



# THESIS RESEARCH REPORT NOTE

## Mechanisms of deviations: observations of projects in practice

Mechanisms of  
deviations

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Received 15 June 2009  
Accepted June 2009

### Abstract

**Purpose** – The purpose of this paper is to describe and summarize a PhD thesis that contributes to the understanding of how unexpected events (deviations) are handled. It explores the reality of project manager's attempts to address loosely coupled components of tightly coupled projects from a projects-as-practice approach.

**Design/methodology/approach** – Research reported here is based upon a qualitative data gathering approach adopting an ethnographic research approach, gathering data from 12 weeks of participant observations, 59 interviews and studying supporting documentation with the offices under study. This approach is warranted by the projects-as-practice approach which puts emphasis on the situated actions.

**Findings** – Rather than reducing uncertainty, project management action through coping with deviations to expectations provides mechanisms that thrive on the uncertainty of the situation. Project managers can cope with unexpected deviations to plan in a logical and rigorous way that is currently poorly recognized as an official project management "skill".

**Practical implications** – More space for action is created to solve the specific deviation by enhancing the seriousness of the deviation. The longer the project manager is able to emphasize the structures of a deviation, the more time the project manager has to find a suitable solution.

**Originality/value** – There are two main areas of conclusion that are given attention. First, uncertainty is inherent in projects which can be used when dealing with deviations in projects because while all deviations do not have great consequences, they follow the same basic pattern when managed. Project management in this sense becomes the management of deviations. Second, in terms of the theory of loosely coupled systems, a practice-based analysis has been largely missing in the project management literature. The study reported upon investigates and explains this inner life of loose coupling mechanisms.

**Keywords** Project management, Project planning, Uncertainty management

**Paper type** Research paper



### Introduction

Hope for rationality and purposefulness in thought and action is still the dominant point of departure in society, organizations, and an individual's life (Brunsson, 2006, p. 12). The ongoing quest for rationality and efficiency is also evident in the continuous

The thesis reported can be accessed from URL: [www.markushaellgren.com](http://www.markushaellgren.com); note that it is written in Swedish (with an extensive summary in English) so for any questions contact Dr Hällgren through his web site or e-mail. The dissertation can be downloaded from: [www.markushaellgren.com](http://www.markushaellgren.com)

development of new management methods and project executions models, e.g. concurrent engineering, to take further advantage of the expected benefits of projects. There is, however, a drawback connected to this development. For example, in concurrent engineering, several project activities are done in parallel rather than sequentially (Terwiesch *et al.*, 2002), thus cutting lag time and reducing organizational slack. An often ignored consequence is that such improvements of the project management model also make projects more vulnerable and sensitive to disturbances. Not even small deviations in terms of time or money spent for a sub-activity may be absorbed by the concurrent, and slim, project organization without being deliberately attended to by management.

In short, it is claimed that projects are tightly coupled, have more complex dependencies established, and are concurrently organized, making them inherently more vulnerable to deviations. Thus, deviations are an even more emphasized element of daily operations and this in turn creates more advanced management challenges for project managers. One important question is, therefore, how are deviations managed in tightly coupled projects?

Such management challenges are only vaguely addressed in best practice models used by project managers and have not been the focus of major research efforts (Cicmil and Hodgson, 2006). On the contrary, much effort has been devoted to the study of risk management models, contingency planning and other structured approaches aimed at the avoidance of deviations before they occur during project execution.

The starting point of this dissertation is quite the opposite. It is contended that the fundamental set-up of contemporary project models inevitably exposes projects (and project managers) to deviations. Deviations are thus inherent in projects, not as a result of poor planning or inadequate risk management tools, but rather as an inevitable result of a project's inherent complexity. With this in mind, the research aim is to analyze how tightly coupled projects are organized in order to shed light on deviations and their nature. It includes analyzing and developing the understanding of the practice associated with the deviations. Furthermore, the research sets out to learn from the theory of loosely coupled systems in project management in order to develop an understanding of how deviations are managed in tightly coupled projects.

The unit of analysis is deviations and associated praxis. In theoretical terms, the dissertation draws upon the practice turn (Jarzabkowski, 2005; Schatzki *et al.*, 2001; Whittington, 2006) and Weick's (1990, 1976) "Loosely coupled systems theory." By answering the initial question posed and the aim of the dissertation through the theoretical framework the dissertation contribute to the understanding of projects in practice. The contribution is threefold. First of all, it contributes by adding to the understanding of how deviations are managed in practice. Second, it contributes to the understanding of how projects continue to exist despite the challenges posed by deviations. Third, it contributes to the theory of loosely coupled system by utilizing the practice approach.

The remainder of this paper is structured as follows. First, there is an introduction that outlines the theories that are used and the practice approach in particular. Then follow a short note on methodology. After this the main findings are summarized in three steps:

- (1) the nature of deviations;
- (2) patterns of practice in the management of deviations; and

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- (3) the mechanisms that allow the project to exist as one entity despite changing demands from deviations.

Mechanisms of deviations

Last some conclusions are offered.

## Organizing the unexpected

*From projects to practice*

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The society of today is increasingly becoming more and more projectified. Meaning that more and more activities are organized through projects (Ruigrok *et al.*, 1999; Whitley, 2006; Whittington *et al.*, 1999). For the individual, the motivation could be the challenge of doing something new while the organizational motivation typically is the project's ability to achieve something unique. However, in addition to being known for uniqueness, projects are known for their ability to achieve goals within set limits in time, scope and cost. From a managerial point of view, this has meant that projects tend to be conceived as highly planned and rational endeavors. Therefore, the operations of most projects are approached by planning (Christensen and Kreiner, 1991; Dvir and Lechler, 2004). Underlying the plans is, however, expectations that is creating plans and is created by plans.

Unfortunately for people working in projects, projects experience unforeseen interruptions that disrupt progress on almost everyday basis (Dvir and Lechler, 2004). A construction project, which should be relatively certain and easy to implement (Turner and Cochrane, 1993) can be disrupted by unforeseen circumstances, for example, by delays in material delivery or equipment damages. Some interruptions are crises (Hensgen *et al.*, 2006; Loosemore, 1998), others are merely surprising (Cunha *et al.*, 2006) and some are just snags, difficulties, and tensions (Hirschman and Lindblom, 1962). Nevertheless, they all are events that is not considered as part of normal operations (Peterson, 1998; Weick, 1979) and which are here referred to as deviations (Hällgren, 2007a; Hällgren and Maaninen-Olsson, 2005b, 2009). As with crises, deviations do not have impact or magnitude as a criterion (Hensgen *et al.*, 2006), neither are they associated with proactiveness (Hällgren and Maaninen-Olsson, 2005b; Steffens *et al.*, 2007). Deviations are simply unexpected events that need attention from the project team because they interfere with cost, time or scope goals.

Academically, the attention given to the management of deviations in projects falls within two main categories; either a structural or a process focus. A structural focus pays attention to phases and predetermined responses. Here, deviations are to be avoided and mitigated beforehand. If they do occur, there is a standardized structural way of managing the deviation (e.g. agile methods). In practice, the structural approach is not very well equipped with deviations that by definition cannot be predetermined. Academically, the insights are limited in terms of micro-activities and the variability of organizing (Tsoukas and Chia, 2002). A process focus instead pays attention to processes and behaviors. In practice, the process approach is pertinent to, for example, setting up organizational structures that aid the execution process and decision making. Academically, it offers an understanding of how, for example, organizational levels adhere to each other. From a projects-as-practice point of view where what people do (in detail) are of primary interest, the process approach cannot give a clear answer. Thus, a process focus examines the processes from a top-down perspective (Cicmil and Hodgson,

2006) and how the process changes over time while a practice perspective focuses on details and what people are doing from a bottom-up perspective.

The projects-as-practice approach (Hällgren and Wilson, 2007, 2008a, b; Söderholm, 2008) puts “an emphasis on the detailed processes and practices which constitute the day-to-day activities of organizational life *and* which relate to [project organizing] outcomes” (Johnson *et al.*, 2003, p. 3). Essentially, the projects-as-practice argument is constructed around the notion that how a project is organized is a result of an interplay between praxis (situated actions), practices (models, guidelines and previous experiences, norms, and values which influence behavior), practitioners (individuals and their profile), and profession (the institutionalized collective identity of, e.g. project managers) (Jarzabkowski, 2003, 2005; Whittington, 2006, 2007) which all comes together in episodes of practice (Hendry and Seidl, 2003). The course of events would be equivalent to one distinguishable episode of practice. Drawing upon Weick’s (1990, 1976, 2000) loosely coupled systems theory, Hendry and Seidl (2003) suggests that episodes are continuously decoupled, implemented, and recoupled within the organizing process. Thus, the structure of organizing is continuously renegotiated through the convergence of what is done (praxis) and how similar situations typically are, or ought to be, solved (practices). In a way similar to episodes, deviations emerge, are implemented and resolved.

#### *The practice of loose coupling*

Organizations are rarely, or never, operated with the same rationality as they were first designed to be. The problem is however that the models that are used to analyze them, or indeed, by the individuals that are assigned to manage them, may assume that they are or should be. In fact, when analyzed more in detail, organizations are often loosely coupled systems. That is, some part behave as designed, others are not. However, it is important to emphasize that coupling is not a property but a process. Coupling is something done by (or in) organizations, rather than something they have (Orton and Weick, 1990, p. 218). The ways things interrelate with each other thus continuously change. Coupling is thus closely related to the practice perspective. The main benefit of Weick’s contribution was the explanation the explanation to how and why policies and operations could be kept together despite changing environments and directives (see also Orton and Weick, 1990 for a comprehensive review). Loose coupling thus provides a possibility for explaining how deviations are absorbed and sealed-off while business continues as usual. By allowing for self-determination, adaptation, and innovation processes in sub-systems, it provides necessary inertia and resistance to change, thereby hindering break-downs from spreading to the whole system (Weick, 1976, pp. 6-7).

There are two main sub-groups of factors by which loose coupling can be examined (Brusoni and Prencipe, 2001, p. 1027). Structural couplings focus on projects as sub-systems of larger organizations or networks. That is, projects are an organizational set-up (Brusoni and Prencipe, 2001; Dorée and Holmen, 2004; Dubois and Gadde, 2002; Kreiner, 1995) or a response to a hyper-competitive environment (Ravasi and Verona, 2001). Behavioral couplings by contrast, are related to bounded rationality (Cyert and March, 1963; Glassman, 1973), uncertainty (Weick, 1976, 1979), or hypocrisy (Brunsson, 1989, 2006) in the practitioners’ practice repertoire. With an interest in practice theory, which includes an interest in micro activities rather than

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organizational structures *per se*, the interest of this dissertation is concerned above all with the behavioural type of couplings. These have not been fully investigated in a project setting. Work that comes closest includes that of Lindkvist *et al.* (1998) and Christensen and Kreiner (1991). On the other hand, these two studies mainly follow a traditional top-down process perspective rather than a bottom-up micro-organizing practice perspective.

Although Orton and Weick (1990) never explicitly defined them, there are two concepts that are of fundamental importance in the analysis of loose coupling: distinctiveness and responsiveness. The identification of an event requires some degree of responsiveness: without responsiveness the project manager lacks the ability to implement appropriate actions. A loosely coupled system is characterized as “[...] events are responsive, *but* that each event also preserves its own identity and some evidence of its physical or logical separateness” (Weick, 1976, p. 3). A system is loosely coupled if both of these conditions apply, that is, responsiveness and distinctiveness. The concept is helpful in explaining how deviations are a distinct, but still integrated, part of the organizing process.

### Methodology

Loosemore (1998) suggested that using case studies could help in the analysis of a crisis. Fittingly, it applies to deviations as well, which is the unit of analysis in the dissertation. The methodology mainly relied on on-site observations of a project team managing a turnkey diesel power plant project. The approach was especially warranted due to the unexpectedness of deviations, which do not allow them to be defined beforehand (Hällgren, 2007a). In addition, the approach is necessary in order to capture the nature and richness of coupling, as less context-sensitive methodologies miss nuances and explanatory conditions (Orton and Weick, 1990, p. 219; Weick, 1976, p. 10). The identification of deviations was invariably made by the project manager and would thus be both responsive and distinctive:

- distinguished and separate from expectations surrounding the project; and
- addressed by project managers or their team.

The data were gathered over 12 weeks of ethnographic research at the corporate office, supported by 57 interviews, ~5,000 e-mails, minutes of meetings, reports, and additional documents. The observations were supported by a field diary (van Maanen, 1988) and the interviews were recorded and transcribed (Yin, 1994). All observations were coded with the data management program Nvivo 8.0. From this approach, 118 deviations were coded (Hensgen *et al.*, 2006; Hällgren and Maaninen-Olsson, 2005b; Peterson, 1998) including detailed notes how the deviations were dealt with – that is, whether they followed a distinctiveness or responsiveness pattern (Orton and Weick, 1990).

### Observations

The organization that was researched in this study was a large globally active project-based organization in which one division specialized in power plant and power conversion construction. This specific division managed more than 120 single projects divided into 30 project teams at any point in time. The company was chosen because they had global projects and executed the projects in parallel – the projects were tightly coupled and complex. The project organization was set-up with one project

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team and a site team. The project team was located at the corporate office in Scandinavia and was responsible for planning, organizing, monitoring and control. The site team was located at the geographically distant construction site and was responsible for the execution of the project. This study focuses on the level of the project team.

As mentioned, 118 deviations were identified spread out across ten projects. In the dissertation, four turnkey projects and their deviations were described in detail and the rest of the deviations presented in a detailed table.

### The nature of deviations

One part of the purpose was to reflect upon the nature of deviations. Each and every one of the 118 identified deviations interrupted the expectations surrounding the activities within the project. Needless to say, in the beginning, many deviations were not necessarily easily detected (Loosemore, 1998). Two types of deviations could be identified. Abrupt deviations that "appear suddenly" or cumulative deviations that "break with the past that result from a steady accumulation of stressors" (Hwang and Lichtenthal, 2000, p. 131). In total, 61 cumulative deviations and 57 abrupt deviations were identified. In large part, the nature of deviations resembled other deviations within projects. The deviations were typically of a technical or contract disputes.

For a deviation to emerge it obviously first needs to be identified. That is, it needs distinctiveness. If it is not given distinctiveness the event is not considered important or the project team lacks understanding of it. On the other hand, once identified the event needs responsiveness in order to be able to handle the situation. This definition of a deviation corresponds to Orton and Weick's (1990, p. 205) dialectic view of loose coupling.

During the 12 weeks between 11 and 31 deviations were identified for each project team. (The number would typically include about four simultaneous projects.) Furthermore, deviations were identified throughout the entire life cycle of the project.

### Managing deviations

Although projects all had signs of being tightly coupled, deviations tended to emerge. Within the observations 29 typical praxis's were observed and from which eight practice patterns were identified where the praxis had common denominators. The patterns were: identify and get to know the boundaries, interpret the goal in an advantageous way[1], mobilization of network, displacement of responsibility, concentration of organizing, acceptance of responsibility, situated use of resources, and finally creation and maintenance of space for actions:

- Identify and get to know the boundaries are necessary in order to collect information about what is happening and what has happened. Among the praxis one therefore finds collection of information, discussions and control praxis, etc.
- Interpret the goal in an advantageous way involves the interpretation of what should be achieved in a beneficial way to the project. The task in this case would be the deviation at hand. Here, one finds praxis such as definition, etc.
- Mobilization of network is necessary in those occasions were the project team do not have the authority or the knowledge to solve a situation. By mobilizing actors

- within the organization from, e.g. the support functions they can achieve leverage on, e.g. the client.
- Displacement of responsibility puts the blame on other actors such as the sub-contractors. This is achieved through, e.g. reports, change management praxis, etc.
- Concentration of organizing involves putting more effort into the situation. This typically is achieved by demanding an increase in personnel or by adjusting the budgeted margin downwards.
- Acceptance of responsibility means that the project team accepts that the deviation needs to be solved and therefore it includes praxis such as replacement, implementation and redesign, etc.
- The creation and maintenance of action space includes the creation and maintenance of goodwill, creation of resources and time, etc.

### *Loosely coupled organizing processes in practice*

As discussed earlier, a deviation needs both distinctiveness and responsiveness in order to exist and be manageable. Deviations are nevertheless not necessarily addressed concurrently. The data show that management action is initially dominated by one of the processes, while attending to the other dominates in the later stage. This creates two different action patterns (Figure 1).

### *Carefully assessed actions*

According to Cyert and March (1963, pp. 169-171, 188-189) any problem solving or innovation pattern in an organization follows one of two search patterns: problemistic search or slack search. The first step in this process is a search for options. Following

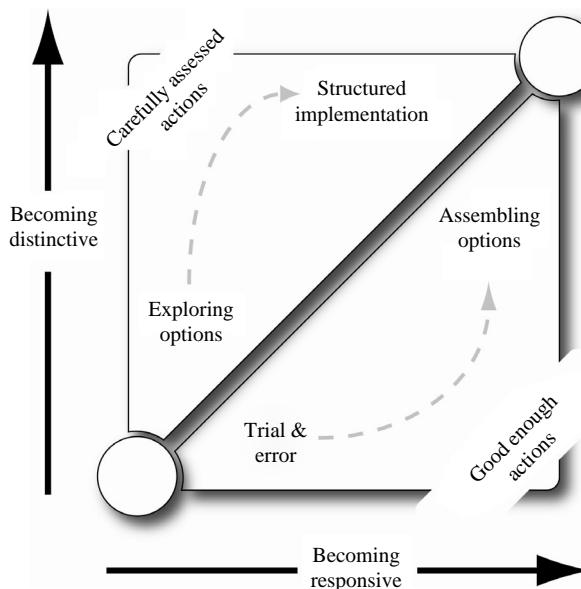


Figure 1.  
Patterns of loose coupling

the lead of Cyert and March (1963, p. 189), the observations suggest that first of all there are analyses aimed at defining the situation and labeling it a deviation, thereby making the deviation more distinct in terms of boundaries. At this point the situation is not yet a deviation. The patterns of practice found in the first phase would be "Identify and get to know the boundaries" and "Interpret the goal in an advantageous way." By the end of the first phase one or a few options should have emerged.

In the second phase, the options are thus transformed into realization by developing responsiveness through patterns of practice including "Concentration of organizing, acceptance of responsibility, situated use of resources" and "creation and maintenance of space for actions".

#### *Good enough actions*

The second process is labeled "Good enough actions". The first step in this process is a search for options. It thus initially follows the problemistic pattern. Problemistic search is associated with specific problems and the search for a solution is often sought near the origin of the situation. Thus, concurring with Cyert and March (1963), deviations are initially dealt with in terms of trial and error, implying an initial recognition of the deviation closely held search for responsiveness.

The trial and error process is built through iterative cycles of actions taken in order to resolve a situation quickly. The situations at this point are briefly defined and poorly understood but still recognized as deviations. Consequently, the precise identification (distinctiveness) of the deviation is postponed until an initial sequence of actions has been concluded.

In summary, regardless of which pattern is followed a deviation will inevitably become loosely coupled in relation to other activities. In that respect, the patterns allow the possibility for the tightly coupled project to continue to exist as one organization.

#### **Mechanisms of deviations**

The fact that deviations become loosely coupled when managed has the consequence that deviations develop a number of elements which aid the deviation management process (Orton and Weick, 1990, pp. 213-14). These elements make it possible for the project manager to manage the tightly coupled project. As the mechanisms are a natural consequence of the deviation they represent a general feature of the event. That is, they are mechanisms emerging out of the deviation. Five mechanisms are identified:

- (1) state of emergency;
- (2) simplification;
- (3) good enough;
- (4) pacing; and
- (5) parallel agendas.

A state of emergency allows the project manager to break against established rules and legitimize his or her action of a different action path. Typically, this kind of behavior is found in regards to crisis but I argue it is a general feature of deviations and thus has nothing to do with sheer size or consequence. The mechanism allows the project manager to make the activities loosely coupled in regards to the rules.

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Simplification allows the project manager to make the deviation loosely coupled in comparison to the complexity of the overall project. By developing the mechanism the deviation no longer is an integrated part of the whole.

Good enough on the other hand allows the project manager to develop not the perfect but satisfying (Cyert and March, 1963; March and Simon, 1958; Simon, 1947) results. Thus, the mechanism allows for activities to become loosely coupled from perfection.

Pacing is a mechanism that allows the deviation activities to become loosely coupled in regards to other activities in time. Pacing allows the project manager to decide how and when a deviation will become integrated with the other activities.

Finally, parallel agendas limit the ability to control the activities within the deviation and can thus be utilized to make the activities loosely coupled in a control sense from other parties.

#### *Illogical solution to maintain the tightly coupled project*

Traditionally, uncertainty is treated as an inherent feature of the organization (Thompson, 1967). In project management, the tools and tricks come in several different forms. One of them is concurrent engineering (Terwiesch *et al.*, 2002). By using the tools the project manager tries to reduce the uncertainty of the feature and thereby assure the tightly coupled project.

What the analysis shows is however illogical compared to the common conception of how uncertainty should be treated. Rather than reducing the uncertainty the mechanisms thrive on the uncertainty of the situation. Therefore, by enhancing the seriousness of the situation more space for action is created to solve the specific deviation, i.e. the longer the project manager is able to emphasize the structures of a deviation the more time the project manager has to find a suitable solution.

In summary, the analysis that has been presented above outlines an additional challenge for project managers. It is a challenge that is typically not addressed in traditional literature but still has an enormous impact on how the tightly coupled project is maintained. Each and every one of the mechanisms is rarely discussed in traditional literature. These mechanisms are even less frequently proposed as necessary tools and competences of project managers. On the other hand, the mechanisms are techniques employed by project managers when they are actually managing a project rather than when they are doing much less demanding planning and control work.

## Conclusions

This study has described how project team members are able to deal with tightly coupled projects, despite continuously occurring deviations. The observations rely on a solid material of observations, interviews and documents which form the basis of a detailed and precise account of what it takes to manage deviations in a project.

There are two main areas of conclusion that are given attention. The first one is attached to uncertainty. There is an inherent uncertainty in projects which can be used when dealing with deviations in projects. Furthermore, all deviations do not have great consequences but regardless, they follow the same basic pattern when managed. From this perspective, project management in one sense becomes the management of deviations. The other area of interest is the theory of loosely coupled systems. For a long

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time, a process and practice-based analysis has been missing. By filling this void, I have been able to investigate the inner life of loose coupling mechanisms.

### Future research

Future research would involve focus on each and every one of the mechanisms that were identified, in order to develop a deeper understanding of them in other contexts. Furthermore, it would be pertinent to show how they relate to each other and whether any combination is different from the other. Last but not least, a similar study in a different context would be important to show the cross-analysis over organizational boundaries.

### Note

1. These first two involve the creation of distinctiveness. The others include the creation of responsiveness.

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### About the author

Markus Hällgren earned his Master degree in Business Administration in 2001, his licentiate degree (a halfway degree to doctor, above all present in Sweden and Finland) in 2004 and Doctoral degree in 2009, all from Umeå School of Business (USBE). In a Swedish context, a PhD normally takes four years, including about 18 months (differs between universities) of course work. If one (as in his case) is working meanwhile as a lecturer the time scheduled for finishing the dissertation is extended by a corresponding amount. USBE currently has around 37 PhD students of which five embarking on project-related research topics. The Government of Sweden generally funds scholarships for these PhDs on a competitive basis or the PhDs are funded through research grants. USBE faculty has an established track record of published contributions to the major project management journals, books, and other related publications. The PhD sometimes follows a path of the coursework leading to a licentiate thesis which can be considered a significant draft PhD thesis, sometimes the doctoral student may go straight for the PhD (he chose to have a licentiate first). Once defended, the licentiate is supposed to form the basis of the PhD thesis. The thesis is developed in close cooperation with supervisor's providing feedback throughout the entire process. When the thesis is almost done an internal viva seminar with one external and one internal examiner is organized. The issues that are brought up are incorporated into the thesis. When the thesis is ready to be defended a public final viva is held with one professor acting as the main opponent and three professors in a grading committee. The thesis is then given the grade of pass/no pass by the grading committee. He has a background in managing internet voting (e-voting) projects and has been project manager of several national e-voting projects in Sweden. The interest for project management in general and deviations in particular came out of these experiences. He is currently lecturing on organizational theory in general and project management in particular at USBE. He also manages the 08:23 research group ([www.0823.se](http://www.0823.se)) that meets every Tuesday at 08:23 am, discussing project research-related topics. His current research interests concerns the coupling mechanisms present in the management of the unexpected in power plant projects (the dissertation). While writing on the dissertation he has developed a keen interest in research on: the relevance of project management – or how project management, taught and practiced, may lose relevance if one is not careful; innovations in open distributed systems – meaning, observed challenges to innovation collaborations in major project undertakings; temporary organizing – specifically how the temporariness of, i.e. projects, causes challenges to the management thereof; and expeditions as temporary organizations – particularly how management issues are dealt with in the less traditional context of mountain climbing expeditions. (Editor's note: a paper on this has been accepted for Issue 1 or 2 in 2010, Volume 3 of this journal.) The common denominator between the areas is projects and the effect on and from practice utilizing a projects-as-practice approach. He has published in all four research areas. He has communicated results from his studies in among others *International Journal of Managing Projects in Business*, *Project Management Journal*, *International Journal of Project Management*, *Journal of Workplace Learning*, *Projects & Profits* and at several conferences. He has 14 published or "in press" articles, three book chapters, 14 conference papers,

two books (the licentiate and the dissertation) and four white papers/business reports (Anell *et al.*, 2007; Blomquist *et al.*, 2006a, b, c, 2007, 2009; Hällgren, 2004, 2006, 2007a, b, 2009a, c, b, d, e, f, g, 2010; Hällgren and Grönlund, 2003; Hällgren and Lilliesköld, 2006; Hällgren and Maaninen-Olsson, 2004, 2005a, b, 2009; Hällgren and Nilsson, 2006; Hällgren and Söderholm, 2005, 2006a, 2006b, 2007, 2009; Hällgren and Wilson, 2007, 2008a, b; Maaninen-Olsson and Hällgren, 2005; Ohlin and Hällgren, 2002) while the thesis (see URL link in the abstract section) leads to the thesis in Swedish, many of the cited papers are in English. He has served as reviewer for several journals, including *International Journal of Managing Projects in Business*. Markus Hällgren can be contacted at: markus.hallgren@usbe.umu.se