GLOSSARY

Ambidextrous organizations. *Ambidextrous organizations* are organizations that have the ability to adapt to changes in external conditions while at the same time generating their own future by means of, among other things, performance improvement, growth and innovation (Duncan, 1976; O'Reilly & Tushman, 2004, 2011; Thota & Munir, 2011). Ambidextrous organizations can be developed by HR departments. In 2004, O'Reilly and Tushman expressed that ambidextrous organizations would constitute one of the major challenges for management in the global knowledge economy. The findings of O'Reilly and Tushman (2004) were overwhelming. Regarding the launching of radical innovations, they found that none of the cross-functional or unsupported teams and only a quarter of the teams with functional designs were able to produce radical innovations. However, among the ambidextrous organizations, 90% were successful in producing radical innovations. Empirical research has shown that this type of organizational design is best for producing both incremental and radical innovations (Thota & Munir, 2011).

Asplund's motivation theory.[1] In brief, this theory can be described in the following way: *People are motivated by social responses*. The following statement may be said to be a central point made by Asplund's theory: *When people receive social responses, their level of activity increases*.

Asplund's motivation theory is consistent with North's action theory (ref. North's action theory). Understood in this way, it seems reasonable to connect the two theories in the statement: *People are motivated by the social responses rewarded by the institutional framework*.

Availability cascades. This refers to the idea that we are all controlled by the image of reality created by the media because this image is easy to retrieve from memory.

Availability proposition. This may be expressed as follows: The more easily information enters into our consciousness, the greater the likelihood that we

1 Asplund's motivation theory, a term we use here, is based on Asplund's research.

will have confidence in that information. In other words, we believe more in the type of information that is available in memory than the information that is not so readily available.

Behavioural perspective. This perspective focuses on the behaviour of employees as an explanation for the relationship between business strategy and the results obtained.

Boudon–Coleman diagram. This research methodology was developed by Mario Bunge (Bunge, 1979, pp. 76–79) based on insights made by the sociologists Boudon and Coleman. The purpose of the diagram is to show the relationship between the various levels, such as the macro and micro levels. For instance, it is shown how changes at the macro level, such as technological innovations in feudal society, can lead to increased income at the micro level. However, it was shown that technological innovations could lead to weakening of the semi-feudal structures because dependency on land owners was reduced. Consequently, the landowners opposed such changes especially in the case of technological innovations, which Boudon has shown in his research (1981, p. 100). Coleman (1990, pp. 7–12) started at the macro level, went to the individual level to find explanations and finally ended up at the macro level again.

An important purpose of Bunge's Boudon–Coleman diagram is to identify social mechanisms that maintain or change the phenomenon or problem under investigation (as mentioned above, in Boudon's analysis of the semi-feudal society). Bunge's Boudon–Coleman diagram may be said to represent a 'mixed strategy'; Bunge says the following: *When studying systems of any kind a) reduce them to their components (at some level) and the interaction among these, as well as among them and environmental items, but acknowledge and explain emergence whenever it occurs, and b) approach systems from all pertinent sides and on all relevant levels, integrating theories or even research fields whenever unidisciplinarity proves to be insufficient* (Bunge, 1998, p. 78). The purpose of this research strategy is to arrive at a deeper and more complete explanation of a system's behaviour.

Capabilities. Capabilities are for an organization what abilities are for an individual.

An organizational capability may thus be defined as an organization's ability to perform a task, activity or process. Operational capabilities enable an organization to make money in the here and now (Winter, 2003, pp. 991–995). Dynamic capabilities, as opposed to operational capabilities, are linked to processes of change. Change and innovation are at the centre of dynamic capabilities.

Simplified, one may say that organizational capabilities are something an organization does well compared to its competitors (Ulrich & Brockbank,

2005). These capabilities are intangible and therefore difficult for competitors to imitate (Wernerfelt, 1984).

Cohesive energy. In a social system cohesive energy is 'the glue' that binds the system together. Cohesive energy is the social mechanisms that make the system durable. According to systemic thinking it is the relationships and actions that bind social systems together. The rationale is that relationships and the systems of relationships may be said to control human behaviour. Social systems are held together (in systemic thinking) by dynamic social relations (e.g. feelings, perceptions, norms) and social action (e.g. cooperation, solidarity, conflict and communication).

Co-creation. Co-creation involves working together to promote knowledge processes and innovation. If knowledge processes and innovation are essential for value creation in the knowledge society, co-creation is an important social mechanism for initiating, maintaining and strengthening these processes. The balance between competition and cooperation, embodied in the concept of co-creation, leads to constructive criticism and the necessary scope of knowledge that exists in the network so as to promote creativity and the innovative. Instead of a zero-sum situation, a positive-sum situation will be developed where everyone wins.

Collective blindness. Collective blindness may be said to be a form of collective arrogance, which results in irrational actions. Minor events slip under the radar, causing the system to not be fully aware of what is happening. Politicians' explanations why voters in a referendum vote contrary to what most of the power elite and the media advocated is an example of collective blindness.

Competence. Competence refers to knowledge, skills and attitudes.

Core competence. The concept was popular in the strategy literature of the 1990s. Core competence may be defined as: *a bundle of skills and technologies that enable a company to provide a particular benefit to customers* (Hamel & Prahalad, 1996, p. 219). More recently, core competence as a concept has been given less attention in the research on dynamic capabilities, and now there is more focus on the concept of *fitness*. The term *evolutionary fitness* is also used in the research literature in connection with technology, quality, cost development, market development, innovation and competitive positioning (Helfat et al., 2007, p. 7).

Discontinuous innovations. These are innovations that change the premises of technology, markets, our mindset and so on. We know that sooner or later discontinuous innovations will emerge in the future (Hewing, 2013).

Dynamic capabilities. Dynamic capabilities stem from the resource-based perspective and evolutionary thinking in strategy literature (Teece, 2013, pp. 3–65, 82–113; Nelson & Winter, 1982). The dynamic perspective attempts to explain what promotes an organization's competitive position over time through innovation and growth (Teece, 2013, p. x).

The original thinking concerning dynamic capabilities may be related to Teece, Pisano, and Shuen (1997). These authors defined dynamic capabilities as *an organization's ability to create, develop and modify its internal and external expertise in order to address changes in the external world*.

Dynamic capabilities are now seen as all the organizational processes, not only internal and external expertise, that contribute to an organization's capacity to adapt to change while creating the organization's future.

Explicit knowledge. This is knowledge that can be digitized and communicated to others as information.

Evidence. This may be results, such as research results, that can be relied on. However, it is also important to be aware of the fact that other evidence may be available without having to refer to figures and quantities, such as evidence that emerges from observations and good judgment without the assessment being quantified. Evidence-based research is research results that are based on approved and accepted scientific research methods.

Emergent. An emergent occurs if something new turns up on one level that has not previously existed on the level below. With emergent we mean: *Let S be a system with composition A, i.e. the various components in addition to the way they are composed. If P is a property of S, P is emergent with regard to A, if and only if no components in A possess P; otherwise P is to be regarded as a resulting property with regards to A* (Bunge, 1977, p. 97).

Entrepreneurial spirit. The entrepreneurial spirit may be described as follows (Roddick, 2003, pp. 106–107):

- The vision of something new and belief in this that is so strong that belief becomes reality.
- A touch of positive madness.
- The ability to stand out from the crowd.
- Creative tension bubbling over.
- Pathological optimism.
- To act before you know!
- Basic desire for change.
- Creative energy focused on ideas, not on explicit factual knowledge.
- Being able to tell the story you want to sell.

Feedback. Giving the other person feedback, for instance with regard to their behaviour, attitudes and the like, is the most important element in the area of interactive skills and emotional intelligence (Goleman, 1996, 2007). Analysis of feedback is a sure way to identify our strengths and then reinforce them (Wang, Lee, & Lin, 2003). Failure to give people feedback on their behavior in some contexts may even be considered immoral.

Feed-forward. Feed-forward is regarded here as an expectation mechanism. It seems reasonable to assume that our expectations influence our behaviour in the present. It is therefore important that we make explicit to ourselves the expectations we have of a situation. By making expectations explicit, we have a greater opportunity to learn from our experiences and thus improve our performance.

Front line focus. This refers to those in the front line, i.e. in direct contact with customers, users, patients, students, etc. They have the greatest expertise, necessary information and decision-making authority and are regarded as the most important resource in the organization because they are at the point where an organization's value creation occurs.

Global competence network. These competence networks may be divided into political, social, economic, technological and cultural patterns. It is when these five patterns interact that one may perceive the overall pattern. In the global knowledge economy it seems reasonable to assume that those who control this pattern set the conditions for economic development. These global competence networks will most likely make an impact on HR departments in companies competing for this kind of expertise in national markets.

Global competence networks are also emphasized as crucial for economic growth by the OECD (2001), although they use the term *innovative clusters*. The purpose of innovative clusters and global competence networks is the development, dissemination and use of new ideas that promote wealth creation.

There is much to suggest that a greater degree of integration and cooperation between private and public sectors at the national and regional levels is an important prerequisite for initiating the innovative locomotive effect. The global competence networks are metaphorically the energy source that sustains the motion of this locomotive. It would be counterproductive to replace the locomotive once in motion. Conversely, the individual carriages of the locomotive (read: organizational level) can be changed depending on their competitive position. The individual passengers on the train create ideas and knowledge through the processes that may be called *creative chaos*. In this way we will arrive at a tripartite of the prerequisites for global competence networks. At the individual level, creative chaos occurs. At the organizational

level, there will be creative destruction. At the social and global levels, creative collaboration takes place. These three processes create innovation and economic growth as an emergent, not as a *future perfectum*, i.e. a planned process with given results.

A prerequisite for the reasoning above is that tension and competition at one level requires collaboration at another level. Competition and cooperation are both necessary if one is to develop innovation and economic growth, in the same manner that stability and change are necessary for flexibility. Too much of the one (stability) leads to rigidity, and too much of the other (change) leads to chaos. Understood in this way, emergents cannot be planned.

Hamel's law of innovation. The 'law' states that only between 1 and 2 of 1,000 ideas become innovations in a market (Hamel, 2002, 2012). Therefore, an infostructure must be created to ensure that ideas are continuously produced in a business.

Hidden knowledge. Hidden knowledge is what we do not know. Kirzner (1982) says that hidden knowledge is possibly the most important knowledge domain of creativity, innovation and entrepreneurship.

History's 'slow fields'. This refers to the fact that norms, values and actions tend to be in operation long after the functions, activities and processes that initially created them disappear, thus generating so-called *slow fields of history*. These norms, values and actions exist though they have no apparent function, contributing to maintaining a type of behaviour long after the type of behaviour is functional or meaningful.[2] For sociologists and historians it is important to determine whether norms and values have any function, or whether they are part of history's slow fields. By examining history's slow fields, it may be possible to provide better explanations for phenomena.

HR management. HR management is defined as HR practices at various levels (micro, meso, macro) for managing people in organizations.

HR management has been defined in many different ways. For instance, Boxall and Purcell (2003, p. 1) define HR management as all those activities oriented towards managing relations between employees in an organization. This definition emphasizes the relational perspective. Later, they expanded their definition to include all the activities and processes that underpin an organization's value creation (Boxall & Purcell, 2010, p. 29). On this basis, Armstrong defines the activities and processes that HR management should engage in: *HRM covers activities such as human capital management,*

2 Asplund (1970 p. 55) refers to a similar phenomenon when he discusses Simmel. He points out that the norms that may have had a positive function during a historic phase become in a later phase dysfunctional.

knowledge management, organizational design and development, resource planning (recruitment, talent development), performance management, organizational learning, reward systems, relationships between employees, and employees' wellness (Armstrong, 2014, p. 6). However, we believe Armstrong underestimates two essential areas of knowledge in his definition: the management of innovation processes and change processes in organizations. Innovation and change are strongly emphasized in the global HRM Survey (White & Younger, 2013, pp. 35–39). Armstrong has included the ethical perspective in his Handbook for HRM (Armstrong, 2014, pp. 95–105). Management of innovation processes and change processes in organizations is also highlighted and underlined by Wright et al. (2011, p. 5) in their description of HRM. However, it must also be said that Armstrong discusses innovation (Armstrong, 2014, pp. 145–155), but not in his process definition of HR management. Innovation and change processes are also emphasized by Ulrich, Brockbank, Younger and Ulrich (2013). Brockbank (2013, p. 24) especially mentions these two processes as being important in the research model Ulrich et al. (2013) have developed through their empirical research over 25 years.

Implicit knowledge. This is knowledge that is spread throughout an organization but not integrated.

Informat. Intelligent robots connected with other intelligent robots in the global economy.

Information input overload. This occurs when an individual, a team, an organization or a community receive more information than they can manage to process.

In a situation characterized by information input overload the following may occur (Miller, 1978, p. 123):

(1) Designated tasks and responsibilities are left undone
(2) Errors are made
(3) Queues of information occur
(4) Information is filtered out that should have been included
(5) Abstract formulations are made when they should have been specific
(6) Communication channels are overloaded, creating stress and tension in the system
(7) Complex situations are shunned
(8) Information is lumped together for processing

Each of the above eight points may result in a decrease in efficiency when the system is exposed to information input overload.

Infostructure. The infostructure concerns the processes that enable the development, transfer, analysis, storage, coordination and management of data, information and knowledge. The infostructure consists of 11 generic processes. The 11 processes in the infostructure may be considered as nodes in a social network at different levels, for example team, organization, society and region, all in the global space. Together, the 11 processes comprise the totality of the infostructure. It may be said that the *info*structure has the same importance in the knowledge society as the *infra*structure had in the industrial society.

Innovation. Innovation is here understood as any idea, practice or material element, which is perceived as new for the person using it (Zaltman, Duncan, & Holbeck, 1973). Ideas are seen as the smallest unit in the innovation process (Hamel, 2002, 2012). However, this refers to the ideas that are in process of development and not fully developed ideas. Before an idea can be characterized as innovative, it must prove to be beneficial to somebody, i.e. the market must accept the idea and apply it. Consequently, the creative process of innovation is here understood as the benefit it has for a market (Amabile, 1996; Johannessen, Olaisen, & Olsen, 2001, p. 25). Thus, it is not sufficient that an idea is new for it to be considered an innovation. An idea may have a great degree of novelty, but if it is of no benefit to anybody in the market, then it has no innovative value.

Kaizen. This is a Japanese method, which means that an organization develops systems for organized improvement.

Knowledge. The definition of knowledge used here is *the systematization and structuring of information for one or more goals or purposes*.

Knowledge worker. A knowledge worker has been described by the OECD as *a person whose primary task is to generate and apply knowledge*, rather than to provide services or produce physical products (OECD, 2000a, 2000b, 2000c, 2000d, 2000e, 2001). This may be understood as a *formal definition* of a knowledge worker.

This definition does not restrict knowledge workers to creative fields, as is the case with, for example, Mosco and McKercher (2007, pp. vii–xxiv). The OECD definition also allows for the fact that a knowledge worker may perform routine tasks. The definition also does not limit the type of work performed by knowledge workers to tasks relating to creative problem-solving strategies, unlike the definition provided by Reinhardt, Smith, Sloep, and Drachler (2011).

Knowledge enterprise. This is an enterprise that has knowledge as its most significant output. It is perhaps helpful to think of the process *input – process –*

output to separate industrial enterprises from knowledge enterprises. Much knowledge and skills are needed to produce high-tech products such as computers, and there are also many knowledge workers involved in this process. However, the majority of products produced today are high-tech industrial products, and although such products require very skilled knowledge in the production process, they are nevertheless output-industrial products. On the other hand, law firms, consulting firms and universities are examples of knowledge enterprises.

Knowledge management. Management of knowledge resources in an organization. These resources may be explicit knowledge, implicit knowledge, tacit knowledge and hidden knowledge.

Locomotive effect. This refers to something that generates and then reinforces an activity or development.

Modularization. An extreme fragmentation of the production process in the global knowledge economy. Production is fragmented and distributed according to the following logic: Costs – quality – competence – design – innovation.

Modular flexibility. The modulization of value creation. Modular flexibility may best be understood as the globalization of production processes, and extreme specialization of work processes with a focus on core processes.

Necessary and sufficient conditions. It may often be appropriate to divide conditions or premises into *necessary conditions* and *sufficient conditions*. Necessary conditions must be present to trigger an action, but these may not be sufficient. The sufficient conditions must also be present to trigger the action.

North's action theory.[3] This action theory may be expressed in the following statement: *People act on the basis of a system of rewards as expressed in the norms, values, rules and attitudes in the culture (the institutional framework)* (North, 1990, 1993). North's action theory is also consistent with Asplund's motivation theory (ref. Asplund's motivation theory).

Primary task. An organization's primary task is what the system is designed to do.

Proposition. This is an overarching hypothesis. It says something about the relationship between several variables. A proposition relates to a hypothesis in the same way the main research problem relates to research questions.

3 North's action theory is a term we use here based on North's research.

Punctuation. By punctuation (Bateson, 1972, pp. 292–293) a distinction is drawn between cause and effect; this is done with a clear motive in mind. A causality is thus created which does not actually exist in the real world, and one is then free to discuss the effects of this cause which has been created through a process of punctuation.

A sequence of a process is selected, and then bracketed. In this way, we de-limit what is punctuated from the rest of the process. Figuratively, we may imagine this as a circle that is divided into small pieces; one piece of the circle is then selected and folded out into a straight line. This results in the creation of an artificial beginning and end. This beginning and end of course cannot exist in a circle, but only through the process of punctuation.

Social laws. Social laws constitute a pattern of a unique type. They are systemic and connected to a system of knowledge, and cannot change without the facts they represent also being changed (Bunge, 1983a, 1983b). The main differences between a statement of a law and other statements are:

(1) Law statements are general.
(2) Law statements are systemic, i.e. they are related to the established system of knowledge.
(3) Law statements have been verified through many studies.

A pattern may be understood as variables that are stable over a specific period of time. A social law is created when an observer gains insight into the pattern. By gaining such insight, we can also predict parts of behaviour or at least develop a rough estimate within a short period of time.

Social laws are further related to specific social systems, both in time and space. However, this does not represent any objection to social laws because this is also true of natural laws (although these have a longer time span and are of a more general nature).

Social mechanism. Robert Merton (1967) brought the notion of social mechanisms into sociology, although we can find rudiments of this in both Weber – with the Protestant ethic as an explanation for the emergence of capitalism in Europe – and in Durkheim, who uses society as an explanation for a rising suicide rate. For Merton, social mechanisms are the building blocks of *middle range theories*. He defines social mechanisms as *social processes having designated consequences for designated parts of the social structure*. In the 1980s and 1990s, Jon Elster developed a new notion of the role of social mechanisms in sociology (Elster, 1986, 1989). Hedstrom and Swedberg write that, *the advancement of social theory calls for an analytical approach that systematically seeks to explicate the social mechanisms that generate and explain observed associations between events* (Hedstrøm & Swedberg, 1998, p. 1).

It is one thing to point out connections between phenomena. It is something quite different to point out satisfactory explanations for these relationships, which is what social mechanisms accomplish. A social mechanism tells us what will happen, how it will happen and why it will happen (Bunge, 1967). Social mechanisms are primarily analytical constructs which cannot necessarily be observed; in other words, they are epistemological, not ontological. However, social mechanisms are observable in their consequences. An intention can be a social mechanism of action. We cannot observe an intention, but we can interpret it in light of the consequences manifested through an action. Preferences can also function as a social mechanism for economic behaviour. We cannot observe a person's preferences, but we can interpret them in the light of the behavioural consequences that manifest themselves. Social mechanisms are, understood in this way, analytical constructs, indicating connections between events (Hernes, 1998). Bunge says: . . . *a social mechanism is a process in a concrete system, such that it is capable of being about or preventing some change in the system as a whole or in some of its subsystems* (Bunge, 1997, p. 414). By 'social mechanism' here we mean those activities that promote/inhibit social processes in relation to a specific problem/phenomenon.

Material resources and technology are social mechanisms of the economic subsystem; power is a social mechanism of the political subsystem; fundamental norms and values are a social mechanism of the cultural subsystem; and human relationships are a social mechanism of the social subsystem. These system-specific social mechanisms interact with each other to achieve certain goals, maintain these systems or avoid certain undesirable conditions in the system or the outside world.

The difficulty of discovering social mechanisms and distinguishing them from processes may be partly explained by the fact that social mechanisms are also processes (Bunge, 1997, p. 414). For the application of social mechanisms, see the Boudon–Coleman diagram.

Social system. From a systemic perspective, social systems can be conceptual or concrete. Theories and analytical models are examples of conceptual systems. Further, social systems are *composed of people and their artifacts* (Bunge, 1996, p. 21). Social systems are held together (in systemic reasoning) by *dynamic social relations* (such as emotions, interpretations, norms, etc.) and *social actions* (such as, cooperation, solidarity, conflict and communication, etc.). None of the social actions have precedence in the systemic interpretation of social systems, such as conflict in the case of Marx, and solidarity in the case of Durkheim.

Staccato behaviour (erratic behaviour). If organizations introduce too many change processes in succession too quickly, a phenomenon may occur called 'staccato behaviour'.

If an organization does not deal with this appropriately, it seems reasonable to assume that workers will become tired, burnt out and de-motivated. Perhaps most damaging to business, employees will lose focus on their primary task – what the business is designed to do. In addition, businesses will often experience that this leads to an increasing degree of opportunistic behaviour (Ulrich, 2013a, 2013b, p. 260).

Strategic HR management. Strategic HR management is defined in this book as: *The choices an HR department makes with regard to human resources for the purposes of achieving the organization's goals*. This is analogous to the view of Storey, Ulrich, and Wright (2009, p. 3) and consistent with the definition we employ of HR management. This means that strategic HR management must be focused on the *micro*, *meso* and *macro levels*.

There are many definitions of strategic HR management. For instance, *use of human resources in order to achieve lasting competitive advantages for the business*; *management of the employees, expressed through management philosophy, policy and praxis*; *development of consistent practices in order to support the strategic goals of the business*; *a complex system with the following characteristics: vertical integration, horizontal integration, efficiency and partnership*.

Systemic thinking. Systemic thinking makes a distinction between the epistemological sphere (Bunge, 1985), the ontological sphere (Bunge, 1983a), the axiological sphere (Bunge, 1989, 1996) and the ethical sphere (Bunge, 1989). Systemic thinking makes a clear distinction between intention and behaviour. Intention is something that should be *understood*, while behaviour is something that should be *explained*. To understand an intention we must study the historical factors, situations and contexts, as well as the expectation mechanisms. Behaviour must be explained with respect to the context, relationships and situation it unfolds in. What implication does the distinction between intention and behavior have for the study of social systems?

Interpretation of meaning is an important part of the *intention aspect* in the distinction. Explanation and prediction become an essential part of the *behavioral aspect* of the distinction.

In systemic thinking it is the link between the interpretation of meaning and explanation, and prediction, which provides historical and social sciences with practical strength. By making a distinction between intention and behaviour, the historical and the social sciences are interpretive, explanatory and predictive projects. According to systemic thinking, many of the contradictions in the historical and social sciences spring from the fact that a distinction is not made between intention and behaviour. The problem of the historical and social sciences is that the actors who are studied have both intentions and they also exercise types of behaviour; however, this isn't problematic as long as we

make a distinction between intention and behaviour. By simultaneously introducing the distinction between intention and behaviour, systemic thinking has made it possible to identify, for instance, partial explanations from each of two main epistemological positions, namely, the naturalists and anti-naturalists (Johannessen & Olaisen, 2005, 2006), and synthesize these explanations into new knowledge.

Systemic thinking emphasizes circular causal processes, also called *interactive causal processes*, in addition to linear causal processes (Johannessen, 1996, 1997). Systemic thinking argues that to understand objective social facts, one must examine the subjective aspects of these. In systemic thinking, objective social facts exist, but they are often more difficult to grasp than facts in the natural world, because social facts are often influenced by expectations, emotions, prejudices, ideology and economic and social interests. *Aspect-seeing* is thus a way of approaching these social facts.

Emergents are central to systemic thinking. A pattern behind the problem or phenomenon is always sought in systemic investigations. Patterns may be revealed by studying the underlying processes that constitute a phenomenon or problem, *and the search for pattern is what scientific research is all about* (Bunge, 1996, p. 42).

According to systemic thinking it is a misconception to say that the facts are social constructions. The misunderstanding involves confusing our *concepts* concerning facts and our *hypotheses* about the facts together with the facts. Our concepts and hypotheses are mental constructs. The facts, however, are not mental constructs. Social need, for instance, is not a social fact; it is a mental construct of, for instance, starvation. Starvation is a social fact. Social need is a mental or social construction. Not being able to read is a social fact. Illiteracy is, however, a social construction.

A *symbol* should symbolize something, just as a *concept* should delineate something. A *hypothesis* should explain something or express something about relationships. A conceptual *model* should say something about the relationships between concepts. A *theory* should say something about relationships between propositions. Physical or social facts are untouched by all these mental constructions. That one can through constructs change social facts, or that social facts are changed as a social consequence of using constructs, is neither original nor new.

The aim of theoretical research, according to the systemic position, is the construction of systems, i.e. theories (Bunge, 1974, p. v). The order in systemic research is thus: Theory – Analysis – Synthesis.

In the methodological sphere, the systemic position has its main focus on relationships, both in terms of concrete things, ideas and knowledge. Consequently, systemic thinking encourages interdisciplinary and multidisciplinary approaches to problems or phenomena.

The systemic position thus attempts to bridge the gap between methodological individualism and methodological collectivism, which is considered the classic controversy in historical- and social sciences.

The perceptions that an observer has about social systems will influence his/her actions, regardless of whether the perceptions are true or fallacious. Systemic investigations start, therefore, writes Bunge *from individuals embedded in a society that preexists them and watch how their actions affect society and alter it* (Bunge, 1996, p. 241). The study of social systems from a systemic perspective for these reasons always includes the triad: actors – observers – social systems.

The observer tries to uncover a system's composition, environment and structure. Then the actors' subjective perception of composition, environment and structure are examined. In other words, both the subjective and objective aspects are studied. When we wish to study changes in social systems, from a systemic point of view, we have to examine the social mechanisms (drivers) that influence changes; both internal and external social mechanisms must be identified. This study takes place within the four subsystems: the economic, political, cultural and relational. According to systemic thinking, social changes occur along seven axes:

(1) As an *expectation* of new relationships, values, power constellations, technologies and distribution of material resources.
(2) As a result of our *beliefs* (mental models) about relationships, values, power constellations, technical and material resources.
(3) As a result of *psychological elements*, such as: irritation, crisis, discomfort, unsatisfactory life, unworthy life, loss of well-being, etc.
(4) As a result of *communication* in and between systems.
(5) As a result of an *understanding of connections* (contextual understanding).
(6) As a result of learning and new *self-knowledge*.
(7) As a result of *new ideas* and ways of thinking.

Historiography, from a systemic perspective, has one clear goal: to investigate what happened, where it happened, when it happened, how it happened, why it happened and with what results.

Systemic assumptions related to historiography and social sciences may be expressed in the following (Bunge, 1998, p. 263):

(1) The past has existed.
(2) Parts of the past can be known.
(3) Every uncovering of the past will be incomplete.

(4) New data, techniques and systemizations and structuring will reveal new aspects of the past.
(5) Historical knowledge is developed through new data, discoveries, hypotheses and approaches.

In systemic thinking if changes are to take place, then the material will sometimes be given precedence; at other times, ideology, ideas and thinking are given precedence. In other contexts, there is a systemic link between the material and ideas that is needed to bring about changes. In such contexts, it is difficult and irrelevant to say what is the primary driver, i.e. the material or ideas; this would be on par with discussing what came first, the chicken or the egg.

The processes that drive social change, according to a systemic perspective, are the interaction between the economic, political, relational and cultural subsystems. In some situations, one of these four perspectives will prevail, whereas in others it will be one or more of the four subsystems that are the drivers of social change. In many cases, it is precisely the interaction between the four subsystems that leads to social changes.

In this context, the systemic perspective may be described by saying that material conditions/energy, such as economic relationships, may provide the ground from which ideologies develop, but that these ideologies in return influence the development of the material. Whether material conditions/energy or ideology comes first is often determined by a historiographical punctuation process (Bateson, 1972, p. 163).

The systemic perspective balances historical materialism and historical idealism. It assumes that overall social changes are the result of economic, political, social and cultural factors, in addition to the interaction between material conditions/energy and ideas. Furthermore, a systemic perspective views any society as being interwoven into its surroundings (Bunge, 1998, p. 275). When a historian considers a historical situation – such as the massacre in Van in April 1915 – from this perspective then he is trying *to throw light upon the internal working of a past culture and society* (Stone, 1979, p. 19).

The systemic position attempts to view the relevant event in a larger context, in order to find *the patterns which combine* (Bateson, 1972, pp. 273–274), because *change depends upon feedback loop* (Bateson, 1972, p. 274). Bunge says about this position: *By placing the particular in a sequence, adopting a broad perspective the systemist overcomes the idiographic/nomothetic duality, …, as well as the concomitant narrative/structural opposition* (Bunge, 1998, p. 275). This means, metaphorically, that the systemic researcher uses a microscope, telescope and a helicopter to investigate patterns over time.

Systemic research strategy is a *zig-zagging between the micro-meso and macro levels* (Bunge, 1998, p. 277). Through a systemic research strategy the researcher has ample opportunities to use a Boudon–Coleman diagram.

Systemic thinking examines four types of changes.[4]

Type I change concerns individuals who change history, such as Genghis Khan, Hitler, Stalin, Mao Zedong, etc.

Type II change concerns groups of people acting together who change history. Examples of Type II change include the invasion of the Roman Empire by peoples from the north; and the Ottoman expansion into the Balkans between the late 1400s and when the Ottoman Empire was pushed back partly due to nationalist liberation movements in the early 1900s.

Type III change include changes in history that are caused by natural disasters, such as the volcanic eruption that destroyed Pompeii. Climate change may also be said to an example of a Type III change.

Type IV change involves a total change in the way of thinking, such as the emergence of new religions, like Islam, or a new political ideology, such as Marxism.

The systemic researcher attempts to explore the relationship between the four types of changes. A single event is in itself not necessarily of special interest to the systemic researcher; rather, the focus is on the *system of events* of which the single event is a part.

All the social sciences are used in the systemic position to seek insight, understanding and to explain a phenomenon or problem.

Tacit knowledge. Knowledge that is difficult to communicate to others as information. It is also very difficult, if at all possible, to digitize.

Technology. Technology, in systemic thought, is the scientific study of artefacts (Bunge, 1985, pp. 219–231). Artefacts may be classified as instruments, machines, automats and informats.

The knowledge-based perspective. The knowledge-based perspective is defined here as creating, expanding and modifying internal and external competencies to promote what the organization is designed to do (Grant, 2003, p. 203).

The resource-based perspective. This perspective can be defined as the structuring and systematization of the organization's internal *resources* so it is difficult for competitors to copy them.

Theory. Here understood as a system of propositions (Bunge, 1974, p. v).

4 The four types of changes are related to Bateson's (1972, pp. 279–309) work on different types of learning, especially those discussed in his article *Logical types of learning and communication*.

REFERENCES

Amabile, T. (1996). *Creativity in context*. New York, NY: Westview Press.

Armstrong, M. (2014). *Armstrong's handbook of strategic human resource management*. New York, NY: Kogan Page.

Asplund, J. (1970). *Om undran innfør samhället*. Stockholm: Argos.

Bateson, G. (1972). *Steps to an ecology of mind*. London: Intertext Books.

Boudon, R. (1981). *The logic of social action*. London: Routledge.

Boxall, P. F., & Purcell, J. (2003). *Strategy and human resource management*. Basingstoke: Palgrave Macmillan.

Boxall, P. F., & Purcell, J. (2010). An HRM perspective on employee participation. In A. Wilkinson, P. J. Golan, M. Marchington, & D. Lewins (Eds.), *The Oxford handbook of participation in organizations* (pp. 129–151). Oxford: Oxford University Press.

Brockbank, W. (2013). Overview and logic. In D. Ulrich, W. Brockbank, J. Younger, & M. Ulrich (Eds.), *Global HR competencies: Mastering competitive value from the outside in* (pp. 3–27). New York, NY: McGraw-Hill.

Bunge, M. (1967). Scientific research. In *Studies of the foundations methodology and philosophy of science* (Vol. 3). Berlin: Springer-Verlag.

Bunge, M. (1974). *Sense and reference*. Dordrecht: Reidel.

Bunge, M. (1977). Treatise on basic philosophy. In *Ontology I: The furniture of the world* (Vol. 3). Dordrecht: D. Reidel.

Bunge, M. (1979). *A world of systems*. Dordrecht: Reidel.

Bunge, M. (1983a). *Exploring the world: Epistemology & methodology I*. Dordrecht: Reidel.

Bunge, M. (1983b). *Understanding the world: Epistemology & methodology II*. Dordrecht: Reidel.

Bunge, M. (1985). *Philosophy of science and technology. Part I: Epistemology & methodology III*. Dordrecht: Reidel.

Bunge, M. (1989). *Ethics: The good and the right*. Dordrecht: Reidel.

Bunge, M. (1996). *Finding philosophy in social science*. New Haven, CT: Yale University Press.

Bunge, M. (1997). Mechanism and explanation. *Philosophy of the Social Sciences*, *27*, 410–465.

Bunge, M. (1997a). *Foundations of biophilosophy*. Berlin: Springer-Verlag.

Bunge, M. (1998). *Philosophy of science: From problem to theory* (Vol. 1). Piscataway, NJ: Transaction Publishers.

Coleman, J. S. (1990). *Foundations of social theory*. Cambridge, MA: Harvard University Press and Belknap Press.

Duncan, R. (1976). The ambidextrual organization: Designing dual structures for innovation. In R. H. Kilman, L. R. Pondy, & D. Slevin (Eds.), *The management of organization* (pp. 167–188). New York: North Holland.

Elster, J. (1986). *Rational choice*. New York, NY: New York University Press.

Elster, J. (1989). *Nuts and bolts for the social sciences*. Cambridge: Cambridge University Press.

Goleman, D. (1996). *Emotional intelligence*. New York, NY: Bloomsbury Publishing.

Goleman, D. (2007). *Social intelligence*. New York, NY: Arrow Books.

Grant, R. M. (2003). The knowledge-based view of the firm. In D. Faulkner & A. Campbell (Eds.), *The Oxford handbook of strategy* (pp. 203–231). Oxford: Oxford University Press.

Hamel, G. (2002). *Leading the revolution: How to thrive in turbulent times by making innovation a way of life*. Boston, MA: Harvard Business School Press.

Hamel, G. (2012). *What matters now: How to win in a world of relentless change ferocious competition, and unstoppable innovation*. New York, NY: John Wiley & Sons.

Hamel, G., & Prahalad, C. K. (1996). *Competing for the future*. Boston, MA: Harvard Business School Press.

Hedstrøm, P. & Swedberg, S. R. (1998). Social mechanisms: An introductory essay. P. I. Hedstrøm & R. Swedberg (Red.), *Social mechanisms: An analytical approach to social theory*. Cambridge: Cambridge University Press.

Helfat, C. E., Finkelstein, S., Mitchell, W., Peteraf, M. A., Singh, H., Teece, D. J., & Winter, S. G. (2007). *Dynamic capabilities: Understanding strategic change in organizations*. Oxford: Blackwell.

Hernes, G. (1998). Real virtuality. In P. Hedstrøm & R. Swedberg (Eds.), *Social mechanisms: An analytical approach to social theory* (pp. 74–102). Cambridge: Cambridge University Press.

Hewing, M. (2013). *Collaboration with potential users for discontinuous innovation*. Potsdam: Springer Gabler.

Johannessen, J.-A. (1996). Systemics applied to the study of organizational fields: Developing systemic research strategy for organizational fields. *Kybernetes*, *25*(1), 33–51.

Johannessen, J.-A. (1997). Aspects of ethics in systemic thinking. *Kybernetes*, *26*(9), 983–1001.

Johannessen, J.-A., & Olaisen, J. (2005). Systemic philosophy and the philosophy of social science-Part I: Transcendence of the naturalistic and the anti-naturalistic position in the philosophy of social science. *Kybernetes*, *34*(7/8), 1261–1277.

Johannessen, J.-A., & Olaisen, J. (2006). Systemic philosophy and the philosophy of social science-Part II: The systemic position. *Kybernetes*, *34*(9/10), 1570–1586.

Johannessen, J.-A., Olaisen, J., & Olsen, B. (2001). Mismanagement of tacit knowledge: The importance of tacit knowledge, the danger of information technology, and what to do about it? *International Journal of Information Management*, *21*(3), 3–20.

Kirzner, S. (1982). The theory of entrepreneurship in economic growth. In I. C. A. Kent, D. L. Sexton, & K. H. Vesper (Red.), *Encyclopedia of entrepreneurship*. Englewood Cliffs, NJ: Prentice-Hall.

Merton, R. K. (1967). *Social theory and social structure*. London: Free Press.

Miller, J. G. (1978). *Living systems*. New York, NY: McGraw-Hill.

Mosco, V., & McKercher, C. (2007). Introduction: Theorizing knowledge labor and the information society. In *Knowledge workers in the information society*. Lanham: Lexington Books.

Nelson, R. R., & Winter, S. G. (1982). *An evolutionary theory of economic change*. Cambridge, MA: Harvard University Press.

North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge: Cambridge University Press.

North, D. (1993). Nobel lecture. Retrieved from http://www.nobelprize.org/nobel_prizes/economics/laureates/1993/north-lecture.html#not2. Accessed on April 5, 2012.

OECD. (2000a). *A new economy? The changing role of innovation and information technology in growth*. Paris: OECD.

OECD. (2000b). *Economic outlook*. Paris: OECD.

OECD. (2000c). *Education at a glance*. Paris: OECD Indicators, CERI.

OECD. (2000d, November 15). *ICT skills and employment, working party on the information economy* (p. 7). Paris: DSTI/ICCP/IE.

OECD. (2000e). *Knowledge management in the learning society*. Paris: CERI.

OECD. (2001). *Innovative clusters: Driving of national innovation-systems*. Paris: OECD.

O'Reilly, C. A., & Tushman, M. L. (2004). The ambidextrous organization. *Harvard Business Review*, *82*(4), 74–81.

O'Reilly, C. A., & Tushman, M. L. (2011). Organizational ambidexterity in action: How managers explore and exploit. *California Management Review*, *53*(4), 5–22.

Reinhardt, W., Smith, B., Sloep, P., & Drachler, H. (2011). Knowledge worker roles and actions–results of two empirical studies. *Knowledge and Process Management*, *18*(3), 150–174.

Roddick, D. A. (2003). In U. Elbæk & A.-Z. Kaospilot (Eds.), *The grassroots entrepreneur*. Gylling: Narayana Press.

Stone, J. (1979). The revival of narrative: Reflections on a new old history. *Past and Present*, *85*, 3–24.

Storey, J., Ulrich, D., & Wright, P. M. (2009). Introduction. I. J. Storey, P. M. Wright, & D. Ulrich (Eds.), *The Routledge companion to strategic human resource management* (pp. 3–15). London: Routledge.

Teece, D. J. (2013). *Dynamic capabilities and strategic management: Organizing for innovation*. Oxford: OUP.

Teece, D., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7), 509–533.

Thota, H., & Munir, Z. (2011). *Key concepts in innovation*. London: Palgrave Macmillan.

Ulrich, D. (2013a). Foreword. In D. Ulrich, W. Brockbank, J. Younger, & M. Ulrich (Eds.), *Global HR competencies: Mastering competitive value from the outside in* (p. xxi). New York, NY: McGraw-Hill.

Ulrich, D. (2013b). Future of global HR: What's next? In D. Ulrich, W. Brockbank, J. Younger, & M. Ulrich (Eds.), *Global HR competencies: Mastering competitive value from the outside in* (pp. 255–268). New York, NY: McGraw-Hill.

Ulrich, D., & Brockbank, W. (2005). *The HR value proposition*. Boston, MA: Harvard Business School Press.

Ulrich, D., Brockbank, W., Younger, J. & Ulrich, M. (Eds.). (2013). *Global HR competencies: Mastering competitive value from the outside in*. New York: McGraw Hill.

Wang, Q.-G., Lee, T. H., & Lin, C. (2003). *Relay feedback: Analysis, identification and control*. London: Springer.

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, *5*(2), 171–180.

White, J., & Younger, J. (2013). The global perspective. In D. Ulrich, W. Brockbank, J. Younger, & M. Ulrich (Eds.), *Global HR competencies: Mastering competitive value from the outside in* (pp. 27–53). New York, NY: McGraw-Hill.

Winter, S. G. (2003). Understanding dynamic capabilities. *Strategic Management Journal*, *24*, 991–995.

Wright, P. M., Boudreau, J. W., Pace, D. A., Libby Sartain, E., McKinnon, P., & Antoine, R. L. (Eds.). (2011). *The chief HR officer: Defining the new role of human resource leaders*. London: Jossey-Bass.

Zaltman, G., Duncan, R., & Holbeck, J. (1973). *Innovations and organizations*. New York, NY: Wiley.