

The origins and conceptualisations of `triple-loop' learning: a critical review

Abstract

In the organisational learning literature a variety of concepts exist denoting some third order of organisational learning, notably that of `triple-loop' learning. Despite this there has been no systematic, critical consideration of this concept or its origins, impeding both theoretical development and empirical research. Whilst `triple-loop learning' has been inspired by Argyris and Schön, we establish that the term does not arise in their published work. Indeed, we argue that conceptualisations of triple-loop learning are diverse, often have little theoretical rooting, are sometimes driven by normative considerations, and lack support from empirical research. We map the major influences on these conceptualisations, focussing on Argyris and Schön's work and Bateson's framework of levels of learning. Bateson's third level of learning, which has inspired several authors, reveals a dark side that contrasts with constructions of triple-loop learning as a form of instrumental, strategic thinking. Based on this analysis we offer an original theoretical contribution that distinguishes between three conceptualisations of `triple-loop learning'. We also highlight implications for practice, and we caution against the uncritical preference for 'higher levels' of learning that is sometimes discernible in the literature and in practice.

Keywords: organisational learning; double-loop learning; deuterio-learning; levels of learning, triple-loop learning

Introduction

Over the last decade, interest in organisational learning has burgeoned, with both increasing journal and book output (Bapuji and Crossan 2004, Dehler and Vendelø 2010, Elliott *et al.* 2008, Scarbrough *et al.* 2007) and an increasing number of reviews of the field (e.g. Easterby-Smith *et al.* 1999, Easterby-Smith and Lyles 2003, Örtenblad 2002, Shipton 2006). Yet, according to Friedman *et al.* (2005), it is a field characterised by conceptual confusion. Huysman (2000) argues for the deconstruction of writings on organisational learning and identifies a series of biases in the literature, while Örtenblad (2010) cites organisational learning as an example of 'packaged' knowledge combining two labels in a potentially paradoxical way that qualifies, according to Weick and Westley (1999), as an oxymoron.

Many scholars have considered the concept of organisational learning as a dichotomy. In its basic, primary form they have described it as action-oriented, routine, and incremental, occurring within existing (mental) frameworks, norms, policies and rules. In the face of profound change in organisational environments, these scholars argue that a qualitatively distinct, secondary form of learning is necessary. This aims to change the (mental) frameworks, norms, policies and routines underlying day-to-day actions and routines (Cope 2003).

This dichotomy has been expressed using a variety of terms: single-loop and double-loop (e.g. Argyris and Schön 1974); lower-level and higher-level (Fiol and Lyles 1985); first-order and second-order (Arthur and Aiman-Smith 2001); exploitation and exploration (Levinthal and March 1993, March 1991); incremental and radical (Miner

and Mezias 1996); and adaptive and generative learning (Senge 1990). Although these dichotomous terms stem from different perspectives on organisational learning, a reasonable consensus seems to have been established that they refer to comparable learning processes and outcomes (Argyris 1996, Arthur and Aiman-Smith 2001, Miner and Mezias 1996). Thus, as defined by Argyris (1999: 68), single loop learning occurs 'whenever an error is detected and corrected without questioning or altering the underlying values of the system', and double loop learning occurs 'when mismatches are corrected by first examining and altering the governing variables and then the actions'.

A number of authors have conceived of a further type of organisational learning, for which the most prominent term is 'triple-loop' learning (Flood and Romm 1996, Isaacs 1993, Romme and van Witteloostuijn 1999, Snell and Chak 1998, Swieringa and Wierdsma 1992, Yuthas *et al.* 2004). Typically, this is described as additional to, and metaphorically at a 'higher' or 'deeper' level than, primary and secondary forms of learning, the metaphor implying that this level has greater significance and profundity. Yet, in spite of its perceived importance, conceptualisations of this form of learning do not always make clear how it differs from, or relates to, primary or secondary forms. Scholars of organisational learning might look first to Argyris and Schön; significantly, though, we have established that whilst 'triple-loop learning' has been inspired by Argyris and Schön, the term does not appear explicitly in their published work.

As we shall demonstrate, there is limited consensus amongst the scholars about the definition of triple-loop learning, other than that its proponents all place it relative to

single- and double-loop learning. Furthermore, not one of the sources already cited that offers any conceptualisation of triple-loop learning explores similarities or tensions between competing definitions. This lack of either consensus or critical discussion impedes theoretical development and makes testing and measurement through empirical research difficult. It also leads to confusion for practitioners about the role that learning can play in responding to wider pressures and challenges in the organisational environment.

The aim of this paper is therefore to undertake a critical review of the ways in which triple loop learning has been conceptualised by organisation and management scholars. By conceptualisation we mean the identification of conceptual components and the formation of conceptual definitions. As such conceptualisation precedes operationalisation, the former being at the level of theory and the latter at the level of research (Frankfort-Nachmias and Nachmias 1992). Within this we explore the original work of Argyris and Schön, and of the anthropologist and cybernetician Gregory Bateson, the major influences cited by authors who propose these conceptualisations. This enables us to make a theoretical contribution through identifying three distinct conceptualisations of 'triple-loop learning'. These are:

- a) a level beyond, and considered by proponents to be superior to, Argyris and Schön's 'single-loop' and 'double-loop' learning;
- b) an equivalent to Argyris and Schön's (1978, 1996) concept of 'deutero-learning';
- c) a proposed third level inspired by Bateson's (1973)ⁱ framework of levels of learning (specifically 'Learning III').

We discuss why these conceptualisations should be regarded as distinct from each other, and highlight some implications for practice.

Conceptualisations of `triple-loop learning`

As noted, scholars of organisational learning might look first to Argyris and Schön for a definition of triple-loop learning. Indeed, several authors (e.g. Gilmore and Warren 2007, Jakimow 2008, and Mark 2006) attribute triple-loop learning to, or associate it with, their work. Dishman and Pearson (2003: 616) say `Argyris (1991) proposed that there is also triple-loop learning, which provides feedback and a change mechanism for the individual.' Yet an examination of their work shows that Argyris and Schön neither formulate nor mention any notion of `triple-loop learning'. More precisely, no instance of the term appears in the text or index of any of Argyris and Schön's joint or separate publications, including seminal texts such as Argyris and Schön (1974, 1978, 1996), Argyris (1991, 1999, 2004), and Schön (1983, 1987); nor, based on our examination of this literature, do we consider that Argyris and Schön developed any conceptualisation that was intended by them as, or equates to, a third `loop' of learning that would logically extend their notions of single- and double-loop learning (we comment below on the place in their conceptual schema of their notion of `deutero-learning').

If it is therefore incorrect to identify the concept of `triple-loop learning' as the progeny of Argyris and Schön's long-established stream of work on organisational learning, where does this notion come from, how has it evolved, and how is it

defined? Our literature search shows that the term first appeared in the 1990s, contemporaneous with the emergence of the 'learning organisation' theme. Table 1 shows key articles identified by this search, selected on the basis that they introduce conceptualisations of triple-loop learning or contain substantive discussions of that notion, together with the sources cited by these authors.

INSERT TABLE 1 ABOUT HERE

Conceptualisation A: Beyond and superior to double-loop learning

The earliest reference in Table 1 is Hawkins (1991), who identifies shortcomings in thinking about learning organisations and argues that 'treble-loop learning' is necessary to move beyond the 'effectiveness thinking' that can be achieved through double-loop learning. Hawkins therefore addresses what he regards as limitations in Argyris' thinking by transcending or going beyond a 'double-loop' outlook, providing 'the awareness and deeper purpose which contains and informs the strategic thinking and operational realities' (Hawkins 1991: 183).

The earliest published use of the term 'triple-loop learning' occurs the following year in Swieringa and Wierdsma's (1992) book, *Becoming a Learning Organization*, which is cited widely in subsequent literature (e.g. Bovaird and Rubienska 1996, Easterby-Smith 1997, Hales 2000). Acknowledging Argyris and Schön (1978), Swieringa and Wierdsma (1992: 41-2) speak of triple loop learning as occurring

`when the essential principles on which the organization is founded come into discussion' and involving `the development of new principles, with which an organization can proceed to a subsequent phase'. Similarly, Isaacs (1993: 30), discussing dialogue as a reflective process, acknowledges Argyris and Schön (1978, among others) and also Hawkins (1991). He suggests that triple-loop learning `opens inquiry into underlying "why's."...that permits insight into the nature of paradigm itself.' In a similar vein, though in an apparently separate strand of development, Nielsen (1993: 118), writing about Woolman's action learning method applied to issues of ethics, proposes that triple-loop action-learning involves `change in the embedded tradition system within which the governing values of a behaviour can be nested'. Nielsen suggests (1993: 118), that this may represent `a theoretical advance beyond' Argyris and Schön.

This first conceptualisation of triple-loop learning is therefore generated by authors who view it as a level that is beyond and superior to Argyris and Schön's `single-loop' and `double-loop' learning, and that is concerned with the underlying purposes, principles or paradigms. Following Argyris and Schön's schema logically, since double-loop learning involves correction of governing variables, it would appear that triple-loop learning should be concerned with change in whatever governs those governing variables. This could be the `paradigm' to which Isaacs (1993: 30) refers, or the `embedded tradition system' discussed by Nielsen (1993: 118). However, these terms remain ill-defined and imprecise.

Roper and Pettit (2002) observe that the discussion of triple-loop learning is often normative, simply encouraging organisations to aspire beyond single- and double-

loop learning. This indicates a sense in which this first conceptualisation could exemplify the dominant managerial perspective on organisational learning that is noted by Huysman (2000). It is noteworthy that several of the sources cited above emphasise applied learning. Hawkins' (1991) article appears in the journal that was the precursor to *Management Learning*, which at that time targeted both academic and practitioner audiences. Swieringa and Wierdsma's (1992) book appears in the practitioner-focused Addison-Wesley series on Organisation Development. Isaacs writes in the journal *Organizational Dynamics* whose objective is 'to link leading-edge thought and research with management practice'. Rhetoric concerned with a 'higher' (or 'deeper') subject matter that (for example) 'informs the strategic thinking' (Hawkins 1991: 183), or which concerns the 'essential principles on which the organization is founded' (Swieringa and Wierdsma 1992: 41-2) appears to constitute the kind of normative appeal to the value of, or even the necessity for, higher-order learning, observed by Roper and Pettit (2002).

This conceptualisation has also been portrayed in a more instrumental and reductive fashion, such as a solution offered by consultants, or as a strategic choice available to managers. For example, Lassey (1998: 11) describes triple-loop learning as where 'the role or the mission of the organization is questioned', and suggests an example of managers deciding intentionally to change the nature of their business from a fast food outlet to a café. This is problematic because changing the nature of a business does not necessarily constitute even double-loop learning; it therefore mistakes a change in external circumstances for change in values or principles.

Conceptualisation B: Deutero-learning

An alternative conceptualisation was subsequently offered by Flood and Romm (1996), Romme and van Witteloostuijn (1999), Snell and Chak (1998) and Yuthas *et al.* (2004). This differs from the first in that it emphasises reflexivity towards, and change in, processes of learning, in contrast to the earlier focus of Hawkins and others on the purposes, principles or paradigms that lie behind operations and strategy. This reflexivity echoes Argyris and Schön's concept of 'deutero-learning' (from the Greek 'deuteros', meaning second or secondary), which they define (1978: 27) as 'to learn how to carry out single- and double-loop learning'. To learn to single-loop learn implies learning to improve performance at an increasing rate. To learn to double-loop learn implies learning to carry out the reflection on and inquiry into the governing variables, values and norms underlying organisational action. However, in their later work Argyris and Schön (1996: 29) appear less clear cut on this matter, when they define organisational deutero-learning as a 'critically important kind of organizational double-loop learning.'

Flood and Romm, writing about diversity management, acknowledge Swieringa and Wierdsma's (1992) use of triple-loop learning, but they make no reference to Argyris and Schön (despite discussing single and double loop learning). They suggest (Flood and Romm 1996: 163) that their own conceptualisation (defined as 'increasing the fullness and deepness of learning about the diversity of issues and dilemmas faced, by linking together all local units of learning in one overall learning infrastructure as well as developing the competences and skills to use this infrastructure') is distinctive; nevertheless, this also emphasises learning about the process of learning.

Whilst citing both Argyris and Schön (1974) and Hawkins (1991) in order to construct an analytical framework for a discussion of the learning organisation, Snell and Chak (1998: 340) define triple-loop learning for organisations as; 'Co-inventing – collective mindfulness. Members discover how they and their predecessors have facilitated or inhibited learning, and produce new structures and strategies for learning'. Significantly, Snell and Chak (1998: 340) explicitly equate triple-loop learning with Argyris and Schön's 'deutero-learning'.

Romme and van Witteloostuijn (1999), who adopt Snell and Chak's notion of 'collective mindfulness', also equate triple-loop learning with deutero-learning. They offer the following description (1999: 452): 'Are we doing things right (single loop learning)? Are we doing the right things (double loop learning)? Can we participate in making well-informed choices regarding strategy, objectives, etc. (e.g. triple loop learning)?'

Yuthas *et al.* (2004), who advocate 'triple-loop learning' in relation to ethics in public accounting, acknowledge Argyris (1982) and Argyris and Schön (1974, 1978), but not Snell and Chak. They define triple-loop learning (2004: 239) as 'continual reflection on the learning process, the contexts within which learning occurs, and the assumptions and values motivating the learning and influencing its outcomes'.

Is deutero-learning therefore simply Argyris and Schön's terminology for their own conceptualisation of a third order of learning? This appears not to be the case.

Although the relationship between double-loop learning and deutero-learning is not always clear in the work of Argyris and Schön, it seems that these concepts often

refer to the same second-order learning phenomenon (Visser 2007). More recent comments by Argyris (2003: 1179) appear definitive on this point:

‘We understood deuterio-learning to mean second-order learning, reflecting on the first-order actions. Deuterio-learning can occur by going meta on single or double-loop learning. The distinction is important because the knowledge and skills required to produce double-loop learning are significantly greater and more complicated than those required for deuterio-learning on single-loop issues.’

In other words, Argyris casts deuterio-learning not as a further level in a hierarchy going beyond single- and double-, but as ‘meta’ to either single or double-loop learning. Saliiently, Argyris’ comment about the knowledge and skills required for double-loop learning being ‘significantly greater and more complicated’ than those required for deuterio-learning on single-loop issues, supports our view that Argyris does not regard deuterio-learning as a higher order of learning than double-loop learning.

Understandably, the noted confusion about the nature of deuterio-learning appears in other authors’ work. For example, Thomsen and Hoest (2001: 474) regard deuterio-learning as an extension beyond double-loop learning that resembles the first conceptualisation of triple-loop learning, in that ‘members question and challenge the assumptions about the existence of the organization’.

In conclusion, our conceptualisation B refers to those authors who have equated Argyris and Schön’s notion of deuterio-learning with ‘triple-loop learning’. We

emphasise that Argyris and Schön themselves did not regard deuterio-learning as a third 'loop' beyond double-loop learning.

Conceptualisation C: Bateson's Learning III

It is evident from Table 1 that, in addition to Argyris and Schön, Bateson is a prominent influence on several authors. We turn now to his framework of 'levels of learning' in order to explain the context in which a third distinct conceptualisation of 'third-order' learning (i.e. Learning III) appears. Isaacs (1993: 30) suggests that Learning III 'could also be called "triple-loop learning."' Nevertheless, in this section we argue that Bateson's notion of 'Learning III' differs radically from the first two conceptualisations of triple-loop learning in several respects that are significant for our understanding of organisational learning.

Bateson worked across diverse fields including anthropology, cybernetics and family therapy (Hawkins 2004; Visser 2003, 2007). While Thomas *et al.* (2007: 872) report that the majority of Bateson's citations in the SSCI (Social Science Citation Index) are in the field of business and organisation management, Bateson's central preoccupation was with epistemology, the 'processes of knowing, thinking and deciding' (Bateson 1979: 242). Working in the field of anthropology in the 1940s, Bateson had observed (1973: 139-40) that in psychological experiments: '...there is a common phenomenon of a somewhat higher degree of abstraction or generality than those which the experiments are planning to elucidate. It is a commonplace that the experimental subject – whether animal or man, becomes a better subject after repeated experiment. He not only learns to salivate at the appropriate moments, or to recite the appropriate nonsense syllables; he also, in some way, *learns to learn.*'

Based on this observation, Bateson proposed a distinction between 'proto-learning' and 'deutero-learning'. It is relevant to note that like Argyris and Schön, Bateson was influenced by cybernetician Ross Ashby. Argyris and Schön (1974: 18-19; 1978: 3, 337; 1996: 21) use Ashby's distinction between variable and parameter change for their definition of single-loop learning and double-loop learning; it also (Bateson 1958) underlies the distinction that Bateson made initially, in 1942 (Bateson 1973: 141), between proto-learning and deutero-learning. Argyris and Schön also acknowledge Bateson's influence on their conceptualisations of single-loop and double-loop learning (Argyris and Schön 1974: 19, 1978: 18-19) and deutero-learning (Argyris and Schön 1978: 26, 1996: 29, Argyris 2003: 1179). Although they hold Ashby's distinction in common, Bateson's and Argyris and Schön's ideas have diverged.

Subsequently, in 1964, in a paper titled *The Logical Categories of Learning and Communication* (Bateson 1973: 250-79), Bateson expanded his initial distinction into a five-level model ranging from 'Learning 0' (learning zero) to 'Learning IV', shown in Table 2ⁱⁱ. While Bateson did not apply this framework to issues of organisational learning himself, it is referenced widely in articles on organisational learning and related topics (e.g. Bartunek and Moch 1994, French and Bazalgette 1996, Huysman 2000, Nielsen 1993, Roach and Bednar 1997, Schein 1999, Tosey and Mathison 2008, Visser 2003, 2007, Wijnhoven 2001, and Yuthas *et al.* 2004).

Bateson described his framework as an attempt to illuminate 'the barriers of misunderstanding which divide the various species of behavioural scientists... by an application of Russell's Theory of Logical Types to the concept of "learning"' (1973:

250). In Bateson's framework, therefore, each higher level of learning represents the *class* of instances of learning of the lower type. Thus Bredo (1989: 36) notes that 'instrumental conditioning tasks, for example, teach not only how to discriminate between particular stimuli, but also about instrumentality itself'.

This indicates the essence of the difference that we argue exists between conceptualisation B and conceptualisation C. Conceptualisation B entails reflexivity; in other words, it concerns learning as applied to the process of learning itself. Conceptualisation C, on the other hand, is a new logical category, one to which all instances of learning at the previous level belong.

INSERT TABLE 2 ABOUT HERE

It is pertinent to comment on the way Bateson conceived Learning 0, I and II in order to clarify his conceptualisation of Learning III. Learning 0 entails responding to stimuli but making no changes based on experience or information. While at first glance one might dismiss the value of Learning 0, it recognises both the importance and the utility of not changing; for example it may be said to include skilled, unconscious performance, and habituation.

The emphasis of Learning I is change *within* a set of alternatives. Learning I is therefore broadly comparable to Argyris and Schön's (1996: 68) 'single loop learning', which occurs 'whenever an error is detected and corrected without

questioning or altering the underlying values of the system...' In an organisation this could occur through seeking more efficient ways to manufacture an existing product or deliver an existing service.

In Learning II, one not only learns but simultaneously learns how to learn. Learning II introduces the notion of *context*, which concerns the meaning given to behaviour; there is change in the way events are punctuated, and '*...a way of punctuating is not true or false*' (Bateson 1973: 271). Context is significant because it emphasises the need to understand learning as both recursive and relational; Bateson's ideas entail a shift from a linear to circular notion of causality (as is foundational in cybernetics), and from an individual to a social perspective on learning. Snyder's (1971) notion of the 'hidden curriculum', cited as an example of Learning II by both Bredo (1989) and Engeström (2001), refers to the tacit expectations and rules for success of formal educational contexts, of which the teachers may be unaware but which they also reinforce.

What of Learning III? While first introduced by Bateson in 1964, as noted, it was not until 1971 that he added a substantial textual commentary on the idea (1973: 250, footnote), where he defined Learning III as 'a corrective change in the system of *sets* of alternatives from which choice is made'. This is a challenging notion; if Learning II is about punctuating experience differently, by implication Learning III might be thought of as an entirely different system of grammar. Bateson (1973: 272) said 'something of the sort does, from time to time, occur in psychotherapy, religious conversion, and in other sequences in which there is profound reorganization of

character', and referred to being 'driven to level III by 'contraries' generated at level II' (1973: 276).

One possible illustration of Learning III, taken from the world of film, is *The Truman Show* (Weir 1998), in which the entire life of the hero, Truman Burbank, has, from the time of his birth, been a broadcast TV show. All the characters, with the exception of Truman himself, are actors, and his world is a gigantic film set - all of which is known to everyone except, of course, Truman himself. His eventual discovery of this fact presents him with massive and inescapable contradictions in his experience; the realisations, emotions and implications that this entails representing an entirely new set of alternatives, and is probably what Bateson meant by Learning III.

The significance of Learning III

We now highlight four features of Learning III that are distinct from conceptualisations A and B, and which have implications for the theory and practice of organisational learning: a) Bateson's scepticism about the instrumental pursuit of Learning III; b) his emphasis on Learning III as being beyond language; c) the recursive organisation of the levels of learning; d) the prevalence of risk in Learning III.

Regarding the first issue, Bateson questioned the idea that Learning III can be achieved through conscious, instrumental means. Bateson was known to hold a deeply passive attitude towards human interference in nature, being sceptical about the capacity for deliberate social planning and intervention to leave 'the complexity

and spirit of the biological world' unimpaired (Lipset 1980: 287). This is echoed in the work of Yorks and Marsick (2000), who note that generative learning is unpredictable and by definition not controlled, and Huysman (2000: 87), who acknowledges that managers are not able to 'fully engineer the future'. This contrasts markedly, for example, with Swieringa and Wierdsma's (1992) description of triple-loop learning as a means for organisations to make progress.

Regarding the second issue, Bateson saw Learning III as extending beyond the reach of language. This contrasts, for example, with Swieringa and Wierdsma's (1992) description of triple-loop learning as amenable to discussion. Instead, Bateson emphasised the role of the unconscious and aesthetic, saying that learning entails a 'double involvement of primary process and conscious thought' (cited in Brockman 1977: 61) and insisting that '...no amount of rigorous discourse of a given logical type can "explain" phenomena of a higher type' (Bateson 1973: 265). For example, Bateson (1973) did accept that one can talk about Learning II; but that merely talking about Learning II does not constitute Learning III.

With Learning III, a discourse of spirituality and the sacred therefore also becomes prominent (Bateson and Bateson 1988). This theme is taken up in Hawkins' conceptualisation of treble-loop learning and, for example, in Bartunek and Moch's notion of 'third order change', which they say is 'initiated by openness to transconceptual experience' (1994: 26). Rather than 'higher' orders of learning being achievable by superior cognitive or intellectual skills possessed by those operating at a more rarefied, strategic level of the organisation, Bateson's conceptualisation indicates the need for a different type of intelligence. Building on this point, Tosey

and Mathison (2008) propose a development of Bateson's original framework drawing on references to multiple modes of learning (i.e. embodied, analytic and aesthetic) identified in Bateson's writing.

Regarding the third issue, Bateson's levels of learning are arranged hierarchically, but he was aware that this was an over-simplification (Bateson 1973). Within Bateson's five levels, 'higher' orders of learning are not inherently superior to or more desirable than 'lower' levels; this challenges conceptualisations of triple-loop learning that conceive of lower levels of learning as being of lesser value than higher levels (e.g. Snell and Chak 1998). Bredo (1989: 32) affirms that this 'multilevel approach to change is not a stage theory moving sequentially from lower to higher levels of learning'. Roach and Bednar (1997: 674) emphasise that Bateson 'refers to the levels as orders of recursion', and Flood and Romm (1996) allude, if briefly, to a recursive relationship between levels of learning. Rather, the levels go in parallel and represent different orders of abstraction. To illustrate this distinction, Figure 1 is a schematic depiction of a recursive hierarchy. In a linear hierarchy, each successive level appears above the other (as in Table 2), and a higher level is assumed to be superior to a lower level, as in hierarchy of job roles shown on a typical organisation chart. In Figure 1, we have arranged the levels of learning as concentric circles to represent the idea that each successive level extends beyond the boundary of, and includes, the previous level. Learning at 'higher' levels means that new premises with successively wider scope are involved. Figure 1 also introduces feedback loops from each level to all of the prior levels, and vice versa. These loops represent the central principle of recursion, which is that causality flows from cause to effect and back again, such that 'a given phenomenon, viewed in context, is both the cause and effect of related

phenomena and, ultimately, its own cause' (Roach and Bednar 1997: 674). The diagram looks complex, which is precisely our point; recursion involves greater complexity than, and is more dynamic than, a linear hierarchy.

INSERT FIGURE 1 ABOUT HERE

Regarding the final issue, Bateson's framework also challenges the assumption that 'higher' orders of learning are necessarily more desirable than 'lower' orders - an assumption that is common in the Western world, where 'more' is usually held to be 'better'. Specifically, a central feature of Bateson's conceptualisation is that higher order learning entails risk, and calls into question the wisdom of the apparent hunger for transformational learning in organisations. Thus Bateson (1973: 277) considered that 'even the attempt at LIII can be dangerous', with psychotic breakdown as a possible consequence for an individual since the very concept of 'self' may be abandoned. Perhaps not surprisingly, Bateson refers to the notion of fools rushing in where angels fear to tread (Bateson and Bateson 1988). Attempts by managers to control and directly effect Learning III may, in an analogous way, result in unintended consequences (Roach and Bednar 1997, Tosey 2005) and profound 'organizational unlearning' (Tsang and Zahra 2008). Significantly, calls for transformation led by an enthusiasm for the value of 'higher' levels of learning may underestimate the impact on an organisation's ecology.

An implication of this feature is that the pursuit of higher orders of learning has ideological and not merely technological dimensions. Authors such as Contu *et al.* (2003) and Huysman (2000) are among the few to identify a value-laden rhetoric in the field of management, such that 'learning' and 'the learning organisation' are seen as unequivocally good things; even (as noted by French and Bazalgette 1996) as some kind of holy grail. This would appear to be a projection of the type of instrumental, goal-orientated mind-set that Bateson criticised as epistemologically flawed, and in his view likely to lead to disaster.

Bateson therefore offers a darker view that emphasises risk in the pursuit of transformation. Fundamentally, Bateson's conceptualisation is about wisdom rather than rational knowledge. It involves a change of epistemology - that is, a change in the form of knowing and learning - not merely a change in subject matter (as from operations to strategy in conceptualisation A) or a reflexivity about the process of learning, as in conceptualisation B. We suggest that the four features discussed here provide the basis for a critique of conceptualisations of triple-loop learning.

The need for further work to apply Bateson's framework to organisational learning is emphasised by Engeström (2001: 139), who suggests that his conceptualisation of Learning III was 'a provocative proposal, not an elaborated theory', and Bredo (1989: 36), for whom the levels of learning are 'properly viewed as a framework and not an elaborated theory'. That it appears to be misconstrued at times is not helped by Bateson's writing being primarily theoretical and lacking detailed empirical evidence. Bateson's research style was unconventional to the extent that theory took precedence over empirical observations. Instead of inductive generalisation, Bateson favoured

abduction, where he used empirical data to illustrate the operationalisation of his concepts, not to provide empirical proof. He often collected small amounts of data that were discarded when the thinking they were intended to support was done (Lipset 1980; Visser 2003).

Synthesis and discussion

In order to summarise our ideas, Table 3 maps the three conceptualisations we have discussed onto Bateson's and Argyris and Schön's schemas. Bateson's framework of levels of learning appears in the left-hand column. A break is shown between this column and Argyris and Schön's single- and double-loop learning in the adjacent column in order to indicate that these conceptualisations are related but not isomorphic. In the second column, the broken line between double-loop learning and conceptualisation A, 'Beyond and superior to double-loop learning', indicates that triple loop learning is not from Argyris and Schön's work. Argyris and Schön's 'deutero-learning' appears in the adjacent column to the right. This is shown in lateral relationship to single- and double-loop learning, based on Argyris' statement quoted above, that 'Deutero-learning can occur by going meta on single or double-loop learning' (Argyris 2003: 1179). We emphasise that, while Learning II is historically Bateson's renaming of his initial concept of deutero-learning, Learning II does not equate to Argyris and Schön's deutero-learning.

INSERT TABLE 3 ABOUT HERE

The three areas of Table 3 marked A, B and C denote the three principal conceptualisations that we have identified. We emphasise that the literature cited can combine or blur these conceptualisations. Hawkins (1991), for example, offers a blend of conceptualisations A and C. Schippers *et al.* (2007) appear to blend conceptualisations A and B when proposing three levels of reflection in teams (following Swift and West 1998). They liken 'deep reflection' to triple-loop learning (attributed to Nielsen 1993 and Snell and Chak 1998) in which 'the norms and values of the team or organisation are questioned and their effect on team and organisational functioning is discussed' (Schippers *et al.* 2007: 191). We have not mapped individual authors discussed in this paper onto Table 3, which would give the impression of an over-simplified arena. However, the principal influences on those authors are apparent from Table 1 and our foregoing discussion.

It is noteworthy that not one of the sources cited above that proposes any conceptualisation of triple-loop learning explores similarities or tensions between competing definitions; this paper is the first to attempt such a review. The need for such examination is shown, among other things, by the authors cited referring variously to the focus of learning ('...the essential principles on which the organization is founded', Swieringa and Wierdsma 1992: 41-2); the process of learning ('new processes for generating mental maps', Snell and Chak 1998: 339); the relational scope of learning ('collective mindfulness', Snell and Chak 1998: 340); and the product or output that results from learning ('new structures and strategies for learning', Snell and Chak 1998: 340; 'new principles', Swieringa and Wierdsma 1992: 41-2).

Furthermore, only two of these sources incorporate empirical work with data relating specifically to triple-loop learning; and even then it is minimal. Discussing the case of Endenburg Elektrotechniek, Romme and van Witteloostuijn (1999: 440) claim that enabling people to 'participate in making well-informed choices regarding strategy, objectives, etc.', constitutes triple-loop learning. However, this is not debated in depth, nor is any evidence presented of the effects of this practice. Snell and Chak (1998) present data from two case organisations and discuss the types of learning shown to have taken place. However, their account concentrates on single and double loop learning, and identifies only one possible instance of triple-loop learning that is not significant to the paper's findings. Given this, together with our observations about Bateson's research style, there is an obvious need for empirical work to test and develop each of these conceptualisations.

We have noted that the first conceptualisation (A) of triple-loop learning appears to be an attempt to expand Argyris and Schön's schema. If so, logically it should be concerned with a level of learning beyond the changes in the governing variables that are addressed by double-loop learning. Although some authors refer to notions such as 'paradigm', these remain poorly defined and imprecise. The second conceptualisation (B) raises the question of whether renaming deutero-learning as triple-loop learning is justified? We consider it is not; because Argyris and Schon never conceived of deutero-learning as being at a higher level than double-loop learning, and because it adds confusion to the relationship between deutero-learning and double-loop learning in particular that is already ambiguous in the work of Argyris and Schön.

We have argued that Bateson's Learning III differs from other conceptualisations of triple-loop learning in that it reveals a dark side to transformation, is non-instrumental, exists beyond language, and is recursive. While many of the authors who have introduced a concept of triple-loop learning cite Bateson and appear to be in sympathy with Learning III (for example, Hawkins' (1991) acknowledgement of a spiritual dimension to organisational learning), we are not convinced that any of these constitute a comprehensive working-through of Bateson's theory.

What does this analysis imply for the practice of organisational learning, and for those who might seek to pursue transformational change? Bateson's conceptualisation contrasts with constructions of triple-loop learning as a consultancy offering or a form of 'deeper' strategic thinking, showing this order of learning to be potentially destructive. It therefore cautions organisations against seeking utopian solutions through ever higher orders of learning.

Indeed, Bateson's emphasis on the risks of Learning III lead us to speculate that in many situations, organisations may be in need of Learning 0 or Learning I more than 'transformation'. In other words, significant improvements in performance can often be gained through enabling existing competences to be used greater effect – perhaps by resisting a felt need to transform. This option, we speculate, may be neglected at times through an acceptance of the imperative to change further and faster, and a belief that Learning 0 is somehow inadequate compared to Learning I, II and III. Brunsson (1998), for example, comments further on the the value of 'non-learning' in organisations.

Conversely, the challenges of pursuing transformational change through higher orders of learning should not be underestimated. More typically, we suggest, the rhetoric of transformation may not be matched in action. As an illustrative example, the Copenhagen summit on climate change in December 2009 (COP 15, the 15th Conference of the Parties to the United Nations Framework Convention on Climate Change) was concerned with no less transformative a task than that of saving the world from the hypothesised effects of climate change. In order to achieve this, it was believed that the summit would need to produce a paradigmatic shift in strategies for dealing with climate change. If we were to take at face value Swieringa and Wierdsma's (1992) suggestion, noted above, that triple-loop learning can take the form of discussion through which progress is achieved, the design would appear sufficient, since it was a collective event through which all interested nations could, in theory, participate in decisions. Yet a familiar format - conferencing among representative delegates - was adopted that was probably better known for producing compromises than breakthroughs. Despite espousal of the need for a transformative outcome, we suggest that the Copenhagen summit was primarily an example of single-loop learning, in Argyris' terms, and Learning I, in Bateson's terms.

Concluding comment

In the organisational learning literature, 'triple-loop' learning is the most prominent of the concepts that exist to denote some third order of organisational learning. In this article we have established that whilst triple-loop learning has clearly been inspired by Argyris and Schön, it does not arise explicitly in their published work.

This paper has also questioned the preference for higher levels of learning that characterises much of the organisational learning arena, and has suggested a more nuanced and balanced understanding. This has been accomplished by critically examining the use and definition of the 'triple-loop' concept. Conceptualisations are often loaded with positive value; competing and conflicting definitions have not previously been debated, and have been subjected to virtually no empirical testing. This dearth of empirical research needs to be addressed.

The paper has re-recognised Bateson and the importance and relevance of his work to the understanding of organisational learning. We have shown how Bateson's Learning III raises important questions about the possibility and wisdom of actively pursuing higher orders of learning in organisations in search of transformation. In particular this emphasises that higher levels of learning cannot be actively planned and may not necessarily have beneficial outcomes. It provides a clear warning against the one-sided preference for 'higher levels' of learning that is sometimes discernible in parts of the organisational learning literature and in consultancy practice.

Year	Author	Sources cited
1991	Hawkins	Acknowledges Argyris and Schön (1974); claims to be developing a model that incorporates Bateson's Learning III (1973).
1992	Swieringa and Wierdsma	Acknowledge Argyris and Schön (1978) as originators of single- and double-loop; propose triple-loop learning as a further distinction.
1993	Isaacs	Acknowledges Argyris and Schön (e.g. 1978) as originators of 'double loop learning'; says that Bateson's Learning III (1972) 'could also be called "triple loop learning"'; also cites Hawkins (1991).
1993	Nielsen	Proposes triple-loop action-learning as a theoretical advance beyond Argyris and Schön (1974, 1988).
1996	Flood and Romm	Acknowledge Swieringa and Wierdsma's (1992) 'triple-loop learning'; claim to be using their own original conceptualisation.
1998	Snell and Chak	Cite Argyris and Schön (1974), Hawkins (1991); acknowledge Bateson's 'levels of learning' (1973); equate triple-loop learning with deuterio learning
1999	Romme and van Witteloostuijn	Cite Bateson (1973), Flood and Romm (1996), Snell and Chak (1998); equate triple-loop learning with deuterio learning.
2004	Yuthas <i>et al.</i>	Cite Bateson's 'levels of learning' (Bateson 1972); acknowledge 'popularisation of Bateson's Learning II as double-loop learning (Argyris 1982; Argyris and Schön 1974, 1978).

Table 1: Attributions from key sources that introduce a conceptualisation of 'triple-loop learning'

Learning IV	`...would be <i>change in Learning III</i> , but probably does not occur in any adult living organism on this earth.'
Learning III	`...is <i>change in the process of Learning II</i> , e.g. a corrective change in the system of <i>sets</i> of alternatives from which choice is made'.
Learning II	`...is <i>change in the process of Learning I</i> , e.g. a corrective change in the set of alternatives from which choice is made, or it is a change in how the sequence of experience is punctuated'.
Learning I	`...is <i>change in specificity of response</i> by correction of errors of choice within a set of alternatives'.
Learning 0	`...is characterised by <i>specificity of response</i> , which – right or wrong - is not subject to correction'.

Table 2: Bateson's levels of learning (from definitions in Bateson 1973: 263-4)

Bateson	Argyris and Schön	
Learning 0		
Learning I	Single loop learning	Conceptualisation B: ⇒ <i>Deutero-learning</i>
Learning II	Double loop learning	⇒ Reflexivity about processes of learning at either single- or double-loop levels, which Argyris (2003) characterises as 'going meta'.
Conceptualisation C: <i>Learning III</i>	Conceptualisation A: <i>Beyond and superior to double-loop learning</i>	
Change of epistemology, or 'a corrective change in the system of <i>sets</i> of alternatives from which choice is made' (Bateson 1973).	A level that is beyond, and considered by proponents to be superior to, Argyris and Schön's single-loop and double-loop learning in that it concerns underlying purposes and principles.	
Learning III cannot be pursued instrumentally, entails significant risk, and is beyond language. Bateson's levels are organised recursively.	It does not appear in Argyris and Schön's work.	
Learning IV		

Table 3: Three conceptualisations of triple-loop learning

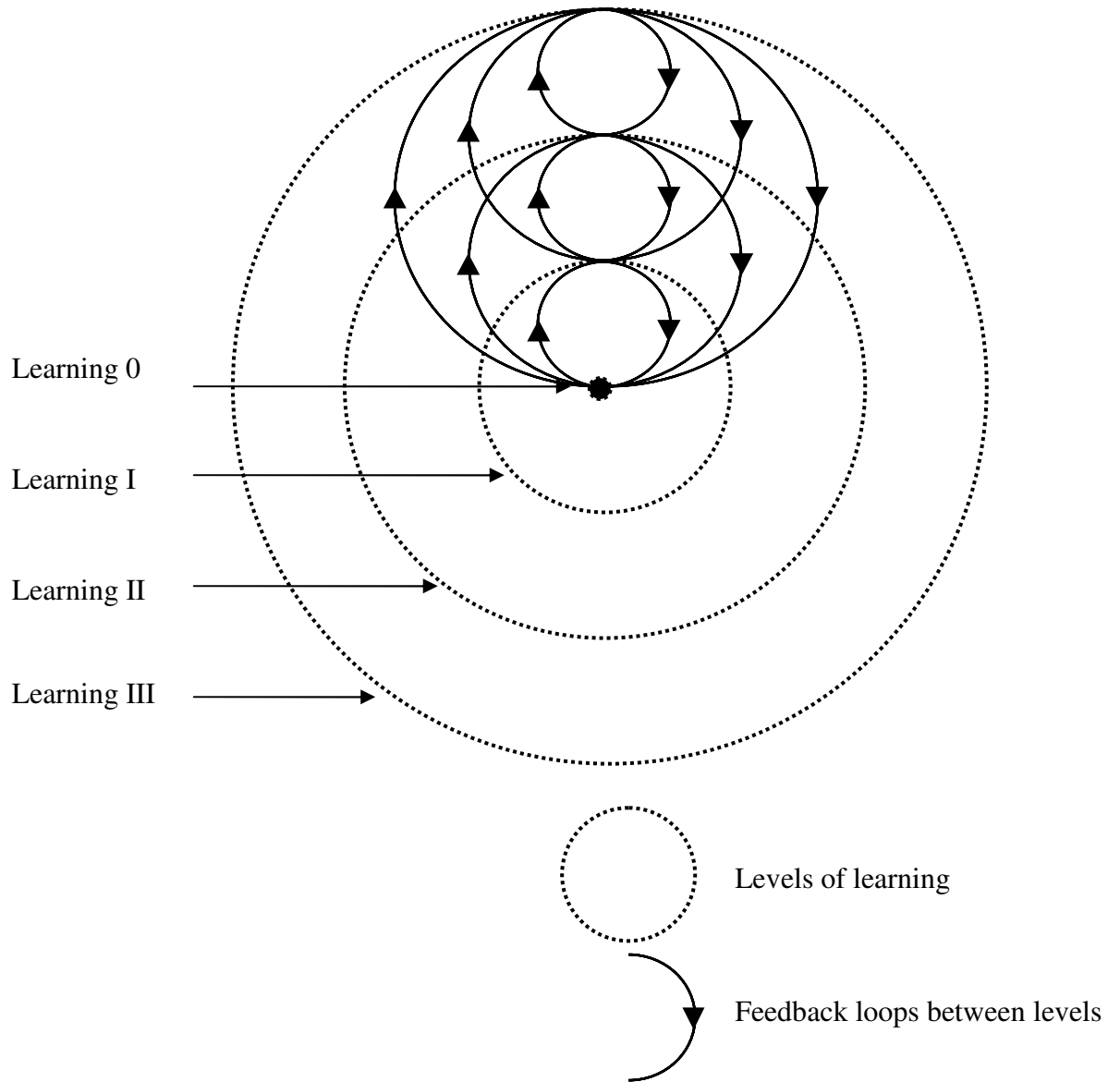


Figure 1: Bateson's levels arranged as a recursive hierarchy

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ⁱ References in our paper are to the 1973 edition of Bateson's *Steps to an Ecology of Mind* used by the authors. Some of the authors cited in the paper (e.g. Isaacs 1993, Visser 2007, Yuthas *et al.* 2004) refer to a 1972 edition of the same book.

ⁱⁱ In fact Bateson had first used the term 'third order learning' in 1959 (Bateson 1973:220), which therefore predates not only the emergence of conceptualisations of triple-loop learning by more than thirty years, but also the earliest published discussion of double-loop learning (Argyris and Schön 1974:19).