole network revolves. The identities of each member are defined – sometimes moment to moment – by the relationship they have with the neonate. Thus paediatricians may find themselves cycling between the identities of doctor, technician and counsellor as the trajectory of care unfolds or terminates. The neonate then in a way can be said to recruit members and materials around it, who become its attributes: I am the person who will insert the catheter, this is the device which will provide sodium readings, these are the drugs and techniques which will provide for respiration at this point. The neonate is what everything refers to. It is also the medium, the grounds upon which all other relations are premised. The relationship between members in the unit is derived from their joint positioning with regard to the baby.

Middleton and Brown go on to speculate whether the baby is, in fact, the strongest link in the clinic, despite its apparent fragility. But its fragility does not make it strong. The baby's blankness makes it strong, they argue, because its blankness is fundamental to the way the network is kept together. The degree of blankness requires that we seek to understand the characteristics of quasi-objects that enable networks to develop and to become robust or powerful. More blankness presumably allows for a richer repertoire of inscriptions. In a sense we are looking at an inverted version of 'requisite variety'. Ashby (1960:229) introduced the law of 'requisite variety', which states that only variety can respond to variety.

Thus, for an organism to be able to respond to a certain variety of stimuli in its external environment, it needs to possess a choice of responses which corresponds to the variety of possible external stimuli. It is quite possible, though, that the degree of blankness is not the only characteristic that influences the ability of an object to tie many different actors together. The baby, for example, has a strong symbolic power, and it is also actually a legal entity. Maybe these two characteristics coupled with blankness enable the baby to tie a large organization together.

Enrolment – the outward dynamics of networks

For understanding how an organized system is made durable, the term 'enrolment', used by Latour and Callon in a number of works, becomes useful (e.g. Latour, 1987; Callon, 1986). For something to become part of a network it needs to be enrolled in the network. To become part of a network, however, actors need to have their interests aligned with those of the network because such alignment enables them to be enrolled in the network. Much of the work of translation, in fact, is about aligning interests of actors.[4] Enrolment is not limited to human actors alone; humans enrol non-humans, but non-humans also enrol humans.

In Latour's book *The Pasteurization of France* he describes how, through processes of translation, Pasteur's work and that of the laboratories at the Pasteur Institute took hold in French society and became incontestable arbitrators of hygiene-related medical issues. The 'hygienists', who had originally been opposed to Pasteur's theory of disease spreading through contagion, realized that his ideas could be used to support their own work. Pasteur's increasing credibility served conveniently as an indisputable scientific background against which the voices of the hygienists could also be heard in French society. Paradoxically, the indisputability of Pasteur as a scientific institution from mid-nineteenth century France was exploited through enrolment by his previous opponents in supporting their own case. Thus Latour shows how, in this case, indisputability gives room for actors to accrue their power over other actors. The greater the indisputability, the firmer the basis from which power is built (Hernes, 2005a).

One could envisage various motivations for actors to become enrolled in networks. Being part of something bigger confers power because it enables the actor to represent something bigger. Elsewhere (Hernes, 2005a), I report on a study of a university's recruitment process. The process was consistently lopsided in the sense that the same 'wrong' candidate was consistently ranked first by all the decision making bodies of the university (institute, faculty and university boards). In that case I explain the outcomes of the process as the results of internal actors enrolling external institutional actors into their respective causes, thus enabling a lopsided treatment of the candidates, in the sense that the same 'wrong' candidate was chosen by each successive university body involved. Internal actors were able to significantly influence the outcome of the case by speaking with the voices of their chosen institutional macro-actors. In actor-network theory language, they *translated* the recruitment dossier into the voices of their chosen

institutional actors. When decisive arguments were presented, they related to the indisputability of the institutions evoked. By evoking the indisputable aspects of the institutions, they 'enrolled' other actors in order to gain sufficient momentum for their causes.

Another motive for actors to enrol in networks is the sheer attractiveness of being part of something bigger. Powell *et al*. (2002), in their study of the formation of networks in the biotechnology field, note that, in certain fields, the attractiveness of companies was important. The name of the game is to be connected, not just to stay abreast on the scientific front, but also to be *seen* as being connected. They note, on the basis of an earlier study (Powell *et al.*, 1996), that connectedness counts and that disconnectedness is a liability.

Enrolment may also take place when currents of thought provide legitimacy for each other. Relevant to organization studies and also illustrating enrolment processes was Max Weber's (1930) argument that the growth of capitalism in the Western hemisphere was related to Calvinism. Weber argued that capitalism effectively 'waited' for Calvinism as the religious institution to legitimize the organized pursuit of profits. Weber defined capitalism as the pursuit of profits through formal organization, which is why he defined capitalism as a Western modern phenomenon. Weber rejected the idea that capitalism emerged because there were actors in the modern era who pursued profits. Those actors, he argued, had been there since antiquity. Therefore, Weber argued, the existence of profit-hungry actors coincided (became aligned) with the emergence of Calvinism, which served to legitimize profit. Calvinism, in fact, contained the written texts that allowed capitalists to pursue maximum profit. Hence, we could speak of a mutual enrolment between the Calvinist texts and the interests of the capitalists.

In relation to organization studies, artefacts become particularly interesting when they become standardized solutions that extend in space and time because they then acquire names and come to be seen as socially acceptable which, in turn, enables them to travel in space and occupy places in organizations around which routines and positions are built. Artefacts, with the routines and positions built around them, may in fact constitute organizational identities which enrol social actors in turn and take part in the creation of organizations. Latour (1994:51) sees materiality as a primary medium of enrolment:

> Everything in the definition of macro social order is due to the enrolment of nonhumans – that is, to technical mediation. Even the simple effect of duration, of long-lasting social force, cannot be obtained without the durability of nonhumans to which human local interactions have been shifted. […] Society is the outcome of local construction, but we are not alone at the construction site, since there we also mobilize the many nonhumans through which the order of space and time has been reshuffled. To be human requires sharing with nonhumans.

On a more practical level, Latour cites several examples of how some actors' interests – which become translated and inscribed in artefacts such as 'silent

policemen' in the guise of speed bumps in the road or 'European hotel keys' attached to heavy and bulky metal knobs (Lindahl, 2005) – constrain the action space of involved actors. Speed is reduced and keys come back to the counter.

Connectivity

The question of enrolment involves the idea of connecting between actors. Connecting upholds the network and makes it self-sustaining. A question is whether a network can sustain itself through its relations between entities alone. Or, put differently, is the connectedness of the network constituted only by what goes on between the actors? For example, think of the relationship between two lovers. When they first meet their relationship is a direct affair between them. Apart from artefacts such as music, a bottle of wine or other material things, there is not much outside their relationship in the way of human actors that mediates what goes on between them: they relate to each other directly. As time goes by they may have children and, as the children grow, the lovers' attention is diverted; what was once a simple direct relationship becomes a web of other participating actors. In this web it may even be hard to find a direct line between them, almost certainly not the same romantic line as was there when they first met. In other words, it becomes difficult for the two to extract their one-to-one relationship from the tangled mass of the surrounding relationships. The initial condition had two actors and it was kept going by romance. The later condition has many actors (not just the children) and is kept going by something more, including the maintenance of the family as an institution. The first condition could break down if the romance went away. The later condition may go on even if the romance goes away.

This leads back to the questions of what constitutes the connectedness of a network and whether it can reside exclusively in the relations between actors. Whitehead ([1933]1967) probes into the very notion of 'connectedness' in an attempt to define how 'many become one', and questions if connectedness can be reduced to relations. He refers to Bradley (1914:193), who argued that 'relations do not relate' and who wrote, 'Is there, in the end, such a thing as a relation which is merely *between* terms? Or, on the other hand, does not a relation imply unity and an inclusive whole? (italics in the original) (Whitehead, [1933]1967:230). Bradley evokes what he calls the 'inclusive whole', suggesting that there is something that underpins collective action which cannot be reduced to relations alone. To Bradley (1914:175, in Whitehead, [1933]1967:233), the 'inclusive whole' is represented by feelings or 'living emotion', and suggests that it '[…] is a whole of which I am immediately aware. It is an experienced unity of many in one'. It is also relevant to mention James (1892) on this point, who suggested that in all thinking there must be *some* topic or subject around which all the members of thought revolve. James used the word 'fringe' to distinguish between the world we choose to know and the world we choose to ignore. That topic, or subject, which is common to the members of the thought, he argued, is constantly felt at the fringe. In other words, even if we think of the world as a network, doing so does not exclude the idea that

the network revolves around something different from what flows in the relations between the actors.

On Latour, Whitehead and organization

Latour's work relates to Whitehead's thinking largely by virtue of its emphasis on connections. As mentioned above, Latour works from the idea that networks are created and maintained through relations between actors. As networks grow, relations are added to new actors and these change the existing relations in the network. The perspective is useful in the sense that it enables one to better understand the dynamics of network propagation. It is in the light of propagation that three foci from Whitehead's work (chapter 3, section entitled 'Extracting foci from Whitehead') may be associated with the work by Latour.

Heterogeneity

According to Latour, connections are possible between heterogeneous elements. Heterogeneity is mentioned in chapter 3 (section entitled 'Between concrete experience and abstraction') as one foci of Whitehead's work. Whitehead did not want to separate the human from the physical, nor did he want to privilege the social over other types of systems, something which is also a main assumption behind Latour's work. Heterogeneity is reflected by the use of actants in Latour's work; they are hybrids, analogous to Whitehead's term 'complex unity'.[5] The very option of working with hybrid notions opens for connecting different factors in organizational analysis such as products, brands and people, and studying how they form durable relations. As durable relations are added to the network, it stands a better chance of propagating in time and space. This again opens for explanations of organizational phenomena which in some cases go far beyond studies confined to levels of analysis, such as individuals, groups and organizations.

Stabilization

It is mentioned above that Whitehead referred to the coming together of events as *concrescence*. In a fluid world, novelty and order arise from connections that produce new patterns which represent a form of stabilization. It is mentioned in this chapter that Latour sees macro-actors as formed from the coming together of several actors. Macro-actors emerge as groups of actors whose relations, however, are such that they may be seen as one actor. A macro-actor may be a formal organization[6] whose name signifies what it represents and how it has evolved. Whereas the process of becoming an actor is inordinately complex, once it is given a place among organizations, it may affront other organizations (Callon and Latour, 1981) and, as a recognized actor, it may enrol other actors. Systems of franchising, for example, might be described in such a way whereby the macro-actor consists of a brand, a concept and various mechanisms for controlling the franchisees who are actors collectively making up the macro-actor.

Macro-actors, in Latour's conceptualization of them, wipe away traces of their construction (also know as 'black-boxing'), presenting themselves (through their spokespersons) as indivisible and solid (Czarniawska and Hernes, 2005). Moreover, social scientists contribute, often unwillingly, to this construction process by increasing this solidity and consistency in their descriptions. But the fact remains that macro-actors tend to be perceived as facts in themselves, and this confers upon them a temporal stabilizing force. Therefore, although they are perpetually in the making, they are treated as ready-made entities with certain characteristics.

Abstraction

It is mentioned in chapter 3 that Whitehead considered abstraction to be of importance for processes. Abstraction, he argued, arises from processes and enter/re-enters processes in turn. Latour's work provides a number of examples of how materiality serves to stabilize processes when human experience becomes inscribed in media. His study of soil sampling in the Amazon forest is a prime example of how experience is translated into abstracted knowledge to be stored in archives. It could be argued that Latour tends to see translation processes as working only one way, from experience to abstraction. On this point he would differ from Whitehead, who insisted that there is no linear order to things; abstraction forms the basis for experience just as experience forms the basis for abstraction (Bakken and Hernes, 2006).

5 Niklas Luhmann on autopoiesis and recursiveness in social systems[1]

> For a theory of autopoietic systems […] the pre-eminent question is: How does one get from one elemental event to the next? Here, the basic problem lies not in *repetition* but in *connectivity*.
>
> (Luhmann, 1995:36, italics in original)

Introduction

Niklas Luhmann (1928–1998) ranks among the most influential social thinkers of the twentieth century. His work has influenced disciplines as diverse as sociology, philosophy, law, psychology, economy and political science. Luhmann studied under Talcott Parsons at Harvard, who wielded considerable influence over him. However, Luhmann distanced himself from Parsons' theoretical framework by developing his autopoietic theory. Luhmann's sociological project aimed at developing a general theory describing how society recursively reproduces itself through systems of communication. The theory is based on the idea that society differentiates itself into subsystems which operate according to their respective codes of communication. He persistently questioned how systems could maintain themselves; furthermore, he argued that one should study the *conditions* of reproduction making it possible for systems to maintain themselves.

The idea of autopoiesis has intrigued central writers in organization theory. Organization textbook writers such as Morgan (1986) and Hatch (1997) have suggested that autopoietic theory has considerable potential. Morgan (1986) (referring to Maturana and Varela) suggested that the idea of self-reference has considerable potential for understanding organizations from a flux perspective. Hatch (1997:373) suggested that '[autopoiesis] has powerful implications not only for our understanding of systems, but our relationship to ourselves, our organizations, and our theorizing efforts'. Although Morgan and Hatch suggest that autopoiesis merits further development in organization theory, they do not pursue the actual application of autopoiesis to organization studies. Luhmann, however, does apply it to organization studies. Recently, works have begun to emerge that apply Luhmann's thinking to organizations. Examples are Bakken and Hernes (2003) and Seidl and Becker (2006), both edited volumes.[2]

Background and principles

A *systems* thinker, Luhmann held essentially a process view of social systems, seeing such systems not as assemblages of interconnected entities (substances), but rather as patterns of communication. Luhmann's process thinking corresponds in a number of ways to Whitehead's idea about process, and ideas about events and time in particular (Luhmann, 1995:290). In Luhmann's work the notion of events is central; we can see a preoccupation about the connecting of events similar to that of Whitehead. Referring explicitly to Whitehead, Luhmann attributes self-referential qualities to events; qualities which enable events to link up with other events by reference to themselves (Luhmann, 1995:509).

Similar to Whitehead, Luhmann works from the fundamental question of how order is at all possible, given the large number of possible choices in social systems. Hence, in a world of endless possibilities, order seems the exception rather than the rule.[3] Consequently, according to Luhmann, we should investigate not just how order comes into being, but also how order does not come into being. Why do systems follow one course and not another? And why are some alternatives selected out instead of being included? The answers to these questions, he argues, lie in the system itself, not in its environment. Organizations, for example, are not selected by the environment. Rather, they orient themselves in such a way that they make their own selections. The process whereby they orient themselves towards the outside world is of primary interest. Systems thus function on the basis of their internal operations, which consist of communication.[4]

The world (system) we are in produces meaning, and this production of meaning keeps it together. In fact, to Luhmann, the very essence of a social system lies in its particular mode of meaning creation. In fact, no social configuration can exist unless it engages in some form of *recurring* meaning production. The reproduction through its own meaning creation processes presupposes that it distinguishes itself from the outside world; otherwise, no system could be distinguished from other systems. For example, I exist as an individual by differentiating myself from other individuals (which does not necessarily mean that I am different from them), which implies drawing a boundary between the meaning I attach to myself and the meaning I attach to others. Thus boundary drawing is essential to social systems, and by drawing and redrawing boundaries, systems create the meaning that enables them to exist. These boundaries must be both closed and open; they must be closed for the system to recreate its meaning production, and they must be open for it to observe the outside world. Luhmann (1995:447) formulates it as follows:

> Self-reference produces recursive, circular closure, but closure does not serve as an end in itself, not even as the sole mechanism of preservation or as a principle of security. Instead, it is the condition of possibility for openness. All openness is based on closure, and this is possible because self-referential operations do not absorb the full meaning, do not totalize but merely accompany; because they do not conclude, do not lead to an end, do not fulfil a telos but rather open out.

A main feature of systems is that they continually draw distinctions between what they are and what they are not. In order for systems to maintain and renew themselves, they must be able to observe what other possibilities exist 'out there'. Thus, although they are 'operationally' closed, they are nonetheless able to observe what goes on in the external world; otherwise, there would be no way that they could have a meaningful relationship with their environments.

According to Luhmann, all is process, which means that there are no privileged enduring links between entities such as the way links and nodes are conceptualized in traditional social networks theory. In the absence of a taken-for-granted stability, organizations, along with other forms of social systems, are inherently unstable and are forced to continually produce and reproduce themselves. They must constantly recreate themselves to prevent their possible dissolution (Cooper, 2005). Production and reproduction are done by drawing distinctions between the system and the outside. This is done through communication. It is communication produced by members, rather than members themselves, that Luhmann uses as a unit of analysis. Actors, such as people, exist, but only to the extent that they move in and out of the system of communication that makes up the organization.[5] Communication, consisting of a synthesis of information, utterance and understanding, enables systems to process meaning. Acts of communication (utterances) are mere suggestions or propositions (Whitehead, [1929]1978; Latour, 1999a) which may or may not be picked up and processed by the system. If they are picked up and processed, utterances become constitutive of the system. Communication is not limited to verbal communication, but includes actions such as decisions.

Readers of Luhmann's work immediately recognize not only its considerable richness and diversity, but also its considerable complexity. The richness of his work owes partly to the multiple disciplines he drew upon (biology, mathematics, philosophy, systems thinking and sociology) and partly to his own sense of creativity. Three 'streams' in particular influenced the development of his autopoietic systems theory.

First, the influence of systems theory stems from his time spent studying under Talcott Parsons at Harvard. Several terms used by Luhmann, such as 'social system', come from Parsons. On the other hand, Parsons' influence also fuelled Luhmann's critical stance towards his work. According to Luhmann, his own autopoietic perspective is fundamentally different from the perspectives of both Weber and Parsons. To take Parsons, his systems are based on functions and norms. Functions serve to uphold a system, and norms serve as an ultimate point towards which a system converges. Consequently, systems become deterministic, evolving towards equilibrium states supported by functions. In terms of research, it implies that if we know the equilibrium state, we can work retractively to an understanding of what led up to it.

In Parsons' thinking, human behaviour inside the system is assumed to orientate itself towards norms that exist outside the human actors. Such an assumption fundamentally shapes the way that we go about analysing human behaviour in organizations. If we assume that norms guide human behaviour, this assumption will inevitably influence our research findings when we try to make sense of

human behaviour. We will look for a sort of finality, a higher order explanation in stable norms. In other words, we will correlate what we observe in terms of behaviour with a fixed point (the norms).

To Luhmann, such thinking is problematic.[6] Luhmann's charge is that Parsons' thinking overlooks the dynamics of the system under study. If there are fixed points against which we can understand a system, we partly understand why it exists. However, we are unable to explain either *how* it comes into existence or *how* it comes to pursue a certain course of development. Luhmann also argued that Parsons' thinking overlooks how a system might have evolved differently.

A second stream of influence came from biology – more precisely, the notion of autopoiesis (Varela *et al.*, 1974; Maturana and Varela, 1980). Systems, argued Maturana and Varela, interact with themselves rather than with their environments. In Luhmann's version of autopoiesis, systems interact cognitively with their own interpretations of the external world rather than with the external world per se. Interpretations are formed over time, hence systems are formed by their own 'historicity' as past choices and the effects of those choices interact to constitute the systems' identities. Consequently, systems are not more or less open to their environments, as assumed in traditional systems theory; rather, they are both closed and open. They are closed for their own operations, allowing interaction with themselves, and they are open for observation of the outside world. In processes of communication, for example, a person (receiver) is not seen to receive parcels of information. Instead, the communication takes place as he interacts with his own cognitive framework while remaining aware of what has been uttered by the other person (sender).

Luhmann's (1995:36) concern was to explain how a system can sustain itself from one elemental event to the next. Systems, he argued, are able to observe themselves and the world around them, and they are able to represent themselves and the world around them in such a way that the representation can be used as a basis of action. Systems that are not able to do so do not emerge in the first place, or they disintegrate. An organization, for example, will not be able to exist unless there is some fairly coherent and stable rationale that guides its decision making. In the absence of any meaningful rationale, it cannot sustain itself and is therefore likely to disintegrate. Similarly to Whitehead, Luhmann emphasizes events as building blocks of systems. Organizations operate on the basis of decisions, which he sees as events. For the system to uphold itself, events need to connect with one another over time.[7]

A third stream that stimulated Luhmann's autopoietic theory comes from philosophy, and notably the influence of Husserl's phenomenology. The 'reality' in Luhmann's autopoiesis is the meaning that is produced and reproduced by the system, which is manifest in the system's operations. In the case of organizations, Luhmann takes decisions to represent intentions. Other philosophical works present in his writings include Spencer Brown's (1969) mathematical treatment of 'laws of form' and Von Foerster's (1991) work on the application of recursiveness to social systems, from which he developed the idea of systems as consisting of distinction drawing operations, separating them from other systems. He drew in

particular upon Spencer Brown's ideas of the 'unmarked space' and 're-entry'. Systems, argued Luhmann, observe by drawing distinctions. However, once a distinction is drawn, only the inside can be seen, leaving the outside as a 'blind spot'. Having observed the system from the outside requires that one re-enter that system. Luhmann also acknowledged Whitehead's influence on his thinking.

Distinctions made are influenced by – but not determined by – previous distinctions that have been drawn. Hence, history is important, but as a contingent factor rather than a determining factor. In a way, systems become unpredictable 'historical machines' (von Foerster, 1991) with an unforeseen future. According to Luhmann, this implies that the idea of organizations as goal-attaining (coming to an end) based on normative-rational models should be abandoned, and that we should instead work from empirical descriptions of how organizations operate their own production and reproduction. Seen this way, organizations are unpredictable historical systems that always operate in present time which they have brought forward themselves through self-referencing.

The above outlines three influential streams that went into Luhmann's work. If we look at the 'downstream' side of his work, we see that his interest was directed at a wide variety of phenomena in social life, what he referred to as autopoietic subsystems of society: family, religion, law, politics, economy, science, education, art and mass media. Luhmann in a radical way wished to distance himself from an interpretation of society whereby a centre or apex represents the whole; that is, an interpretation whereby one subsystem is able to penetrate all the other subsystems in a kind of *representatio identitatis.* According to Luhmann, the subsystems are equal to each other; none of them can demand to be the centre of society, although he was very aware that certain subsystems may well have a dynamic effect on the development of society.

Autopoiesis

Autopoiesis (meaning self-creation or self-production) was coined by the Chilean biologists Humberto Maturana and Francisco Varela (Varela *et al*., 1974; Maturana and Varela, 1980), who began by arguing that systems are not subject to environmental selection in a linear process of selection, as prescribed by classic biological models derived from Darwin. Systems, argue Maturana and Varela, interact with themselves as they produce and reproduce themselves in a recursive fashion: 'Consider for example the case of a cell: it is a network of reactions which produce molecules such that (i) through their interactions [they] generate and participate recursively in the same network of reactions which produced them, and (ii) realize the cell as a material unity' (Varela *et al*., 1974:188).

Whereas Maturana and Varela meant autopoiesis as a biological concept, the social systems theorist Stafford Beer (1980) commented that autopoiesis has considerable potential for the study of social systems. At around the same time, Giddens (1979:75) made a similar observation: 'the most relevant sources of connection between biological and social theory do not involve the functional analogies so strongly represented in the history of sociology, but rather concern

recursive or *self-producing* systems'. It was also in spite of Maturana and Varela's scepticism that Luhmann worked for many years to show how autopoiesis could be applied to understanding social systems.

As mentioned above, Luhmann's theory is not a substance-based theory. Instead, systems are about features of social life that exhibit a certain 'systemness' or regularity (regularity not being synonymous with repetition). A system is held up by the connectivity that it is able to perform between events over time. It is worth noting that Luhmann attributes neither deterministic nor causal characteristics to systems. He acknowledges that the term 'system' is problematic, precisely because it suggests a higher degree of 'systemness' than that which he is willing to attribute to social life. To be sure, social life is not to be seen as possessing machine-like features. Rather, the term 'system' is used for lack of a better term.[8] Discussing Luhmann's framework, Baecker (1999) points out that systems help explain that possibilities exist and that selections can be made at all. A notion of systemness which could also be applied to Luhmann's framework is found in a passage from Whitehead (1938:6) who suggests that 'We must be systematic, but we should keep our systems open'.

A feature of systems in general is that of regularity, which does not preclude change.[9] It is the regularity that keeps things from falling apart, which Luhmann calls systems. Nevertheless, there might be different modes of regularity. A system distinguishes itself from other systems by exhibiting a different *type* of regularity than do other systems. A public education authority, for example, has a different type of regularity than that of each school it is charged with overseeing. Whereas the education authority makes decisions concerned with policy and principles, the schools make decisions about how to conduct a course, how to deal with specific pupils, etc. Neither of these systems can be described as close-knit, or clear-cut, but they perform decisions that are largely different in kind, which serve to distinguish the two systems from one another. Systems operate, according to Luhmann, through differentiation from other systems, which constitutes their identities.

An autopoietic view of systems emphasizes the *types* of operations that can be seen as being essentially internal to the systems. This view is compatible with the idea of recursiveness, whereby a system's operations interact recursively with the network that makes up the operations. Such a formulation may be difficult to appreciate at first sight. It may be easier when seen in relation to Maturana's observation that self-referential systems are made of networks of productions of components that 'recursively, through their interactions, generate and realize the network that produces them' (Maturana, 1981:21).

Translated into organization studies, this means that organizations sustain themselves by connecting operations to the basis from which they operate. An illustration of how this works is presented in a study of a Norwegian dairy corporation carried out by Hernes and Schjelderup (2005). The corporation, founded in 1889, had developed a set of values in its dealings with farmers, politicians and its customers. The values, which were the basis for its operations, concerned matters such as hygiene, technology, milk, nature and national culture. The study

illustrates how regular processes such as major meetings, surveys, training and information served as reminders of these basic values. In fact, they served to communicate the outer boundaries of the system as stipulated by the fundamental values of the corporation, thus differentiating it from other organizations. The organization could be seen as a recursive system whereby the regular processes, being connected to the values, also served to connect values to actions.

The notion of recursiveness helps to explain how organizations adapt to the external environment through their internal operations. The internalization of external factors is done through the organization's system of meaning processing, as autopoietic systems operate on the basis of meaning proper to the system. Hence changes are transmitted, not directly from the environment, but are channelled through variations inside the system. This idea not only rejects ideas of tight coupling between organization and environment; it also draws attention to the inner workings of the system and, in particular, to how systems emerge and evolve through their internal operations.

A common charge against the autopoietic perspective is that it does not explain change. 'Autopoiesis' means self-production, and therefore the term lends an impression of systems engaging exclusively in maintaining, unchanged, their basic features. The charge is therefore understandable, given the assumption that the only way for systems to maintain themselves is to close themselves off from other systems; hence, the impression that nothing can trickle in from the external environment and that novelty cannot be created.

However, two things can be said about stability and change in relation to an autopoietic perspective. First, developing stability should be seen as a change in itself. One of the great achievements of organizations is their capacity to transform unorganized complexity into organized complexity while building the external complexity into their internal operations. This is how routines are developed to rationalize operations, thus enabling the organization to meet demands from its external environment. An important achievement of organizations is their ability to transform complexity into simple structures, leaving them free to handle other areas of complexity through non-routinized behaviour.[10] When it comes to complexity, most process approaches would dictate a pragmatic view of the degree of complexity that systems can handle. In Luhmann's thinking this means that, beyond a certain level of complexity, autopoiesis is not possible. A subject of study then becomes the transition of one level of complexity to another, and how new systems are formed in response to increased complexity. In relation to organizations, the point is highly relevant, notably in relation to understanding how organizations differentiate internally to cope with simultaneously competing institutional pressures from their environments.

Second, continuity offers *opportunity* for change. According to the principle of autopoiesis, systems uphold themselves through interaction with their own states. Without reproduction a system breaks down. On the other hand, if there is only reproduction of existing features of the system, the system cannot change and will remain essentially identical over time. The dilemma is resolved by conceptualizing the relationship between process and structure. Process, consisting of successive

events, offers occasions for change as well as continuity (Luhmann, 1995:347). Change may happen in a number of ways (such as through accidents or unintended consequences), but it will take hold only insofar as it can be 'understood' by the system, i.e. interpreted through the codes of communication that are appropriate to the system in question. Structure presupposes self-maintenance which is sufficiently stable to enable meaning to be made of opportunities for change, thus enabling choices to be made against a horizon of recognizable possibilities. The discussion of continuity and change in relation to structure and process, respectively, offers a framework that greatly benefits the study of organizational change.

Time and structure

Why do we organize at all? Imagine any form of social organization: family, company, business network, political party. Luhmann's answer is that time forces us to organize. Time is a precious restraint forcing us to organize so that we can achieve things. Luhmann (1995:42) points out that 'if an infinite amount of time was at one's disposal, everything could be brought into tune with everything else'. A consequence of an abundance of time would be that we would not be forced to make selections. But because time is in limited supply, we are forced to select the things that we think we can control and select away things that are not within our sphere of control or our sphere of understanding. This is how we construct our world of relative stability in a world where everything flows (Chia, 2000).

However, time itself is an elusive thing. Chronological time, the most common notion, is the most convenient definition of time because it provides comfort. By providing us with an unambiguous scale along which things can be measured, it instills a sense of order and predictability. Chronological time is constructed by humans to deal with their reduction of complexity. It belongs to 'our world' in here. As Luhmann (1995:309) points out, 'time that is measured chronologically is still the most secure: no matter what happens, it continues on'. Outside the system of 'ordered time' is a world that invites itself in, which does not operate according to chronological time. That is the world of entangled flows. However, most of what is out there is kept at bay because time as a limited resource forces selections to be made. Selections are based on distinctions between what is perceived as important and what is perceived as unimportant. In organizations, selections of what is important may be made through the lens of chronological time.[11]

Another aspect of time relates to the relationship between past, present and future. To uphold themselves, systems need to look both forward and backward. If a system is to exist over time, it must be able to interact with its past. If not, nothing could lead to anything else, and the system would disintegrate. Therefore, as far as the system is concerned, something must hold options open in a coherent way over some period so that the decisions made today correspond to some extent to decisions made yesterday. That which holds options open is what Luhmann calls 'structure'. Structure is there from one moment to the next to permit some flexibility of choice over time. An example is provided by Huff (1988) (in Weick, 1995a:144) who argues that decision points, such as budget and planning

meetings, are regular opportunities for people, solutions and problems to meet. In other words, the very fact that meetings are held keeps the possibility open over time for different connections between people, solutions and problems to be made.

In the absence of the stability provided by structure, it would be impossible to operate collectively in a meaningful manner over time, and opportunities for change would probably be lost too. In their study of open source software projects, Lanzara and Morner (2005) illustrate how structure serves to keep options open over time. Open source software projects are virtual organizations in the form of online communities of software developers who double up as users of the programs. Lanzara and Morner (2005:86) refer to threads in the communication that lead ephemeral lives. On the other hand, although individual threads may be volatile, there are more robust bundles of threads that provide continuity over time:

> By plotting the overall stream of threads […], we can appreciate the ongoing emergence and disappearance of threads over time. As we have already said, threads are ephemeral entities. Most of them live the life of a mayfly. Robust and durable threads emerge very rarely but the flow of communication is never completely discontinued. The single threads go off and on, but the overall fabric never collapses. At any point in time in the development of the project there is a persistent bundle of active threads that signal and carry on activity at varying degrees of intensity. Agents can go off the stream, but can always re-enter later on. Thus the inter-temporal continuity and stability of the project are assured by a flow of communication along a main stream of development and sensemaking.

The example illustrates Luhmann's notion of time in the sense that some parts of the system hold options open while others come and go. It is important, therefore, not to see structure as a pattern of roles and functions, as is done in much mainstream organizational research. Structure, in a loose sense, is that which provides the stability enabling the system to 'revisit' itself, so to speak.

Bearing in mind that autopoietic social systems are based on communication, they depend on exhibiting a dominant discourse which provides consistency of meaning over time. For communication to make sense, it must be organized into 'themes' in which 'contributions' can be located (Luhmann, 1995:155). Themes form context for contributions and form the basis for selection of contributions. Themes keep open the possibility of contributing, and as structure they make it possible for contributions to connect backwards in time, allowing recall of earlier contributions to a theme (Luhmann, 1995:156). At the same time, themes regulate who can contribute what. They may be exclusive in the sense that only a few may contribute, or they may allow for greater numbers to contribute their views. Organization researchers are familiar with themes being more or less open to different groups of participants. However, the degree of exclusivity of access has commonly been related to levels in a hierarchical sense. Whereas this makes

sense in some cases, it unduly restricts understanding of communicative processes beyond a hierarchical view of organization.

Luhmann was concerned with the conditions necessary for a system to reproduce its structures. And because communication forms part of structure, he posed the question of what matters in communication. Instead of focusing on praxis, which reflects daily operations of people, he focused on significant communication that enables the differentiating of operations. Systems attain autopoiesis through differentiation (distinction), as pointed out above. Most processes do not create the momentum or represent the stimulation required for reproduction, and it therefore becomes important to differentiate communication that actually enables system reproduction. Such operations are what Bateson (1972:459) refers to as those arising from 'difference that makes a difference: the information that we select which becomes impulses to the system'.

Events, contingencies and horizons

Structure allows for going back and forth in time, which confers upon structure the feature of reversibility. Systems cannot, however, operate on the basis of structure alone. Systems also consist of what actually takes place in terms of operations. Decisions, for example, take place within some form of structure that connects them in time. But the system also consists of decisions that mark selections of courses of action. Courses of action are linked by events. Events connect to form chains of events, which again mark the trajectory of the system. It is the connecting of events (Luhmann, 1995:289) which Luhmann calls process. Structures and events, in Luhmann's work, are complementary concepts.

Events constitute a major aspect in Luhmann's autopoiesis, notably through their role in creating the system's temporality. Events take place in time and they mark the difference between 'before' and 'after'. Events exist in time, but have by themselves no extension in time; they are essentially evanescent phenomena. They are moments in time that exist as markers that allow us to explain continuity as well as discontinuity of social systems. In Luhmann's organization theory (Luhmann, 2000), for example, decisions act as events marking the difference between before and after (Åkerstrøm, 2003). Events mark selections of some alternatives over others. If an unfortunate decision is made, correcting it will not eliminate that decision, but its correction will enter the process as a new event.

An important feature of events (and hence process) as opposed to that of structure is that they are irreversible. Once an event has taken place, it becomes a fact as having taken place. Events occur only once, and only in the briefest period necessary for their appearance, which makes them ideal as elementary units for analysis of processes (Luhmann, 1995:67). Events, compared with structure, do not keep options open, but mark irreversibly the choice of some options over others. Because systems depend on being both reversible and irreversible (keeping options open while also making selections), both structure and process become important to systems. Structure without process becomes an empty shell; process

without structure becomes actions without direction. This is why Luhmann does not treat process as isolated from structure, but considers structure and process as complementary terms (Luhmann, 2000:340). Structure and process become related to one another through *events*, at which selections are made.[12]

The relationship between structure and events is a recursive relationship, whereby they take part in their mutual production. Giddens (1979) points out the recursive character of social life, with structure being both the medium and the outcome of social practices. In other words, social practices take place thanks to structure, but they tend to reproduce or modify the structure in turn. This is what happens with events as well, in the sense that they take place within a structure while also reproducing and modifying it. It could be argued that Luhmann drives the question about recursiveness further than Giddens, in the sense that he more specifically searches for the conditions of recursiveness, whereas Giddens appears more content to observe that recursiveness exists. When Luhmann is concerned with the conditions for recursiveness, he forces the question of what matters for reproduction, such as in the case of communication. In contrast to Giddens' use of social practice, he focuses on the communication that surrounds differentiating operations. Systems attain autopoiesis through differentiation (distinction), which takes place at 'decisive' events.

Recursiveness, although it lies at the basis of autopoietic systems, is not a causal mechanism. As mentioned above, there is always room for choice, which may make the system take a different direction. Choices are made consciously by decision makers in organizations, within the structure of meaning on which the organization operates. The 'structure of meaning' is presented to the decision makers in the form of horizons. Horizons appear as ranges of choices in the present, while embodying possible interpretations, both for the past and for the future. Events at which decisions are made may thus be directed towards remembrance from the past as well as towards foresight for the future (Luhmann, 1995:449).

From meaning to expectations and beyond

With focus on communication, autopoietic systems become essentially systems of meaning creation, and it is the internal meaning creation that enables the system to reproduce itself. A system that is not able to communicate meaningfully is likely to disintegrate because it has no basis from which to make sense of events, which is why it needs to be closed for its own operations. This is not to be confused with everybody being in agreement with the meaning that is created. People may make similar meaning of events that they experience, but that does not prevent them from making different interpretations from the implications of those events. This is why it is risky to interpret behaviour in the light of shared assumptions, as suggested by writers on organizational culture such as Ouchi (1981). Assuming that there is something all-embracing there to be shared makes it difficult to appreciate the volatility of social life. As Czarniawska (1997:163) points out in her work on narratives, actors are normally forced to choose one version of the world to act upon, but that does not make any version permanent or even particularly valid.

Communication and meaning creation, although they seem indispensable for system reproduction, do not, however, explain how any system moves forward. With its insistence on closure, the autopoietic perspective may lend the impression of a system as static, a sort of 'perpetuum mobile' – a machine that can continue to do work indefinitely without drawing energy from some external source. Thus a system that is simply oriented towards meaning may appear, at best, to be reactive to the world around it.

But there is more to autopoietic systems. Systems reflect members' expectations which project the system onto new possible futures. In the absence of expectations there would be nothing to project the systems into the future, and it would become the sort of perpetuum mobile that a superficial reading of autopoietic theory might suggest. In a sense, expectations represent life and emotions, perhaps hope. In fact, the structures of social systems may also be understood as patterns of expectations, what Luhmann (1995:325) refers to as 'antipicipatory structures'. Expectations serve to make the occurrence of some events more probable than others, as they tend to work as mechanisms of selection of events similar to Whitehead's discussion of concrescence and prehension mentioned in chapter 3. Thus, while communication *reproduces* the meaning inherent in the structure, expectations[13] 'produce' the future of the system by making some events more probable than others. Hence, expectations work as anticipatory selection devices by hinting at what actors might expect. More accurately, expectations work as crystallized meaning, making it possible to 'anticipate a decision and provide it with justifications, opportunities for consensus, allowances for exceptions, and so forth' (Luhmann, 1995:325). By contrast, the meaning reproduced by communication makes it possible for actors in the system to talk about possibilities and disturbances with which the system becomes confronted. To simplify, one might say that reproduction upholds the system through communication of meaning. Neither of these two – reproduction and production – can be seen in isolation from the other. Production is embedded in reproduction.

An important point is how expectations can be seen to differ between systems, and how those differences affect system behaviour. It is mentioned above that a system that reproduces itself over time and space exhibits a certain robustness, because that is how it is able to exist. Latour, for example, argues that actor-networks become more robust with a higher degree of heterogeneity of connections. Weick (1976) points out that a certain looseness of coupling in organized systems provides for improved local adaptation. March (1971) suggests that playfulness allows organizations and institutions to escape from over-rationalized straightjackets and experiment with alternative interpretations of the world. These examples do not relate directly to expectations, but they illustrate how different process theorists pay attention to how qualities of systems or networks influence their chances for survival.

Luhmann's interpretation of expectations is that they lay the basis for learning by enabling comparison between what happened and what was expected to happen. In this way, they provide the necessary elements for system behaviour.[14] Depending on how expectations are communicated within the system, they may

lead to feelings of fulfillment or disappointment. Expectations with a high degree of precision, for example – what Luhmann refers to as claims – may in an unpredictable world lead to disappointment when they are not fulfilled. On the other hand, if fulfilled, they become all the more entrenched and eventually lead to an excessive bias of expectations, a point also made by March.

In tightly connected systems, precise expectations are not able to incorporate complexity and unpredictability in the outside world, which is another way of describing the points made by robustness (Latour), loose coupling (Weick) and playfulness (March). Luhmann's point is that precision in expectations may actually make the system *inaccurate*. The argument that precision may lead to inaccuracy is characteristic of Luhmann's subtleness of analysis of the apparent paradoxes of social systems. It resonates with arguments in organization theory for loosening of structure for better chances of survival. For example, Weick (1976:7), in his discussion of the nature of loosely coupled versus tightly coupled systems, points out that adaptation is not the same as adaptability; on the contrary, the two might well be at odds with each other. Adapting precisely to a niche in the market – what some might see as successful adaptation – may prove costly for a company. It may prove costly, argues Weick, because redundant resources may be neglected which could prove crucial for adaptation when external demands change. In other words, what is successful adaptation at one time could become a liability at another time.

Luhmann's use of the term 'expectations' is a somewhat 'cooler' version of 'emotions', sometimes used as a substitute for 'values'. Luhmann does not want to get locked into the idea that values are a final state of social systems from which they cannot return. He argues that the processes of fulfillment and disappointment are complex, but they both appear within the system as *emotion*, as expectations are transformed into claims. However, an emotive state is not to be perceived as being irreversible. The transition from expectations to claims, he suggests, increases the chance that emotion will form, although the converse is also possible as emotions may be cooled down into mere expectations (Luhmann, 1995:269).

In organization studies emotions connect to institutions, such as found in Selznick's (1949, 1957) important work. Selznick's book *Leadership in Administration* argued that formal structure may become 'infused with value beyond the technical requirements of the task at hand' (Selznick, 1957:17). His earlier book (Selznick, 1949) shows how ideologies are played out in a large public organization, the Tennessee Valley Authority. A difference with Luhmann is that, whereas institutional theory tends to see institutional formation as moving towards a final equilibrium state, Luhmann's framework allows for systems to change from being institutionalized to being non-institutionalized. Such a difference from institutional theory is also a reflection of Luhmann's criticism of Parsons.

Thus Luhmann chooses to regard meaning as potentially unstable rather than stable. Meaning, writes Luhmann (1995:65) 'must be fashioned as basally unstable, restless, and with a built-in compulsion to self-alteration'. Luhmann's conception of social systems thus rests on a view of there being a constant tension between, on the one side, their basis for self-production and, on the other side, their propensity for change.

Luhmann's reasoning for how systems may exist in such a state of tension between the secure and the potentially insecure is based on his perception of the tension between actuality and potentiality, discussed in chapter 3. Like Whitehead, Luhmann views actuality as the residue of potentiality. To Luhmann, meaning – which is the basis on which systems are enacted – is in effect the continual actualization of potentiality. Meaning is not that which is actual, but rather the *difference* between that which is actual and that which could be potentially different. We recognize here that the basic unit of the system consists of distinction drawing operations, i.e. distinctions reflecting a difference between what 'is' and what 'is not'. But for meaning to be an actualization of potentiality, that which is potential must be known, and here Luhmann's idea of potentiality, rooted in meaning processing alone, deviates somewhat from that of Whitehead. For Luhmann, potentiality is represented by possibility, i.e. possible selections made by the system. Possibilities refer to possible conscious choices, in the sense that a range of choices is open from which a selection may be made. But, to be sure, this is a version of potentiality restricted to meaning processing. It does not account for potentiality residing in factors beyond that meaning processing of the system, which is where his notion of possibility-actuality differs from Whitehead's idea of potentiality-actuality.

Complexity, autopoiesis and identity

A tangled world entails complexity. In organization theory, a number of views have been taken of the complexity that surrounds organizing processes. However, complexity has commonly been reduced by isolating levels represented by individuals, units and organizations, respectively. In contrast, Luhmann worked from the idea that a social system consists of operations, not levels, and that, furthermore, the system's operations can only absorb a limited amount of complexity. The world may be experienced in its complexity, but its complexity cannot be absorbed by the system's operations. When the limit of their complexity handling is reached, the system's operations become hampered as choices become ambiguous. His theory, therefore, rather than attempting to explain the degree of complexity as is attempted by complexity theory, investigates how systems actually deal with complexity by remaining sufficiently simple to reproduce themselves. In fact, argues Luhmann, systems such as organizations arise primarily as a means to deal with complexity.

This does not mean, however, that systems, such as organizations cannot become complex; rather, it means that the *basis* for a system's operations cannot exceed a certain complexity. The network of all the daily decisions of a sizeable company may be very complex. However, the principles by which decisions are made must, by necessity, be less complex otherwise there would not be a sustainable basis for coherence between the various decisions made. Therefore systems shelter themselves from excessive complexity.

A case in point is Luhmann's analysis of social identity. Identity is currently attracting considerable attention from organization researchers, and it is a topic

that illustrates important differences between an autopoietic view and much mainstream identity research. Seidl (2003), who discusses organizational identity from an autopoietic perspective, points out that Ashforth and Mael (1996:23), for example, define organizational identity as members' shared beliefs about central, distinctive and enduring characteristics of the organization. Rather than assuming that organizational identity is a substance (something that organizations 'have'), an autopoietic perspective implies studying the actual processes by which organizational identity is produced and reproduced.

An autopoietic view of organizational identity takes production of texts as its point of departure. To be sure, organizations consist of people and technologies, but what each organization is actually about is reflected in the texts (Luhmann, 2000 in Seidl, 2003:135) that it produces and reproduces about itself. Hence, although organizations consist of tangible entities (people and technologies), the focus is on the meaning they produce as text production systems. The texts they produce function as self-descriptions on which they depend for their operations. Their self-descriptive texts prevent them, in effect, from 'losing themselves' (Seidl, 2003). In other words, organizations create their own reality by talking to themselves.[15] It should be noted that, although the texts guide organizations, they do not determine them. The fact that organizations cannot exist without self-descriptive texts does not mean that they are prisoners of their texts. The best they can do is to try to produce texts and thereafter to try to conform to them. Sometimes they do not conform, and that is when we see cases of loose coupling (March, 1981) and hypocrisy (Brunsson, 1989).

An interesting aspect of autopoiesis arises when complexity is introduced in relation to identity production. Organizing is about operating in a world that is fluid and complex, and no observer – including the organization itself – can in any way represent its actual degree of complexity. Consequently, the organization cannot fully describe itself because it cannot represent every detail of the making of its identity. As has been pointed out by Whitehead and Bergson, complexity and fluidity can be experienced but not expressed. That which we can express is abstracted and fed into the process of experience. What consciousness 'knows' is that which is abstracted for its understanding. Self-reference, according to Luhmann (1995:264), operates on the basis of consciousness.

This level of basal operations already determines that consciousness does not know what it does not know, does not see what it does not see, and does not mean what it does not mean – and that nothing in the environment corresponds to this negativity.

In a similar way, organizational identity as text must be a simplification of the actual complexity of the organization. The texts are simplifications that enter into the system, which in the case of organizations is the decision making system. In the process of the texts re-entering the organization, it is realized that they cannot all be used, but they are assimilated or translated to the extent that the organization can make meaningful use of them (Seidl, 2003). The viability of a self-description therefore depends on how successfully different decisions relate to it. Some decisions are made to adapt to it whereas others are not. Thus, according to

Seidl, texts help the individual decision to integrate into the 'labyrinth' (Luhmann, 2000:420) of organizational decisions.

On the absence of the subject

It is mentioned in chapter 5 that the human subject is a tricky topic, from a Whiteheadian perspective, because the subject forms part of the process; that is, it cannot stand outside it because neither the subject nor the process can be ascribed constancy. In Luhmann's framework, social systems do not include the individuality of the subject, but individuals are seen as environment to the system. The system, in other words, does not depend on the individual directly because the individual is not part of it. Such a perspective runs counter to much process-based thinking about groups and organizations because, in such thinking, the acting and interpreting subject has an indisputable place. Weick's work, for example, is based on a view of the subject as an integral part of the system, such as in micro-level organizing processes where organizing is primarily a phenomenon of inter-*subjective* communication. With Luhmann, on the other hand, the communication system exists more or less independently of the individual.

Luhmann's reticence to 'subjectify' the subject has, not unexpectedly, earned him stark criticism in sociology, not the least from Habermas (1984, 1987). Criticism from Habermas and others has an ideological flavour, blaming Luhmann for rendering the individual powerless. How, for example, can individuals help systems avoid degenerating into ruthless machines that destroy humans, societies or the natural environment if they have no place in the systems? At a more mundane level, Luhmann opens for criticism in management studies because his autopoietic theory seems unable to explain why some managers are successful and others are not.

Thyssen (2003), for example, takes Luhmann to task for not being able to account for the individual manager or decision maker. This inability, according to Thyssen, is a result of designing systems solely on the basis of communications. Individuals may step into the stream of communication but they cannot alter it, according to the theory. It is worth stressing 'according to the theory' because Luhmann is not so naïve to think that people do not make a difference. His autopoietic theory is developed to provide an analytical framework that accounts for how *systems* emerge and uphold themselves. Systems consist of communications that are framed by expectations which come from individuals. Still, he has a hard time finding a place in his theory for the role of the individual in social systems. On the other hand, one could argue that since process thinking is inherently relational, individuals cannot really be seen as 'things in themselves' anyway. From a process view, individuals exist through the relations they maintain with other parts of the system or the network.

In a sense, Luhmann's framework, with its focus on communication, strikes a parallel with Latour's focus on relations rather than entities. There is, however, an epistemological aspect to Luhmann's work that differentiates it sharply from Latour's work on actor-networks. As pointed out in chapter 4, in Latour's work

networks consist of people and artefacts – humans and technology. In fact, most actants are hybrids; they are 'humanized technologies' or 'technologized humans'. In Latour's work there is no network outside the relations between the entities, and the change or maintenance of the network is synonymous with the change or maintenance of the relations between these hybrids. Inspired by Husserl's phenomenology, Luhmann, on the other hand, translates everything into the communicative system of intentional acts. More like Whitehead, he sees the event such as a decision as the smallest unit of analysis.

On Luhmann, Whitehead and organization

Connectivity

An aspect that differentiates Luhmann's work from Whitehead's thinking, and which also sets it aside from Latour's work, is the importance he pays to boundary drawing. To be sure, Whitehead did not ignore boundary drawing, as he acknowledged that distinctions lie at the base of human perception. However, boundary drawing does not occupy a major role in Whitehead's work, maybe due to his reticence towards privileging the social. Luhmann's reasoning, on the other hand, dictates that without boundary drawing there is no difference between one system and another, and hence no system can exist because there is nothing differentiating one system from another.

The importance of considering boundary drawing lies in the locus chosen for connectivity. An autopoietic perspective considers the system to operate closed from its external environment in a structural sense, which means that the main emphasis is on the mutual connectedness of the system's internal operations. Perspectives such as those taken by Whitehead and, to some extent, Latour, on the other hand, are different from Luhmann's because they focus attention on the outward rather than the inward connecting processes of systems. In the case of Whitehead, an outward focus corresponds to his atomistic view of things. In the case of Latour, an outward focus is reflected in his view of networks as residing primarily in the connections between heterogeneous elements.

Contingency and stabilization

As the quote at the beginning of the chapter suggests, Luhmann's concern was to formulate a framework that explains the connectivity between events. Like Whitehead, he saw events as evanescent elements of processes. Once an event has taken place, it cannot take place again. In other words, events represent irreversible time. Yet social systems exist and continue to exist, which means that something provides for continuity between events or, put differently, events find their place in relation to a system that upholds a range of possibilities for different events to take place. Such is the role of structure in Luhmann's framework. Structure consists of the codes of communication that characterize the identity of the social system,

thus allowing the system to 'talk to itself' and thereby give rise to expectations about the future. In relation to structure, events represent possibilities, both for reproduction of the system and for change.

The importance of the structure-process relationship as it is conceptualized by Luhmann is that it allows for structure and process to be complementary (Luhmann, 1995:289). In fact, as pointed out above, the boundary between process and structure may be vague as they tend to form part of one another, although they may be considered analytically separate. The advantage of such complementarity for organizational analysis is that the mutual making of process and structure over time may be studied.

Potentiality

It has been mentioned that, although Luhmann's autopoietic theory presupposes that systems tend towards stability, they are also open to change. As systems reproduce meaning that is sufficiently simple to form a basis for reproduction and actions, they constantly 'redraw' their texts. The redrawing of the texts cannot take place in isolation; rather, it must take place against a background of the other possibilities that exist. Hence, although systems reproduce themselves in actuality, the reproduction is done against a background of possibilities. As mentioned above, however, an autopoietic view is based on the importance of meaning processing, and for meaning to be an actualization of potentiality, that what is potential must be known. This is where Luhmann's idea of potentiality, rooted in meaning processing alone, deviates somewhat from that of Whitehead, as Luhmann's notion of potentiality is represented by possibility, i.e. possible selections made by the system.

6 James March on decision processes and organization

A logic of streams

Introduction

James March ranks as one of the founders of modern organization theory. His early work with Nobel laureate Herbert Simon, resulting in the book *Organizations* (March and Simon, 1958) served in many ways to define the field of organization theory, being the first attempt at systematizing insights relative to organizational phenomena. The book was followed up in 1963 with a book co-authored with Richard Cyert entitled *A Behavioural Theory of the Firm* (Cyert and March, [1963]1992). The latter book is of particular interest as an early process perspective in economic organization theory.

March does not work from a priori notions of what organizations 'are', but rather what constitutes and sustains organized actions in a fluid and often incoherent world. Put differently, organizations are not ready-made 'things' that are clearly demarcated from other organizations or from their environment. Nor are they things that consist of predefined elements interacting with each other in predictable ways. A Parsonian reading of organizations as social systems, for example, would see social norms as the ultimate template against which to assess individual behaviour, and thus make it predictable. In March's work behaviour, although open to interpretation, is not predictable on the basis of stable constructs such as norms. This does not mean that norms do not exist – institutions create rules of appropriateness, for example – but they are not reliable explananda of human behaviour.

Instead of being attributed precise boundaries or substance, organizations are patterns of formalized decision making processes that constitute a feature of modern life. When March and his co-writers use the noun 'organization', it is more in terms of allusion to labels given to entities called formal organizations such as the Red Cross, a corner grocery store or the New York State Highway Department (March and Simon, 1958:1). Within these organizations there are processes that attain varying degrees of stabilization, from garbage can-type decision processes to routines. However, these processes do not lend themselves to assumptions of equilibrium.

March frequently leaves an element of surprise in his use of terms. When he refers to organizations, he uses the label that they are given and which lends the

impression of consistency. The Red Cross is to all intents and purposes a consistent organization over time and space. What is meant is that it is consistent in its actions when seen from the outside, whether seen by financing agencies, beneficiary groups or the media. But that does not mean that its patterns of decisions all add up to consistency. Far from it. If the various processes were consistent, it would probably owe more to chance than to anything else. Thus, the reader looking for a mechanistic or organic conception of organizations when reading March is likely to be disappointed. Organizations are not really much more than name tags for things that we tend to think they are (i.e. purposeful, consistent, etc.), but which they are not. His use of the term 'organizations' thus exhibits an element of irony and playfulness, leaving open a number of possible interpretations.

Beneath the seemingly coherent label of 'organizations' there is incoherence. Organizations operate in a world ruled by incoherence, and organizational design therefore consists of ways of coping with incoherence. Ironically, as March sees it, organizational design conceals, tolerates, even stimulates, incoherence (March, 1994:194). Thus, organizational life produces incoherence that makes organizations (as coherent labels) able to survive in an incoherent world. It is therefore a curious mix of coherence and incoherence by design that enables organizations to survive. March (1994:193) formulates it thus:

> Rather than have decision processes that proceed from consistent intentions, identities and expectations to coordinated decisions and actions, organizations exhibit numerous symptoms of incoherence. Decisions seem unconnected to actions, yesterday's actions unconnected to today's actions, justifications unconnected to decisions. Organizations frequently have ambiguous preferences and identities, ambiguous experiences and history, ambiguous technologies, and fluid participation in decision making. They are loosely coupled.

Reading this, one could easily slip to the conclusion that the implication is that there is no order, or that organizations might be better described as chaotic systems. According to March this depends on how the description of the various incoherences in organizations in the previous paragraph is read. If we read it as a breakdown of centralized coordination, it may well look like a description of chaos. That would be a logical conclusion from a theory of order from the top, which March (1994:193) suggests belongs to standard theories of organization. Such conventional theories, however, are inherently faulty, and the type of order that prevails in loosely coupled systems is not conventional order. On the contrary, they are rooted more in our propensity to want to understand systems as coherent and individuals as consistent (March, 1988:17):

> The idea of coherence is central to modern thinking about human existence. Individuals are seen as seeking and securing coherence in attitudes and between attitudes and action; institutions are seen as coherent assemblages

> of tasks and activities; intra-individual and inter-individual conflict is seen as moving towards resolution; health in individuals and institutions is associated with internal integration. Observations in organizations, on the other hand, suggest enduring incoherence. Although there are pressures and processes leading to coherence in organizations and actions in organizations are in some ways impressively coordinated, the apparent coherence is produced less by resolving inconsistencies than by obscuring them. By limiting attention at any one time to a relatively small number of problems, values, participants, and constraints, organizations maintain an ideology of consistency within a reality of contradictions and dualities among actions and beliefs.

Analytically speaking, March works from entities that make up organizations but without assuming any a priori connections between them. For example, it is in principle possible that talk and actions lead separate lives. In fact, it is logical that they should, at least part of the time, lead separate lives because they try and do different things. Talk tends to deal with principles one at a time but aims at generalization. Action tends to deal with many principles simultaneously but only in a specific limited situation (March, 1994:198). Thus, March makes a break from much conventional organization theory by assuming that things do not hang together by default but instead by assuming that things come together through organizations.

Where conventional organization theory would be dismayed by the existence of disorder, March invites us to marvel at the existence of order. This is where he joins other process theorists building on the assumption that there is no a priori order. Whitehead, for one, spoke of *creative* order. There are no intrinsic organic or mechanic logics by which organizations function. The extent to which they appear as organic or mechanic systems is dependent on their being made to appear like that, either by actors within the organization or by those who happen to be looking at the organization. This is why much organizational discourse tends to be rationalistic. Directors, when talking about a service that was developed and successfully launched, will tend to ascribe the event to successful management. They will tend not to say that it happened by chance, even if their hunch was to attribute it to chance – the reason being that investors, financing authorities or share owners do not like the idea of waiting for another chance event that might or might not happen. This is why rational decision making is such a celebrated myth in modern society (March, 1987).

Beneath the appearance of rationality, we are essentially looking at systems in which elements that may well lead separate lives come together and create outcomes that could not be anticipated. We are looking at systems where things are in a state of becoming, even though we may regard them as fully fledged entities. When they do come together, however, they entangle, they mesh with one another. For example, an innovation may enter a decision making routine. But once it enters, neither the innovation nor the routine remains what it was (March, 1981).

March looks at how tanglements of processes take place, using the term 'streams' to describe how various factors interact with one another in time and space. In his various publications he considers a number of different factors ranging from information, choice and goals to identities and learning. The idea of streams lends the impression of an atomistic view not dissimilar to that of Whitehead. The atomistic uncertain order is compounded by the fact that, not only are there streams that may or may not cross, as the entities making up the streams such as actors, but that these may pursue inconsistent preferences. In other words, the streams are not to be understood through the lens of consistency. These various considerations add up to a view of organizations as loosely coupled systems, a metaphor he shares with Weick (1979).

How organizations become: decisions connecting decisions

A persistent question of March and his colleagues relates to the connecting patterns of streams of participants, choices, problems and solutions in organizations. In their seminal article on the garbage can model of decision making, Cohen, March and Olsen (1972) do a good job of illustrating a process view by which organization is an outcome rather than a pre-existing entity. Their starting point is that organizations, rather than being seen as coherent structures, are basically loose collections of ideas. From being loose collections of ideas they coalesce into systems that operate with sufficient coherence to prevent them from falling apart. Their coherence is made possible through persistence of some beliefs about the world, although coherence and persistence may operate together with incoherence and lack of persistence. Taken together, March's production touches upon several stages between organizations as loose collections of ideas on the one hand, and as persistent systems on the other.

We might ask ourselves how loosely coupled phenomena develop into something more coherent. I permit myself an example to illustrate the idea of propagation in timespace. Have you ever lit a fire in the garden in the spring to burn twigs and branches trimmed from trees and bushes? Some of them are dry and burn without any help. Most, however, are recent offshoots, which means that they are fresh wood and do not burn easily. At least in our garden, the heap of twigs and branches may be quite big, and most of it will not burn unless I start the fire in the right way, meaning that I organize the initial stages to enable early and rapid progression of the fire. The fire may die out at any stage early on before it gets so big that the sheer heat from it enables its own progression through the fresh wood. More often than not, I am not able to get it going because I do not arrange for the right succession of pieces of wood to enable them to gain momentum in the early stages. There is the question of time. If a bundle of wood burns for too long before the adjoining wood catches fire, the fire may die out because the longer that bundle of wood burns, the less chance there is that it will spread. There is also the question of space. Unless the fire extends through a volume of wood that leads to ignition of a sizeable adjoining volume, it may also die out. The earlier in the process, the higher is the risk that it will die out, and the more crucial is the

time and space organization for the progression of the fire. Having failed several times to get the fire going, I try and do it according to a simple rule of thumb. The organization is done by arranging pieces of wood in proximity that catch fire quickly and provide a sustainable fire, at least long enough for adjoining volumes to catch fire. I have noticed that it helps to have a few dry sizeable logs burn early in the process. These logs sustain the fire over the period that it takes for the rest to ignite. In other words, they 'keep the heat on' while other less combustible pieces of wood heat up and catch fire. These logs are important in the early stages; after that stage the fire becomes largely self-propagating due to the generation of its own heat. Once the fire becomes self sufficient, all the wood is eventually burned, meaning all the twigs and branches that would not otherwise burn. Once the fire gets going under its own steam, it also becomes irreversible; I cannot stop it unless I make use of a watering hose. In the early stages I could stop it by merely removing a central piece of wood.

The fire has become a 'self-sustaining fact'. The propagation of the fire could be seen as the unfolding of tangled processes of events at which choices are made. In the early stages, decisions may be highly consequential for what is to come. Once a programme becomes so powerful that it propagates under its own steam, however, decisions tend to be made in place of the decision maker. In other words, individual decisions cannot really change much except, perhaps, by igniting other fires.

Much like Luhmann's view of organizations, March's focus is on how organizations emerge and become sustained through decision making. What decisions are made, about what and how depends in part on how decisions are connected in timespace. Decisions, however, consist of different factors. There is the choice, the problem, the decision maker, the solution and the opportunity.[1] Such factors may connect or they may not. Probably, and more often than not, they do not connect. When they do connect, however, it is not entirely accidental because they tend to be 'looking' for each other, much like the spreading fire in the above example. Solutions look for problems and decision makers look for decisions. This is akin to what Whitehead calls the 'prehension' of events; events that 'grasp' for each other.[2] Prehension relates to the propensity of an event to connect to another event with which it has common aims. Each occasion, according to Whitehead, takes in all the frozen data from its predecessors and adds novel feelings of its own. The occasion does not passively copy the past: in the act of self-creation it refreshes the design of the past, thereby inventing its novel present and preparing for its possible futures.

The probability of events connecting to one another depends consequently on the intensity of their search for each other, but it also depends on the organizational structure. Organizations consist of structures that shape the priorities of decision makers by channelling attention. For example, a decision maker in a specific function will assess decision criteria partly based on his or her identity as a member of that function. Another and important structural constraint is that of time. As discussed in chapter 4, Luhmann's point about time is that it is a crucial factor for the structuring of social systems. March makes much the

same point, although from a different angle, arguing that decision makers within organizations are constrained by the amount of time they can devote to the various things demanding attention (Cohen *et al.*, 1972). The very limitation of time forces certain logics upon organizations as they force decision makers to limit their horizon of choice, thus privileging some problems over others without really knowing if the privileged problems are more important than those that are not given the same amount of attention. For example, problems may vary in importance relative to the amount of time spent on solving them. Relatively unimportant problems receive relatively little time, and relatively big problems receive relatively more time.

There are two important aspects to decisions. First, the actual contents of the decision – the actual choice made between several possible choices. In line with Luhmann's thinking, events in the form of decisions present a horizon of choice which is related to preceding choice and made possible by the structure, which helps keep choices open over time, as mentioned in chapter 5. March (1988) emphasizes the importance of rules as a basis for organizational stability and change, which presents some similarities with Luhmann's idea of horizons. Rules exist in organizations in order to make intelligent choices possible, and decision makers tend to make choices according to what they see as appropriate in relation to prevailing rules.[3]

Another aspect of decisions is how they connect to one another in shaping the organization. Decisions are made all the time, but some are more important than others or, rather, some groups or *types* of decisions are less reversible than others. For example, the choice of an operating system has consequences for choices of software. A decision to replace a Microsoft platform with an Apple platform, for example, has obvious consequences for what types of application can be used. At the level of strategy, the choice to become an environmentally responsible company, for example, has repercussions for how business is conducted. Other decisions have to relate to such a decision, whether they conform to it or not. This does not mean that a company becomes wholly environmentally responsible, although it may signal this intention. Studies in the past have shown how companies who have been regarded as responsible, such as by scoring high on the corporate social responsibility (CSR) indicators, have turned out to be quite the opposite – the most noteworthy case being Enron (Sims and Brinkmann, 2003).

Beyond the importance of singular decisions there is the aspect of decisions of connecting decisions. For example, a decision to make a company environmentally responsible is likely to be consequential if there are other important decisions to which it can be meaningfully seen to connect. Consequential decisions are decisions that have an impact on the way that people go about their work, or on the way the company goes about doing its business. If it does not connect with supporting actions, it is more likely to leave mere ripples on the life of an organization than lead to wider organizational change.

March seems to suggest that we might be talking about a sort of clustering of consequential decisions which, depending on their mutual connectedness,

makes them more or less powerful in shaping organizational choices. His emphasis is on the timing of problems, solutions, decision makers and choice opportunities (March, 1994:201):

> Problems, solutions, decision makers, and choice opportunities are linked initially by virtue of the times of their arrivals on the scene and the possibilities available at those times. The linkages change over time as problems, solutions, and decision makers move from one choice opportunity to another, and as choices are made. Thus the results produced by the system depend on the timing of the various flows and on the structural constraints of the organization.

In other words, temporality is central to the connectivity of decisions. Decisions that are related to each other and that are closer in time to one another therefore stand a bigger chance of making an impact than if they are made further from each other in time. Connectivity between decisions relates to the intensity of the structure within which the decisions are lodged. Thus, March (1991) argues that organizations that develop effective instruments of coordination and communication, i.e. more compact patterns of connectedness between related decisions, will tend to become more robust over time than more loosely coupled organizations. More tightly connected decisions tend to favour reason over foolishness, and imitation over experimentation (March, 1991:73); in short, a more rational and hence reliable organization. He points out, nonetheless, that the price of reliability is a smaller chance of becoming innovative compared with the organization's competitors. Consequently, we end up with the seemingly paradoxical conclusion that more robust organizations may be less fit for long term survival.[4]

A question worth posing, however, is the extent to which temporal proximity is the only parameter that works in the direction of robustness or reliability. A decision will only be of limited effect if there are not other decisions that follow which support it. As long as we look at mere operational decisions directed exclusively at the organization in question, this assumption seems to hold. However, some decisions are directed towards institutional legitimacy and aim to embed actions in a more widespread framework of meaning. Such decisions serve to provide a basis of meaning for organizational participants, and they tie decisions to identities of social institutions that exist beyond the local organizational context. Institutions become institutions precisely because they concern many actors over long periods of time (Latour, 2005a); they occupy large chunks of timespace that exist largely outside the vicinity of organizational decision makers.

For example, a decision to launch a new routine to overlook the ethical standard of a company's practices connects to what we may call the institution of 'corporate ethics'. Under this umbrella a number of mechanisms have emerged to promote improved ethical behaviour among public and private organizations, including journals, programmes, research projects, organizations and standards. Standards are promoted through a concept of CSR, which includes a set of ethics-related criteria against which the performance of organizations may be assessed.

Thus, a number of elements connect to promote the idea of ethical corporate behaviour, making it a relatively powerful and widespread source of organizational legitimacy. A decision associated with corporate ethics may therefore prove to be consequential for other decisions, precisely because it connects to a well-known concept that transcends the boundaries of the organization and not necessarily because the decision connects closely with other related decisions in the organization.

Indeed, many decisions within organizations do refer to external institutions. When, for example, a manager or a consultant speaks in favour of importing a management tool, he or she speaks on behalf of an institution appearing as a 'field of international expertise' at that moment in time. Likewise, when a union representative speaks of rights for workers, he or she speaks against a background of unionism as an institution. These institutions come to life through the enactment of individuals who enlist them in their internal cause (Hernes, 2005a). They are enacted largely through association, which means that they are enrolled (Latour, 1999a) as participating actors into the organizational discourse.[5]

When debating institutions, March and Olsen (1989:51) emphasize the importance of meaning. Symbols, myths and rituals, they argue, signal the appropriateness of events; they belong to 'the way things happen' (Feldman and March, 1981). Elsewhere, March (1987) refers to decision making as a highly ritualized and symbolic activity in modern society. Nonetheless, if there are institutions in modern society that legitimize organizational decisions, it is possible that they weigh heavily in shaping organizational actions, and that they carry a different weight than what is suggested by their connectedness with other internal decisions. Some decisions relate to the more emblematic side of the social and economic world, and their agenda-setting power may depend less on their position in timespace than on the case for decisions of a more operational character.

Signals and symbols

A central preoccupation of process thinking is how an order emerges and sustains itself over time and space. In Whitehead's thinking the search is for how entities evolve. If entities evolve, ordering ensues. When people talk about something on various occasions, that which they talk about enters the consciousness of more people and becomes embedded as discourse. One central question that Whitehead worked from was how many become one? How can many unrelated processes converge into complex unity? In the absence of convergence, organization would not be possible. Organization is possible, however, and it becomes possible as and when many occasions converge towards one; when many emails, for example, serve to maintain an order that transcends any one of them. Callon and Latour (1981) embarked on a similar line of thinking with their idea of macro-actors – actors that sit on top of many other actors and become their spokespersons. Thus, organizations become assemblies of many factors whose interrelationships are ambiguous but whose labels as organizations lend the impression of unambiguity (March, 1981).

March, as mentioned already, studies how organizations evolve over time and space. In line with theorists such as Luhmann and Whitehead, he takes account of symbolic dimensions of how facts evolve. Decision making, in particular, is a highly ritualized and symbolic activity. He argues that what is particularly celebrated in modern society is the idea that life is under intentional human control, and that the control is exercised through choices based on explicit anticipation (March, 1987). Because making correct predictions is an impossibility, giving the impression of being in control actually serves the aim of remaining in control. Decision making in modern organizations therefore tends to serve the upholding of organization in the sense of order as much as it serves the need to make decisions. Hence, there is a certain sacredness about decisions which by far exceeds the need for making things work.[6]

Although the symbolic aspect of decisions here seems unnecessary and purely 'for the gallery', March's subtle point is that, with all their ritualistic and performative aspects, decisions are necessary for order to be produced and reproduced. A parallel may be drawn with Whitehead's explanation of how processes converge. Convergence (or what he calls 'concrescence') happens because subjects need a basis of knowledge to work from. Humans cannot fathom the 'real' complexity of the world and they depend on models, which is the knowledge from which they operate. However, this is not the knowledge of the world, but the basis from which humans make things come together.

Returning to the world of decision making, the idea that decision makers know what they are doing creates and sustains a belief that choices are based on wisdom, and it is the belief in the wisdom that creates the enthusiasm required for people to join in collective action. Making a decision is a symbol of humankind's achievement over nature, and it is that symbol that is celebrated more than the ingenuity of the individual decision maker. What better example of the perceived wisdom of decision making than the story of troops on a military manoeuvre in the Swiss Alps related by Weick (1995:54, taken from Holub, 1977):

> The young lieutenant of a small Hungarian detachment in the Alps sent a reconnaissance unit into the icy wilderness. It began to snow immediately, snowed for 2 days, and the unit did not return. The lieutenant suffered, fearing that he had dispatched his own people to death. But on the third day the unit came back. Where had they been? How had they made their way? Yes, they said, we considered ourselves lost and waited for the end. And then one of us found a map in his pocket. That calmed us down. We pitched camp, lasted out the snowstorm, and with the map we discovered our bearings. And here we are. The lieutenant borrowed this remarkable map and had a good look at it. He discovered to his astonishment that it was not a map of the Alps, but of the Pyrenees.

The power of the symbol over utility has been pursued, especially in new institutionalism where a main tenet is the power of legitimation that institutions confer upon social systems. New institutionalist thinking is largely based on the idea

that organizational structures become increasingly alike, what is referred to as isomorphism by Meyer and Rowan (1977). Isomorphism is only possible if organizations adhere to a general idea of what is good for them, rather than attend to their local functional needs which are likely to differ. Hence, conclude Meyer and Rowan, adoption of structural ideas is a matter of adhering to myths and ceremonies rather than improving efficiency. Meyer and Rowan's argument is basically that modern society consists of a number of formal structures that are socially and institutionally legitimized, such as personnel recruitment procedures, financial planning and many others. Because such structures come to be taken for granted – not so much for their efficiency as for their legitimacy – they can be seen as 'rationalized myths'. It is not obvious how Meyer and Rowan draw the distinction between legitimacy and efficiency. They do, however, point out that solutions tend to work because they are considered 'right' by actors at several institutional levels in institutions. Still, although they are myths, they contribute to overall efficiency because they tend to stabilize transactions between institutions.

The very act of adopting is ritualistic; it portrays an intention of being with the times. However, because institutions still have to attend to demands of efficiency, they sometimes have trouble reconciling efficiency in dealing with their constituents on the one hand and fully incorporating legitimized structures on the other. In Meyer and Rowan's own words (1977:354): 'Technical activities and demands for efficiency create conflicts and inconsistencies in an institutionalized organization's efforts to conform to the *ceremonial* rules of production' (italics added). Organizations deal with this dilemma by decoupling the one from the other. Indeed, what led Meyer and Rowan to their study was observations of public schools suggesting a gap between the formal structure and what was actually practised by teachers.

Demands to conform are not limited to public organizations; they transcend organizational types as well, as shown by Trice and Beyer's (1993:309) observation from voluntary organizations:

> They were, above all, antibureaucratic. They eschewed the need for abstract rules and relied heavily on face-to-face communication as a way to reach collective decisions. There were no hierarchies of authority; rules and written documents were held to a minimum. They managed to buffer themselves from outside influences by accepting for membership only individuals whom they knew embraced their egalitarian ideology. They did not admit strangers into their ranks (Rothschild-Whitt, 1979). However, over time, many of these organizations gradually took on bureaucratic features (Newman 1980, p. 159). Their dependence on external funding sources forced them to conform to the expectations of the larger society – especially by the adoption of a distinct hierarchy. Funding agencies expected a clear-cut, specified set of authority relations.

The reasoning in new institutional theory is attractive. It fits well with Trice and Beyer's observation as well. On the other hand, there is a certain finality about

the analysis. For example, it gives the impression that once practices become symbolic, there is no way for them to become non-symbolic. The assumption of finality is an Achilles' heel of institutional theory because it does not readily allow for understanding how institutions, such as routines, take part in their own change. Institutionalization is seen as an ultimate state, and processes are understood insofar as they lead to an institutionalized state. It seems difficult, on the basis of such assumptions, to see a point of return to a state at which things are taken less for granted than at the stage of an institution. Because March works consistently from the idea that coupling is loose and nothing is ever entirely determined, even symbolic institutionalized behaviour may become something else.

The fact that a practice may be adopted because it is symbolically appealing at one moment does not mean that it is kept up consistently because it remains symbolically attractive. Feldman and March (1981), for example, point out that although a certain pattern of behaviour may be adapted for merely symbolic reasons, in the course of performing the behaviour actors may find that it serves other purposes such as improving efficiency or achieving goals that were not intended. They call this appropriately 'the dynamics of symbols', considering the unfolding of organizational processes as opening for new justifications when new practices take hold. To be sure, the borderline between symbolic and efficient behaviour is problematic, to say the least, but the argument still seems useful. Such thinking is very much in line with Whitehead's idea that, when facts take hold, they do not represent a final condition, i.e. a point of no return. Instead, when facts take hold, they open up for processes that lead to new realities again. A Whiteheadian view would be to see a fact as a datum for new processes. Thus, the facts take part in shaping the new realities. This is what happens when models of organizing are entered and re-entered into a fluid world.

There is a significant conceptual difference between the process view of Feldman and March, whereby justifications for behaviour may emerge and change, and the more static distinction between symbolic and rational behaviour drawn in new institutionalism. The difference is, in fact, profound and reflects to some extent the difference between relational and correlational thinking suggested in chapter 1. A process view as suggested by Feldman and March considers the organization to be unique and guided merely by its own logic. The new institutionalist view, on the other hand, tends towards identification of general patterns among organizations, also referred to as an organizational field (DiMaggio and Powell, 1983; DiMaggio, 1991).

The inefficient yet indispensable histories: search processes and learning

In a number of publications March and colleagues (e.g. March and Olsen, 1975; Levitt and March, 1988; Cyert and March, 1992) devote attention to the role of learning in organizing processes. Learning is seen as an indispensable ingredient for the unfolding of processes both in time and in space. Learning is what connects history, organizational routines and targets (Levitt and March, 1988). It is in a way

the glue that enables organizational actors to define what to expect in the future on the basis of experiences. Because organizations are goal-based systems, their learning relates to differences between what was expected (the goals) and what was achieved (the performance).

As multiple learning experiences become synthesized in collective memory, they need to be given labels of association which tend to be crude. Hence, not achieving goals becomes associated with failure, while achieving them becomes associated with success. There is a parallel to Luhmann's more general discussion of social systems here, where March argues that expectations are what they allow for learning to happen, i.e. they allow for comparing what happened to what was expected to happen. In this way, they provide the necessary sensemaking (Weick, 1995a) ingredients for system behaviour because they provide a basis against which progress (or lack of it) may be assessed. Depending on how expectations are communicated within the system, they may lead to feelings of fulfilment or disappointment. From the works of both March and Luhmann, it is possible to see how experiences which are intended to be rational and subject to calculation rather than founded in emotion may engender feelings as they become connected to success or failure. Experiences thus attain an emotional 'stickiness' and thus engender phenomena such as competency traps (Levitt and March, 1988) and self-fulfilling prophecies (March, 1981).

In March's work, organizational learning is seen to take place in both time and in space. In time, learning is the mechanism that enables organizations to interpret past successes and failures and to inscribe the reasons for those successes into their goal formulation for the future. In space, organizations learn from the performance of other organizations. Organizations scan their environments for experiences made elsewhere, which they may choose to heed or ignore (Cyert and March, [1963]1992). They may, for example, decide to adopt seemingly successful practices of others or ignore practices that do not appear useful to them.

Since March and colleagues began to theorize organizational learning processes more than 30 years ago, a monumental volume of literature has emerged related to learning and organization. It is necessary, however, to draw a conceptual line of separation in order to better appreciate the work carried out by March in this field. With learning, as with many other themes in organization studies, a line of separation may be drawn between viewing organizations as entities and organizations as processes. The former assumes that organizations are perceived as more or less homogeneous entities that perform learning behaviour much the way that individuals do. Examples are found here in, for example, works by Hedberg (1981) and Cohen and Levinthal (1990). Works such as these tend to view organizations as agents who perform learning in much the same way as individual, as individuals writ large. Hernes (1995), borrowing from Argyris and Schön (1978), refers to this as an 'organization-as-agent' perspective.

The question relates to questions of rationality which are fundamental to March's work. A rationalist assessment would imply working from the assumption that there are some 'hard truths' out there against which the wisdom of a decision may

be assessed. In economics, for example, the market is commonly seen as the arbiter of wisdom. If a decision is made to manufacture a product and the product sells well, relying on market arbitration we would infer that it was a rational decision to manufacture the product. Such assumptions are sometimes problematic because the market may not be a good judge of wisdom. Greve (2002), for example, provides an elaborate empirically-based argument suggesting that organizations that adjust too readily to market changes may in fact prove to perform less well over longer time spans. March (1991:73) provides a similar but somewhat expanded argument in his discussion between exploitation and exploration, suggesting that what seems to be good in the short run for the organization is not necessarily good in the long run; what is good at a particular point in time may not be good at another time, and what is good for one part of the organization is not necessarily good for another part.[7]

In other words, it seems problematic to base studies of learning on the idea that there exist truths outside the system against which learning can be assessed. Rationality, to the extent that it can form a basis for assessment, must be sought inside the system rather than outside it. The argument is decisive for how organizational learning is understood, because it enables conceptualization of how learning is performed in a world where ambiguity prevails over certainty. There are no answers that provide certainty in the socio-economic world because it is naturally tangled and opportunities are plentiful.

In order to exist in such a world of generic ambiguity, actors have no choice but to 'produce' their own certainty, which may not correspond to the 'truth' out there. Their self-produced certainty belongs to the actors themselves; it may have no other foundation than the self-produced bias from which it is created. It is one out of many possible certainties but, on the other hand, it is the certainty that keeps the organization going. It is an exercise in bootstrap pulling which works because the environment in which organizations are embedded is flexible and harbours multiple opportunities onto which the self-produced certainty may be projected. And, because the world changes, what might not work at one point in time might, with persistence, work at another point in time.

The idea of organizations as loosely coupled systems, used as a basis for March's work, is powerful because it allows for similar actions to produce different outcomes and for different actions to produce similar outcomes. Power, for example, is not taken as an exclusive parameter of explaining how decisions are made. March (1966) reviews the concept of power from a process perspective and infers that paradoxes and subtleties of social life make power a problematic variable. To be sure, as he argues, we may infer that some actors in some situations have more power than do other actors. Someone who is more knowledgeable about a topic has more power than someone with less knowledge of that same topic, if knowledge of that topic is decisive for whose preferences are to carry most weight. Similarly, someone in a managerial role wields more power in certain situations than someone who occupies the role of a subordinate. But such explanations seem valid only if one freezes time at the instant of exercising power

and at the same time excludes a number of factors from the analysis. A process view implies a different approach to power, such as that described by Clegg *et al.* (2006):

> Power can be woven through different media: through domination, authority, seduction, manipulation, and coercion, for instance. Moreover, rather like the character from the evocative song of ceaseless travel that Bob Dylan (1974) conjured, the effects of power are always 'tangled' up in the rhythms and routines of everyday life. And everyday life is always lived in specific places: the East Coast; out West; New Orleans; outside of Delacroix; a topless place; or Montague Street. They are a part of a topological landscape through which we move here-and-now, there-and-then, in the present, the recollected and imagined pasts as well as those futures we aspire to.

As a view of organization as a loosely coupled system, a process view encourages questions related to the propagation of phenomena rather than pinning them down to static parameters such as knowledge and roles. In a similar way, Whitehead and March ask how events and actors connect to form relatively stable phenomena, acknowledging that chance and unanticipated consequences naturally form part of the process. A process view obliges the incorporation of multiple factors. In March's (1966:66) own words related to power: 'We want to include many more discrete and nominal variables, many more discontinuous functions, and many more rare combinations of events'. His citation of Long (1958:252) in the same paper is illustrative of the view he takes:

> Much of what occurs [in local communities] seems to just happen with accidental trends becoming cumulative over time and producing results intended by nobody. A great deal of the communities' activities consist of undirected cooperation of particular social structures, each seeking particular goals and, in doing so, meshing with the others.

Nonetheless, organizations remain goal-seeking systems, and their goal-seeking activities are rooted in some models of the world as well as assumptions about which models work and which do not. The task, then, is to understand how some models become more persistent than others. This, argues March, happens as biases take hold and influence important decisions in the organization. Biases are not necessarily right or wrong, but they reflect dominant world views to which dominant actors adhere, and hence provide consistent behaviour over time.

Perhaps one of the most important contributions of James March is the various ways he describes how feelings of success and failure come to guide reasoning about what is right and what is wrong in organizations. What happens in organizational processes is that facts tend to generate into feelings as they become preferred world views. Such world views may be retained even when experiences suggest that they are not viable. Consequently, in the absence of real truths about good versus bad performance, persistence may well be the answer. Persistence may

seem out of place in a world that emphasizes 'realistic' expectations and clear successes, but such criteria are established out of opportunity and convenience rather than anything else. Persistence signals commitment, which March emphasizes in his courses on leadership. His example of ultimate persistence is drawn from Cervantes' hero Don Quixote who had no notion of realistic expectations but, as March points out, 'he persists because he knows who he is'.[8]

If the truths about performance do not lie outside the system, it is found within it. Through persistence a system produces its own unambiguity in an ambiguous reality, and persistence calls for emotional commitment. March and Olsen (1975) provide a series of assumptions about the connection between what actors see and what they like, such as seeing what one likes and liking what one sees. Although liking something and seeing something may be analytically kept apart, they argue, liking and seeing are closely interwoven with each other.[9]

The power of routines and the subtleness of change

Perhaps somewhat paradoxically at first sight, a process view of organization is concerned with stability. Rather than wanting to explain change, which has for many years been a topic in organization studies, the focus is on how processes can stabilize. The wish to explain stabilization comes mainly from the assumption that the situation is forever changing, and that what we see as stability is exception rather than the rule. Nike and the European Union are not what they are due to some underlying law of nature, but they are unique achievements whose stability has unique explanations. To be sure, this does not mean that there are not generalized explanatory frameworks that enable us to explain them. On the contrary, searching for the unique rather than the common begs the use of generalized conceptual models.

Searching for stability serves two purposes. First, it serves to explain how seemingly stable states come into being and how they manage to reproduce themselves. If Nike manages to remain a dominant player in leisure wear, it is because there are actors within Nike who connect factors such as, for example, branding, marketing, new product development, organizational culture, finance and quality control in such a way that a sufficient number of people prefer Nike wear over other makes. There may also be a history that shows how actors within Nike have become able to connect factors such as these. Latour (1992a) provides an example in his discussion of how the Kodak camera has embedded itself in the market over many years as actors and technologies have connected to stabilize the brand.

Second, searching for stability enables understanding of how stability relates to change. One of Whitehead's points is that becoming cannot be seen as separate from being, because being forms a basis for becoming. Luhmann makes a similar point; that structure and process cannot really be separated from each other. In organization studies, however, stability and change have been seen as antitheses where one works at the expense of the other. March (1991) provides a more nuanced view by distinguishing between exploration and exploitation in

an organization. Exploration and exploitation may be seen as two different types of change. Exploitation signifies strengthening the organization's competence in existing areas. Exploration, on the other hand, signifies experimenting with new and unknown knowledge. More than signifying the difference between stability and change, however, the two signify different approaches to change and stability.

March's approach to change and stability avoids dichotomizing between the two, largely because of his view of organizations as essentially coupled systems rather circumscribed entities. From a process view, different parts of coupled systems may or may not connect, which is different from assuming that organizations are systems that are run along hierarchical lines. In a coupled system, what happens in one part of the system may not necessarily be transferred to another part. Different parts may operate according to different logics, which does not mean that the system breaks down. On the contrary, it may make the system all the more robust. Naturally, over time, connections between parts enable mutual adjustment. A budgeting routine, for example, will be adjusted to a change of production logic, or the composition of the management team may be adjusted to a new way of viewing marketing.

In contrast to much mainstream literature on stability and change, a process view allows for studying the emergence of a temporarily stable state. The emergence of a routine, for example, is in itself a change of state and represents an achievement. It is an achievement because it enables rationalization of activity which, in turn, makes it possible to allocate resources to more individually autonomous behaviour. Therefore, when routines, for all intents and purposes, may appear to some observers as obsolete and bureaucratic, what is not taken into account is their ability to integrate important aspects of organizational life (March and Olsen, 1989:24):

> The ubiquity of routines often makes political institutions appear to be bureaucratic, rigid, insensitive, or stupid. The simplification provided by rules is clearly imperfect, and the imperfection is often manifest, especially after the fact. But some of the major capabilities of modern institutions come from their effectiveness in substituting rule-bound for individually autonomous behaviour. Routines make it possible to coordinate many simultaneous activities in a way that makes them mutually consistent. Routines help avoid conflicts; they provide codes of meaning that facilitate interpretation of ambiguous worlds; they constrain bargaining within comprehensible terms and enforce agreements; they help mitigate the unpredictability created by open structures and garbage can processes by regulating access of participants, problems and solutions to choice opportunities. Routines embody collective and individual identities, interests, values, and worldviews, thus constraining the allocation of attention, standards of evaluation, priorities, perceptions, and resources […].

Organizational events connecting and eventually emerging as a routine is one form of organizational change whereby some activities become rationalized.

When writers argue that it is more important to turn away from routine-based behaviour, they overlook the importance of routines as the embodiment of the organizational activities, as the above quote illustrates. Routines are in many ways mere reiterations (Whitehead, 1929) latently in search of something potentially different. Seen from a process perspective, routines are but a transient phenomenon, even though they may appear stable. There are, in fact, several ways in which they may change. For example, Feldman (2000), from studying routines, points out three reasons why routines change through emergent processes. One reason is that unintended outcomes are produced. Another reason is that new problems arise that need to be solved. A third reason is that new resources are produced, creating new opportunities. An example of the latter is when new knowledge is produced, enabling innovation of new products or procedures.

On March, Whitehead and organization

A point of ontological similarity between Whitehead's and March's approaches to the analysis of process lies in an implicit atomistic view of organization processes which is most visible in March's theorizing of decision processes. March's conception of organization is largely that of a coupled system that defies neat lines of demarcation between levels of analysis. In the garbage can model of decision making, for example, no a priori classification is made of the originators of decisions or of their formal organizational role or hierarchical level. An atomistic view in organizational analysis would thus defy the idea of levels of analysis whereby a distinction is drawn between individual, unit and organizational level. The point tallies with March's approach to organizational analysis. March (1981) suggests that the assumption that organizations as the intermeshing of three systems (the individual, the organization and the environment) is no less than a 'heroic simplification out of which theoretical mischief can come'.

Connectivity

Because March works from the idea of organizations as coupled systems that vary in their degree of coupling, he comes across much the same question as Whitehead does when he asks what makes events connect to one another into structured patterns. A basis for March's work on decision making is that decisions connect to solutions and problems in ways that make it more probable for other decisions consistent with previous choices to connect to choices made, which relates to Whitehead's use of the term 'prehension'.

Stabilization

Organizations tend to stabilize around rules and, although actors may not adhere to rules, and although rules may be ambiguous and changing, they form repositories

for learning and action. Patterns of rules tend to stabilize as and when they become entrenched in the organization, which is when they become associated with feelings and subsequently with norms. Feelings enable distinction between success and failure, and through this 'filter' allow for decisions to be made using relatively simple rules of thumb.

7 Karl Weick on organizing and sensemaking[1]

> The word, organization, is a noun and is also a myth. If one looks for an organization one will not find it. What will be found is that there are events, linked together, that transpire within concrete walls and these sequences, their pathways, their timing, are the forms we erroneously make into substances when we talk about an organization.
>
> (Weick, 1974:358)

From entities to process

Weick (1979) has left his imprint on organization theory by calling for focus on processes rather than on stable entities, by focusing on organizing rather than on organizations. Weick is what one might call a 'radical mainstream organization theorist'. He has been radical in recognizing early on that organization researchers spend a lot of time describing and comparing entities that fall into the category of 'organizations', thus imposing limitations on how far we can go in actually understanding what goes on when people organize. In order to make a case for a differently conceptualized organization theory, Weick has performed a number of action-based empirical studies around which he has built his theoretical framework. To the extent that Weick is a mainstream theorist, he relates his process arguments to – and builds largely on notions from – mainstream organization theory. A likely reason for Weick's strong position in the field is that he has gently pushed organization theory more in a process direction while at the same time engaging persistently with mainstream writings.

One of Weick's main arguments is that, if we are to find other things than formal circumscribed entities, we need to be willing to put aside the most common organization allegories. This is what he alluded to when he urged organization researchers to 'drop their tools' in the *Administrative Science Quarterly* 40 year anniversary issue (Weick, 1996). Tools prevent us from seeing things that fall outside the 'organization' imagery because our imageries and methodological tools do not allow us to see them, much less explain them. Weick suggests organizing and sensemaking as terms that take us down a path of understanding the more processual nature of organization.

Of the four writers discussed in this book, Weick is perhaps the one who comes closest to what is commonly referred to as a 'social constructivist' paradigm. For example, his definition of sensemaking as the ongoing processes of constructing and framing text, like cues (Weick, 1995a), comes close to Berger and Luckmann's (1966:49,68) idea of social construction as the ongoing production of social order based on intersubjective indices. Social constructivism places the experience with social actors in the centre who, through interaction commonly mediated through language, enact their reality. Similarly to Berger and Luckmann, Weick stresses the importance of actions and how actions relate to sensemaking, in which language plays an important role (Weick *et al.*, 2005). Berger and Luckmann stress the role of actions in human interaction and Weick, in his study of groups, relates sensemaking to members' actions. Sense*making* is an expression that he uses purposely to distinguish himself from the somewhat more passive term 'interpretation'. Echoing views of the pragmatist philosopher William James, he argues emphatically that organizing is imposed rather than discovered, and that action *defines* cognition (Weick, 1979:165). 'Sensemaking' is in line with a view of actors enacting their reality, while 'interpretation' lends the impression of there being a reality 'out there' lying ready to be interpreted. There are significant differences between Weick and Berger and Luckmann's social constructivism as well. Weick, for example, is loath to describe behaviour in the light of norms and institutions. While Berger and Luckmann consider institutions and legitimacy to be important factors in human behaviour, this is not a concern of Weick's. As will be discussed below, Weick is more interested in coordination mechanisms at the level of groups, mediated through people's actions and sensemaking.

There is a strong tendency in Weick's work to boil phenomena down to the sense that people make of them; there is no actual world beyond that which can be grasped by human actors. Hence, as processes unfold, they unfold through enactment by human actors. In his discussion of enactment he suggests that when *people* enact, they 'undertake undefined space, time, and action, and draw lines, establish categories, and coin new labels that create new features of the environment that did not exist before' (Weick, 1995a:31). The enactment perspective is central to Weick, as it is to process theorizing. It is has been discussed in earlier chapters how processes may be seen as being projected forward by various means. Whitehead, with his event-based philosophy, refers to prehension – the tendency for events to attract other events, and March and Luhmann refer to members' expectations that tend to shape future choices, whereas Latour uses the term 'enrolment' to describe the inclusion of new members in actor-networks. What puts Weick slightly apart from the other writers, apart from his use of the term 'enactment', is that he locates the process of enactment at the level of intersubjective interaction between individuals.

Weick's perhaps most influential book, *A Social Psychology of Organizing*, appeared first in 1969, then in an edited version in 1979. The book is considered a classic in the field; it has been translated into several languages and in 1996 was designated by Inc Magazine as one of the nine best business books ever written. The book owes its popularity to its pioneering work on the nature

of organizing, and how organizing evolves as a process of sensemaking and interlocking of behaviour. The book is in many ways a hallmark in organizational process thinking, as it discusses how organizing is done on the basis of models and how organizing is enacted into a fluid and complex world.

The book also deals with basic analytical dilemmas facing process analysis, such as how to determine the selection of models. In contrast to contingency theorists' content-orientated, 'rational-open' systems approach, Weick (1979) advanced a process-orientated, 'natural-open' systems model of 'organizing' in which organizational activities are directed toward resolving equivocal informational inputs from the environment. Organizational activities are carried out in three stages – enactment, selection and retention – a translation of Campbell's (1960; 1969) influential variation-selection-retention model of sociocultural evolution. Weick, however, replaces 'variation' with 'enactment' to emphasize the active role organizational members play in defining, giving meaning to and influencing their environments. Weick's use of contingency also differs considerably in its orientation from mainstream organizational contingency theories. Organizational contingency theorists such as Donaldson (1996) emphasize the contingent evolution of structures, taking as structures the stabilized patterns of roles and functions in organizations. These structures adapt to stable contingencies in the external environment. Where Weick's work contains contingency, on the other hand, it is more in the structuring of actions and interlocking of behaviour in response to past actions. In other words, Weick treats contingency as belonging to the process itself, and not the factors outside the process, such as is the case with Donaldson and others.

Much of Weick's work is orientated towards sensemaking, and how people make sense of confusing or ambiguous events. His work in this area has been applied to emergency situations, errors, high-reliability performance, improvisation and continuous change. In such situations, events are sometimes confusing because there is a wealth of information that could be used, but with no obvious ordering or structuring to enable unambiguous handling. In such situations, improvisation is of the essence. Still, organizing sometimes requires that structures are imposed upon events in order to reduce ambiguity and complexity. There is a parallel between this line of thinking of Weick's and Whitehead's idea of transition between experience and abstraction, as will be discussed below. From a broader process perspective, such thinking is useful in the way it sheds light on how models of organizing interact with a complex reality.

The power of language

Sensemaking (Weick, 1995a) is part of the organizing process, intertwined with the actions of organizing. Weick's sensemaking analysis corresponds somewhat to what is called the 'linguistic turn' in organization studies (Alvesson and Kärreman, 2000), in that his analysis emphasizes the interactive talk and the resources of language in organizing processes (Weick *et al.*, 2005). Weick *et al.* suggest in particular that sensemaking is an issue of language, talk and communication,

whereby situations, organizations and environments are *talked* into existence. Whereas, on one level, Weick's work focuses on the intersubjective production of meaning (Rhodes and Brown, 2005), on another level he draws upon the structure of language as a lens through which to make sense of organization. This is seen most clearly in the distinction he makes between verbs and nouns discussed below, which is central to his work.

Weick argues that we are forever forced to operate with words and visual models that are very simple in relation to the world in which we organize, which he summarizes as follows in relation to sensemaking and organization (Weick, 1995a:107):

> People pull from several different vocabularies (Rorty, 1989, chapter 1) to focus their sensemaking. They pull words from vocabularies of society and make sense using ideology. They pull words from the vocabularies of organizations and make sense using third-order controls. They pull words from vocabularies of occupations and professions and make sense using paradigms. They pull words from vocabularies of coping and make sense using theories of action. They pull words from vocabularies of predecessors and make sense using tradition. And they pull words from vocabularies of sequence and experience and make sense using narratives.
>
> But all of these words that matter invariably come up short. They impose discrete labels on subject matter that is *continuous* (italics added). There is always slippage between words and what they refer to. Words approximate the territory; they never map it perfectly.

The language which, according to Weick, comes closest to mapping 'the territory' is that of sensemaking (Weick *et al.*, 2005:410): 'The language of sensemaking captures the realities of agency, flow, equivocality, transience, reaccomplishment, unfolding, and emergence, realities that are often obscured by the language of variables, nouns, quantities, and structures'.

It transpires from Weick's work that there are essentially two different types of sensemaking at work when people organize. On the one hand there is the sensemaking that takes place in the midst of the flux of materials, people, money, time, solutions, problems and choices (Weick, 1979:42). When people act, they resort to what James refers to as 'streams of consciousness' and what Schutz (1967) refers to as 'pure duration' (Weick, 1995a:23–4). This seems to be the kind of sensemaking at work when people apply intuition, such as in situations of extreme urgency. Sensemaking 'in motion' is what takes place in groups acting in relatively tight timespaces, which may be characterized by intuition and intersubjectivity. This is the sensemaking that consists of verbs rather than of nouns.

However, organizing is also characterized by situations other than intersubjective ones. Thus, another type of sensemaking is done by the use of nouns rather than by verbs. Much as organizing is conceptualized as taking place in the midst of streams (Weick, 1979:42), there are inevitably more stable constellations of

factors around which people organize. This is the world of nouns; the enacted world of tangible entities, technical artefacts, around which stability of meaning revolves in relative stability. The language of such sensemaking consists largely of what Weick, Sutcliffe and Obstfeld (2005) refer to as 'labels'.

Verbs: the intersubjective side of processes

Weick's view of processes is well illustrated by the following passage (Weick, 1979:444): 'Process imagery also means concern with flows, with flux, and momentary appearances. The raw materials from which processes are formed usually consist of the interests and activities of individuals that become meshed'.

Weick (1995a:188) advocates the use of verbs as a means of coming to grips with the fluid nature of organizing as a way of 'accepting life as ongoing events into which they are thrown, and less likely to think of it as turf to be defended, levels of hierarchy to be ascended, or structures to be upended'. Weick (1979) situates the analysis at the level of actions, seeing 'organizing' as relating to the interlocking of behaviours, an imagery borrowed from Buckley (1967). Interlocking behaviours are intelligible to actors and form 'grammars' that help people not only to make sense of the conventions and rules of the interlocking but also to draw causal maps of past experiences which they project into future actions. Weick is loath to leave the level of actions and consequently places explanations at a higher level of abstraction. His argument is basically that organizational actions can be boiled down to actions of individuals acting on behalf of the organization. Thus, what we need to understand lies in the proximity of the actors; their sensemaking and their actions.

The focus on the interaction between sensemaking and actions has encouraged rich and highly instructive studies of what happens between individuals in organizations. Weick and Roberts (1993), for example, provide a good illustration of this in their study of communication between pilots and landing crews on aircraft carriers. Landing on an aircraft carrier is an operation that is carried out at extremely high speed and where the pilot and the crew on the flight deck are crucially dependent on each other. According to conventional wisdom, the high degree of precision and speed under such operations would normally entail high accident rates. Not so with aircraft carrier landing operations, something which led Weick and Roberts to ask why are there so few accidents under such conditions where almost anything could go wrong? In probing for answers, they come up with expressions that describe high intensity collaboration between people in organizations, such as 'heedfulness' and 'collective minds'.

Weick's analysis of organization in stressful situations suggests that there are contingencies in time and space, respectively. First, there is a contingency in time, whereby one decision influences what is done next. It is important to stress 'influences' what is done next and not 'determines' what is done next. A decision opens up alternatives for what can be done in a later situation while closing down

others. An example is found in Weick's (1995b:48) discussion of high reliance organizations:[2]

> The failure was set in motion by actions and choices that said it was safe to launch and by the decision to launch itself. The defect in the O-ring can't harm anyone as long as that defect stays on the ground. The fact that a defective design even 'existed at all was the result of previous decisions to select this design. That it was allowed to continue to exist was the result of previous decisions not to alter it, despite repeated warnings. That it was allowed to be in use in unsuitable weather conditions was also the result of decisions made to allow it to operate despite the danger that the weather conditions represented.

Second, there is contingency in space, whereby behaviours interlock as sensemaking is transmitted between persons. Weick's main unit of analysis is that of behaviour and not primarily that of people. It is behaviours of individuals, and not the individuals themselves, that in his work makes up the system. Weick's (1995b:44) analysis of fire fighters is a suitable illustration of how behaviour may be contingent in space. He is describing a team of fire fighters moving up a crest, away from the fire:

> Finally, people may hold onto their tools as a simple result of social dynamics when people are lined up. If the first person in a line of people moving up an escape route keeps his or her tools, then the second person in line who sees this may conclude that the first person is not scared. Having concluded that there is no cause for worry or that I'm not going to be the only one who goes back without tools, the second person also retains his or her tools and is observed to do so by the third person in line who similarly infers less danger than may exist. Each person individually may be fearful, but mistakenly concludes that everyone else is calm. Thus, the situation appears to be safe except that no one actually believes that it is. The actions of the last person in line, the one whose back feels most intensely the heat of the blowup are observed by no one, which means it is tough to convey the gravity of the situation back up to the front of the line.

Such situations also highlight the volatility of organized behaviour, where people may choose to follow their intuition rather than stick to prescribed rule-based behaviour (even when circumstances may dictate otherwise). For example, for fire fighters in a life-threatening situation, the impulse to drop one's tools and run (and a fire fighter's tools are heavy) is problematic when they have been told repeatedly never to let go of their tools. A major achievement of Weick's studies of groups is to show how urgency, instinctive trust between members and the instantaneous codification of cues create opposition to prescriptions of formal organization.

Weick's descriptions of such situations come quite close to Whitehead's notion of experience as opposed to abstraction. For Whitehead, intuitive experience is the

most complex form of perception and hence such complex perception best comes to grips with the dynamics of process. Experience, in Whitehead's words, reflects 'brute facts'; it reflects the actually felt, what he refers to as 'the realization of our essential connection with the world without, and also of our own existence now' (Whitehead, 1938:72).

As pointed out in chapter 3, Whitehead saw events as producing 'data' for events to come. Events embody the past while projecting the process into the future. A question is how this may come about in organized settings. Weick's studies show how processes are contingent upon events and actions. In a sense, Weick brought contingency into the process itself rather than seeing contingency as something that influences the process from the outside.

Weick marked his difference with mainstream contingency theorists by replacing the term 'variation' in Campbell's (1960; 1969) influential variation-selection-retention model with 'enactment'. Whereas variation, as it is used in contingency studies, suggests the organization as a passive adapting entity, 'enactment' stresses the active roles played by members in creating their own reality, thus privileging choice and opportunity over environmental determination. Over time, organizational activities become structured systems of repeated, contingent, interlocked behaviours that establish a workable level of certainty for organizational members, while allowing for variation in interpretation and action as organizational members selectively attend to their environments.

Where Weick's work contains contingency, on the other hand, it is more in the structuring of actions and spontaneous interlocking of behaviour in response to situations in the environment. Contingencies relate to factors such as urgency, shown in his study of fire fighters (Weick, 1995b) and flight crews (Weick, 1990). Situations, such as the rapid spreading of a fire, trigger actions and behaviour based on interpretations of the best way to act. Especially in tight situations where rapid reaction is a matter of life or death, dilemmas about what to do may be particularly acute. For example, where the only way to save one's life would appear to be to drop one's tools (which, in the case of fire fighting, are heavy (already noted)), is problematic to a fire fighter who has been told repeatedly never to let go if his tools. In other words, the basis for sensemaking may be locally situated or it may be based on more generalized knowledge of what action to select. Weick's analysis suggests also that the type of cues transmitted to other fire fighters, and by whom, influences how the group as a whole reacts to the emergency. Hunches from senior team members carry, not unexpectedly, more weight than hunches from junior members, although in retrospect hunches from senior members may prove wrong.

Nouns: the tentative fixing of patterns

But organizing is not all about flux and hunches. Although Weick argues that we (managers as well as researchers) should become better at thinking in terms of process, he acknowledges the importance of thinking and organizing in terms

of more stable notions. An approach based on verbs may well account for how perceptions and behaviour propagate in groups, but actors also initiate and make sense of organizing processes using nouns (Weick, 1979).

Weick's thinking draws inspiration from the work of William James in the American pragmatist philosophical tradition, especially in his assumption of enactment and bracketing off of meaning in a reality of flows: 'Any reflective act originates in a here and now where some projects are visualized, others are under way, and still others have just been completed' (Weick, 1995:26). Weick also quotes James as saying: 'This whole function of conceiving, of fixing, and holding fast to meanings, has no significance apart from the fact that the conceiver is a creature with particular purposes and private ends' (James, 1890/1950:482 in Weick, 1995:26). The statement relates well to Weick's understanding of organizing processes as the actors' framing of reality by imposing an unambiguous interpretation upon ambiguous signals.

It is important to emphasize the role of equivocality in sensemaking processes. As Weick (1979) points out, actors perform on the basis of 'bracketing' their environments through actions, what he calls 'enactment'. Enactment is the process by which actors 'engage an external "environment"' (Weick, 1979:131) Enacted environments, according to Weick, are products of successful sensemaking; they are meaningful environments produced by organizing. Hence, they are outputs from processes rather than inputs. Although enacted environments become meaningful to actors, the process of enacting involves equivocality. Thus, the enacted environment is a 'punctuated and connected summary of a previously equivocal display' (Weick, 1979:131). The notion of equivocality is central to enactment, and it is preferable to see equivocality as a probing process, similar to Schön's (1983:150–1) description of the way professionals proceed through testing of hypotheses in-action.

A central point with Weick is that sensemaking is seen as a process that connects to the interlocking of behaviours; in other words, it depends on action. Here lies an important commonality with Whitehead; namely, in the idea of movement as an element in making sense of the world. An important element of Whitehead's work was that action transcends the subject and moves the process forward (Whitehead, 1925:90); moreover, that subjectivity is created in the meeting between the past, the present and the future.

In intersubjective situations, with people being in direct proximity to one another, cues and hunches may be transmitted; cues that would be ambiguous in the absence of a social context. This is how air fighter pilots may land time after time on aircraft carriers, guided by 'heedful' communication with controllers. However, if we leave the relatively tight timespaces such as in-flight situations and fire fighting, the importance of ordering information takes on increased importance. Thus, Weick (1979:186) speaks of the point in the selection process at which equivocal information is treated as orderly, and when procedures, rules and fewer cycles are applied to it. This is when information gets to be treated as orderly and as a given 'fact', as the procedures are taken for unequivocal and less attention is given to them: 'New information gets sorted into existing pools (variables)

and channels (causal relations) and deepens these pools and channels' (Weick, 1979:211).

As he illustrates in his study of fire fighters, the patterns of organizing may swing from being spontaneous to being routine; instead of taking potentially life-saving instinctive action that deviates from the learned routine, the fire fighters may stick to the learned routine. In other words, when one is confronted with choosing between a spontaneous action and a learned routine, i.e. between a verb and a noun, one sometimes chooses the noun. The situation is one where actors impose 'entitative' (Chia, 1999) labels or vocabularies on a fluid reality, which may succeed in controlling behaviour to a greater or lesser degree. The imposition of labels in this case consists of the adoption of routines.

Whereas Weick refers to intersubjectivity and the use of sensemaking language in fluid situations, he refers to the level of nouns as 'generic subjectivity'. Generic subjectivity corresponds to a different level of analysis than the intersubjective level, and is embedded in structures such as rules, habits and routines. At the level of generic subjectivity, we find the nouns that are used in order to talk about organizations. These are nouns such as budgets, plans, roles, strategies, etc. that enable organizations to outlast their originators (Weick and Gilfillan, 1971) and that consequently make them relatively impervious to personal redefinition (Weick, 1979:35).

Organizing between nouns and verbs

Weick's work relates to process in at least two different ways. The intersubjective studies mentioned above and their associated theories contain a distinct process focus. Another way in which his work relates to process is in the way that he conceptualizes the transition between the intersubjective and the generically subjective, as mentioned above. The latter transition is important, and constitutes in many ways the inherent nature of any organization. Weick points out that organizing may be seen as oscillation between the intersubjective and the structural, between the realities expressed by verbs and the realities expressed by nouns.

Nouns form stable bases for processes, and interact with the more fluid and emergent. Routines, for example, which may be represented as nouns – what Whitehead called abstractions – embody dynamics that may uphold them or eventually lead to the change of the same routines (Feldman, 2000). Thus, on the surface, what we see is a label of routine that we assume to consist of recurring identical actions. Under the surface of the routine, however, exist multiple processes – what Weick and Quinn (1999) refer to as micro-level changes. Micro-level changes represent the fluid and changing taking place within the more stable routine-based reality. Micro-level changes feed on the routine and they may change it in turn. In other words, they exist in a recursive relationship with the routine because they both exist within it as well as serving to uphold or to change it.

Weick claims, importantly, that organizing lies in the transition between what he refers to as the 'intersubjective' and 'generic subjectivity' (Weick, 1995a:72–3); that is, it lies between the person-to-person level and the structural level.

As mentioned above, the intersubjective takes place in direct communication between persons, largely unmediated by structural mechanisms. The 'generic subjectivity', on the other hand, corresponds to a different level of analysis and is embedded in structures such as rules, habits and routines. An important point made by Weick (1955a:72) is that organizing consists of incessant fluctuation between the two levels:

> I would argue that organizing lies atop that movement between the intersubjective and the generically subjective. By that I mean that organizing is a mixture of vivid, unique intersubjective understandings and understandings that can be picked up, perpetuated, and enlarged by people who did not participate in the original intersubjective construction.

Similar distinctions to that between the intersubjective and the 'generic' levels have been pointed out by other writers. Similarly to the generic versus intersubjective distinction, Ciborra (2002), in his discussion of the introduction of information technology, distinguishes between procedures and what he calls *bricolage*. Procedures, he suggests, are dominated by clock time, diagrams and sequence maps. Bricolage and improvisation, on the other hand, exist in situated contexts that are local, short and sudden.

The relationship between the two levels of subjectivity is well illustrated by Weick's discussion of Barley's 1986 study of CAT scanners in radiology departments (Weick, 1995:71–2). In times of stability, generic subjectivity – represented by nouns – takes many forms such as what Barley refers to as 'scripts', which he defines as 'standard plots of types of encounters whose repetition constitutes the setting's inter-actional order' (Barley, 1986:83). 'Plots' may therefore be taken as synonymous for 'nouns' because their entity-like nature is what enables plots to transcend the limits of the here-and-now experience. Weick's interpretation of Barley suggests that, when nouns (scripts) dominate interactions between people, they allow people to substitute for one another because the plots serve to substitute for people's interactions. An example may be found in routines (Feldman and Pentland, 2005) which have a noun quality in the sense that they represent labels of standardized solutions to problems.

In Barley's study, when the CAT scanners are brought into the department, the prevailing scripts (nouns) change in the sense that the scanners carry with them a different script for carrying out the work than that which prevailed before they were brought in. The arrival of the new scanners imposes a new generic subjectivity, and as this new generic subjectivity begins to take hold, the existing intersubjectivity becomes out of tune with the new generic subjectivity. In other words, two different plots, or patterns of nouns, at the generic level 'collide' with one another as the new takes over from the old. Consequently, uncertainty increases and intersubjectivity (the level of verbs) becomes the focus of the sensemaking activities because the intersubjectivity was attuned to the old generic subjectivity. Hence, tension arises between the levels of generic subjectivity and intersubjectivity (Weick, 1995:71). The distinction between the intersubjective and the

generically subjective strikes parallels with Whitehead's distinction between concrete experience and abstraction. A difference between Weick's and Whitehead's thinking, however, is that Weick tends to think dialectically about the transition between the intersubjective and the generically subjective where they exist in a state of mutual tension. Whitehead's conception of the relationship between concrete experience and abstractions, however, was that they were cut from the same cloth, able to transform into one another, and constitute together a recursive view of process (Bakken and Hernes, 2006).

The question of extension of timespaces

Much of Weick's work is focused on situations driven by spontaneity and actions in which verbs are more important than nouns. By studying such settings, his analysis brings out the tension between routinized and spontaneous behaviour because it is precisely in such situations – compressed by time and urgency – that local situated factors can be observed. These are situations of small timespaces where decisions are made swiftly and where changes are short lived. In a wider timespace,[3] on the other hand, models of organizing evolve and become embedded as accepted responses to a wider set of contingencies.

Weick's focus on situated contexts of organizing, such as crisis situations, enables him to explain how organizing unfolds in intersubjective situations. Because he focuses largely on smaller groups, he is also able to observe how sensemaking translates into behaviour that interlocks to form patterns of organizing, especially in volatile situations. In many of the situations that he studies, time is compressed so as to create some urgency, and the time compression comes about from local contingencies. Because Weick focuses on limited settings in timespace, he can concentrate his analysis on relatively few factors that he can observe have a bearing on organization in that limited time and space.

In larger timespaces, however, such as the unfolding of organization over weeks, months or years, we expect more stable models of organizing to take hold and act as a basis from which emergent processes occur. In larger timespaces we expect the stable and the emergent to interact and not to be a matter of local choice. We see the more stable models of organizing as nouns because they enter human consciousness as entities, and it is this feature that allows the larger timespaces to harbour the more emergent 'verb'-like processes.

In larger timespaces, models evolve progressively and gradually take on meaning, and contingencies for the models also exist beyond the local context. In larger timespaces, models evolve gradually and take hold through learning processes (Levitt and March, 1988). Yet within these more established models, emergent micro-level processes are at work, what Weick and Roberts (1993) refer to as micro-changes. Micro-level processes take place amid the larger movements in organizations, and may connect to the more overall organizational unfolding in a variety of ways. Hernes (2004b) suggests, for example, that stable organizational spaces serve to harbour emergent processes such as, for example, by providing resources to emergent processes.

The relationship between the more stable and the emergent in organizations may work in different ways. In most cases, emergent processes serve to uphold the more stable ones, in the sense that they tend to reproduce the overall logic of organization. One explanation for this is that the larger system embodies the premises for emergent processes. For example, when projects are launched as collaboration between line units, the line units define the framework within which the project is to operate. It is extremely rare that the line organization sets limits that transcend its own logics, although exceptions may be found (e.g. Nonaka and Takeuchi, 1995). More often than not, stable processes, represented by evolved models of organization, serve to accommodate and hence to shape emergent processes.

Alternatively, emergent processes may serve to change existing models, as pointed out previously. Models such as routines change, but they adapt incrementally in response to feedback about outcomes (Levitt and March, 1988). More stable structures tend to serve as scaffolding for emergent processes, such as in the case of inter-firm projects and ventures. Sometimes the scaffolding is left in place and the emergent processes die as a result of overprotection, similar to how Weick (1995b) observed that overlearning may result in the wrong decisions in emergency situations. Other times, however, the scaffolding may be removed in time and new models may see the light of day. That is when they begin the transition from verbs to nouns, and for new verbs to emerge in turn.

On Weick, Whitehead and organization

Drawing inspiration from Schutz, Weick (1979) works from the idea that reality is presented as streams of experience to actors which they sometimes act upon by applying intuition and improvisation. Parts of Weick's work are directed towards what he calls 'confusing events', which occur as a result of tangled processes that appear equivocal to actors. Under normal conditions in organizations, confusing events may constitute occasions for innovation. Innovation is typically possible when actors can reflect and experiment with different possible courses of action. But under extreme conditions, where correct choices need to be made quickly, confusion may be dangerous because there is no time for experimentation and little time for reflection. It is in relation to the latter where some of the thrust of Weick's research lies. Nevertheless, as I have tried to point out in this chapter, his conceptualization of the relationship between verbs and nouns, between intersubectivity and generic subjectivity, is important for understanding how the more emergent and the more stable live side by side and interact in organized settings.

Stabilization

When confronted with events, actors try and figure out their meaning. In the same way as Whitehead states that nature does not sort itself into categories, Weick does not assume that anything is packed readily into categories for actors to 'understand'. In Weick's view, sensemaking generates cues about causalities that the actor imposes on the events. Weick uses the word 'untangle' (Weick, 1979:130),

but he also refers to the untangling as a process of 'bracketing'. Bracketing is a form of enactment in the sense that it includes a selection of possible explanations from a tangled world where many (other) explanations are possible. Bracketing is done with the use of labels which constitute organizational models, serving as a basis for stabilization of actions. It is by the use of models composed of labels that actors attempt to stabilize through organizing. As new events occur, they become exposed to existing labels, serving to stabilize further. This runs parallel to Whitehead's idea behind *prehension*, by which events tend to 'look for' one another.

Potentiality and actuality

Weick's presentation of the organizing process suggests that, once something is enacted, the learning from the consequences of the enactment can only be done within the framework in which the enactment was done. This is because the enacted environment is seen as a 'surrogate' environment for the world 'out there' (Weick, 1979:187). It means that, if I go out into the world with a set of ideas about how I will fare in the world, then I can only learn from my actions in the light of that set of ideas. His model is instructive and, to some extent, it corresponds to assumptions made in autopoietic theory described in chapter 5. Weick works from the idea that it is ecological change that makes us do what we do. However, one could also argue that, if ecological change was the only source of our understanding, it would mean that what happens when we enact corresponds to what we intended to do. In other words, what takes place is a direct consequence of what we enacted. One could argue that such a line of thinking makes us ignore the fact that what we enact is but an attempt to bring order to a world that is vastly bigger than our sphere of enactment. Weick's model implies that the retention cannot extend beyond the sphere of the enactment, but the retention, following Bergson, is part experience, part knowledge. We experience complexity but we organize on the basis of knowledge, and the knowledge is re-entered into the world that we experience in turn. Hence, what is described, both as input to – and output from – processes, is actuality. Weick's enactment-selection-retention model thus seems to lack a dimension for potentiality.

Abstraction and concrete experience

It is discussed above how Weick draws a distinction between the intersubjective and the generically subjective levels. It is also mentioned how actors enact from undefined space and time by drawing lines, establishing categories and coining new labels. Examples from crisis situations suggest that categories, such as routines, may impact on behaviour, or the individuals may resort to their own intuition. All this revolves around the distinction between abstractions and concrete experience from which Whitehead worked. There is nevertheless a difference between Whitehead's and Weick's thinking. For Whitehead, abstractions are always 'becoming' rather than 'being'; they are always in formation, and never

exist as actual entities in themselves. For this reason, abstractions cannot be seen to be separate from their processes in which they take part and which create them. This point, intrinsic to Whitehead's philosophy, is crucial for a reconceptualization of the verb-noun relationship because it explains how verbs and nouns emerge from the same process. They are not disconnected terms, struggling for synthesis in an ongoing tensional process such as what a reading of Weick suggests. On the contrary, as a Whiteheadian reading would suggest, verbs and nouns are seen to co-evolve as inseparable yet analytically distinct (Bakken and Hernes, 2006).

8 A scheme for process-based organizational analysis

Introduction

This book is based on the idea that organization is about attempts at some ordering, redirection or stabilization in a fluid world forever in a state of becoming, where nothing is ever accomplished in a final state. The idea embodies basically two assumptions. The first of these is a mere ontological assumption; that the world exists as flows in which entities are in a state of becoming rather than as a final state of being. The second assumption relates to epistemology; actors intervene in the world of flows equipped with their understandings of how it works, and equipped with models of how to bring about some order, either by continuing doing what they are doing already or by attempting to stabilize the worlds that surround them into some intended pattern. This pattern is never fully achieved, but without the idea that some pattern will be achieved, nothing is likely to take place. Doctors and nurses work to save lives even when they know that the odds are stacked against them; managers try to implement reform although they know that the intended reform will not materialize the way it looks on paper or in PowerPoint presentations. Actors intervene on the assumption that something will become; they assume that there is something there to be reckoned with, and they assume that through organization some*thing* will be achieved in a tangible state. In the process they connect things that they assume to be in a tangible stable, state. When I use the word 'actors', I do not have in mind singular actors such as managers. To be sure, persons in management positions take part in organizing activities, but they do not stay constant, nor are they the sole architects of processes.

Assumptions about flows and stabilization raise a number of questions to which the theorists discussed thus far have provided different answers. Some of their answers can be built upon in developing what I call a 'scheme' for process-based organizational analysis. I borrow the term 'scheme' in this connection from Whitehead, who presented his theory as a 'philosophical scheme' of ideas that is coherent, logical, applicable and adequate (Whitehead, [1929]1978:3). The scheme that I discuss below is based on four basic ideas: first, the idea of the primacy of organizing as connecting; second, the idea of organization as reiteration and novelty; third, the idea of the plot or organization; and fourth, the idea of actuality versus potentiality.

The primacy of connecting

Organization theory has traditionally been based on the view of organizations as providing contexts for actions, and management theory has traditionally worked from the idea that managers create contexts in which intended results are achieved. The assumption is spatial in the sense that characteristics are assumed to form a context for what goes on. Organizational culture, for example, is assumed to form a frame for behaviour, as behaviour is assumed to be guided by deep seated assumptions pertaining to the organization and its environment (Schein, 1985). Implicit in a contextual view is the assumption of levels of analysis, where the 'organization' belongs at a level above the individuals and their actions.

If we do not work from a priori distinctions between levels, but instead analyze organization as the process of connecting entities in the making, the analysis will be quite different. Such a kind of analysis is what makes sense from a Whiteheadian perspective, and it can be perceived in the work of the four theorists discussed in this book. As mentioned in chapter 3, Whitehead (1938:9) held that 'connectedness is of the essence of all things of all kinds'. Without connectedness there is no process. Connectedness implies bringing together things to form a basis from which action can take place.[1]

Connections may be considered at two levels at least. First, connections represent the stuff that every organized activity is made of. Connection is a generic term for what takes place as actors 'engage with the world' (Heidegger, 1927). Working towards an aim means connecting people and activities to an aim. There are many possible mechanisms that serve as connecting devices, and they vary in terms of robustness. Second, connecting is done through conscious organizing of activities. This takes place when consolidation is attempted, such as by stabilizing an existing pattern or, alternatively, when novelty is attempted, introduced through change of organizing patterns. In either case, we are talking about the application of models of organizing as a means of making connections.

Cooper (2005a) discusses connection using the example of newspapers. Newspapers connect by assembling information from multiple and distant sources. Things that are initially disconnected come together in the text and words of the assembly. The assembly, in fact, is what constitutes the newspaper. While connecting information from sources, the newspaper also reveals that there are many sources that are not present in its assembly, what Cooper refers to as missing presences. Taken together, the connected presences and the missing presences define an encompassing framework of space and time where the newspaper occupies a connecting role. Each day of its appearance the newspaper manifests its role as that which connects the disconnected, and its roles as defining that which is present and that which is not. The regular reappearance of the newspaper is a reminder that it performs the connecting, which Cooper sees as revealing its underlying fragility and impermanence. There is a continuous threat of the paper's disappearance, which is averted through its daily reproduction.

Newspapers operate in a market situation where customers may buy a competing newspaper without any effort. Newspapers have no binding mechanisms

on their customers except the temporal measure of subscriptions. This is why the example of a newspaper is also a good example of the fragility of organization. Organizational leaders are in a position to bind organizational members through a number of mechanisms. Many of us go along with these mechanisms because, somehow, they work for us. You may hate your boss, even the company as a whole, but you may still continue to go and work for them. On the surface it seems that organizational leaders have much stronger binding mechanisms than newspapers. However, leaders, like newspapers, live amid threats of extinction, and they also have to reproduce connections even though they have their staff between fixed walls (or linked up electronically through gates of usernames, as the case may be). In principle they are playing the same game of connecting things, and the binding mechanisms differ in terms of temporality and not so much in principle.

The idea of connecting rather than contextualizing opens a number of questions related to the very process of connecting. I suggest that there are three main questions that form part of a process analysis of organization.

First, what is assumed to *connect*? March, for example, works from the connecting of decisions mediated by learning. In a similar way, Luhmann works from the idea that autopoietic systems, in order to reproduce themselves, need to enable decisions to connect to one another. Latour is also explicit about the idea of connecting, but in a different way, as he works from the idea of connecting between heterogeneous elements where, for example, people may connect to ideas and institutions. Weick describes socio-cognitive connecting processes in groups in situations of stress and ambiguity, referring to the connecting in the form of interlocking behaviours.

To be sure, connecting may take place between an almost infinite number of elements. Repeating Whitehead's (1938:9) argument that connectedness is of the essence of all things of all kinds, connecting is the essence underlying all dynamics of organization. Hence, connecting implies a choice of factors, regardless of whether it applies to the practitioner or to the analyst. Connecting, like any other choice, is a choice of the significant; that which 'is'. Some factors are intrinsic to organization, such as routines, technologies and people. Within and between these groups of elements, connections may be attempted that appear significant.

Second, what major factors characterize the *process* of connecting? Connecting, seen as something mechanical such as connecting two wires, would lead us to overlook the dynamics of connecting processes. Connecting, instead, should be seen as a process in itself, and not limited to being the condition of either connected or not connected. Suddaby and Greenwood (2005:41), for example, say the following about connecting through rhetorics:

> […] because logics are abstractions, […] contestations are often a function of rhetoric in which the legitimacy of competing logics is openly debated. In these debates, actors employ rhetorical devices to connect elements of the existing or proposed form to broader cultural understandings in an effort to support or challenge the comprehensibility of an innovation.

Connecting is about approaching something that may become, not about mechanically connecting existing entities. Connecting takes place in anticipation of entifications of things, to use a term suggested in chapter 2. Connecting is a process in itself because it implies tentative fixing, as pointed out in chapter 7. It is tentative because neither the elements nor the way they change can be treated as givens. Connecting is done in order to stabilize, and the means of connecting are derived from models of organizing held by actors. Organization is seen, along with Chia (2000) and Tsoukas and Chia (2002), as *attempts* at stabilization in order to create a more predictable world. Attempts at stabilization go on all the time, with the aim of a stabilized state in mind but without anything ever becoming stable. It is the desire or purpose of creating stability, and the means which organizers employ in their attempts at stabilization, that make the world more stable than if organizers had not gone about their business of stabilization. Processes of stabilization go on all the time but their unfolding is largely indeterminate, although they may be observed as they occur or are interpreted in retrospect. They are contingent in the sense that what happens at one stage influences what happens at another stage, and choices made at one stage influence what choices are possible or likely at another stage.

A key question relates to the *nature of the connecting activities*. The four social theorists have different versions of how processes unfold. Latour employs a number of terms to describe the activities by which new elements are enrolled into networks. March has focused some of his work on the connecting aspects of decisions and the effects of learning. In Weick's work, action and sensemaking serve as bases for connecting entities through organizing. A noticeable example from his work is the way that he conceptualizes organizing as the interlocking of behaviours.

No connection seems possible without the two basic elements of actions and sensemaking. It seems hard to conceive of any connecting without action. Connecting a company to another, for example, may mean physically acquiring stakes in that company, working together on projects, or operating within the same office space. In addition, actions make no sense without accounting for the meaning attached to the connecting operations, i.e. sensemaking associated with actions. Connecting to a company, for example, may enhance prestige, dampen conflict or improve profits. Whatever the reason, there is meaning attached to the action of connecting which relates to intentions of connecting.

It is useful to employ Weick's term 'sensemaking' because of the emphasis put on the active aspect of attending to events; we notice things as we act, and the sense made of what was noticed forms a basis for what is done next. When we attend to what seems within our control there are fringes, as James (1892, [1909]1996) called them, which mark the transition between our field of focus and that which is outside it. Hence, what we 'see' is within the world of focus. This world is subjective, made available to us through our own selection. Note that although it is made available through human selection, the 'seeing' may be done through technology, which is often the case. But with the notion of fringes, it seems important not to assume that there is a clear dividing line

between what is seen and what is merely intuited or noticed. Beyond the concrete opportunities that actors see, there is a more blurred world which actors sense. Nevertheless, when actors act, they do so on the basis of having bracketed off parts of the world, which they concentrate their projects on. It is mentioned in chapter 7 how the term 'bracketing' used by Weick draws inspiration from the work of William James in the American pragmatist philosophical tradition. Bracketing is a form of enactment in the sense that it includes a selection of possible explanations from a tangled world where many (other) explanations are possible.

Third, what can be assumed in terms of *nature* of connections? In organization studies, Weick and March are credited with introducing the idea of loose coupling (Weick, 1976; March and Olsen, 1975; March, 1981). To assume loose coupling is to assume that conditions are united for connections to take place, while allowing for the possibility that connection may not take place. First and foremost, loose coupling allows for leeway of analysis, such as the degree to which we allow for the possibility that actors have the freedom of choice. The assumption is important for understanding behaviour and actions because it provides a broader understanding of different underlying mechanisms and how they interact.

There are several ways to conceptualize looseness of connections. It is possible, for example, to envisage looseness to vary along a continuum going from the virtual to the physical and concrete. Virtual connecting implies observing a possibility for connecting without necessarily connecting through actions. Virtual corresponds to Luhmann's idea of virtual possibilities. The 'virtual' is that which may happen, i.e. that which is possible. A manager may observe, say, the devastations of hurricane Katrina and its aftermath, and may take precautions on behalf of the company based on what has been observed. At the other end of the spectrum we find more absolute connections, such as rules which apply to behaviour. The same manager may recruit personnel for crisis situations who enter under a contract and who develop rules that apply to all personnel of the company. In this case, connecting is done through contract and rules.

Organization as reiteration and novelty

Reference is made in chapter 3 to Whitehead's (1925) use of the term 'reiteration', by which he means remanifestation or reappearance. Reiteration, in Whitehead's thinking, refers to successions and contrasts of patterns (Whitehead, 1925:133). With the assumption of a processual world without static substances, what keeps things going is the repeated enactment of some order or other. The enacted order is order that is brought forward from the past. Similarly, Heidegger (1927:391) refers to 'repetition' of the possibilities that 'have been'. Repeated enactment brings the organization in touch with itself in view of its past, and with possible connections in its external environment. Without reiteration, orders fade into oblivion, and without reiteration that reproduces connections new possibilities cannot be realized. Without reiteration, actors fail to be reminded of the organization. A railway station can only exist as long as people continue to go through it; a prison is only

upheld as a prison as long as there are inmates and wardens going about their business.

Organization is about connecting heterogeneous elements in the accomplishment of some task. But whereas connecting may be said to form part of any social action, the distinctive feature of organization lies in the attempt at the actual coherence of its connecting operations.

Coherence is a necessity, however unrealistic it may be in a fast changing world. Coherence of action over time is necessary because it is that which enables learning, and learning is what enables knowledge of whether or not expectations are met, and why. The primacy of learning for social systems is argued by March and Luhmann in particular, both of whom point out the link between learning and expectations. Coherence is not the same as consistency. Coherence allows for holding things together so that the whole make up of things is recognizable from one point in time to the next. Consistency, on the other hand, refers to the maintenance of a particular standard or task from one point in time to the next. Organizations need to exhibit coherence, otherwise they disintegrate, but they do not necessarily need to be consistent. In fact, much of the work by James March and his colleagues illustrates how organizations are frequently inconsistent, such as by pursuing incompatible sets of goals, yet they do not disintegrate.

The assumption of organization being linked to learning is also why organization is, according to a strong process view, a conservative enterprise. Despite all the talk about organizational change, organization in a changing world is first and foremost about stabilization around some central set of ideas, what we might call a 'plot'. Organization is done 'around' something that makes sense and which is passably durable. By 'passably durable' I mean that it is perceived as sufficiently durable for those involved to form a basis for action. Moreover, it is not just sufficiently stable, but it also makes *sense* in that it is meaningful to those involved.

Organization implies continuity, and to the extent that there is novelty, there is novelty in continuity. Nothing 'organized' starts from zero. No organization starts from nothing. If we organized completely anew every day, there would be no discernable organization, and hence nothing to study worthy of the label of organization studies. At the same time, organization is about novelty. If we remain faithful to Heraclites' idea that the world can never stay the same, it means that those involved in organization always experience possibilities of novelty. Doing the same thing in a changing world means doing something different for two reasons; first, because the experience of doing the same thing twice is different the second time round; and second, because the world has changed since the first time.

It may seem contradictory to assume the simultaneous presence of both novelty and continuity. But assuming the world is continuously in a state of flux, exercising continuity implies doing something different because the world around has changed. Taken to the extreme, a company that does exactly the same thing with the same people (if that were possible) over a long time period may be described as exercising novelty as long as all other companies have changed. To be sure, this does not mean that the less a company changes, the more novel it is. Novelty is not

so much about degrees as about direction. A company may, for example, launch a product based on a technology that it has used for many years. Thus, for those working for the company, there may not be all that much novelty about the product since it uses a well known technology. To other companies and consumers, however, the novelty may seem far more obvious. In this case, novelty points in a direction which is outwards in space from the organization.

The point to be made about continuity is that it is essential because it is what allows for learning from the past and for expectations to be sustained for the future. In the case of the company used as an example here, the introduction of novelty has come about through the reiteration of an established in-house technology. The company is likely to continue with the technology that has allowed the 'discovery' of a new product; the connecting to something new, an as yet unrealized potential of possibilities. In a sense, what takes place is what Tsoukas and Chia (2002:576) refer to March (1981) as saying: 'There is no object as such that undergoes change; there are, instead, choices, actions, decisions, and people ordinarily going about their businesses'. The future does not come about through a plan, but it lies there as a locus of unrealized potentiality (Whitehead, [1929]1978).

All this may seem mundane to those who operate with the idea of change taking place through grandiose schemes and heroic actions, but it has a pragmatic explanation. Reiteration is necessary in order to uphold the system of relations, and the reiteration must therefore be incremental rather than radical. It is the mundane day-to-day incremental changes embedded in continuity, forming the undergrowth of activity, which allow for movement and the possibility of discovery and connecting to other elements. This is how reiteration and connecting can be seen to form two complementary parts of the process of organization.

The essence of plot

A central question is: what enables continuity? Reiteration constitutes continuity, but it is not by itself sufficient to enable continuity. Reiteration needs to be performed around a theme that provides meaning to the acts of reiteration. Reiteration consists of numerous processes, but for it to provide for continuity it needs to relate to a theme, to a distinction that marks the difference between one organizational setting and another.

It is mentioned in chapter 4 how Whitehead refers to Bradley's (1914:193) question about relations being performed around what he called an 'inclusive whole' (Whitehead, [1933]1967:230). Bradley suggests that there is something that underpins collective action that cannot be reduced to relations alone, suggesting that the inclusive whole might be an experienced unity of many in one (Bradley, 1914:175 in Whitehead, [1933]1967:233). It is James (1892), referred to previously, who suggests that in all thinking there must be *some* topic or subject about which all the members of thought revolve.

That 'something' around which connecting operations coalesce is what I call a 'plot'. Among the four social theorists discussed in this book, there are different versions of what a central 'plot' might be. Latour, working with the idea

of networks, seems to locate the 'plot' in the relations between actors. This is how, once new elements are added or existing ones excluded from the network, the relations change between those who form part of the altered network. In another sense, as the network unfolds, certain constellations may turn into 'macro-actors', or 'black boxes', which implies that they come to be taken more or less as granted by actors. In Luhmann's autopoietic theory, the more central and enduring lies in the communicative structure by which the social system defines itself and its environment. Importantly, Luhmann also distinguishes between 'themes' and 'contributions'; for communication to make sense, it must be organized into 'themes' in which 'contributions' can be located (Luhmann, 1995:155). Weick seems reluctant to define any kind of plot around which organizing takes place. In the writing of March and colleagues, rules and routines are central repositories of learning which, at some levels, tend to remain fairly stable. March *et al.* (2000), for example, make the point that written rules that have been repositories for organizational learning over long periods of time tend to become particularly resistant to change. Such rules may become 'decision rules', analogous to what Simon (1976) called 'decision premises', which he says are integrating devices for organizations.

Much organization theory has been built from the idea of integrating mechanisms. For example, early economic organization theory has developed from goals as the main mechanism. The 1980s witnessed the emergence of organizational culture as a mechanism defined by some as 'shared assumptions' (Schein, 1985), whereas in the last decade organizational identity has taken a central place as an integrating mechanism in a number of works in organization studies. It should be noted that, for each of these three types of integrative mechanisms, writers have pointed out that the integrative effects may be loose or inconsistent (e.g. March and Olsen, 1975; Martin, 2002). Garsten (2003:249), from her study of temporary staff agencies, takes a cautious view of integrating mechanisms, writing that: '[The temporary staff employment agencies] … may, by analogy, be seen as "diasporic organizations", whose members are widely distributed but maintain some sense of connection to the organizational center'.

Maybe precisely because she studied staff who cannot readily be assumed to be embedded in a single organizational culture, Garsten's observation is interesting. Temporary workers are employed by one company but most of the time they work physically inside other companies. As employees report to different employers for different tasks, a number of questions present themselves, notably related to loyalty, identity, motivation and conflict. Still, they maintain, she writes, 'some sense of connection'.

Whatever mechanism is chosen, it tends to come up short in relation to the complexity of organization. Perhaps the main weakness of working with one type of integrating mechanism is that we miss out on the relational and heterogeneous nature of organization. Cyert and March ([1963]1992) made the important point that elements making up theories of the firm should be relational and, moreover, that they may be expected to change over time. Goals and rules, for example, may substitute for one another. In a similar vein, but at a different level, Brunsson and

Jacobsson (2000) make the point that standards and organizations may substitute for one another. If we look at organizations, the qualities that differentiate one organization from another are composite. The introduction to the book argues that Nike cannot be reduced to either organizational or symbolic characteristics. The point to be made is that what makes Nike is the interaction between different factors related to Nike, some of which are general for many organizations, others of which are unique to Nike. For example, many aspects of their organization, such as their operating procedures, may equally apply to other companies, but their founders and their logo belong to Nike only.

Hence the term 'centre' used by Garsten should be treated with some caution. We are looking at organization as a 'centre' with various connections of people, activities and technologies pertaining to that 'centre'. But even when the word 'centre' is used here, it does not imply a centre of substance like the kernel of a fruit. What these processes revolve around may just as well be a void, the way Rorty (1991) sees the human self as a self-weaving, centreless and contingent web (in Czarniawska, 1997:44).

A plot may be considered to be relational in the sense of forming a configuration of different factors. One definition of a plot in literature relates to a storyline, a sequence of events, where the plot represents the particular pattern of stringing together events. Vaara (2002) points out that a characteristic of narratives is that they are interpretations of sequential events. But organization cannot be reduced to storytelling alone, and a plot may also be seen as the arrangement of factors where chronology is not of the essence. It is noted in the previous chapter how Weick refers to Barley's use of the word 'plot' in the sense of 'standard plots of types of encounters whose repetition constitutes the setting's inter-actional order' (Barley, 1986:83). The word 'plot' is also used by Czarniawska (1997:18), who points out that plots are the means by which 'specific events, otherwise represented as lists or chronicles, are brought into one meaningful whole'. Thus plots may be seen as webs of factors that are invoked in various ways. These factors are particular to the organizational setting, and so are the ways in which their relations are invoked. The 'plot', however, resides not just in the connections between entities. It may also be assumed to constitute a 'centre' towards which connections point, or something that is reproduced through connections – belonging to connections while at the same time lying outside them. As pointed out above, a plot, although conceptualized as a centre, may be empty, which does not prevent it from being a centre.

The potentiality-actuality dimension

According to Whitehead, the potentiality-actuality dimension is a general principle of processes. The atomistic view held by Whitehead offers a view whereby one form of organization emerges among several possible forms. The form that emerges is the actual form, emerging as one of many different possibilities. The actual form of organization consists of sets of interconnected abstractions that provide meaning to actors, both within and outside the system. It is in many ways the

form that 'is', derived from potentialities of previous forms. At the same time, the actual form represents potentiality for possible future actual forms. The potentiality provides a number of factors – within the reach of actors and outside it – and holds potential for causing unanticipated consequences.

Organization implies reiteration of connections between entities in the making while, at the same time, harbouring possibilities for connecting with other entities. As systems get organized, some opportunities reveal themselves through connections while others are left out. As mentioned in chapter 5, Luhmann described how systems are continually faced with the necessity of making selections, which also means selecting away possibilities. In fact, he argued, selection makes no sense without an awareness of what is selected away. Selecting something over something else means drawing a distinction between the selected over the non-selected. Luhmann presents an example which illustrates what he means. As a woman gets on a crowded bus a man gives up his seat to her. He does not know whether she will refuse his offer or accept it. Whatever her reaction, the man is aware that he has selected away the possibility of not getting up and, while he observes her reaction, he simultaneously is aware of what might have happened had he not offered her the seat. However, the consequences of offering her the seat are directly observable, while the consequences of not doing so can only be guessed at. It means that some factors, which are not accounted for as actuality, impact on what happens.

Potentiality, as opposed to actuality, represents that which cannot be accounted for; it represents that which is absent, that which is not available for assessment, but which nevertheless represents a space of opportunities.[2] Potentiality resides in the unintended consequences of what actors do, but it also resides in forces in the environment. It is important to keep in mind that potentiality works two ways in relation to actuality, as pointed out in chapter 3. On the one hand, actuality creates potentiality in the sense that what is acted has effects on what happens later beyond that which was anticipated. This is inevitable in organizing processes. On the other hand, actuality embodies potentiality from earlier actualities and from actualities elsewhere.

The Grameen Bank: a tangled story

An organization of interest for a process view is the Grameen Bank, a financial institution extending micro credit to the poor and landless, mostly women. Grameen is not easily defined as an 'organization', but more like a tangled configuration of different processes. It is a bank, but perhaps only because it lends money to people. It is many other things as well, such as a social movement, an educational institution, a concept and an international institution. As the example will illustrate, it is very hard indeed to separate its way of doing banking from its social and symbolic features.

Grameen was founded in Bangladesh by Muhammad Yunus in the early 1970s. Since then the concept of the bank has spread, not only throughout the development world but also to Europe and the USA. Grameen Bank has grown from being a few idealistic persons lending tiny amounts ($24 in all) to 42 women

villagers in the village of Jobra in Bangladesh in 1976 to more than 4 million borrowers today, 95 per cent of whom are women. The lending is done without collateral to 'the poorest of the poor', and the loan recovery rate is an astonishing 99 per cent. In Bangladesh, Grameen Bank now has 1,326 branches with a total staff of 12,903 working in 47,836 villages (November 2004 figures). In addition to operating its micro credit programme, it has embarked on parallel programmes such as initiatives directed toward beggars, housing, scholarships, education, insurance, deposits and pensions.

To mention the word 'Grameen Bank' today evokes associations in different places of the world as the story of a concept (micro credit, social mobilization) and organization and a man going against the grain of twentieth century theories about poverty alleviation, then making his way into the economic life of industrialized countries. Few would dispute the fact that it is one of the (perhaps few) great success stories of fighting poverty in the twentieth century, and for this reason Yunus was awarded the Nobel prize in 2006. Published accounts of the bank's evolution (such as Bornstein, 1996) contain all the basic ingredients of a good story, such as the good against the bad (the bank versus money lenders and corrupt officials), the poor against the rich (landless women against the established banks), the one against the many (Muhammad Yunus against the prevailing economic doctrines of not lending without collateral) and becoming freed from domination (Bangladesh becoming a free country after having been ruled from then West Pakistan) and, finally, the making of a myth that is much bigger than what the Bank actually does. In short, the making of a dream.

The word 'dream' is not just meant in a romantic sense, but dreaming may simply be seen as a means of moving processes forward, of projecting them into the future. It takes us back to the idea of metaphysics of process with which Whitehead was concerned. Processes are more than what we see, according to Whitehead. In processes, being is a basis for the becoming, but becoming also moves towards a desired state of being (without ever really getting there). This is why events cannot just be seen as points of experience, because process entails things that transcend the process itself. Process is more than meets the eye. If the Grameen Bank in any way can be used to exemplify such a statement, it might be what Yunus describes as a common reply that he gives to people who don't see 'the bank' in what Grameen does in the countryside (Bornstein, 1996:292):

> A variety of people come here and they say they wanted to see a *bank* […] All of a sudden, when I start talking, they say, 'Well, this is not quite a bank'. I say, 'It depends on what you mean by a bank'. So, they say, 'Oh, you are *more* than a bank'. I say, 'Well, that's what you think, but we think we are *just* a bank. And every other institution that you see that calls itself a bank is *less* than a bank'. […] We do a lot *more* than a bank, but when people come to judge us many say, 'Look, it doesn't add up'. I say, 'Give it time. Most businesses don't add up in the first days. We can show you the gap is closing. But don't be so mechanical that you lose sight of the big picture'.

There have probably been many Grameen Banks in the making, but only this one has become one. Reading stories about its becoming clearly conveys the impression that there are several processes that evolved and met in timespace to make it precisely what it is today. Reports concentrate a lot on the virtues of the founder, Muhammad Yunus, and it is difficult to see how it would have become what it is without him. At the same time, several other factors have obviously coincided, some of them entirely out of his control and others partly within his control; some in the external environment and others within the bank. Before he returned to Bangladesh in 1972 with a PhD in economics to work for the planning commission, he had worked as a lobbyist in Washington, DC to get the US congress to stop military aid to Pakistan. The year 1971 saw the end of Bangladesh's war of independence from Pakistan and, upon his return to Bangladesh, he found himself caught up in the euphoria of liberation (Bornstein, 1996:32). Disappointed with the efforts of the public administration, he joined the Chittagong University as an economics professor. Again he was disappointed, this time with the theory taught at the university, which was disconnected from the lives of ordinary people. In 1976, in the wake of a terrible famine in 1974, he embarked on what was later to become the micro credit scheme of the Grameen Bank, lending $24 to 42 women villagers in the village of Jobra.

Moving focus from the founder to the organization, the Grameen Bank operates on the basis of strict principles and a relatively simple structure. The head office is in Dhaka, which works as a centre for the operations in the almost 50,000 villages throughout Bangladesh. Its field structure consists of thousands of branches which are, in fact, small huts set up in the village, the idea being that the bank should come to the poor and not vice versa. In the villages the operations of the 'bank' are co-managed with the borrowers, which creates a sense of co-ownership and interdependence. This fact seems to account partly for the unusually high repayment rate. At the same time, the bank operates on the basis of a pragmatic business logic with strict rules and procedures. For example, punctuality and a frank no-nonsense style with the borrowers seems to characterize behaviour.

It is not easy to see where 'the organization' is, if one were to look for a circumscribed system that was clearly distinguished from its environment. In fact, the boundaries of the bank seem difficult to draw. There seem to be many boundaries, many of which are blurred and many which criss-cross. It seems more useful to see it as a mixture between a movement and a network, but even here the picture can get very complex. The economic and financial principles of the bank are simple, but they cannot explain the emergence of the Grameen Bank alone. Just because the bank is a success because it took on loans without asking for collateral, does not mean that banking generally can be done without collateral. Something that pervades accounts of the bank is the social and ideological aura that surrounds it. Many accounts point towards the creation and sustaining of the social identity of poor people, and especially women, who can identify with being entrepreneurs and being associated with a movement that transcends, not just the borders of the village and the region, but also the borders of the country. The instilment of pride

seems a social effect which the micro credit scheme achieves elsewhere as well. Bornstein (1996:337) reports how, in the US, pioneers of the micro credit movement, inspired by the Grameen experience, strived to build sustainable institutions that demonstrated faith and respect in poor Americans.

Because the bank extends its operations over a large territory, it can be seen how it is both quite stable and represents novelty. It is stable in many ways. For example, as mentioned above, the lending principles are simple and they are applied throughout the operations of the bank. The ideological principles (part of the 'plot') are recognizable as well, such as the idea of micro credit and the targeting of the poorest and least advantaged groups in society. These and other factors constitute a basis of stability which, through the operations of the bank, are manifest through reiteration of what it actually does. At the same time, reiteration makes novelty possible as operations are repeated into new territory for the bank. Venturing into new territory confronts the bank with new challenges which may or may not be absorbed by the bank.

The literature about the Grameen Bank emerges from stories, and by retelling stories the literature in turn helps spin a web of belief in the bank. This web of belief appears to transcend what the bank can do at any time, and serves to propel the very idea of the bank forward. In a sense, the plot is projected on an environment of possibilities outside the bank. For example, a myth has been created around the founder, the idea and the bank which the stories upheld and reproduced.

At the same time it seems that there are coincidences, such as the independence of Bangladesh following the war in 1971 and the famine in 1974, which have been significant in making the Grameen Bank what it is today. Such factors are examples of how potentialities lie 'out there', ready to be invited into the process or forcing themselves upon the process, as the case might be.

The story is a tangled one by all accounts. There are elements of social identity, of personal charisma and of pragmatic business logics, and then there are a series of contextual factors such as national independence, frustration with incompetence of the national authorities, and then the positive response among the international donor community and heads of state (such as Bill Clinton) which have served to reinforce the idea of the bank. It does not make sense to allocate relative weight to any single factor because that would isolate factors from each other that are mutually sustaining. Still, there is a process of connecting elements that is reproductive and which serves to maintain the bank as well as the idea of the bank. The connecting of elements serves to maintain the bank in Bangladesh and it serves to export the idea of the bank to other countries in the world. But, as pointed out earlier in the chapter, the connecting is but a tentative relating of entities in the making.

The Grameen experience may seem a success story, and it probably is, but that is not the point here. It is irrelevant whether the Grameen story eventually should turn sour and critics can bring out their weapons of attack, fuelled by the wisdom of hindsight. The point is that it has become something to be reckoned with, and something interesting at that, because it shows how tangled organization is. Looking at the above incomplete account of Grameen Bank, organization is tangled by

factors on at least three levels: First, factors that are accessible to analysis such as people, rules, money and goals. Second, events that transcend the entity itself such as national disasters, developments, political changes etc. – note that events and developments are connected to the organization throughout its life and that they are not to be seen as just those conditions under which the organization was formed. Third, beliefs that serve to hinder or enable the production and reproduction of the organization, both among those responsible for initiating and running the organization and among those who benefit from it or those who might potentially benefit from it.

Evidently, organization may take a range of different paths, depending on what factors are connected. It also depends to a large extent on who are the 'connectors' and how they got to be 'connectors'. Yunus may be a strong spider in a web at present, now that the Grameen Bank enjoys a worldwide reputation for tackling poverty head-on. During the last few years he has enjoyed leeway, and perhaps for some years to come he may have leeway to connect a number of factors which make it possible to enhance the success of the bank, or suffer failure, depending on how connections are made and which factors are connected.

As the example illustrates, it is very hard to separate the bank's ways of doing banking from its social and symbolic features. Rather, it is probably in the coming together of the various features of the bank that it manifests itself. It is in the coming together that the 'plot' of the bank reveals itself. The plot consists of contrasts, such as performing both as a bank and a social movement. At the same time, the plot is coherent because its banking operations are coherent with its humanitarian principles. There are a number of factors that enter into what we might call the plot of the bank; the point to be made is that the plot is relational, i.e. it consists of different factors whose manifestation is conjunctive in the reiteration of the bank's practices.

The story of the bank, presented only briefly here, illustrates how an organization, including its actors, is perpetually in a process of becoming, and should not be taken as a static entity. In no organization have the central actors been there all the time. In fact, they have not been actors all the time. Actors are in the making, as much as anything else. Yunus was not an actor in the same way as he is today (a Nobel prize winner) when he lent $24 to the 42 women in 1976. At that time he could have been anybody lending them $24, but the difference is what he did as a consequence. Lending them the money was an action, or a set of actions, which encouraged him to carry on and which attracted others to join him. Actors who later participate in the creation of organizations – be they small firms, political parties or large institutions – become what they are because they happen to act in certain ways, which again spur other actions leading again to new patterns of action.

9 Some implications for organizational analysis

A different way of studying things

Law (2004) considers the messiness of social science research, which comes close to the word 'tangledness'. Throughout his book, Law refers to what he calls the 'Euro-American thinking', which he sums up (Law, 2004:145) as reflecting *constancy* (i.e. there are general and invariant laws and processes and nothing changes unless it is forced to change), *passivity* in the objects that it discovers (they stay the same until they are caused to change) and *universality* (what is absent is generally the same in all possible locations). Law (2004) suggests that studying process is more about disentanglement of a world 'out-there' than about imposing regularity on that world. The world 'out-there' is basically a mess, but not a mess without any form of order. Our approach to social phenomena, he suggests, should therefore be reflected by what he calls 'modest sociology' (Law, 1994).

Law makes the point that precision and clarity have been prominent features of modernity. It might be added that, maybe for this reason, the most noble of instruments of precision – mathematics – has been prominent in social science research. In organization studies, quantitative analyses have been central for a long time, particularly in the US. Whatever the proportion between quantitative and qualitative studies, among journals that are ranked highly and serve as criteria for awarding merits in business schools, journals that publish predominantly quantitative studies are heavily represented. Maybe this has to do with aesthetics; numbers and models seem to have their own special appeal. In mathematics some proofs are seen to be elegant, which suggests emphasis on aesthetics. When mathematics is applied in social science, elegance may be demonstrated by the ability to squeeze a messy reality into a neat mathematical model.

Precision and clarity relate to distinctions. Science, as is human thinking, is made from the drawing of distinctions. All knowledge, according to Whitehead ([1933]1967:177), is the conscious discrimination of objects experienced. In messy science, distinctions tend to be fuzzy, whereas more ordered science consists of clearer distinctions. Whether distinctions should be clear is a debate that started

between Aristotle and Plato. Aristotle's efforts were channelled towards clear categorizations where the aim was that something belonging in one category could not also belong in another category. Plato, on the other hand, allowed for fuzzier distinctions.

The unfolding of the research process depends largely on the extent to which we allow ourselves to expect fuzziness or clarity. Living with fuzziness enables sometimes qualitatively richer and counterintuitive findings, perhaps with less possibility of using the findings elsewhere. Expectations of clarity, on the other hand, tend to lead to shallower findings, but with greater immediate possibility of applying them elsewhere. The choice is one of attitude, whether the data should be let to speak or whether the researcher should speak to the data. Fuzziness allows for findings to emerge in unexpected patterns; it assumes that data have a live quality which, given time and space to move in different directions and combine in different ways, can yield qualitatively new insights. Assuming, along with Whitehead, the primacy of process, and that 'connectedness is of the essence of all things of all kinds', would make tolerance for fuzziness a prerequisite for process-based research. It means paying attention to details and unexpected forms of data that might emerge from a tangled world. The following passage from Latour's (1999a:116) incisive analysis of Pasteur's search for the nature of yeast may be illustrative:

> Under the microscope, when one is not forewarned, it is *hardly possible to distinguish* [the yeast] from casein, disaggregated gluten, etc.; in such a way that nothing indicates that it is a separate material or that it was produced during the fermentation. Its apparent weight always remains very little as compared to that of the nitrogenous material originally necessary for the carrying out of the process. Finally, very often it is so *mixed* with the mass of casein and chalk that there would be no reason to suspect its existence.

Understanding rather than measurement

There seem to be two main ways of going about scientific inquiry. On the one hand we may try and understand what is going on. Once we try and understand a phenomenon we owe it to that phenomenon to be treated on its own merits, bringing in its history and antecedents. This does not mean that we let history determine whatever has become, but rather that history has made it possible. Whitehead argued, for example, that because the present lays the basis for the future, we can understand the future in terms of the present, once we are in the future. The present contains the seeds of the future, but not all of it.[1] We enact the future in the present, a future which is a version of the past (Whitehead, 1933:195):

> But there are no actual occasions in the future, already constituted. Thus there are no actual occasions in the future to exercise efficient causation in the present. What is objective in the present is the necessity of a future of

> actual occasions, and the necessity that these future occasions conform to the conditions inherent in the essence of the present occasion.

This is the principle of contingency in time, by which what takes place at one time influences but does not determine what comes later. There is actuality which we may observe in process which is open to potentialities.

On the other hand, if we measure what is going on by ascribing value to tangible entities, once the decision is made to measure the phenomenon has to be compared with other seemingly similar phenomena. In this case the phenomenon is understood as something that is more or less similar to other phenomena. In a sense it has become objectified. Once it is counted, it cannot re-enter the process as something else. Whitehead might perhaps have said that it has lost its soul because it now becomes an object of determination. From being something that is understood on its own merits, it becomes something that is understood as part of a pattern.

The point may be familiar to most students of social science, but it may be useful to repeat it by quoting Whitehead's reasoning related to determinism and patterns. In his discussion of the evolution of science he describes the final stage of the evolution as follows (Whitehead, 1938:142–3):

> The fourth stage in the development of science is the introduction of the notion of pattern. Apart from attention to this concept of pattern, our understanding of nature is crude in the extreme. For example, given an aggregate of carbon atoms and oxygen atoms, and given that the number of oxygen atoms and the number of carbon atoms are known, the properties of the mixture are unknown until the question of pattern is settled. How much free oxygen is there, – how much free carbon, – how much carbon monoxide, – how much carbon dioxide? The answers to some of these questions, with the total quantities of oxygen and carbon presupposed, will determine the answer to the rest. But even allowing for this mutual determination, there will be an enormous number of alternative patterns for a mixture of any reasonable amount of carbon and oxygen. And even when the purely chemical pattern is settled, and when the region containing the mixture is given, there are an indefinite number of regional patterns for the distribution of the chemical substances within the containing region.

In other words, the basic choice is between pattern and no pattern. Choosing to work in the absence of patterns is risky because the result may appear unspectacular. When phenomena are compared and measured, on the other hand, unspectacular findings are legitimate because it is the patterns that dictate the occurrences, not the phenomena themselves. Another related problem with understanding – and corresponding advantage of measuring – is that it seems of little help for prediction. Things that are measured may help us say that, given certain contextual characteristics, we can predict what will happen within a specified limit of probability. For things that are 'simply understood', this is not so.

Cobb (2004), a process theorist, observes the power of prediction as compared with understanding in the case of physics:

> Physicists have, on the whole, been respectful of Bohm's work, but very few have adopted his model. Why? The answer is that it makes no predictions that they cannot make on the basis of their received models. The fact that it provides a better way of understanding the world does not count in its favor so far as physics is concerned. Physicists once understood their task as being the explanation of natural phenomena. By that measure, Bohm's work counts as a great advance. But in the twentieth century, physics redefined itself. It became a system of prediction, testing, and control. Bohm does not advance that process. Therefore his speculative interpretations are not treated as physics.

The choice between understanding and measuring has repercussions for how we go about talking to those who are closer to the action than we are. In organization research we commonly refer to the 'informers', and a huge number of studies are based on interviews or observations. Studying process as process, as understood in this book, invariably implies working reflexively, for two reasons. First, processes are contingent in the sense that what happens prior to an event lays the basis for what might happen at the event. As mentioned before, previous choices take part in creating the horizon of choice, but they do not determine what actually is chosen at the event. Second, actors change during processes. They act upon a fluid world, which changes them in turn. Both these two factors present great challenges to researchers.

Individuals, such as managers, live in this world of actions. They are aware that things change, that actors change and that nothing is really determined, although their discourse might suggest otherwise. Managerial discourse suggests that the world can be predicted or, worse, that it can be controlled. But this is mere public discourse that serves to create an impression of coherence in an incoherent world. It may reflect what they do consciously. Unconsciously, decision makers know that the world is far more complex and fluid because they live in that world every day, although it sometimes looks as though the researchers understand their reality better than they do. So, who occupies the bird's eye view – the researcher or the decision maker? Latour (2005a) takes a rather critical view, suggesting that social scientists tend to use actors as mere 'informants', implying that the 'informants' are not seen to understand the whole picture, which is the privilege of the researchers. Researchers, in his opinion, tend to relegate actors to doing things 'unwittingly', while promoting the researchers themselves as the reflexive actors.

Capta rather than data – selection rather than finding

Taking a process view in research influences the way that we conceptualize the nature of 'data'. The word 'data' lends to research an image of neutrality in the sense that findings appear independent of the way in which we arrive at them.

We often hear that 'our data show', or 'having collected our data, I set about analysing them'. Obviously, this rhymes with most textbooks on research methods. Many textbooks still seem to assume that social science proceeds from what, even for natural sciences, is at best a simplification of the world. Even in the natural sciences, the idea that 'data' exist there independently of how they were obtained is highly contested.

In addition, most books assume that there exists a chronology whereby 'data collection' precedes 'data analysis'. There is the assumption that 'data analysis' is finished by the time they are to be written up. If we accept that the world is a never ending process, then research, being limited to a few years, is but a window of opportunity into something that is in the making. We observe actuality, ignoring that this actuality forms potentiality for new actualities. In a sense, research is a 'drop of experience', to borrow a term from Whitehead, in a perpetually evolving world.

According to Whitehead, time makes for experience, and according to Luhmann, time makes for structure of social systems. The idea is that, if time is infinite, the world may develop in a haphazard way because options for trial and error are endless. Time is a limiting factor as much in research as in organizations. Hence, in the same way as systems need to organize themselves by making 'timely' selections, so researchers need to select some items over others in order to produce a story that is seen as legitimate by readers. Selecting something means selecting away something else. It means making something present and something else absent (Law, 2004), at least for the time being. It means that we 'let' something capture our attention, which means that we 'let' something else escape our attention. We produce a disposition which leads us to select some early data that fit our disposition. Because processes (including research processes) are contingent, early selection looks for next selections, and next selections help legitimize the earlier ones. In a way, this is the principle of Whitehead's prehensions applied to research.

The point is that, whatever we call data were really selected and fitted to the story at the outset. These early 'data' are not data in the sense that 'data' is understood in everyday language. In everyday language, data are assumed, more or less implicitly, to be neutral. Law (2004) makes the point that, in the Euro-American culture, social science has tried to produce notions of universality, meaning that data produced at one location in timespace will apply elsewhere in timespace as well. It would seem foolish to reject the idea that findings somewhere in timespace have utility elsewhere in timespace. However, the point that when findings are called data, it implies that may travel across timespace without change of validity or meaning. It means, for example, that absenteeism means the same in the US as it does in Kenya or in Scandinavia. There is power in the term 'data' that accrues from centuries of faith in the ubiquitous power of science as a predictor, controller and explainer of nature. Nowhere is this faith more unjustified than in social science.

If we assume that the world is infinitely connected, as Whitehead suggests, and everything is ultimately connected to everything else, then research is about

selection, and a very limited selection at that. Only an infinite selection can be made of potential factors that have a bearing on what is to be explained. Selection is active, not passive, much the same way as organizing, in the words of Weick, is about enactment rather than passive selection. Hence, whatever factors we choose are not data in the traditional sense, but features that we let capture our attention.

This is not new. Checkland and Holwell (1998), for example, draw the distinction between data, information and what they call 'capta'. Capta, according to Checkland and Holwell, are selected or created facts. Data, they suggest, are basic facts from which capta are selected. However, an alternative version might be to simply say that data are also capta, because no meaningful research can be done without selection. What may be perceived as data at some stage will at any rate have been capta at an earlier stage; becoming data simply means that they have achieved an objectified status, where the act of selection and its context may have been forgotten. Hence, there are no data, only capta.

Process-based research would do well to work with the notion of capta rather than data, because capta remind the writer and the reader that they are subject to selection as well as discovery, and that they are active rather than passive factors of research. They help ensure that we pay attention to how facts come into being; how they are conceived, and in what context. This gives the facts historicity and provides them with a 'passport' for travelling, just like passports do not just contain the name of the traveller, but also other particulars. Capta are in a way living data that take an active part in telling a story rather than merely lying there ready to be pulled out and used. Hence, they take part in shaping the researcher as much as the researcher shapes them.

Removed from the pretended neutrality of data, it becomes necessary to look at what capta might represent. According to Whitehead, every experience is a composite into which enter objective and subjective data. There are what we might call 'objective data', which are what we see as facts of the world. Then, to these facts, we impose subjective form which may translate into feelings and norms. Latour (1999a) uses the word 'signs', which are human made categories that form the basis for social sensemaking. Signs are not 'natural' categories, but invented positions along a continuum. At one end we may find what Whitehead refers to as eternal facts, such as colours. At the other end we might find notions such as, for example, names of new management methods. Along the continuum, boundaries are blurred to say the least, but the distinction between the objective and the subjective is, like all distinctions, a way to speak about the world.

Labels and muddles

Imagine that we try and list label phenomena that we associate with organization research. The list might look something like this:

Actors, goals, intentions, resources, plans, structure, learning, motivation, knowledge, products, technology, services, size, conflict, co-operation, power, intuition, control, money, rewards, rules, routines, procedures, problems,

participants, decisions, sharedness, coalitions, tactics, strategy, culture, belief, understanding, sensemaking, consciousness, conscience, norms, relations, influence, change, stability, bureaucracy, documentation, rhetoric, action, behaviour, operations, logistics, boundaries, responsibility, transactions, levels, groups, departments, discourse, networks, trust, communication, roles, materials, concepts, recruitment, novelty, innovation, atmosphere, adaptation, manipulation, opportunism, ethics, moral, dilemmas, play, history, events, rationality, loyalty, chaos, solutions, clans, cliques, groupthink, division of labour, artifacts, vision, slack, sanctions, budgets, process, fashion, renewal, tradition, leadership, management, heroes, gender, profit, reporting, systems, creativity, society, administration, law, economics, symbolism, passion, space, socialization, virtuality, flexibility, rationalization, sex, stress, burnout, expansion, discrimination, narratives, nepotism, technology, outsourcing, projects, actors, aesthetics, time, theories, governance, hypocrisy, centralization, institution, love, responsibility, bankruptcy, entrepreneurship, market, consultants, specialists, formalization, experience, identity, competition, standardization, confidentiality, politics, legitimacy, superstition, crises, information, class, success, problem solving, historicity, health, rituals, ownership, brand, logo, investments, doctrine, ethnicity, minorities, democracy, harassment, landscape, feelings, joy, hope.

In all, there are probably hundreds of terms that have entered into organization-related research agendas over the past few decades. A point for reflection, however, is the extent to which this diversity of terms reflects complexity. If there are, say, 200 terms pursued systematically in organization research, does this imply that there are about 200 'phenomena' related to organization? Assuming that phenomena are interrelated, we arrive at an enormous number of relationships between phenomena. And what if each 'phenomenon' represents a separate process that extends over time and space? Obviously, if we are interested in studying how processes get tangled up with one another, it is likely that the complexity will largely surpass the capacity that any of us possesses for dealing with the complexity. So we are in for some trouble here, if we wish to construct a meaningful research agenda. By a meaningful research agenda I mean one that enables sensemaking between studies made of different phenomena, and not one that is based on the type of cumulative insights associated with the positivist paradigm.[2]

The problem is not really that we use many different terms; the problem is that we are having difficulty letting go of them and, instead, we let them accumulate, thus creating an infinite number of possible combinations. Consequently, as research agendas capture people, journals emerge that cover new issues and conferences are organized to debate the emerging issues. We are left with a situation where the creativity of organization researchers has led to the construction of a vastly complex web of terms which, by implication, reflect a vastly complex web of phenomena. The construction of this complexity is our own making. Some might say that it is because the world of organizations is so complex, but that would seem a dubious statement. Such a statement would pretend that there is a nature out there which is so complex that we need a corresponding number of terms to describe it.

What is most interesting in a process perspective is not which labels we use, nor whether we use many or few. Whatever labels we use, they are reductions in relation to the complexity of that which we study. What is more interesting from a process perspective is how we actually extract and reintroduce our labels into a complex world, given that when we introduce them they become part of the world. It is largely the process of extraction and reintroduction that is a tangled one. This is the type of tangledness that managers grapple with. It is also the type of tangledness that researchers grapple with, because process is not just what goes on out there or down there. It is also what goes on between the researcher and his/her focus of interest. At some point in the process, researchers inevitably get involved with labelling. At that point the labelling enters the research process, and the research becomes suspended between the labelling and the process of study. In many ways the process of organization and the process of studying organization resemble one another. Mead ([1934]1967:78) formulated it much better many years ago as follows:

> Meaning is thus not to be conceived, fundamentally, as a state of consciousness, or as a set of organized relations existing or subsisting mentally outside the field of experience into which they enter: on the contrary, it should be considered objectively, as having its existence entirely within this field itself.

Studying something raises the question of how our labelling interacts with that which we wish to study. This chapter was introduced with reference to Law's (2004) use of the word 'mess' in social research. I would like to conclude this book by including one of Gregory Bateson's (1972) 'metalogues' which illustrates how we label things from a world that is not labelled, a world characterized by flows rather than things, included a number of 'metalogues'. The metalogues are imaginary dialogues between father and daughter (actually, they were inspired by dialogues that had taken place between himself and his daughter Mary Cathrine Bateson). Mary Cathrine Bateson writes in the introduction to the 1999 edition of *Steps to an Ecology of Mind*:

'It is no accident that a group of the father-daughter conversations he called 'metalogues', especially those written in the 1950s, stand at the beginning of this volume: Daughter is uncorrupted by academic labelling and becomes Father's excuse to approach profound issues outside of their boundaries'.

Bateson's approach is to take a process view of the meeting between mind and nature. Nature enters the mind but, in exploring nature, the mind enters the nature in turn. Mind and nature are inextricably intertwined with each other. The metalogues show the unfolding in a dialogue of the mind grappling with complexity, then becoming part of the complexity. The mind establishes labels in order to understand what is going on, but then the labels become part of what is going on.

Metalogue: Why do things get in a muddle? (Bateson, 1972)
Daughter: Daddy, why do things get in a muddle?
Father: What do you mean? Things? Muddle?

D: Well, people spend a lot of time tidying things, but they never seem to spend time muddling them. Things just seem to get in a muddle by themselves. And then people have to tidy them up again.

F: But do things get in a muddle if you don't touch them?

D: No – not if *nobody* touches them. But if you touch them – or if anybody touches them – they get in a worse muddle if it isn't me.

F: Yes – that's why I try to keep you from touching the things on my desk. Because things get in a worse muddle if they are touched by someone who isn't *me*.

D: But do people *always* muddle other people's things? Why do they, daddy?

F: Now, wait a minute. It's not so simple. First of all, what do you mean by a muddle?

D: I mean – so I can't find things, and so it *looks* all muddled up. The way it is when nothing is straight –

F: Well, but are you sure you mean the same thing by muddle that anybody else would mean?

D: But, Daddy, I'm sure I do – because I'm not a very tidy person and if I say things are in a muddle, then I'm sure everybody else would agree with me.

F: All right – but do you think you mean the same thing by 'tidy' that other people would? If your mummy makes your things tidy, do you know where to find them?

D: Hmm … *sometimes* – because, you see, I know where she puts things when she tidies up –

F: Yes, I try to keep her away from tidying my desk. Too. I'm sure that she and I don't mean the same thing by 'tidy'.

Notes

Introduction

1 Actually, Whitehead contributed an article to *Harvard Business Review* in 1933.

1 Organization in a tangled world

1 The argument is by no means novel. It was also made by Bergson (1896), whose work is important to several writers on process and organization (e.g. Tsoukas and Chia, 2002; Styhre, 2004). However, Latour has, with colleagues has developed a conceptual scheme (actor-network theory) from the argument.

2 Process views of organization

1 The latter part of this chapter is based on Hernes and Weik (2007).
2 The etymological roots of the word 'process' date back to at least from fourteenth century French, from the word *proces;* meaning journey, a going, and directly from Latin, from the past participle stem of procedere – go forward (Chambers, 1988). Although more recent definitions point to process as specific orderings of actions, the more generic meaning of something that moves, is more useful, because it forces attention to how things connect relationally.
3 E.g. Weick, 1979; Pettigrew, 1987; Pettigrew, 1997; Chia, 1999; Tsoukas and Chia, 2002; Van de Ven and Poole, 2005.

3 Alfred North Whitehead on process

1 In organization studies, the punctuated equilibrium model would be an example of such a view.
2 Such units operate similarly to what Latour (1999a:71) calls 'centres of calculation'.
3 I owe this point to Elke Weik.
4 In a similar vein, Knorr-Cetina (1981) uses the expression 'episodes of situated interaction' to designate a 'social unit' of analysis.
5 Latour refers to association as an act of creating durable heterogeneous networks, implying that actors are bound through acts of association.
6 The Oxford Dictionary mentions 'grasping' and 'seizing' as synonmyms of prehension.
7 The making of what we call organizations represents the coming together of a number of heterogeneous elements. Mainstream organization theory tends to ignore that this heterogeneous coming together never stops; that this is not only what made the organization but also what it is made of.
8 In his view, therefore, philosophy should act as the critique of abstractions. This view has earned him popularity in some corners of postmodernism.

4 Bruno Latour: relativizing the social, and the becoming of networks

1 Both Latour and Whitehead mention Kant as being in 'the other camp'.
2 Whitehead criticises Kant for starting with the subject and letting the subject define the object. Latour criticises Kant for leaving the subject in the centre of processes, imposing 'forms arbitrarily on amorphous but real matter' (Latour, 1993:56).
3 'Actant' is a term that Latour uses to characterize socio-material hybrids.
4 It is worth noting that March and colleagues (March *et al*., 2000:190), in their study of organizational rules, make a similar point, i.e. that written rules tend to be more robust repositories of learning than do tacit rules.
5 Translation is defined differently in different texts by Callon and Latour, but a relevant definition is a '[…] term that criss-crosses the modernist settlement … [and] …refers to all the displacements through other actors whose mediation is indispensable for any action to occur' (Latour, 1999a:311). However, Latour's actants are entities, shaped over time, whereas Whitehead's complex unities are occasions.
6 But a macro-actor may also be an institution, a concept, a market or a technology.

5 Niklas Luhmann on autopoiesis and recursiveness in social systems

1 I owe several of the ideas in this chapter to collaboration with Tore Bakken.
2 Although Luhmann's work is yet to be assimilated by large numbers of organization theorists, he drew inspiration from a number of central thinkers in organization theory such as James March, Karl Weick, Herbert Simon, Nils Brunsson, Fred Emery, Eric Trist, Michel Crozier, Paul Lawrence and Jay Lorsch.
3 This view corresponds to that of March, discussed in chapter 6.
4 This way of conceptualizing the relationship between system and environment has clear parallels to Weick's use of 'enactment'. Weick did, in fact, allude to an autopoietic view early on in organization science by arguing that 'The "outside" or "external" world cannot be known […] The outside is a void, there is only the inside' (Weick, 1977:273).
5 The tenet is controversial among organization researchers, as might be expected. On the other hand, it avoids the problem of a substance view of organizations because it could be argued that communication as a unit of analysis lends itself better to a process view than human actors (i.e. entities) as units of analysis do.
6 Latour and March express dissatisfaction with it as well. Latour finds that abstractions, such as structure, culture and norms, are too distanced from local situations to provide good explanations (Latour, 1999b:17) of what really goes on. March (1981) warns against assuming that decision systems evolve towards equilibrium states; this warning amounts to a contention similar to that of Latour.
7 This line of reasoning may be found with March as well.
8 A similar modification of the term 'system' is done by Giddens (1984:36) who, inspired by Goffmann, relates it to integration and co-presence.
9 On the contrary, regularity is the basis of change. I discuss this in connection with March's work in the next chapter. None of the process thinkers mentioned in this book deny a certain regularity in the social world. It is thanks to some regularity that we are able to exist as individuals, groups and institutions.
10 This view corresponds to Whitehead's argument quoted above (1911:16) that 'Civilization advances by extending the number of operations which we can perform without thinking about them'.
11 The point corresponds to the argument by Orlikowski and Yates (2002) referred to in chapter 2. Their focus is on how actors enact their notions of linear time in organizations and how they consequently reproduce the linear notion of time.
12 It is possible to see how Luhmann sides with Whitehead in associating being with becoming, if we associate structure with being and process with becoming.

13 In Luhmann's theory expectations belong to the psychic system, as opposed to the social system. In contrast to social systems, psychic systems consist of consciousness with thoughts as the elements of reproduction. Social and psychic systems co-evolve, but they are separate and form distinct environments to one another (Hernes and Bakken, 2003). The distinction between the two types of systems, although important, is not pursued in this book.
14 This is a point which will be pursued in relation to March's work on learning in chapter 6.
15 There is a parallel here to Weick's (1979) work on organizing, derived from Campbell's work, based on the following question: 'How can I know what I think until I see what I say?' (Weick, 1979:133). Similarly, Weick suggests, organizations talk to themselves to see what they are thinking. The point is subtle: groups and organizations enact a reality, but the enactment is but raw talk. Sense is then made of it, and this sense is stored as knowledge in the retention process (Weick, 1979:134). The parallel with autopoiesis is strong.

6 James March on decision processes and organization: a logic of streams

1 At a more aggregate level, Cyert and March ([1963]1922:22) suggest that a theory of the firm should usefully consider organizational goals, organizational expectations, organizational choice and organizational control.
2 The Oxford Dictionary mentions 'grasping' or 'seizing' as synonyms of prehension.
3 Rules, however, are also part of a wider structure of rules, hence changes in some rules lead to changes in other rules (March *et al*., 2000).
4 Such a conclusion tallies with Weick's argument that loose coupling enables adaptation.
5 The enrolment of external actors is largely a performative act (Feldman and Pentland, 2005), meaning that it is largely symbolic, but it may nevertheless be largely consequential for other decisions.
6 A similar point was made by Selznick. However, a difference with March is that he is loath to consider institutions as final equilibrium states.
7 The roots of the argument are found in March's analytical conception of socio-economic reality, where his thinking joins central tenets of process thinking associated with Whitehead: reality is an ambiguous, tangled and uncertain reality. Because it is tangled, the causality of events cannot readily be understood (March and Olsen, 1975; Levitt and March, 1988); hence causalities are imposed rather than inferred.
8 Quote taken from the film *Passion and Discipline: Don Quixote's Lessons for Leadership* produced by James March and Steven Schecter.
9 Similarly to March, Whitehead takes account of the transition from facts to feelings. Whitehead sees feelings as a necessity for the 'creative advance' of the world. Feelings make dead facts come alive and enable novelty. But feelings also lead to error such as, for example, what Levitt and March (1988) refer to as competency traps and March and Olsen (1975) refer to as superstitious learning. Both competency traps and superstitious learning may be necessary for organizational survival, as they may be responsible for its death. Whitehead offers an additional and interesting twist here, saying that error lies at the core of achievement. Human experience, argues Whitehead ([1929]1978:168), operates almost always in a mixed mode of symbolic reference. Thus, he points out, human perception is subject to error. However, it is precisely the opportunity for making errors that enables 'upward evolution'.

7 Karl Weick on organizing and sensemaking

1 This chapter builds partly on Bakken and Hernes (2006).
2 Weick refers to Allinson's (1993:111) analysis of what led up to the 1986 Challenger space shuttle disaster, where it was concluded that the defect 'O-ring' was a major reason for the disaster.

3 The word ‘timespace’ is used in line with Whitehead’s (1925:162) definition of spatio-temporal continuum as the general system of relatedness of all possibilities.

8 A scheme for process-based organizational analysis

1 Czarniawska (2004) brings out the word ‘connection’ in relation to organization studies, suggesting that connecting is the central activity in organizing processes.
2 I owe this expression to Tore Bakken.

9 Some implications for organizational analysis

1 This owes to the actuality-potentiality dimension, where actuality may be assessed, whereas potentiality is not open to assessment.
2 For works in organization theory that argue for the use of cumulative insights, see Donaldson (1996) for example.

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