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■ *Research Paper*

A System Dynamics Model of Resistance to Organizational Change: The Role of Participatory Strategies

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The literature on organizational change and resistance to change is contradictory. Some scholars find resistance a hindrance to successful change (traditional paradigm), whereas others find it a valuable source (modern paradigm). The objective of this study is to enhance our understanding of how resistance affects organizational change by providing a coherent system dynamics perspective. Based on interviews, expert modelling and group modelling, this inductive case study develops a causal loop diagram that displays eight interacting feedback loops to explain resistance to change and the role that participatory strategies play in addressing this. The model contributes to the theoretical debate on how resistance affects change by providing propositions that integrate the traditional and modern paradigms. When managers face decisions about when to increase, stabilize or decrease the use of participatory strategies, our findings imply to base these decisions upon currently dominating feedback loops, such as the Stress Trap or Slow Trap.

Keywords organizational change; resistance to change; system dynamics; traps; participatory strategies

INTRODUCTION

To be successful, organizations must effectively adapt and respond to changes in their environment (Jaramillo *et al*., 2012). Sustainable organizational change is crucial to the development, growth, success and survival of any organization operating within an ever-changing environment (Zimmermann, 2011; Michel *et al*., 2013). In today's environment, change is a practical necessity for organizations in providing efficient and effective services (Zorn *et al*., 2000). Therefore, it can be held that if the environment of an organization is changing, organizations need to adapt in order to develop, grow, succeed and survive. In line with Harvey and Broyles (2010), we define

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organizational change as a process starting with an initial stimulus that motivates organizations to move from one state of being to another.

Despite the importance of organizational change, researchers and practitioners agree that the majority of organizational change initiatives fail (e.g., Bareil, 2013; Michel *et al*., 2013; Wetzel and Dievernich, 2014). Estimations of the exact proportion of organizational change efforts that fail vary from 50% to 80% (Strebel, 1996) and include an exact 70% (Burke, 2011). Burnes (2005, p. 85) states, 'changing organizations appears to be getting more rather than less difficult'. One reason for these difficulties is a lack of knowledge and understanding of the internal dynamics of organizational change (Samuel and Jacobsen, 1997). Samuel and Jacobsen (1997, p. 165) claim, '(…) change is rarely an instant event. In most cases it is a process unfolding over a considerable time'. Burke (2011, p. 155) adds that 'changing an organization's culture is a long-term endeavor. Persistence is key because from time to time and at whatever stage of the change process, resistance on the part of organizational members is highly likely'. We need to expand our dynamic understanding of the barriers that impede effective change in order to gain more competence in successfully managing change.

We focus on the process identified as the number one reason for the failure of change (Erwin and Garman, 2010; Bareil, 2013), namely, employees' resistance to change. We adopt Bareil's (2013, p. 62) definition of resistance to change as 'a change-specific behavioral response of a change recipient (or a group of stakeholders) toward a change initiative that is usually proposed by a sponsor or a leader. This behavioral response can be more or less intense and can appear before, during, or after a change implementation'.

Scholars traditionally considered employees' resistance to change as something that needs to be overcome or eliminated (Strebel, 1996; Furst and Cable, 2008; Erwin and Garman, 2010). Bareil (2013) labelled this the 'traditional paradigm' towards resistance, interpreting resistance as a maladaptive anti-change behavior or an inappropriately perceived threat on the part of a change recipient (usually an e0mployee). Resisters' behavioral responses to change include opposing, fighting, defying, refusing, disturbing and rejecting as they aim to stop, perturb or slow down the change process (Bareil, 2013). To cope with resistance to change, traditional strategies range from explanatory conversations and education to explicit and implicit coercion (Kotter and Schlesinger, 2008).

Bareil (2013) contrasts this to the 'modern paradigm' that suggests resistance is a valuable resource in accomplishing change (e.g., Ford *et al*., 2008; Ford and Ford, 2009; Harvey and Broyles, 2010), which can even be considered a type of commitment (Burke, 2011). This modern paradigm considers resistance to change an important form of information from employees to managers; dismissing this feedback would divest organizations of a powerful source of information in adjusting change initiatives (Ford and Ford, 2009). The change-resistant recipients' behavioral responses include questioning, doubting, arguing, hesitating, showing ambivalence and reflectively responding as they aim to better understand, adjust and improve the change initiative (Bareil, 2013). Common strategies for successful change when viewing resistance from the modern perspective include openly communicating, actively listening and deeply involving change recipients (Bareil, 2013).

Hence, the existing literature offers two dominant yet contradictory perspectives on resistance to change: one that demonizes and one that celebrates resistance to change (Thomas and Hardy, 2011). Viewing resistance to change from a traditional perspective dates back to the 1940s (e.g., Coch and French, 1948), while the modern view on resistance starts in the late 1990s (e.g., Dent and Galloway Goldberg, 1999; Piderit, 2000). Since then, both paradigms have continued to exist in parallel. This paper follows Thomas *et al*.'s (2011) quest for new insights into how resistance affects change (positively or negatively) by exploring this relationship from a system dynamics (Sterman, 2000; Senge, 2006) perspective.

Studying resistance from a system ontology dates back to the roots of theorizing resistance to change. Lewin (1947) introduced resistance as a systems concept (Dent and Galloway Goldberg, 1999), suggesting 'rather than attempting to understand a situation by focusing on one or

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two elements in isolation, one needs to consider the situation as a whole' (Burnes and Cooke, 2013, p. 411). As Burke (2011) argues, understanding resistance to change as an individual behavior that needs to be overcome narrows the concept to a psychological phenomenon instead of enhancing a systems perspective that combines individual forces within the context. Combining individual and contextual factors facilitates a better understanding of individual behavior and organizational phenomena (Burnes and Cooke, 2013).

Despite Lewin's (1947) original work on resistance to change that applied a systems perspective (Dent and Galloway Goldberg, 1999), only limited theoretical knowledge exists with respect to the dynamic processes that unfold during resistance to change (Zimmermann, 2011). In line with Burnes (2005) and Shirey (2013), we suggest that contradictions in the literature on resistance to change relate to the internal dynamics occurring between organizational change and resistance to change. Because linear and static causal relations cannot identify and explain complex dynamics (Van de Ven & Sun, 2011), we provide a system dynamics perspective on resistance to change. According to Vallacher *et al*. (2010), a system dynamics perspective integrates diverse factors responsible for a certain phenomenon in a coherent way and thus offers fresh explanations, insights and testable propositions.

Through an inductive approach this study contributes to our understanding of how resistance to change affects organizational change as time unfolds, dynamics shift and contexts change. We will explain how this allows for integrating contradictory perspectives in a coherent model and understanding what strategies apply when being confronted with particular dynamics in a certain change effort. The remainder of this paper is organized as follows. The next section underpins our choice for an inductive case study and exhibits its qualitative rigour (Gioia *et al*., 2013) by describing our methods of data collection and analysis. We then present the causal loop diagram that visualizes the feedback processes that reinforce or balance resistance to change. Thereby, our causal loop diagram reveals the important role of participatory strategies that are defined as policies that involve employees in designing and implementing a change initiative (Kotter and Schlesinger, 2008). Finally, we discuss the contribution of our inductive case study to the theoretical debate, suggest practical implications and outline some limitations of the study.

METHODOLOGY

To gain better explanations, insights and testable propositions on the processes (Langley, 1999) by which resistance to change unfolds and affects change, we apply the method of causal loop modelling. This method captures complexities and nonlinearities of organizational phenomena in a causal loop diagram (Voyer *et al*., 1997; Sterman, 2000; Tucker *et al*., 2005; Schaffernicht, 2010) that visualizes feedback loops. This means that variables explaining a social phenomenon can be both cause and effect, thereby enabling a representation of nonlinear processes (Vennix, 1996; Senge, 2006; Murdoch and Geys, 2014). There are two types of feedback loops: reinforcing (positive feedback) and balancing (negative feedback) feedback loops. The visualization of feedback loops allows for a dynamic perspective on the behavior of a phenomenon over time. For instance, if a reinforcing loop is dominant, one can expect accelerating behavior, while a dominant balancing loop implies some stabilizing, goal-seeking behavior (Sterman, 2000).

By finding ourselves at an early stage in conceptualizing the dynamic processes unfolding in employees' resistance to change, we believe that it is imperative to let the theory emerge from the data. Scholars recognize inductive research for its potential to generate new concepts and ideas and to serve as valuable starting point (Siggelkow, 2007; Gioia *et al*., 2013). Consequently, we decided to conduct an inductive case study to develop a system dynamics perspective on how employees' resistance to change affects organizational change.

In this study, we employ Gioia *et al*.'s (2013) assumption that organizational members are knowledgeable agents. They know what they are doing and are able to understand and explain the phenomena in which they take part. The consequence of this assumption for research is that it

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emphasizes the participants' interpretations (Gioia *et al*., 2013). To provide an adequate account of these interpretations, we retrieved data from interviews and modelling sessions conducted with organizational members.

All participants in this study work in a large Austrian service company with a long and successful tradition of being a pioneer and key player in its business domain. However, for several years, employees at various management levels have been noticing severe changes in the company's external environment. For example, new players keep appearing on the market, increasing the competition in the respective service sector. Moreover, customers' attitudes, tastes and demands have been rapidly changing in recent years. Therefore, an increasing number of organizational members consider it necessary to adapt to changes taking place in the environment in order to succeed and survive as a company. Despite this perceived need for change, the company seems to be confronted with difficulties in successfully initiating and implementing organizational changes.

Our gatekeeper is a mid-level manager of the company who discussed these challenges with the first author during a workshop on organizational change. This manager reported that he often encountered major employees' resistance to change to projects and believed that this resistance is one of the biggest reasons that his organization faces difficulties in adapting to a changing environment. After discussing this in more detail, the first author and the gatekeeper agreed to conduct a research project. The gatekeeper asked several of his colleagues whether they were willing to contribute to this study. In total, 10 employees from top-level, middle-level and low-level management agreed to participate in this research project. The next section details our four methods of data collection and analysis (Table 1).

The first author conducted semi-structured individual interviews with 10 participants to collect data about their experiences with resistance to change in the company. By conducting interviews, we aimed to capture many different viewpoints and to offer as many ideas as possible (Andersen and Richardson, 1997). The interviewees often referred to their individual experiences with specific change projects, and we asked them for strategies they consider facilitative for successfully implementing future change initiatives. The interviews took place face-to-face and lasted between 45 and 70 min. They were tape recorded and then transcribed verbatim. The interviews also allowed us to become familiar and build rapport with the participants (Vennix, 1996), which proved useful during the subsequent modelling processes.

Table 1 Overview of methods of data collection and analysis

Data collection methods	Semi-structured interviews	First expert modelling	Group modelling session	Second expert modelling
Who was involved? (role)				
Data analysis methods	Coding	Model building	Model building	Model building
Main focus of data analysis	Generating interviewee-centric codes	Constructing a preliminary model	Jointly interpreting and validating the model	Aggregating the model
	• 10 employees (interviewees) • First author (coder)	• Gatekeeper (participant) • First author (model building expert)	• Six employees (participants) • First author (facilitator)	• Three authors (model building experts)
Output				
	52 codes (13 variables, 39 causal relations)	Causal loop diagram with 26 variables and 38 causal relations	Causal loop diagram: 16 feedback loops with 29 variables and 38 causal relations	Causal loop diagram: 8 feedback loops with 12 variables and 19 causal relations

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The main objective of interviewing was to generate interviewee-centric codes. Following the guidelines of Gioia *et al*. (2013) and Luna-Reyes and Andersen (2003), we let the codes emerge during constant comparisons within and between the transcripts. Aided by manual coding, we developed codes that represent either (1) definitions of concepts (variables) or (2) relationships between two variables (causal relations). Discovering patterns in the data ultimately led to identifying positive and negative causal relationships (Kopainsky and Luna-Reyes, 2008) that are the building blocks of feedback loops (Sterman, 2000). We used the 52 codes we defined (representing 13 variables and 39 causal relations) as inputs for the subsequent modelling process.

During the first expert modelling phase, we actively involved the gatekeeper in validating the model. We presented him with the 52 codes derived from the interview transcripts and involved him in picking variables and relating them. Afterwards, several weeks of expert modelling followed in which we built the model based on interviews transcripts and input from the gatekeeper.

The preliminary causal loop diagram derived via the first expert modelling contained 26 variables and 38 causal relations and served as the input for the group modelling with six of the ten interviewees. The first author was the facilitator and guided the participants through a structured group discussion. The participants validated the model within three subgroups and afterwards discussed the causal relations, variables and feedback loops in a plenary discussion. They added three variables (extending it to 29 variables), which they considered necessary to connect the 38 causal relations via the 16 feedback loops (Table 1).

Only the causal relations all participants agreed upon were taken up in the causal loop diagram in order to build confidence in it (Van Nistelrooij *et al*., 2015). In this way, this research project also provided a shared learning environment to the participants (Rouwette *et al*., 2016). In the beginning of the study, participants had individual perceptions of resistance to change. After the group modelling session, participants seemed to take shared ownership of the model and acknowledge the fact that different perspectives do not necessarily contradict but can also complement one another. The group model building gave a voice to our participants in the data collection and analysis phases.

In the final phase, the second expert modelling, the three authors aggregated the model and downsized it from 16 to 8 feedback loops, 29 to 12 variables[1] and 38 to 19 causal relations. The criteria we used were parsimony and relevance. We strived for parsimony to improve the model's ability to clearly communicate the relevant patterns and major interrelationships (Senge, 2006; Morecroft, 2012). Whether we perceived model components as 'relevant' depended on a process of cycling between the causal loop diagram, our research question and literature on employees' resistance to change. We considered data and existing theory in tandem (Alvesson and Kärreman, 2007). Only in this phase of data analysis did we intensively study the literature on resistance to change '(…) because knowing the literature intimately too early puts blinders on and leads to prior hypothesis bias (confirmation bias)' (Gioia *et al*., 2013, p. 21).

The different levels of involvement in data gathering within our research team reduced the danger of being trapped in a confirmation bias. While the first author was very familiar with the data as the facilitator of the modelling sessions, the co-authors had more distance and interpreted some phrases differently. This supported us double-checking our findings and allowed us to '(…) revisit the data, engage in mutual discussions, and develop understandings for arriving at consensual interpretations' (Gioia *et al*., 2013, p. 22). The next section describes the causal loop diagram that is grounded in the data and captures the processes underlying resistance to organizational change. The selection of some interview excerpts aims to illustrate our data.

A SYSTEM DYNAMICS MODEL OF RESISTANCE TO CHANGE

To facilitate the illustration of the generated causal loop diagram, the findings are split into

[1] The 12 variables are change goals, need for change, successful change, awareness that change is needed, resistance to change, stress, participatory strategies, quality of change, efficiency of change, personal disadvantages, empowerment and trust. Figures 2–10 depict how they are causally related.

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Figure 1 Three linkages in the causal loop diagram

three parts. As shown in Figure 1, we first describe the relationships between organizational change and resistance to change. Then, because the model grants participatory strategies a significant position in moderating the relationship between organizational change and resistance to it, we illustrate the interconnectedness of participatory strategies with organizational change in the second part of the findings. Third, we describe mutual causalities between resistance to change and participatory strategies.

Organizational Change and Resistance to Change

The introduction indicated that resistance to change can have both positive and negative effects on the success of organizational change. However, our data suggest mutual causality in the sense that resistance affects change and successful change also affects resistance. According to our analysis, organizational change starts with a need for change that is determined by two factors: the change goals and the level of successful change. Figure 2 graphically depicts the idea that

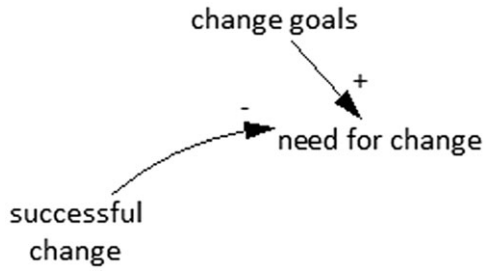

Figure 2 Need for Change

increasing change goals leads to more need for change, while increasing the level of successful change reduces the need for change, as successful change brings the company closer to their change goals.

> Our goals are constantly changing. If there is no successful change, the current situation remains, which means that the need for change is getting bigger and bigger (mid-level manager, man).

The participants distinguished between change and successful change in that they argue that not all change is successful and capable of bringing the company closer to the desired goal, thus reducing the need for further change. By adding the variable 'successful change' to the model, we specifically refer to change that is capable of closing the gap between a current and desired state.

Next, our data suggest that an increase in need for change can foster employees' awareness that change is indeed needed. Participants in this study suggest that when employees perceive a need for change because the level of successful change has not met the change goals, they may develop a sense of commitment and show support towards finding a solution. Consequently, employees may be less likely to resist upcoming change initiatives.

> If I don't see any reason for change, it's hard not to resist. If you want to stop resistance, it's very important that employees understand the reason and need for change (low-level manager, man).

> More awareness of a problem means less resistance (mid-level manager, man).

Our data further suggest that low levels of resistance to change facilitate successful change (in line with the traditional view of resistance), which in turn reduces the need for change. These combined causal relationships create the 'Rationality' loop as illustrated in Figure 3.

The Rationality loop operates according to a simple balancing process in which increasing change goals will lead to a higher need for change. If employees become aware of this need, they will react supportively or not resist, and change initiatives can successfully take place. Successful

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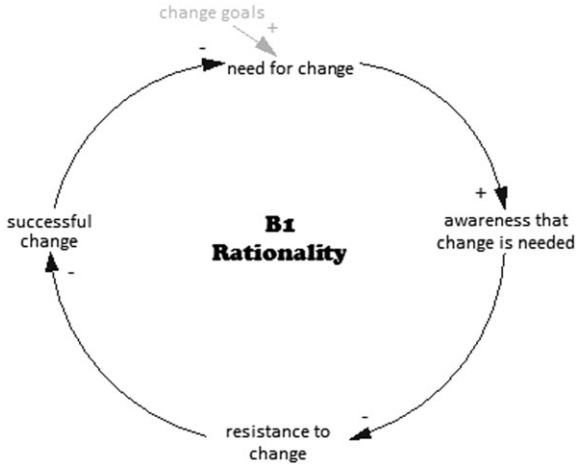

Figure 3 Rationality

change will decrease the need for change as it brings the organization closer to its change goals. An initially high need for change will eventually be reduced. The problem seems solved.

However, we also found that higher need for change may strengthen resistance to change through triggering stress. This occurs when employees feel overwhelmed by the magnitude of the anticipated change and the involved uncertainty fosters psychological stress or mental overload.

> If there is too much tension (...) employees will be overwhelmed and begin to block (mid-level manager, man).
>
> Crisis means that some employees close up. They are not open anymore and close their minds to anything new (mid-level manager, man).

Subsequently, stress increases resistance to change when employees block change initiatives. Thus, stress can trap change. This 'Stress Trap' (Figure 4) is reinforcing in nature, that is, resistance produces further resistance, which hampers successful change. Hence, a vicious cycle can arise that impedes reaching the change goals.

The degree to which change goals are reached depends on the strength of the Rationality loop relative to that of the Stress Trap.

Participatory Strategies and Organizational Change

The concept of participatory strategies first emerged during the interviews. During the expert modelling, the concept became a variable in the model, which was subsequently related to other variables. During the group model building process, we discovered that this variable was

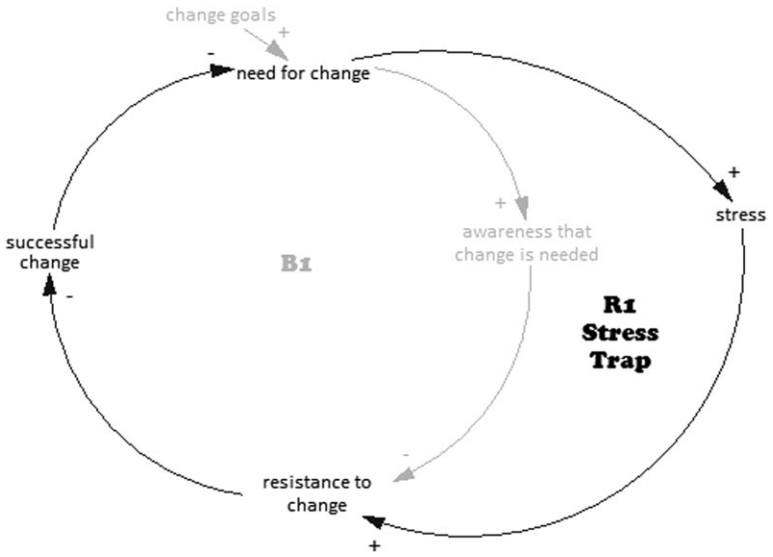

Figure 4 Stress Trap

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linked to many other variables and was situated between resistance and successful change. Therefore, in this paper, we claim that participatory strategies play an important role in our model.

During our study, participatory strategies emerged as a supposedly useful and appropriate response to resistance. When referring to the variable 'participatory strategies', this study's participants aggregated quite a number of activities such as communicating in an open, transparent, comprehensible and honest way; seeking direct conversations; listening and catering to employees' needs and involving employees in change development and decision-making processes.

> [In case of resistance] in a first step you need to get people on board by providing information. In a second step you should ensure a good and strong involvement in the development of the change (mid-level manager, man).

> In case of resistance, you need to try to explain why it is so important and necessary to change, why this change is needed and what each individual can do to play a part of this and to explain what consequences we are confronted with if the change is not taking place. Also, it's important to seek direct conversations. Communication is an important aspect, but I think it doesn't suffice. The next step is to involve employees (mid-level manager, woman).

In the model, introducing participatory strategies has an indirect positive effect on successful change (in line with the modern view of resistance) because participatory strategies increase the quality of change initiatives and thus foster successful change. We found that the more resistant employees are involved in a change process, the more thought is given to the project, the more additional viewpoints come to the surface, the more concerns are shared, and thus, more potential drawbacks of change initiatives can be easily detected. Consequently, change initiatives become subject to more critical analysis and review.

> Resistance also shows that somebody cares and gives thought to the change and doesn't blindly accept all nonsense (low-level manager, man).

> If somebody is enthusiastic, he/she only perceives the positive and might overlook an important thing. If somebody is resistant and critical, then I have the advantage that I also

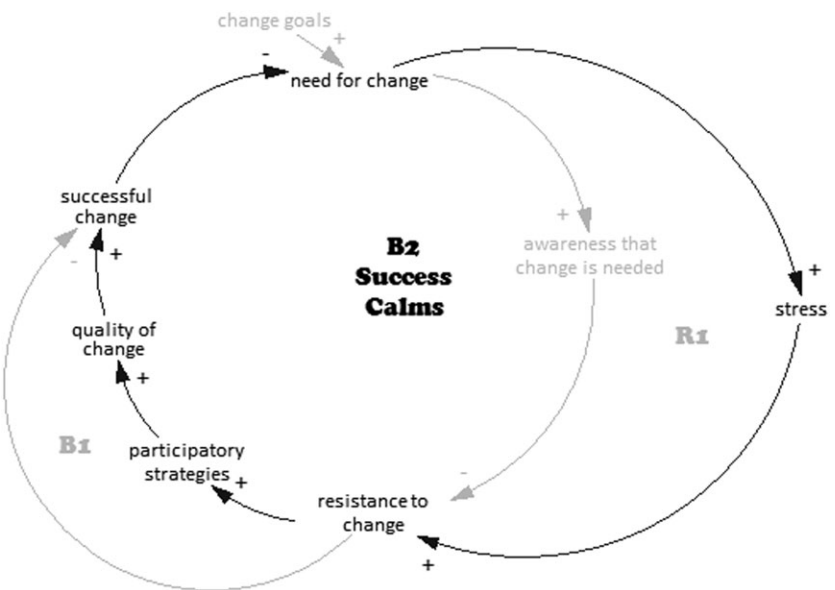

Figure 5 Success Calms

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> get to see negative consequences of the change initiative (mid-level manager, man).
>
> There are really good people here. If you let them participate, they could really contribute in a great way (mid-level manager, woman).

Thus, the model acknowledges that resistance to change can also be positively linked to successful change via the intermediate variable participatory strategies. Adding this causal relation results in the feedback loop called 'Success Calms' (Figure 5).

Success Calms is a balancing loop; it counteracts initially strong resistance to change. This loop suggests that an increasing use of participatory strategies emerging from resistance to change leads to a higher quality of change that boosts successful change, which eventually reduces the need for change. Consequently, both perceived levels of stress and resistance decrease. These dynamics may also reduce the strength of the Stress Trap, as this vicious trap obtains its strength via a high need for change.

However, the causal loop diagram also acknowledges that participatory strategies have an important drawback. They can be very time-consuming, which counteracts organizational change. We found that when more participatory strategies are applied, more employees are involved in the development of and decision-making about change, more communication must be offered, and more conversations should be conducted. By the time sufficient exchange of information and opinions has been achieved and decisions have been made, it might be too late to act upon them. This process can reduce the efficiency of a change initiative. Therefore, our analysis suggests a negative causal relationship between participatory strategies and the efficiency of change. Therefore, the causal loop diagram contains a feedback loop describing the delaying effect of participatory strategies as the 'Slow Trap' (Figure 6).

The Slow Trap implies that the level of successful change declines through decreasing efficiency as a result of the increasing use of participatory strategies. Consequently, the need for change grows, leading to more stress and stronger resistance, and thus resulting in the use of even more participatory strategies. Hence, the Slow Trap is

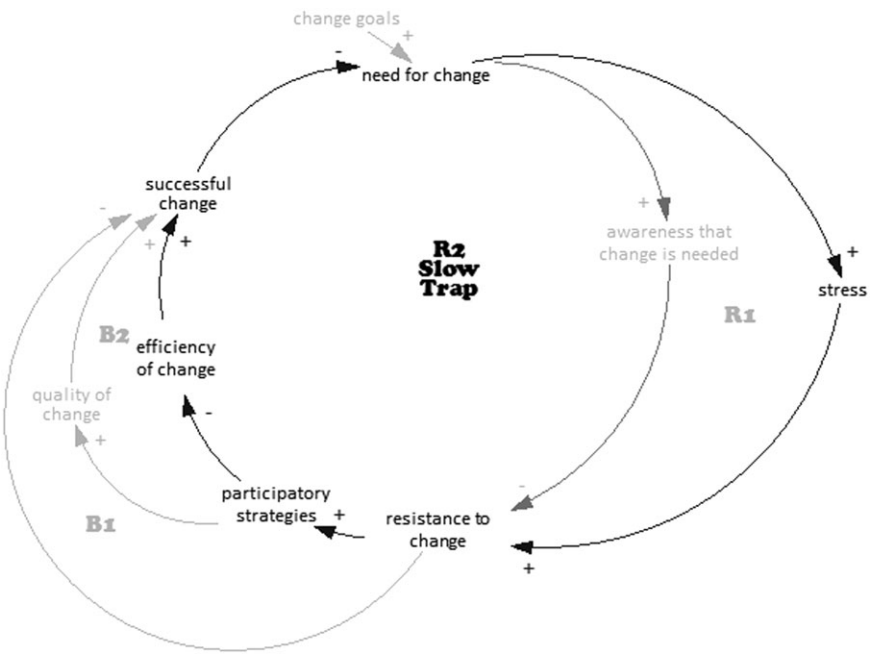

Figure 6 Slow Trap

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reinforcing in nature. It can contribute to continuous growth in the need for change while also reinforcing resistance to it.

Our causal loop diagram shows how participatory strategies can both foster and impede successful change. Whether the Success Calms loop dominates the Slow Trap or vice versa depends on the degree to which the quality of change initiatives (which fosters change) outweighs the inefficiency of participatory strategies (which impedes change).

Participatory Strategies and Resistance to Change

Our data further suggest that participatory strategies have a tempering effect on employees' resistance to change. We were able to identify four such tempering effects, including raising awareness, negotiating compromise, increasing perceived levels of empowerment and accumulating trust in change agents.

Participants indicated that with resistance to change, one needs to raise awareness by explaining why change is necessary and what consequences are to be expected if the change does not take place. They suggest that an atmosphere of open, comprehensible and honest communication can lead to employees understanding the reasons behind change, thereby becoming more aware of the need for change and less likely to resist upcoming change initiatives.

> [When resistance emerges] contents about WHY and WHAT most probably haven't been articulated in a very transparent way (mid-level manager, man).

> If you cannot explain the change so it makes sense that it's a good idea, then the change won't take place (mid-level manager, man).

This indicates that the use of participatory strategies has a direct positive effect on awareness that change is needed. The 'Enlightenment' feedback loop is illustrated in Figure 7 and captures the dynamics that awareness of the need for change increases when applying participatory strategies, which in turn leads to a decline in

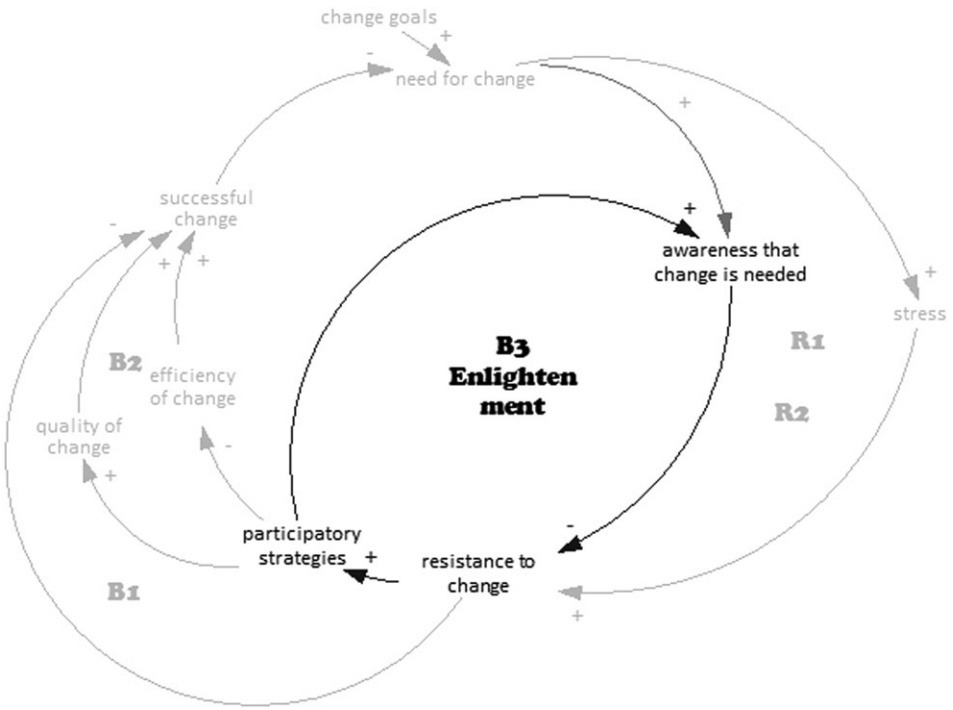

Figure 7 Enlightenment

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resistance to change. Enlightenment is balancing in nature. It counteracts initially strong resistance to change.

The second tempering effect of participatory strategies on employees' resistance to change has to do with negotiating compromises. According to our analysis, a major reason for employees' resistance to anticipated change initiatives is their fear of expected personal disadvantages that the changes might bring about. Examples include fear of additional workload; the need to learn different tasks; new responsibilities; loss of power, prestige and security; and loss of job. As mentioned previously, participatory strategies include seeking direct conversations in which organizational stakeholders can articulate their needs. These activities contribute to finding compromises that each party can accept and reducing employees' fears of personal disadvantages.

> With resistant employees you have to speak most often and you have to 'sell' the change to them. For half of them, a compromise can usually be achieved, so, at the end, the change is pleasant for them (mid-level manager, woman).

This process is captured in the balancing loop called 'Compromise' (Figure 8), which illustrates that personal disadvantages decline due to an increase in the use of participatory strategies, leading in turn to a decrease in resistance to change.

The third tempering effect of participatory strategies on employees' resistance to change relates to employees' perceived level of empowerment. Participants indicated that their commitment towards change increases when they feel adequately heard and involved during the change process. This perceived empowerment reduces resistance to change.

> [Participatory strategies] lead to more immediate perceptions of employees' own contributions' consequences. In other words, when it's recognized which contribution your own actions create, then you are less resistant (mid-level manager, man).

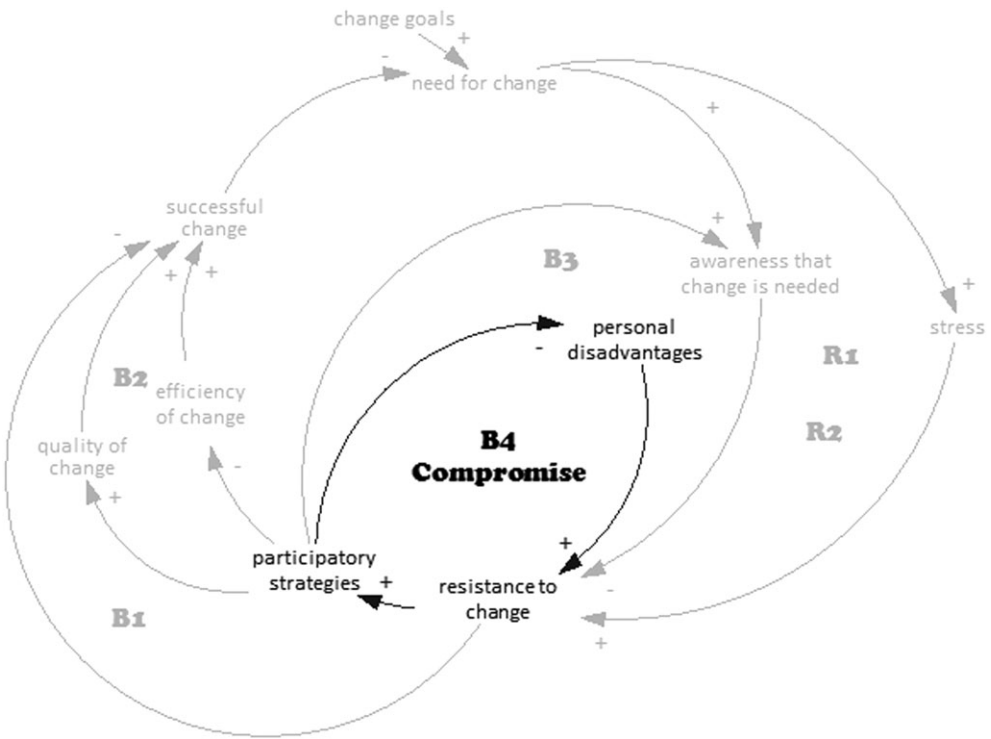

Figure 8 Compromise

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> If an employee is confronted with a change he/she was not involved in beforehand, then most probably he/she will resist (mid-level manager, man).

We summarize this in the balancing loop of 'Active Contribution' (Figure 9). It shows how empowerment increases because of an increase in participatory strategies, which in turn leads to a decline in resistance.

The fourth tempering effect of participatory strategies on resistance to change relates to accumulated trust towards change agents. Participants perceive trust in change agents as the conviction that the management is properly planning and implementing change and is doing what is best for the organization and employees. Trust is supported by the open, transparent and comprehensible communications entailed in participatory strategies. We found that trust serves as a counterweight to fears. In this respect, trust in change agents contributes to reducing resistance to change.

> Information and transparency create trust. (...) It is important to clarify what the change initiative is all about in order to create mutual trust which finally leads to a space free of fear. Such a space enables a lot (mid-level manager, man).

We capture this in the balancing 'Social Credit' loop that is added to the model in Figure 10.

To conclude our findings, we contribute to the literature on resistance to change by offering a systems perspective that is dynamic and incorporates eight feedback processes that encompass resistance to change. Two of the feedback processes (Stress Trap, Slow Trap) are reinforcing, and six (Rationality, Success Calms, Enlightenment, Compromise, Active Contribution and Social Credit) are balancing. We argue that when an organization finds itself trapped in a Slow Trap or Stress Trap, successful change is hindered by strong resistance to change. Balancing feedback processes by using participatory strategies (Enlightenment, Compromise, Active

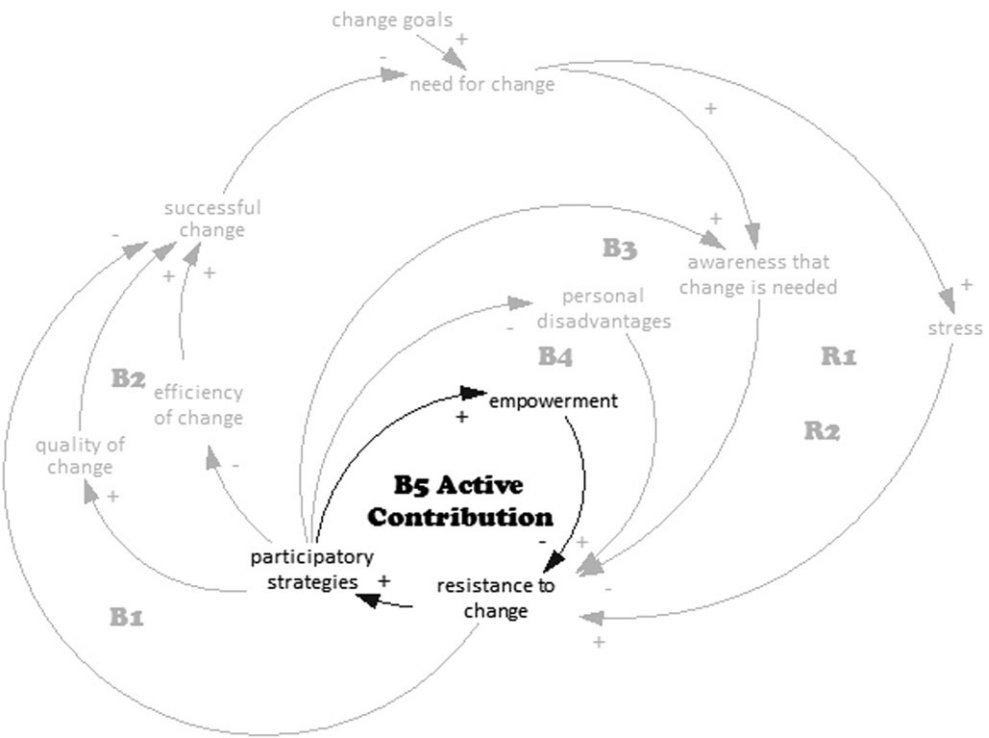

Figure 9 Active Contribution

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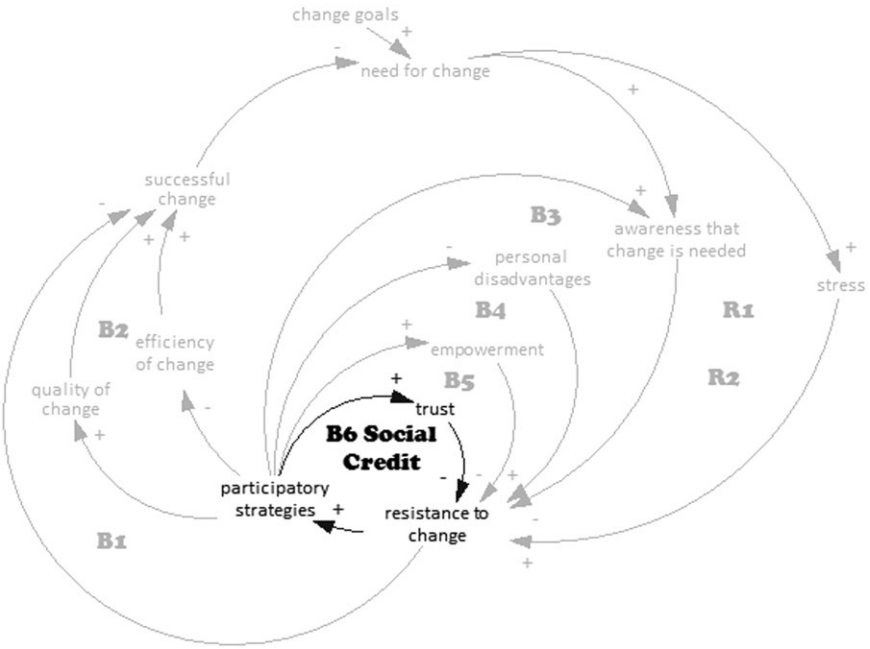

Figure 10 Social Credit

Contribution and Social Credit) may reduce resistance, counteract the traps and stimulate successful change. However, our causal loop diagram also points out that declining resistance may in turn inhibit successful change (Success Calms).

DISCUSSION

As we found, participatory strategies play a crucial role in addressing resistance to organizational change. We discuss the consequences of increasing, stabilizing or decreasing the use of participatory strategies. Deploying participatory strategies in an adequate and timely manner does not imply that one should opt for participatory strategies every time an organization requires change. In fact, not all change evokes high levels of resistance. The Rationality loop might counteract resistance in cases in which change is required and employees have positive responses and feel a readiness for change (Powell and Posner, 1978).

However, when an organization is stuck in a Stress Trap, the use of participatory strategies may foster successful change via increased quality of change, as the literature (e.g. Vennix, 1996; Burke, 2011) suggests, and these strategies can have tempering effects on resistance to change. The model points towards four such effects. Participatory strategies can (1) raise awareness that change is needed, (2) reduce employees' personal disadvantages, (3) create perceived empowerment and (4) accumulate trust in change agents. These results agree with the literature that identified several of these effects (Chawla and Kelloway, 2004; Hornung and Rousseau, 2007; Kotter and Schlesinger, 2008; Sheu and Kim, 2009; Erwin and Garman, 2010; Harvey and Broyles, 2010; Jaramillo *et al*., 2012).

Still, haphazardly and excessively applying participatory strategies comes with the risk that the company may fall into a Slow Trap. In this case, the time-consuming nature of participatory strategies negatively affects the efficiency of change while urgent changes sometimes require fast implementation. This is a more specific elaboration of Eisenhardt's (1990, pp. 39 and 53) argument that 'the best strategies are irrelevant if they take too long to formulate' and 'a slow strategy is as ineffective as the wrong strategy'. Therefore, fostering participation and actively involving as many employees as possible is not always the best strategy.

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The Social Credit loop suggests reducing participatory strategies whenever sufficient trust towards the change agents has been accumulated. This strategy allows for fast decision-making when necessary, while historically accumulated trust ensures employees' support and hinders resistance. The Social Credit loop is a dynamic translation of Nutt's (2002) suggestion that decision-makers use edicts drawn on social credit (the store of goodwill they built up by honest dealings and positive accomplishments), trading the credit for rapid action. At first sight, fast decision-making based on social credit seems to trigger a win-win situation of high efficiency and low resistance. However, our results suggest that this strategy should only be scarcely applied, given that a reduction of participatory strategies fosters personal disadvantages and negatively affects the quality of change and the levels of empowerment and awareness. Also, if change leaders repeatedly refrain from encouraging participation, trust will (eventually) deplete. These findings confirm Nutt (2002) who highlights that repeated use of an edict exhausts the store of social credit.

Our study makes several contributions to the theory. *First*, this paper adds to the theoretical debate on resistance to change by conceptualizing it as a dynamic process and suggesting that currently dominating feedback processes determine whether resistance to change facilitates or hinders organizational change. In particular, our system dynamics perspective highlights the important roles of *time* and *context* when trying to identify how resistance affects change. As indicated previously, our findings agree with past literature that identified several causal links that are part of our causal loop model. However, so far the literature has neglected to explain the causal links' interrelatedness via feedback loops. Interrelated feedback processes such as the Slow Trap and the Stress Trap offer fresh explanations, insights and testable propositions that have not been mentioned in earlier literature on resistance to organizational change despite their potentially strong relevance in various organizational change settings. In this respect, our findings resonate with Perlow *et al*.'s (2002) study that identified the speed trap as a reinforcing process that harms the general quality of organizational decision-making and emphasized the role of feedback processes in explaining organizational phenomena.

Second, by providing a both-and perspective, our study integrates the traditional and modern paradigms on resistance to change. In this vein, we claim that past research has taken too short-sighted a view on resistance by offering an either-or perspective (traditional or modern paradigm). Instead of compartmentalizing resistance as being either maladaptive or valuable and placing change recipients into the two categories of 'unreasonable change blockers' versus 'diligent feedback providers' (Ford and Ford, 2009), we propose focusing on the *context* in which change recipients find themselves. Hence, we contribute to the theory by acknowledging the significance of both paradigms that exist in parallel and resolving perceived contradictions. In particular, we argue that understanding resistance via one particular paradigm may be misleading as time unfolds, dynamics shift and contexts change.

Third, we contribute to the theoretical debate by highlighting the significant position of participatory strategies in moderating the relationship between resistance and organizational change. Our results suggest that deploying participatory strategies *in an adequate and timely manner* enhances successful change. Past research argued that the application of strategies depends on the prevailing paradigm. The traditional paradigm copes with resistance using strategies that range from explanatory conversations to serious disciplinary measures (Kotter and Schlesinger, 2008). Common strategies when viewing resistance from the modern paradigm include openly communicating, actively listening and involving change recipients (Bareil, 2013). In contrast, we suggest basing strategies upon the relative strengths of the different feedback loops. For instance, if organizational members find themselves trapped in a Slow Trap, they are advised to decrease participatory strategies. However, when members are facing a Stress Trap, we suggest increasing the use of participatory strategies while bearing in mind that choosing specific levels of participatory strategies has implications

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for the subsequent strengths and weaknesses of other feedback loops.

Our causal loop diagram provides practical insights for managers on when to increase, stabilize or decrease the use of participatory strategies and the possible effects on organizational change and resistance. When deciding how and when to use participation, we advise decision-makers to attend to their situational context by (1) continuously trying to perceive changes in variables such as trust in change agents, awareness of the need for change, perceived stress and personal disadvantages and (2) anticipating which decisions may lead to feedback effects such as accelerating or stabilizing behavior.

This study has its limitations. The first limitation is the limited opportunities to draw dynamic behavior from a causal loop diagram. Therefore, we propose future work quantifying the model structure in order to support the reader in discovering emerging dynamics. Whether an organization finds itself in a Stress Trap or Slow Trap or is able to balance its levels of resistance has not been empirically tested within the context of a specific change project. We suggest testing the components of the causal loop diagram in formal models of various case studies and with different types of organizational change (Lane, 2008).

Second, the inductive approach that defined the scope of our model was restricted to the data we collected. Even though we based the causal loop diagram upon rich stories, it misses some causal relations that the literature has identified. For instance, Oreg (2006) points out that providing information can promote resistance. Also, in certain circumstances, participatory strategies can decrease the quality of change (e.g. Janis, 1972). We acknowledge the possibility that there may be many more aspects in a causal loop diagram of resistance to organizational change. Still, Senge (2006, p. 72) warns that 'thousands of variables and complex arrays of details can actually distract us from seeing patterns and major interrelationships'. Morecroft (2012, p. 645) confirms this by stating that' very often, smaller models are extremely useful, particularly when their purpose is to aid communication and to build shared understanding of contentious problem situations in business and society'. Therefore, future research might want to concentrate on enhancing the quality/depth rather than the size of the model.

CONCLUSIONS

The objective of this paper is to enhance our understanding of *how* resistance to change affects organizational change by providing a system dynamics perspective on this relationship. Our study suggests that the complexity underlying resistance to change cannot be fully accounted for by either the traditional or the modern perspective. The relationship between resistance and change is not only positive or negative, but it also allows for resistance that simultaneously affects successful change negatively and positively. We provide an integrated perspective allowing for the co-existence of both paradigms in one model and the role of participatory strategies in addressing resistance. Whether resistance to change eventually hampers or fosters successful change is a function of the relative strength of different relationships and the feedback loops of which they are part.

This study conceptualizes the dynamic processes surrounding employees' resistance to change in the form of eight reinforcing and balancing feedback loops: (1) Rationality, (2) Stress Trap, (3) Success Calms, (4) Slow Trap, (5) Enlightenment, (6) Compromise, (7) Active Contribution and (8) Social Credit. We propose that feedback loops such as the Stress Trap and Slow Trap have strong relevance in and can be transferred to other domains within the field of organizational research and decision-making.

This study proved originality in both (1) offering a system dynamics perspective to unite contradictory perspectives and (2) applying methods that give extensive voices to participants. We contribute to the theoretical debate on how employees' resistance to change affects organizational change by providing inductively derived propositions in the form of feedback loops that may be quantitatively tested in a follow-up study. In addition, the causal loop diagram provides practical insights for managers on when and how to regulate the use of participatory

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strategies and their effects on organizational change and resistance. The success of these strategies depends on the actual strength of the loops in a given situational context. However, we argue that the anticipation of various potential reinforcing and balancing effects, which can be expected upon taking a specific decision, can support decision-makers in avoiding obvious traps or even successfully triggering organizational change.

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