The Challenges and Prospects of Learning-in-Practise

Professor Elena P. Antonacopoulou

Senior Fellow of the Advanced Institute of Management Research
Professor of Organisational Behaviour and Director of GNOSIS
University of Liverpool Management School
Chatham Building
Liverpool
L69 7ZH
UNITED KINGDOM

Email: E.Antonacopoulou@liverpool.ac.uk

Submitted to OLKC 2006 Conference at the University of Warwick, Coventry on 20th - 22nd March 2006.

Abstract

If learning is an integral part of living; if working life demands learning as a condition of survival; if learning is an essential human condition, why is it that we have such difficulty engaging with the phenomenon? This paper engages with this question and explores the complex interconnections that underpin the social complexity of learning in working life. The discussion provides a critique of our current approaches in engaging with the dynamics of learning in working life. Attention is drawn to our modes of thinking and the tendency to look for outcomes like change as evidence of the ongoing co-evolution of learning, working and living. The analysis highlights four neglected dimensions of learning: inter-connectivity, diversity, self-organisation and politics. These dimensions are discussed drawing on the main principles of complexity science and process theories of becoming and a new conceptualisation of learning as a flow expanding the space of possibility is presented. This perspective is further elaborated in the notion of *learning-in-practise* which is introduced as a new avenue for future learning research.

Introduction

If learning is an integral part of living; if working life demands learning as a condition of survival; if learning is an essential human condition, why is it that we have such difficulty engaging with the phenomenon? The intimate relationship between learning and working life is one that does not easily lend itself to analysis partly, because it is embedded in the dynamics of our human engagement with the challenges of living and working. Learning is both a process and product, a cause, a consequence and context in which emerging life and work patterns co-evolve and in turn organise learning. No one single perspective in current learning theory is sufficient to capture fully the multiple connections and possibilities that learning creates and from which it emerges. Yet, if we seek to move the learning debate forward we must learn to work with and live with the complexity of learning in ways that we can usefully engage and employ it as a driving force helping us address many of the challenges working life present us with.

The need to capture the dynamics of learning in working life is a long-standing challenge in learning research. There has been a tendency to examine learning by using change as a measure for such dynamics. Therefore, much current thinking equates learning with change and presents them as interdependent, even synonymous (Alderfer & Brown, 1975; Friedlander, 1984; Handy, 1989). This perspective is dominant in views which position learning as important for surviving the challenge of change (Heywood, 1989; Clark, 1991; Cunningham, 1994), as well as, views which argue that for effective change to take place organisations and individuals must first learn (Fiol and Lyles, 1985; Argyris, 1993; Srivastva et al., 1995). Some commentators refer specifically to Ross Ashby's law of requisite variety (Lessem, 1993; Dixon, 1994). The law of requisite variety states that for an organism/system to survive its rate of learning must be equal or greater (**L ≥ C)** than the rate of change in its environment (Ross Ashby, 1958).

Some commentators however, also present a counter argument drawing on empirical findings at the group (Cook & Yanow, 1993). and individual (Antonacopoulou, 1998; 1999; 2004a) levels. Their analysis suggests that the social, emotional and political forces at play in the process of learning do not always lead to change and transformation. Instead, learning aims to provide a degree of stability by reinforcing the status quo through a focus on what is known rather than a drive towards the unknown.

We need to move beyond conceptualisations of learning and changing as stable patterns of routines and practices. We need to embrace more fully the emergent, self-organising practices that shape learning in relation to the multiplicity of forces constitutive of work and working life. In pursuing this challenge we need to first carefully reflect on the range of disciplines, which inform the learning debate and take stock of their fundamental epistemological and ontological assumptions about learning. Each of the dominant disciplines (psychology, sociology, philosophy and anthropology see Easterby-Smith, 1997) that have so far informed the learning debate has brought a different set of assumptions about what is learning. If we are to come closer to capturing and representing the richness of the learning phenomenon we need to make a concerted effort to integrate these diverse perspectives and assumptions, as they reveal different aspects of learning. Only then can we begin to engage more fully with the complexity of learning as a phenomenon. Some of the principles of complexity theory which is considered as a trans-disciplinary science may be useful in our efforts to embrace learning more holistically. Ideas from complexity theory (Dooley et al. 2003) and process theories of becoming (Clegg et al. 2005) enable us to explore learning as a flow expanding the space of possibilities.

This definition of learning employs a mode of thinking consistent with 'trialectic logic' (Ichazo, 1976; Horn, 1983; Soja, 1997). Ford and Ford (1994) understand that trialectics as a logic is strongly related to the science of complexity. The science of complexity might provide a new avenue for rethinking learning. Trialectics as an alternative logic to formal and dialectic logic, focuses on the forces that create different possibilities. The ontological focus is not on the epiphenomena but the unfolding of the phenomena in time and space. Applying this logic in rethinking what is learning, we can explore learning not only as a result from a synthesis of potentially opposing perspectives as suggested in dialectics or formal logics of change. Instead, learning can also emerge as different connections and possibilities are explored. Learning therefore, emerges as a space/*choros* where these possibilities can be contained and it is also a process and product of a multiplicity of interconnections (Antonacopoulou, 2000a; 2002, 2006).

This paper contributes to our understanding of the complex nature of learning by focusing on the complex interconnections between learning and working life. The analysis paves the way

for a re-conceptualisation of learning in relation to work practices. The section, which follows introduces a more dynamic way of engaging with learning complexity highlighting inter-connectivity, diversity self-organisation and politics as key, yet neglected dimensions in the learning debate. These dimensions will be analysed drawing on the main principles of complexity theory and a new conceptualisation of learning as a flow will be presented. The notion of *learning-in-practise* will then be introduced as a new perspective drawing attention to the fluidity of learning as a mode of living and working. The paper concludes with a review of the main implications for future learning research in complex social arrangements such as work organisations.

Learning as a flow

Although complexity science has its roots in the physical sciences it is increasingly employed to understand social phenomena, including organizations (Dooley et al., 2003; Ofori-Dankwa & Julian, 2001) and their social complexity (Antonacopoulou & Chiva, 2005) as well as specific management issues such as: strategic management (Stacey, 1993), strategic change (Stacey, 1995; Brown and Eisenhardt, 1997) innovation management (Cheng & Van de Ven, 1996) and design management (Chiva, 2004). It is also penetrating into adult education debates (Fenwick, 2003) and more recently organisational learning debates (Antonacopoulou & Chiva, 2005).

It is beyond the scope of this discussion to provide a review of the main principles of complexity science (for such reviews see Antonacopoulou & Chiva, 2005; Mitleton-Kelly, 2003; Tsoukas, 1998). It is important to clarify however, that complexity science sets out to devise mechanisms to create and maintain complexity, and to produce tools for its description and analysis (Simon, 1996). Complexity science covers many fields of scientific research including chaos theory, the study of fractals and the idea of complex adaptive systems (CAS). The ideas of CAS enable us to understand system behaviour in relation to simple actions that may create multiple effects as interacting 'agents' follow rules and influence their local and global environments (Sherman & Schultz 1998). One of the most important characteristics of CAS systems is their capacity to learn (Gell-Mann, 1994; Stacey, 1995, 1996). Previous research also shows that CAS ideas are relevant in identifying the essential factors that facilitate organisational learning (Chiva, 2003).

Three key principles of complexity science will be employed here to illustrate dimensions of learning that the current learning debate does not fully account for; Inter-connectivity, Diversity and Self-organisation. A fourth and equally neglected element in both complexity and learning debates is politics. The re-conceptualisation of learning as a complex social system demands that we also pay attention to the socio-political dimensions of complexity.

Inter-connectivity

Appreciating the complexity of learning implies a need to understand the inter-connections among parts of the system that constitute learning (Kauffman, 1995; Axelrod and Cohen, 1999). Inter-connections reflect the fractal nature of learning and demonstrate that a number of elements combine to create what we understand learning to be. Learning is clearly not only a cognitive process due to the neural connections it creates as information is connected to create meaning. By the very process of developing meaning, learning is also a highly emotional process that influences how we re-act and respond to experiences we encounter. These very responses generate different psychological states that combined with related actions in turn are contained within structures and systems defined and negotiated by social actors. These very social structures by extension provide meaning to social interactions and at the same time provide an understanding that defines one's identity in the context of one's role in different settings. Therefore, learning as a system is embedded within biological, psychological, social, cultural, emotional and other viable systems all of which co-exist and co-evolve in relation to internal and external conditions within an ecosystem.

This point suggests that the institutionalisation of learning processes within any (social) system are subject to the ongoing institutional transformations which are caused by learning practices that are instituted by social structures. These very social structures however, are also constantly negotiated as diverse social forces (agents and structures) interact in embracing the heterogeneous nature of self-organization. Therefore, if learning is about connecting, inter-connectivity implies the co-existence of heterogeneous forces (Gell-Mann, 1994).

Diversity

Heterogeneity and diversity are key dimensions of learning. Diversity is what feeds learning in the way conditions that underpin interactions and connections between systems create tensions. That multiple dimensions exist in tension is to reflect the multiplicity of possibilities

each dimension can create by being attracted to different possibilities. Tensions dissolve into the space of possibility and become *ex-tensions* of current reality. These *ex-tensions* reflect the elasticity of processes like learning as multiple possibilities emerge in the way inter-connections are explored. Inter-connections are reflective of the *in-tension* to learn which brings *at-tension* to some specific possibilities, which are more relevant at different moments in time. This ultimately suggests that tensions are not only born out of conflict, power and political differences privileging one mode of reality over another. Instead, tensions are also attractions to different possibilities. It is the way learning space expands to embrace the new space learning creates. Therefore, learning is "the edge of chaos" in the way the tensions between competing forces drives the possible connections that can be productively created as a result of their interaction. Engaged interaction as opposed to instrumental transaction challenges conditions of power and control in heterogeneous forces. This perspective implies that the learning space embraces different perspectives and engages actants in a reflective and reflexive process of learning. In other words, the inherent diversity need not lead to a synthesis of conflicting perspectives, as per the dialectic logic would suggest. Instead, the diversity needs to be maintained as this is a source of dynamism driving self-organisation, which is a basic cause, consequence and context for learning, we frequently refer to as 'understanding'.

Self-organisation/emergence

That learning connects heterogeneous forces reflects the ultimate quality of learning; surprise. Learning is not a matter of chance. Learning is part of the stream of practices that constitute organization. Such practices are reflected in routines (Axelrod and Cohen, 1999; Bechky, 2003); models (Stacey, 1996); strategies (Gell-Mann, 1994); culture (Gell-Mann, 1994); or the dominant logic (Bettis and Prahalad, 1995). Regularities in practices enables a system to determine the nature of further experience and make sense of it (Stacey, 1996). Reconfigurations in practices are a consequence of a process of self-organization and co-evolution. Learning practice therefore, can be re-conceptualised as a process and product of the on-going mutations in relation to the governing practices and the way these co-evolve in time and space in response to endogenous and exogenous forces. Learning does not only arise as a result of noticeable shifts (formal logic) in practices or re-integration of otherwise conflicting perspectives (dialectic logic). Learning emerges from multiple possibilities previously not explored. Such possibilities may be interpreted as *surprise* or *serendipity*

depending on whether they are considered relevant or attainable. No single experience determines learning practice, which is unpredictable and uncontrollable (Goodwin, 1994) due to its social nature (Elkjaer, 1999).

Learning therefore, emerges as a natural condition of creating new order and self-organization as diverse elements within a system co-evolve and provide both negative and positive feedback to support single loop learning (negative feedback) and double loop learning (positive feedback) (Argyris and Schön, 1978; Stacey, 1996). Essentially, self-organisation is the process of re-ordering different aspects of learning such that new learning can emerge in a cyclical process of ongoing evolution. Learning is therefore, not only a mode of connecting, it is not only an expanse of diverse elements and forces. Learning is also the very foundation of learning. Learning provides the energy for connections to be made and highlights the gaps that exist while it also provides the scope for bridging these gaps. Moreover, learning shapes the emerging models that define the boundaries of action while it also opens up multiple modes of interaction. Modes of interaction are not only the emerging patterns of thinking and action, they are also the very social structures that are constantly evolving as social actors become sensitised to new possibilities for learning. These new possibilities are also central to self-organization the inherent nature of social systems to renew themselves. This process of renewal, and on-going transformation is made possible because learning, is endemic to living.

Moreover, learning is central to the systemic nature of social evolution because, it highlights the complex (the fusion) of connecting forces and the conditions that support their interaction. This perspective not only captures the fluidity that is so central to social systems, it also challenges us to explore learning as an integral part of what it means to be a viable system (see Beer, 1972). In other words, self-organization is an inherent mechanism for reaching internal consistency in relation to external forces. This point is critical as it reaffirms the political nature of learning.

Politics and Power

The political nature of learning remains one of the biggest challenges in learning research. Researchers who focus on the political nature of learning (Coopey, 1995; Antonacopoulou, 2000b 2001; 2006b; Lawrence et al., 2005) highlight mainly the inequalities of power and control, the tensions between individual and organisational priorities in learning or the

different perspectives and motives underlying learning and knowledge. The politics of learning clearly illustrate that learning does not take place in a vacuum. Learning is a connection of possibilities stimulated by the signals received within the context in which learning takes place. These signals however, are subject to multiple interpretations which define the actions one takes to make life and work more meaningful. This point however, reveals a key dimension of the political nature of learning that we have so far neglected partly because we have paid insufficient attention to the power of learning. The power of learning is at the core of what makes knowing political, hence the common phrase 'I know enough to be dangerous'[1]. Learning entails responsibility and accountability. It is rather common that social actors tend to negate the responsibility learning entails by proposing sad excuses about their inability to learn. These defensive routines as Argyris (2004a) clearly demonstrates in his research, reflect the tendency to be reluctant to learn even when the need to learn is obvious. This learning state is what Antonacopoulou (1998) describes as 'mathophobia', which is reflective of the power of learning to steer a whole host of emotions. It is also the powerful connection between learning and what people do in the name of learning.

To learn therefore, is to make viable connections between a diverse set of emerging possibilities that affect action and interaction with others. To be accountable for one's actions is one of the defining characteristics of those who chose to lead a life of learning (Antonacopoulou & Bento, 2003; Antonacopoulou, 2004b). Responsible action reinforces that learning only gains meaning in the process of interacting with others. This point reasserts the social and political significance of learning which reminds us that learning is not a controllable entity. Rather, learning is better understood as a dynamic complex process, which is embedded in the ways social forces within systems define the conditions of their interaction. Therefore, to say learning is social and political is to appreciate the multiple ways in which learning is manifested in action. How and why people act in relation to their work is defined by their learning and in turn defines their understanding that subsequently guides their actions. In short, political learning is reflective of the emerging tensions as different learning opportunities in life are explored.

All these aspects illustrate the complexity of learning and reinforce the need to explore learning as a complex flow unfolding from the emerging tensions of work practices. It is also

[1] My thanks are due to Mr Neil Paterson, Divisional General Manager at Hay Management Consulting Group for

these dimensions of learning that we can usefully draw from as we develop further our understanding of the patterns, practices and routines that give life to learning-in-practise.

Learning-in-practise

The characteristics of learning as a flow renews the importance of embeddedness and situatedness of learning. This is consistent with a growing shift towards a practice-based view which has been marked in recent years in many different parts of social science (Schatzki, et al. 2001). In management, this has been reflected in an increasing concern with what do people actually do as a necessary pre-amble to theorise about organisations and organising (Barley & Kunda, 2001; Whittington, 2003; Nicolini et al. 2003).

The practice-based view, has been particularly prominent in the organizational learning and strategy debates where the focus tends to be on the set of actions or activities (praxis of practitioners) and the mediating objects that constitute part of a practice (Gherardi, 1999; 2000; Johnson et al. 2003). It also emphasises the importance of communities of practitioners as the space where the social dynamics of learning are negotiated, thus reinforcing principles of interconnectedness and interdependence between agency and structure, a point which is central both in structuration theory (Giddens, 1984) and in actor network theory (Law, 1999). This is also of course consistent with much thinking underpinning the pragmatist framework that Dewey (see Elkjaer, 2004) introduced in the way he has helped us understand participation and experience as integral aspects in the learning process. Therefore, these perspectives encourage us to explore 'learning-as-practice' engaging not only actions and activities in relation to learning, but also the role of language and other cultural and material artifacts, the nature of social interactions and not least the tacit, situated and almost instinctive responses of actors in the socially networked worlds in which they live. Conceptualizing learning as practice (Nicolini et al., 2003), reminds us that practices are influenced by forces that are both inside and outside of the organisation (Beckhy, 2003; Gherardi & Nicolini, 2002). The co-existence of multiple adjoining and interlocking practices forms the heart of their evolution. The normal, everyday execution of practice thus, becomes the context of tensions amongst different practices and the groups that embody them. Learning in relation to practice is therefore, an emerging powerful force expanding the space of possibility by connecting actors, work systems and artefacts together. By focusing on this emerging

---

reminding me of this powerful point.

powerful force to connect we can also open the possibility of engaging with the fractality of practices.

Therefore, if we are to understand this self-organizing process in the way practitioners and their practices are interconnected, two issues need to be further developed. One issue is the definition of practice, which needs to become more 'elastic' and multi-faceted. The existing literature, provides a number of different perspectives on practice as *action* (Bourdieu, 1980); practice as *structure* – language, symbols, tools (Turner, 1994); practice as *activity system* (Engeström, Miettinen & Punamäki, 1999); practice as *social context* (Lave & Wenger, 1991); practice as *knowing* (Nicolini et al., 2003). The literature on organizational routines, as a special kind of practice, becomes relevant here, with their conceptions of routines as sources of efficiency, memory and social order (Nelson & Winter, 1982), flexibility (Adler, Goldoftas & Levine, 1997; Pentland & Rueter, 1994), connections (Feldman & Rafaeli, 2002), change (Feldman & Pentland, 2003) and the creation of resources (Feldman, 2004). A full description of the processes of emergence and self-organization needs simultaneous consideration of many aspects of practice at the same time.

The second issue that needs theoretical development is the dynamics of the practice. Because of the multifaceted nature of practice, the existing conceptualization of institutionalizations (Berger & Luckmann, 1966; Selznick, 1957) are potentially reductive, when talking about practice. Studies of institutionalization processes in fact tend to emphasize the end result, the institutionalized practice. More in keeping with the view of learning as a flow introduced in the previous section we need to appreciate that there is no end result to this process, only a continuous unfolding of what could be referred to as *practising*. This is an important point that on the one hand, introduces a trivial distinction between practi**c**e and practi**s**e however, on the other hand, one that sensitizes us to an important qualitative difference between a practice and its practise. The Oxford dictionary defines *practice* as "the actual doing of something" or "a way of doing something that is common, habitual or expected" such as the work of a doctor working in general practice. *Practise* on the other hand, is defined as "to do something repeatedly or regularly in order to improve one's skill" or "to do something regularly as part of one's normal behaviour" e.g. to work as a doctor is to be in practise.

Therefore, whilst practice and practicing refer to the institutionalization of activities and routines, *practise* and *practising* focus on the holistic and emergent nature of practice. Practice can be conceptualised as a dynamic social process that emerges over time entails at its core practising attempts which seek to accommodate endogenous and exogenous forces, brought about by ecological, economic, social and political dynamics (Antonacopoulou, 2006b, 2006c). Connections between practices form the core of learning-in-practise as it describes how practices evolve and how learning unfolds through the repeated enactments which configure multiple arenas for negotiations of order, thus involving multiple interdependent stakeholders whose interactions are supported by the degree of learning collaborations they seek to explore (Antonacopoulou & Meric, 2005). By focusing on practise and its emergence, it is possible to map the social network that impacts on the way practices are orchestrated, through practising attempts. By placing learning practise at the centre of the investigation, it is possible to more fully account for the (diverse interests) political forces underpinning learning in time and space. A practise-centred perspective as a new dimension in future learning research can help us potentially develop methodologies for studying the fluidity and interconnectivity of complex social processes such as learning and working.

There is a critical need therefore, to refocus attention in future learning research not only on the changes resulting from learning practices, but the *practising* attempts behind those practices and the changes they entail. This view would call for not only a different mode of thinking but a different set of epistemological and ontological positions to engage with such fluidity. Epistemologically this would encourage us to explore the practice of learning and working in different contexts, to pay attention to the dynamics between individual agency, social structures and systems embedded in social systems and the complexity of tasks that shape the focus and orientation of learning and experiences of living in such organized arrangements. Ontologically, in extending process research (Pettigrew, 1989; Langley, 1999; Lewis & Grimes, 1999; Scandura & Williams, 2000), instead of studying processes as objects located in time and space we can embrace the challenge of using the process itself as a foundation for studying the same process. This could be described as a cosmological approach to studying learning, which would have the capacity to integrate macro and micro dimensions of learning (see Antonacopoulou, 2002).

Therefore, in capturing the dynamic nature in which practices, like learning, emerge, we need to also explore how a *practi**c**e* is *practi**s**ed* i.e. rehearsed in performance, if we are to more fully account for how learning is the condition for learning in the same way as change is a condition for changing. The underlying ethos of practise (i.e. the values, beliefs and interpretations surrounding a practice) is just as critical as understanding the behaviours, activities and actions that constitute a practice. This view implies that learning one's practice is not enough, *practising one's practice* is more important (Antonacopoulou, 2004b). One cannot really master one's practice unless one is prepared to practise it. In other words, by practising one's practice one refines, improves, changes elements of the practice, elements of one's praxis and ultimately elements of one's self (e.g. identity).

In the context of this analysis, practice is not only what one does, what actions they take, but also how one learns to discover the intricate aspects and meanings of one's practice, with the socialisation aspects that are implicit in that. Learning-in-practise reflects learning as a foundation for learning because at the core of practice is practise. This only goes to reinforce the power of learning as part of working life and as an extension of learning so that living is purposeful and working can be meaningful.

Conclusions

This paper outlined the unfinished and ever evolving relationship between learning and working life. The re-conceptualisation of learning extends the view of learning-as-practice to embrace the co-existence of multiple adjoining and interlocking practices which forms the heart of learning as part of a co-evolving process of living and working. Learning is therefore, conceptualised as a flow where multiple and heterogeneous actants attract each other and create inter-connections that define the emerging purpose of learning in different contexts as self-organising attempts expose different political agendas. Therefore, learning is not only a practice. It is also a practise; a flow, a flexible ever-changing mode of connecting different practices in ways that enrich learning practice and working life.

This view has several implications for future learning research. For one, the study of learning needs to advance by recognizing the value of viewing and researching the phenomenon as a connecting force between people, systems and other processes that define the social complexity it seeks to engage with and represent. Therefore, learning is not only the institutionalisation of practices but also a reflection of the self-organizing nature of learning

routines, processes and practices. These issues raise a number of methodological implications for future research in learning, particularly in relation to capturing the social complexity underpinning learning. As others (Argyris, 2004b; Easterby-Smith et al., 2004) have recently pointed out in outlining future research directions in learning research, learning needs to describe the universe as completely as possible. For that it is critical that learning scholars reflect on their learning scholarship and constantly renew their learning practices as they practise with their emerging ideas about learning. Unless, learning scholars learn how to (un)learn, learning research will not progress. Hopefully, this paper signals the enormity of the task ahead, if learning research is driven by its own efforts to support learning about learning.

Acknowledgements

The author would like to acknowledge the support of the ESRC/EPSRC Advanced Institute of Management Research under grant number RES-331-25-0024 for this research. My thanks to Chris Argyris and Tara Fenwick for feedback on an earlier draft of this paper.

References

Adler, P.S., Goldoftas, B. & Levine, D. I. (1997) 'Flexibility versus efficiency? A case study of model changeovers in the Toyota production system'. *Organization Science*, 10(1): 43-68

Alderfer, C.P. & Brown L.D. (1975) *Learning from Changing: Organisational Diagnosis and Development*, USA: Sage.

Antonacopoulou, E.P. & Chiva, R. (2005) 'Social Complex Evolving Systems: Implications for Organizational Learning', Paper presented at the *6th International Organizational Knowledge, Learning and Capabilities Conference*, Boston.

Antonacopoulou, E.P. & Méric, J. (2005) 'From Power to Knowledge Relationships: Stakeholder Interactions as Learning Partnerships', in M. Bonnafous-Boucher & Y. Pesqueux (Eds) S*takeholders and Corporate Social Responsibility - European Perspectives*, London: Palgrave.

Antonacopoulou, E.P. (1998) Developing Learning Managers within Learning Organizations, in M. Easterby-Smith, L. Araujo and J. Burgoyne (Eds.) *Organizational Learning and the Learning Organization: Developments in Theory and Practice*, 214-242, Sage, UK.

Antonacopoulou, E.P. (1999) Individuals' Responses to Change: The Relationship between Learning and Knowledge, *Creativity and Innovation Management*, Vol.8, No. 2, 130-139.

Antonacopoulou, E.P. (2000a) 'Reconnecting Education, Training and Development through Learning: A Holographic Perspective', *Education + Training*, Special Issue on 'Vocational Education and Training in SMEs', 42(4/5): 255-263.

Antonacopoulou, E.P. (2000b) 'Employee Development through Self-development in three Retail Banks', *Personnel Review*, Special Issue on 'New Employee Development: Successful Innovations or Token Gestures?' 29(4): 491-508.

Antonacopoulou, E.P. (2001) 'The paradoxical nature of the relationship between training and learning', *Journal of Management Studies*, 38(3): 327-350.

Antonacopoulou, E.P. (2002), Learning as Space: Implications for Organisational Learning, Manchester Business School Research Paper series, No. 443.

Antonacopoulou, E.P. (2004a) The Dynamics of Reflexive Practice: The Relationship between Learning and Changing, in M. Reynolds and R. Vince (Eds) *Organizing Reflection*, 47- 64, Ashgate: London.

Antonacopoulou, E.P. (2004b) The Virtues of *Practising* Scholarship: A Tribute to Chris Argyris a 'Timeless Learner'. Special Issue 'From Chris Argyris and Beyond in Organizational Learning Research', *Management Learning*, 35(4): 381-395.

Antonacopoulou, E.P. (2006a) Working Life Learning: Learning-in-Practice, in E.P. Antonacopoulou et al. (eds) *Learning, Working and Living: Mapping the Terrain of Working Life Learning*, London: Palgrave.

Antonacopoulou, E.P. (2006b - in press) The Relationship between Individual and Organisational Learning: New Insights from Managerial Learning Practices, *Management Learning*, 27(2).

Antonacopoulou. E.P. (2006c) Strategizing as Practising: Strategic Learning as a Source of Connection, AIM Working Paper Series.

Antonacopoulou, E.P. and Bento R. (2003) 'Methods of 'Learning Leadership': Taught and Experiential', in J. Storey *Current Issues in Leadership and Management Development*, 81-102, Blackwell, Oxford.

Argyris C. (2004a) *Reasons and Rationalizations: The Limits to Organizational Knowledge*, Oxford: Oxford University Press

Argyris, C. & Schön, D.A. (1978) *Organisational Learning: A Theory in Action Perspective*, Addisson Wesley, Cambridge, MA.

Argyris, C. (1982) *Reasoning, Learning and Action*, USA: Jossey-Bass.

Argyris, C. (1993) *On Organisational Learning*, Cambridge, MA: Blackwell.

Argyris, C. (2004b) 'Reflecting and Beyond in Research on Organizational Learning', Special Issue 'From Chris Argyris and Beyond in Organizational Learning Research', *Management Learning*, 35(4):

Axelrod, R. and Cohen, M.D. (1999) *Harnessing complexity*; New York: The Free Press.

Barley, S.R. & Kunda, G. (2001) "Bringing work back in"; *Organization Science*, 12 (1): 76-95

Bechky, B. (2003) 'Sharing meaning across occupational communities: The transformation of understanding on a production floor'. *Organization Science*, 14(3): 312-330.

Beer, S. (1972) *Brain of the Firm*, London: Penguin.

Berger, P.L. & Luckmann, T. (1966) *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*; Penguin, London.

Bettis, R.A. and Prahalad, C.K. (1995) 'The dominant logic: Retrospective and extension', *Strategic Management Journal*, 16: 5-14.

Bourdieu, P. (1980. *The Logic of Practice*. Stanford, CA: Stanford University Press.

Brown, S.L. and Eisenhardt, K.M. (1997) 'The art of continuous change: Linking complexity theory and time-paced evolution in relentlessly shifting organizations', *Administrative Science Quarterly*, 42: 1-34.

Cheng, Y.T. and Van de Ven, A.H. (1996) 'Learning the innovation journey: Order out of chaos?', *Organization Science*, 7 (6): 593-614.

Chiva, R. (2003) 'The Facilitating Factors for organizational Learning: bringing ideas from Complex Adaptive Systems', *Knowledge and Process Management*, 10 (2): 99-114.

Chiva, R. (2004) 'Repercussions of complex adaptive systems on product design management' *Technovation*, 24: 707-711.

Clark, N. (1991) *Managing personal learning and change: A trainers guide*, London: McGraw-Hill.

Clegg, S. R., Kornberger, M., & Rhodes, C. (2005) Learning/Becoming/Organizing. *Organization*, *12*(2), 147-167.

Cook, S.D.N. & Yanow, D. (1993) 'Culture and Organisational Learning', *Journal of Management Inquiry*, December, 2(4): 373-390.

Coopey, J. (1995). The learning organisation: power, politics and ideology. *Management Learning*, 26(2): 193-213.

Cunningham, I. (1994) *The wisdom of strategic learning: The self-managed learning solution*, London: McGraw-Hill.

Dixon, N. (1994) *The organisational learning cycle: How can we learn collectively*, London: McGraw-Hill.

Dooley, K.J, Corman, S.R., McPhee, R.D. and Kuhn, T. (2003) 'Modeling high resolution broadband discourse in complex adaptive systems'. *Nonlinear Dynamics, Psychology, and Life Sciences*, 7 (1): 61-85.

Easterby-Smith, M. (1997) 'Disciplines of organizational learning: Contributions and critiques', *Human Relations*, 50(9): 1085-1113.

Easterby-Smith, M., Antonacopoulou, E.P. Lyles, M. and Simms, D. (2004) "Constructing Contributions to Organizational Learning: Argyris and the New Generation", Special Issue 'From Chris Argyris and Beyond in Organizational Learning Research', *Management Learning*, 35(4): 371-380.

Elkjaer, B. (1999) 'In search of a social learning theory'. In Easterby-Smith, M.; Burgoyne, J. and Araujo, L. (Eds.) *Organizational Learning and the Learning Organization*, pp.75-91. London: Sage Publications.

Elkjaer, B. (2004) 'Organizational Learning: The Third Way', Special Issue 'From Chris Argyris and Beyond in Organizational Learning Research', *Management Learning*, 35(4):

Engeström, Y., Miettinen, R. & Punamäki, R.-L. (1999) *Perspectives on Activity Theory*. Cambridge: Cambridge University Press.

Feldman, M. S. & Rafaeli, A. (2002) 'Organizational routines as sources of connection and understanding'. *Journal of Management Studies*, 39(3): 309-331.

Feldman, M. S. (2000) 'Organizational routines as a source of continuous change' *Organization Science*, 11(6): 611-629.

Feldman, M. S. (2004) 'Resources in emerging structures and processes of change'. *Organization Science*, 15(3): 295-309.

Feldman, M. S. and Pentland, B. T. (2003) ‘Reconceptualizing organizational routines as a source of flexibility and change’, *Administrative Science Quarterly*, 48 (March): 94-118.

Fenwick, T. (2003). Reclaiming and re-embodying experiential learning through complexity science. *Studies in the Education of Adults*, 35 (2): 123-141.

Fiol, C.M. & Lyles, M.A. (1985) ‘Organisational learning’, *Academy of Management Review*, 10(4), 803-813.

Ford J. and Ford L.W. (1994) ‘Logics of Identity, contradiction, and attraction in change’, *Academy of Management Review*, 19 (4): 756-785.

Friedlander, F. (1984) ‘Patterns of individual and organisational learning’, in P. Shrivastava, (Ed), *The Executive Mind*, San Francisco: Jossey-Bass.

Gell-Mann, M. (1994)*The quark and the Jaguar. Adventures in the simple and the complex.* New York: WH Freeman.

Gherardi, S. & Nicolini, D. (2002) ‘Learning in a constellation of interconnected practices: Canon or dissonance?’ *Journal of Management Studies*, 39(4): 419-436.

Gherardi, S. (1999) ‘Learning as problem-driven or learning in the face of mystery?’. *Organization Studies*, 20 (1), 101-24.

Gherardi, S. (2000) ‘Practice-based theorizing on learning and knowing in organizations’, *Organization*, 7 (2), 211-223.

Giddens, A. (1984) *The Constitution of Society*. Cambridge: Cambridge University Press.

Goodwin, B. (1994) *How the leopard changed its spots: the evolution of complexity*. London: Weidenfeld and Nicholson.

Handy, C. (1989) *The age of unreason*, London: Arrow.

Heywood, J. (1989) *Learning adaptability and change: The challenge for education and industry*, London: Paul Chapman.

Horn, R. (1983) *Trialectics: Towards a Practical Logic of Unity*. Lexington, May: Information Sources.

Ichazo, O. (1976) *The human process for enlightenment and freedom*. NY: Arica Institute Press.

Johnson, G., Melin, L. & Whittington, R. (2003) ‘Guest editors' introduction: Micro strategy and strategizing: Towards an activity-based view’. *Journal of Management Studies*, 40(1): 3-22.

Kauffman, S.A. (1995) *At home in the Universe*, Oxford: Oxford University Press.

Langley A. (1999) "Strategies for Theorizing from Process Data" *Academy of Management Review*, 24: 691-710.

Lave, J. and Wenger, E. (1991) *Situated learning: Legitimate peripheral participation*. New York: Cambridge University Press.

Law, J. (1999) 'After ANT: complexity, naming and topology', in J. Law and J. Hassard (eds.) *Actor Network Theory and After*. Oxford: Blackwell Publishers: 1-14.

Lawrence, T.B., Mauws, M.K., Dyck, B. and Kleysen, R.F. (2005) 'The politics of organizational learning: integrating power into the 4I framework', *Academy of Management Review*, 30(1): 180-191.

Lessem, R. (1993) *Business as a learning community*, London: McGraw-Hill.

Lewis M.W. and Grimes A.J. (1999) "Meta-triangulation: Building Theory from Multiple Paradigms" *Academy of Management Review*, 24: 672-690.

Mitleton-Kelly, E. (2003) *Complex systems and evolutionary perspectives on organizations: the application of complexity theory to organizations*. London: Elsevier.

Nelson, R. R. & Winter, S. G. (1982) *An Evolutionary Theory of Economic Change*. Cambridge, MA: Belknap.

Nicolini, D., Gherardi, S. and Yanow, D. (2003) 'Introduction: towards a practice-based view of knowing and learning in organizations', in D. Nicolini, S. Gherardi and D. Yanow (eds.) *Knowing in Organizations: A Practice-Based Approach*. 3-31 London: M.E.Sharpe.

Ofori-Dankwa J. and Julian S. D. (2001) "Complexifying Organizational Theory: Illustrations using time research" Academy of Management Review, 26: 415-430.

Pentland, B. T. & Rueter, H. H. (1994) 'Organizational routines as grammars of action'. *Administrative Science Quarterly,* 39(3): 484-510.

Pettigrew, A. M. (1989) "Longitudinal Methods to Study Change: Theory and Practice" in Mansfield R. (ed) *Frontiers of Management Research and Practice*, Routledge, London.

Ross Ashby, W. (1958) 'Requisite variety and its implications for the control of complex systems', *Cybernetica*, 1(2), 83-99

Scandura T.A. and Williams E.A. (2000) 'Research Methodology in Management: Current Practices, Trends and Implications for Future Research'. *Academy of Management Journal*, 43: 1248-1264.

Schatzki, T. R., Knorr Cetina, K. & Von Savigny, E. (2001) *The practice turn in contemporary theory*. London: Routledge.

Selznick, P. (1957) *Leadership in Administration*. Berkeley: University of California Press.

Sherman, H. and Schultz, R. (1998) *Open Boundaries*. New York: Perseus Books.

Simon, H.A. (1996)*The sciences of the artificial*. Mass.: Institute of Technology.

Soja, E.W. (1997) *Thirdspace, Journeys to Los Angeles and Other Real-And–Imagined Places.* Oxford: Blackwell.

Srivastva, S. Bilimoria, D, Cooperrider, D.C. and Fry, R.E. (1995) 'Management and Organisational Learning for Positive Global Change', *Management Learning*, 26(1), 37-54.

Stacey, R.D. (1993) 'Strategy as order emerging from chaos', *Long Range Planning*, 26 (1), 10-17.

Stacey, R.D. (1995) 'The science of complexity: an alternative perspective for strategic change processes', *Strategic Management Journal*, 16: 477-495.

Stacey, R.D. (1996) *Complexity and creativity in organizations*. San Francisco: Berret-Koehler publishers.

Tsoukas, H. (1998) 'Introduction: chaos, complexity and organization theory', *Organization*, 5 (3): 291-313.

Turner, S. (1994) *The Social Theory of Practices: Tradition, Tacit Knowledge and Presuppositions*. Cambridge: Polity.

Whittington, R.E. (2003) 'The work of strategizing and organizing: For a practice perspective'; *Strategic Organization*, 1 (1), pp. 117-125.

Zollo, M. & Winter, S. G. (2002) 'Deliberate learning and the evolution of dynamic capabilities'. *Organization Science*, 13(3): 339-351.