Learning Behaviour, Team Contexts and Team Performance

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Abstract

Multiple contexts shape team activities and how they learn (Day, Gronn, and Salas, 2006), and group learning is a dynamic construct that reflects a repertoire of potential behaviour (Wilson, Goodman, and Cronin, 2007; Murray et al., 2009). The purpose of this developmental paper is to examine how better learning behaviours in different types of teams improves the level of team adaptability and performance. The discussion posits that learning behaviour enables the team to deal with critical uncertain contexts which in turn influences team performance. The paper discusses the important relationship between team performance and learning behaviour and develops a number of hypotheses. The need to understand the link between multiple uncertainty contexts, team adaptability and team learning is important in improving team performance indicating a significant research gap.

Keywords: Emergent learning, contexts, team performance

Introduction

The purpose of this paper is to explore how the level of team adaptability (TA) is enhanced by learning behaviours that better enable teams to deal with critical contexts. Three different contexts are discussed: knowledge sharing, conflict and leadership. Also, TA is examined in respect of semi-autonomous (S-A) teams as distinct from other functional type teams not expected to display the same level of adaptability across work tasks and contexts. The relative merit of learning behaviour that accelerates team performance is not well understood (Salas, Cooke, and Rosen, 2008), and research related to how contexts increase uncertainty (e.g. conflict, leadership) in team design and performance is scarce (Stewart, 2006; O'Connell, Doverspike, and Cober, 2002). There is an expectation that S-A teams will more likely adopt better team learning when influenced by flexible structures, systems, and processes (Macy, Farias, Rosa, and Moore, 2006), enabling them to more effectively deal with context. While the traditional approaches to team effectiveness have focused on improving team performance (Peelle, 2006; Kirkman and Rosen, 2000; Hackman and Walton, 1986; Nieva, Fleishman, and Rieck, 1978), how to achieve social and group cohesion (Cummings, 1978; Janis, 1972; Trist and Bamforth, 1951), and methods to improve team effectiveness (Jordon, Field, and Armenakis, 2002; Hackman and Oldham, 1980; Steiner, 1972), (among others), there has been a relative lack of attention on how to develop improved TA through superior learning behaviour. Some research has dealt with specific contexts and team learning (e.g. Edmondson, 2003) however specific learning behaviours have not been examined. In recent times, research involving individual and team-level adaptability as a performance construct is gaining momentum (Han and Williams, 2008; Day, Gronn and Salas, 2006) and most of these studies acknowledge cross-level relationships (Dansereau, Cho, and Yammarino, 2006). Similarly, studies on learning climate have found a moderating effect between the transfer of training and individual characteristics (Tracey et al., 1995) and the ability of team members to benefit from a team learning climate learned in one situation and applied to another context has been noted (Mathieu and Martineau, 1997; Schneider et al., 2000). Very little research however has examined the level of adaptability within a team based on learning and the link to context. The relationship between learning and team performance in semi-autonomous teams has been restricted to a meta-analysis by Macy et al., (2006) and contextual studies are scarce.

This paper explores a number of research gaps related to whether team adaptability is enhanced with the existence of better learning behaviour (LB) in S-A teams. First, the discussion explores how learning behaviour influences context when more, or less, of a particular type of learning is evident. In relation to the latter, a conceptual framework is developed to reflect the relationships, and a set of hypotheses are formulated in relation to learning behaviour to be tested in subsequent field research.

Second, different contexts are discussed. The expectation is that better team learning will result in a stronger ability of the team to deal with specific contexts which in turn increases team performance. The discussion explores the mediating effects of contexts on learning behaviour and team performance. The *level of analysis* is at the team with an emphasis on its autonomy. Third, following this exploratory approach, the paper discusses implications for future research.

Conceptual Framework

Semi-autonomous Teams

According to Macy et al. (2006), S-A team members perform "between 5-7 multi-skilled tasks….. [including]…. 5-7 different formalized leadership roles" (p.18), while some supervision is evident from time to time. In recent research, S-A teams reflected an ability to change their systems and processes to include wider spans of control and greater decision making (Macy et al., 2006: 18). Given the type of processes that govern S-A teams, it is expected that they embody more fluid and flexible work structures that emanate from a broader learning and greater team adaptability.

Team Adaptability (TA) and Learning Behaviour

Previous literature suggests that learning flows back and forth between different levels within the organization from individual to team to organisation (Crossan and Berdrow, 2003) with team learning providing a bridge between individual and organisation For some, team learning climate concerns the type of support provided by a team that influences the extent to which team members participate in learning opportunities and apply what they have learned in one situation to another context (Han and Williams, 2008; Mathieu and Matineau, 1997; Schnedier et al., 2000). The type of learning climate created refers to the level of adaptability of the team or team adaptability (TA). The literature suggests that team learning or team adaptability is via a composition model, that is, where individual learning represents at the group level a sum or composite of team member contributions (Chan, 1998). Similarly, team learning can also be conceived via a compilation model of a continuous series of socialization, dyadic role negotiation, and network repertoire phases where adaptability at the individual level is considered compatible to, but different from team adaptability (Kozlowski et al., 1999). The latter approach is preferred. This is because team learning as the former (a composition model) will come under attack since a team's ability to apply what they have learned and demonstrate adaptability will be almost always influenced by surrounding contexts. Also, any team may not possess the ability to apply equally the collective good of its individuals.

In view of the contribution of individuals in a compilation model, TA will be influenced by the ability of team members to deal with task performance and contextual performance. The former concerns prescribed task duties and in-role behaviour with the latter behaviours contributing to the social climate or culture of the organisation (Han and Williams, 2008). Similarly, at the team level itself, TA will be influenced by the coordination between team members in complex environments, on each team members individual capability, on the way the team configures any task, and team dynamics and team structure which may have to change to fit new contexts (among others). While this level of adaptability will be ideal, it raises a number of important questions. One question relates to the actual ability of a team to change the level of adaptability to suit the context. Another concern is team adaptability itself. Where does it really come from and how are these behaviours created? One way of conceptualising team learning behaviour is via a *method-based* approach. This approach which enables a firm to constantly exploit its existing capabilities is called lower-order learning associated with improving practices that are already known (Espedal, 2008; March, 2006; Miller, 1996). Another conceptualisation is an emergent-based approach. This approach is associated with higher-order learning or "the changing of a logic of action that is known and experimentation with what is not known but might become known" (Espedal, 2008: p. 366). When a team displays more emergent learning, it is reasonable to suggest that its members better deal with contexts that potentially disrupt the performance of the team (Griffin et al., 2007; Edmondson et al., 2003). Hence, the level of adaptability might be enhanced in emergent-based teams as distinct from method-based teams. Higher team performance may simply be an outcome of team members' adaptability to demonstrate superior learning. This is the basis of the conceptual framework (Figure 1).
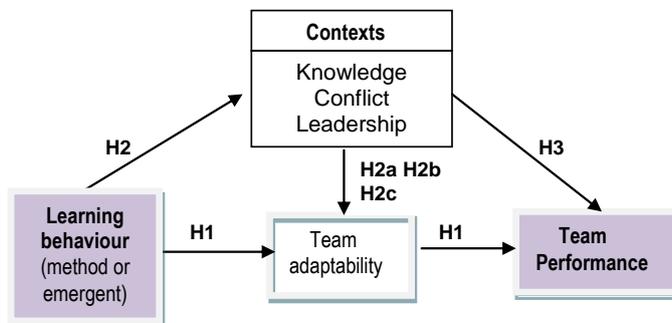
Figure 1: Learning Behaviour, Team Adaptability and Team Performance

Team adaptability in Figure 1 can be expressed through the dimensions of determinism and voluntarism (Miller, 1996). Whether people and their institutions are restricted in action and cognition on the one hand (determinism), or intelligent and autonomous on the other (voluntarism), concerns the capacity of the firm to learn and change over time. Determinism may explain more bureaucratic and restricted processes leading to constrained behaviour whereas voluntarism more flexible processes and choice for organisational actors (Ansoff, 1979; Cyert and March, 1963; Pawar and Eastman, 1997). Hence, TA in relation to dealing with difficult tasks and contexts may be restricted through determinism and a range of cognitive, ideological, and political structures (Mintzberg, 1983; Lindblom, 1959) that impose restraints on actors. Training and procedures needed to exploit what has been learned over a long period of time forms the basis of method-based learning. Method-based learning consists of structured, analytical, and experimental behaviour. *Structured* behaviour arises from strict procedures, processes, and systems (Hedberg, 1981), whereas *analytical* behaviour is the basis of procedures for common forms of analysis such as analysing a firm's external/internal environment (Miller, 1996). *Experimental* behaviour by comparison refers to changes made on a piece-meal basis (see Miller, 1996). Out of these, structured behaviour is perhaps the most restrictive for teams since what a team does and how it does it is pre-ordained in advance of action allowing only for small-scale improvements (Murray et al., 2009).

Team adaptability based on voluntarism allows for more flexibility and unconstrained actions that are more intuitive (Mintzberg, 1983). That is, team members would need to be open to new ideas and new innovations (Salas et al., 2008; Wilson et al., 2007), that over time challenge traditions and conventions, so that what is not known might become known. Emergent learning forms the basis of synthetic, interactive, and institutional behaviour (Miller, 1996). Synthetic behaviour combines different pieces of a puzzle in the forming of novel relationships where concepts can be redefined to achieve greater fit, consistency, and harmony (Mintzberg, 1989), where rich traditions and assumptions are challenged on a continuous basis. It is envisaged that this type of behaviour is invaluable in semi-autonomous teams who are often left to their own devices in making decisions (Salas et al., 2008; Macy et al., 2006). In interactive behaviour, bargaining and trading is common such as deciding on the best alternatives made by the team and how to communicate them in the best light. Better interaction and synthetic behaviour enables higher interpretation by the team of its environment avoiding costly mistakes and reworks (Crossan et al., 1993). Institutional behaviour, while emergent, is the most restrictive in terms of influencing the balance between thought and action (Miller, 1996), since behaviours are imposed by external institutions (such as governments, powerful banks, stakeholders) with politicised or financial agendas; while institutional change may be radical, it is arguably less evident/imposed in S-A teams since decisions are less constrained in these team types (Langfred 2005; O'Connell et al., 2002).

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It is reasonable to conclude that a predominance of method-based learning over time and the constraints imposed leads to less TA and lower team performance since not enough behaviours exist to challenge traditional wisdom and convention. The level of team adaptability would be threatened over time. Conversely, fewer constraints coupled with more interaction and better learning allows teams to demonstrate more emergent learning leading to higher team performance since more behaviours are in place to challenge tradition, and update continuously decisions that ultimately influence team performance (Figure 1). The level of team adaptability would be stronger especially in dealing with both task and context. Therefore,

Hypothesis 1a: More evidence of method-based learning leads to reduced TA in semi-autonomous teams and lower team performance.

Hypothesis 1b: More evidence of emergent-based learning leads to enhanced TA in semi-autonomous teams and higher team performance.

Contexts

Scholars suggest that understanding context is critical for equality, consistency, and decision control providing team members an opportunity to voice their views and opinions (Colquitt and Jackson, 2006). Similarly, researchers cannot afford to ignore the context that shapes teams nor divest it from theory, research, and practice (Day et al., 2006: 213). The importance of studying context is consistent with Rousseau and Fried's (2001) suggestion that contextualizing involves "linking observations to a set of relevant facts, events, or points of view" (p. 1). Team processes for instance are subject to many uncertain contexts that influence team adaptability and team performance. While many contexts lie outside the scope of this paper, three have received critical attention in the literature: knowledge sharing, conflict, and leadership (Detert and Burris, 2007; Day et al., 2006; Macy et al., 2006; Edmondson et al., 2003; Jordon et al., 2002; O'Connell et al., 2002; Amason, 1995). This paper follows tradition by restricting the discussion to these three. Consistent with the approach taken by Edmondson and colleagues (see Edmondson et al., 2003), *critical context uncertainties* (CCUs) need to be carefully managed. From a detailed review of the literature, CCUs are situations that cause the team to make sub-optimal performance decisions for two main reasons: 1) a lack of ability to manage the uncertainty, and 2) poor team learning behaviour (Salas et al., 2008; Day et al., 2006; Carmeli and Schaubroeck, 2006; Gibson and Vermeulen, 2003). Accordingly, team adaptability would be less visible when both these variables are in play. Next, we explore which issues may be more prevalent for team adaptability in each of the critical context uncertainties of knowledge, conflict, and leadership.

Critical Contexts Uncertainties
Knowledge Sharing

Organizations have difficulty in dealing with knowledge sharing and knowledge participation (Spender, 2008; Nonaka and Takeuchi, 1995), or even understanding what knowledge actually *is* and how it should be defined (Cook and Brown, 1999). Yet, knowledge accumulation, knowledge sharing, and knowledge conversion is a key resource of an organisations capacity to turn capabilities into competencies and skills that make a difference in practice (Byosiere and Luethge, 2008; Eisenhardt and Martin, 2000). It is one thing to capture and store knowledge, but it is quite another to share it so that a teams' practical application is more evident. While explicit and tacit knowledge is possessed by people, knowing is not about possession but about 'practice' and about interacting with the things of the social and physical world (Vera and Crossan, 2003: p. 126).

For method-based learning, knowledge is retained in systems, procedures, and policies by facilitating the formal articulation and codification of ideas (Arthur and Huntley, 2005: p. 1161). Learning behaviours will be required to allow individuals and teams to express the 'know what' and the 'know how' by converting knowledge into practice (Arthur and Huntley, 2005; Brown and Duguid, 2000) thus improving TA. One question is whether the right kind of emergent learning is evident in team actions which allows team members to convert the 'know-what' into 'know-how'. A second question concerns whether team members themselves have acquired the right type of knowledge to make a significant contribution to the team. Learning behaviours will reflect the capacity of team members to use their knowledge in dealing with common tasks by using method-based learning for everyday occurrences. On the other hand, team members will also need to transform and challenge existing knowledge often in groundbreaking ways that allows them to radically change and alter or adapt to tasks (Crossan and

Berdrow, 2003; Miller, 1996; Mintzberg, 1984). So, a direct link can be made between stronger TA and the actual functions performed in S-A teams (Jordon et al., 2002). While better LB is needed for knowledge participation to occur, simple or basic behaviour may not be enough to facilitate the knowledge participation process. The latter can become a CCU when not enough advanced behaviours are in place to convert knowledge into practice.

S-A teams will benefit by members sharing knowledge freely as distinct from a more bureaucratic learning climate, or one which emanates from a more structured learning process. To externalise knowledge and make it available for sharing, there has to be some way for team members to convert tacit knowledge to explicit knowledge since semi-autonomous teams may have more goals and tasks to perform on the basis of delegated autonomy and cross-level functions (Macy et al., 2006). This might be achieved by many joint activities and face-to-face interactions over time (Byosiere and Luethge, 2008: p. 68). It can be suggested that these participation strategies are needed in far greater quantity in S-A teams because of the increased expectation on end-results due to greater shared cognition (Salas et al., 2008), and an increased expectation of creativity in process decisions. What is understood intuitively needs to be translated into a form that can be understood. While method-based learning is clearly invoked where one learns the knowledge to the point where it becomes second nature (Byosiere and Luethge, 2008), different behaviour through the use of metaphor, dialogues or analogies will be more useful for participation. In S-A teams where there is more freedom in thought and action and a stronger level of adaptability is required, it is reasonable to suggest that knowledge participation processes will be enhanced by more rather than less emergent learning. Therefore:

> Hypothesis 2a. More evidence of emergent learning in contexts where team member's
>
> deal with shared knowledge leads to enhanced TA (Figure 1).

Conflict

Scholars suggest that team members should be engaged in strategic assessments and decision making by feeling psychologically safe in their surroundings to express divergent ideas (Edmondson et al., 2003; Carmeli and Schaubroeck, 2006). Psychological safety is particularly important in the prevailing situational consensus of organizational norms. The natural tendency for teams is to become more risk averse and narrower in their scope of analyses and solution search especially team adaptability is based on a compilation model of individual adaptability and skill. Consequently, teams tend to escalate their commitment to existing courses of action and therefore have a psychological stake (Moon et al., 2003). Edmondson and colleagues (2003) observed that teams are especially unwilling to speak openly and share information when the team's power is highly centralized in the CEO or other leadership position. Power asymmetries reduce psychological safety by undermining accurate and comprehensive situational assessments potentially threatening to the organization. Recent research has found for instance that employees fear significant loss from speaking up (such as restrictive career mobility, loss of support), and as a result are likely to choose defensive silence (Detert and Burris, 2007: Van Dyne et al., 2003). Yet, empirical evidence suggests individuals who "experience high-quality team-member exchange relationships are more likely to contribute by assisting one another and to share information, ideas, and feedback within work teams" (Tse et al., 2008: p. 196). Hence, the level of TA is enhanced as a result.

Conflict also can produce negative results that inhibit performance. *Cognitive* conflict describes disagreements that amount to task-related differences of opinion; a team's capacity to reach high-quality outcomes is largely dependent on cognitive conflict that focuses on substantive rather than personal issues (Amason et al., 1995). Cognitive conflict is common to teams that display superior LB where team members openly challenge and contest assumptions (Kontoghiorghes et al., 2005) and share information. These behaviours reflect a greater depth and breadth of learning. As Wilson and colleagues (2007) suggest, the depth of group learning concerns the level of detail about any particular knowledge that is shared. Conversely, the breadth of sharing knowledge concerns the distribution of learning within the group, so that the more the group members share the learning, the greater the probability that it will be retrieved in the future (2007: p. 1045). In contrast, *affective* conflict is the result of disagreements over individual, personal matters, and is largely detrimental to TA and team performance (Amason et al., 1995), with less depth and breadth common in teams displaying impoverished learning (Argyris, 1993; Crossan et al., 1993). More emphasis on affective conflict and less on structure and process in S-A teams is anathema to team performance (Detert and Burris, 2007). Affective conflict often results in competitive behaviour. Cognitive conflict by comparison is

more beneficial for teams as it leads to trust, support, and mutual respect leading to greater collaboration (Hoegl and Gemuenden, 2001). In the greater sharing of power, it is suggested that the LBs will reflect increases in synthetic and interactive behaviour described earlier. Consequently, in S-A teams, a poor capacity of members to practice cognitive conflict may lead to lower-run performance and too much method-based learning may ultimately discourage the sharing of ideas leading to reduced team adaptability. Therefore:

Hypothesis 2b: More evidence of emergent learning in contexts where team member's

deal with continuous conflict leads to enhanced TA (Figure 1).

Leadership
Shared leadership *in* organizations rather than a focus on a single leader *of* organizations (Boal and Hooijberg, 2000) has been a subject of increasing interests for scholars (Day et al., 2006). While leadership studies might extol the benefits of transformational, instrumental, and functional leaders, scholars suggest that 'leadership might also encompass both vertical and shared facets in order to capture a fuller view of leadership processes' (Day, Gronn, and Salas, 2006: p. 218). This aspect of leadership is consistent with emergent learning. Shared leadership can be described as "a dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both" (Pearce et al., 2008: p. 354). Sharing leader activities equates to shared cognition as a collection of task and team related knowledge related to team members' collective understanding of the current situation (Cooke et al., 2000).

It can be considered that shared leadership is particularly suited to S-A teams because of the focus on autonomy, shared insights, and greater responsibility over team tasks. Shared leadership is a mutual ongoing process where leaders emerge in an official and unofficial capacity (Pearce and Sims, 2002). S-A work teams for instance seldom possess a dominant functional leader (Macy et al. 2006). Rather, leadership and discussion is distributed by those with relevant knowledge, skills, and abilities which are then acted on by the team (Ensley, Hmieleski, and Pearce, 2006), so that leadership is ongoing and simultaneous; a mutual influence process involving the serial emergence of official as well as unofficial leaders (Pearce and Conger, 2003).

Shared leadership is also strongly related to team effectiveness in previous studies (Pearce and Sims, 2002; Shamir and Lapidot, 2003). For instance, in most self-managed new venture teams, there are no standard operating procedures and structured team tasks. This is the case also with new product development teams who need to create a new set of designs and innovations replacing the old ones. In this situation, founding members lead in the absence of structures that normally guide traditional functional roles (Ensley et al., 2006), and a higher level of creativity and employee input is required (Detert and Burris, 2007). In relation to the previous contexts discussed, shared leadership would be useful in situations where affective conflict is evident and when knowledge participation leads to higher team outputs. Sharing leader activities in highly autonomous teams would be consistent with emergent learning since less structure and rules guide what is shared; it is not limited by a learning climate based on determinism and restrictive beliefs and practices (March, 2006); rather, emergent learning underpins team functions and team adaptation would be less restricted. Hence, shared leadership will have a greater influence on team performance since all members are encouraged to input into leadership arrangements. Therefore:

Hypothesis 2c: More evidence of emergent learning in contexts where team member's

deal with shared leader activities leads to enhanced TA (Figure 1).

Discussion
The contexts discussed in this paper thus far attest to the difficulty in assessing team performance without some reference to the wider context within which teams operate. A restricted research scope helps explain why previous research has focused on the input design features of teams linking good design to effective performance (Stewart, 2006; Cohen and Bailey, 1997; Goodman, Ravlin, and Argote, 1986), or team performance more generally (Salas, Cooke, and Rosen, 2008; Stewart, 2006; O'Connell, Dovespike, and Cober, 2002). However a focus of process in prior research has been at

the expense of understanding the relationship between team learning, team adaptability and team performance. Similarly, many team studies seem to generalise across all team types yet there are clear differences. Semi-autonomous teams for instance demonstrate greater autonomy and decision making. They will be much different to strictly functional teams influenced by higher levels of determinism in team design.

Another focus of past research is that group composition (characteristics of individual team members), task design (differentiation of work activities), and organizational context (support from organization), are critical in team design (Stewart, 2006). The argument is that more effective design leads to increased performance; what is often lost in these debates is the focus on context and the required level of adaptability of the team to deal with many different contexts. This would be the same for all teams however the focus of research in this paper is S-A teams. In support of a stronger focus for the latter, Stewart found in a recent meta-analysis of ninety-three studies of design features that teams perform better when members "have higher levels of cognitive ability and expertise" and that "the task design factors of greater autonomy and intra-team coordination likewise facilitate team performance" (2006: p. 47). While this developmental paper does not discuss at length team effectiveness or team design, it is posited that better team adaptability (and team performance) is demonstrated by higher emergent learning across different contexts. As indicated earlier, this is particularly so when faced with greater task complexity and context-specific factors. That is, relationships between team members are more likely to be enhanced as a result of better learning behaviour and members' experience is more likely to be positive since all members share cognitive knowledge and systematically work to reduce knowledge sharing problems, leadership issues and workplace conflicts. The set of hypotheses proposed will be tested in field research and a subsequent paper. It is likely that a compilation of team adaptability variables underpinned by learning allows a semi-autonomous team to more effectively deal with each of the contexts or CCUs described.

We suggest however it would be difficult to prove that team performance would be increased simply on the basis of more emergent behaviour, without considering the mediating effect of each context. Although we expect a relationship between learning behaviour and team adaptability, it is more likely that each context plays a mediating role in influencing performance. Knowledge, conflict, and leadership contexts will influence team member adaptability particularly if past decisions are embedded and reinforced in existing systems (Murray et al., 2009). Consistent with organisational change literature, organisations with a strong commitment to existing resources, those who are strongly embedded and reliant on old systems find it difficult to change (Herold et al., 2007; Newman, 2000). While teams may be semi-autonomous in scope and purpose, they may be restricted by old knowledge processes or old leadership practices arising from a deterministic environment (discussed earlier) that impose restraints on the level of adaptability achieved. Ultimately, that team performance is strongly influenced, either positively or negatively, by mediating contextual factors is important in determining the overall influence of learning behaviour on team performance. Therefore,

> H3. Contexts related to knowledge, conflict, and leadership positively or negatively
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> mediate the relationship between learning behaviour and team performance (Figure 1).

Implications for Future Research

Subsequent research should examine the proposed relationship between learning behaviour and team performance by examining the mediating relationship between specific contexts and team performance. That is, it would be useful to explore gaps in research not previously examined in any great detail apart from more single-dimensional studies of learning and team performance. Contexts remain critical to studies of learning and performance which at its most basic measures the influence of one phenomenon (learning behaviour) on another (team contexts) by taking into account the change that occurs (increased team performance). Scholars have recently noted the importance of context in cross-level linkages related to organisational change which for our purposes here can easily include teams:

> "Exploring the role of context, while still accounting for individual differences requires that we
>
> examine cross-level linkages that may explain the connection among aspect of the change *in*
>
> *behaviours*, the change *in team* contexts, and characteristics of the change *or team dynamics*

as they might shape change responses *or team outputs such as performance* (Herold et al., 2007: 942). (*emphasis added*)

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