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# **The Role of Anticipatory Emotions and their Contagiousness in an IS Project**

*Completed Research Paper*

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## **Abstract**

*The previous research has shown increasing interest in understanding anticipatory emotions and their contagion, which can happen in dyads or groups as well as in other settings in organizations. The role of anticipatory emotions and their behavioral effects remain unexplored in IS projects. To address the research gap, we conducted a qualitative and longitudinal case study in order to understand what are the role and consequences of the anticipatory emotions in IS project work, and how their contagiousness emerges over time. Adopting a model of group emotional contagion as a theoretical lens provided us with an opportunity to explain the relationship between anticipatory emotions and emotional contagion, and how they influence individual- and group-level outcomes. In terms of a theoretical contribution, we provide an answer to the call for an understanding of anticipatory emotions and emotional contagion, their influence on group dynamics, and the processes and outcomes of collective emotions.*

**Keywords:** Anticipatory emotions, emotional contagion, information system project, case study

## **Introduction**

The concept of anticipation captures not only expected future events but also how we (consciously or subconsciously) alter our behavior according to specific expectations (cf. Barsade et al. 2018; Butz et al. 2003; Epstude & Roeser 2008; Hinton 2015; Niedenthal & Brauer 2012). Emotional contagion is “a process in which a person or group influences the emotions or behavior of another person or group” (Barsade 2002: 646; Barsade et al. 2018). A couple of decades ago, organizational researchers started to focus on understanding the different processes of collective emotion, such as what triggers us to behave and feel in certain ways (Barsade 2002; Barsade et al. 2018; Forgas 1990; Niedenthal & Brauer 2012). Although researchers, such as those in the field of psychology, have shown increasing interest in understanding and formalizing anticipatory emotional and behavioral mechanisms (cf. Barsade et al. 2018), we have limited information about which types of anticipatory behavior are important to distinguish and why different anticipatory mechanisms (in, e.g., learning, attentional processing, or object recognition tasks) are necessary and/or beneficial in organizations (cf. Butz et al. 2003). However, recent studies have shown that emotional contagion, which can happen in dyads or groups as well as other settings, is crucial to our understanding of organizational behavior (Barsade et al. 2018; Niedenthal & Brauer 2012).

The role of anticipatory emotions and their behavioral effects remain unexplored in information systems (IS) project work. However, a few studies (e.g., Beaudry & Pinsonneault 2010; Hekkala & Stein 2016; Pawlowski et al. 2007; Stein et al. 2015) have studied emotions and so-called lived experiences within IS project contexts. They have highlighted that emotions have a very powerful influence on not only everyday organizational processes but also organizations’ functioning, including how ISs are implemented and used. Moreover, those studies have shown that periods of change create extreme demands on both individuals and organizations, often leading to intense ambivalence that is difficult to manage (cf. Ashforth et al., 2014).

Such situations can result in negative outcomes, such as decreased performance at work. To address the research gap, we try to understand the role that anticipatory emotions play in a complex IS project over time (2016–2019). This study is guided by the following questions: What are the role and consequences of the anticipatory emotions in IS project work, and how does their contagiousness emerge?

To answer the research questions, we conducted a qualitative, longitudinal case study with interviews, adopting an interpretive approach (cf. Klein & Myers, 1999). In addition to utilizing literature on anticipatory emotions, we anchored our study, insofar as it was possible, on a model of group emotional contagion (Barsade 2002; Barsade et al. 2018). The model, though not strictly followed, provides an opportunity to consider the relationship between anticipatory emotions (e.g., hope or fear related to possible future events) and emotional contagion and how they influence individual- and group-level outcomes (e.g., cooperativeness, conflicts). Processes related to anticipatory emotions and emotional contagion can occur in dyads and groups (cf. Niedenthal & Brauer 2012; Barsade et al. 2018). Understanding these processes is becoming increasingly important as companies have begun to emphasize the value of team orientation at both the national and international levels (cf. Barsade et al. 2018).

In terms of a theoretical contribution, we provide an initial answer to the call for an understanding of anticipatory emotions and emotional contagion, their influence on work group dynamics, and the processes and outcomes of collective emotions (cf. Barsade et al. 2018; Niedenthal & Brauer 2012). It is crucial to understand emotional contagion and its consequences for organizational behavior because these factors influence individual and organizational performance and well-being. Furthermore, such research will increase our understanding of how people share ideas and knowledge in group(s), including how negative anticipatory emotions may lead to situations in which some knowledge is hidden.

The rest of this paper is organized as follows. In the next section, we present the basic ideas related to anticipatory emotions, emotional contagion, and their influence on group behavior (e.g., Barsade et al. 2018). The following three sections present the research case, the research method, and our findings. In the final sections, we discuss our findings and conclude the paper.

## **Theoretical Background**

The term “anticipation” is often understood as a synonym for prediction or expectation. Butz et al. (2003: 3) highlighted that “anticipation means more than a simple lookahead into the future.” As such, the concept of anticipation captures not only expected future events but also how we alter our behavior according to specific expectations. According to Butz et al. (2003), the latter aspect of anticipation—actual behavior—is often overlooked and misunderstood. Anticipatory behavior refers to a behavior that is based on expectations and predictions about the future, and it is shaped by past and present experiences. Emotional contagion is defined as “a process in which a person or group influences the emotions or behavior of another person or group through the conscious or unconscious induction of emotion states and behavioral attitudes” (Barsade 2002: 646). Following Hatfield et al. (1994), and Barsade (2002), we use the term “emotion” as a broad label, similar to affect and mood, both of which refer to the general phenomenon of subjective emotions.

### ***Anticipatory emotions and behavior***

Anticipatory emotions are defined as emotional responses to the potential consequences of a future event (e.g., Baumgartner et al. 2008; Ortony et al. 1998) that have either positive or negative consequences (e.g., Ortony et al. 1988). Psychologists have long recognized the role of anticipatory emotions and argued that we all experience emotions related to our uncertainty about the future, such as hopefulness, anxiety, fear, and suspense (Caplin & Leahy 2001). In fact, some scholars have highlighted that it is uncertainty about the future that constitutes part of the meaning of anticipatory emotions; a critical aspect of forecasting future events is whether the outcome is expected to be desirable or undesirable (cf. Roseman et al. 1996; Smith & Ellsworth 1985; Niedenthal & Brauer 2012).

Our assumption(s) or desire to achieve certain goals in the future have been identified as reasons why we enact behaviors in the present (e.g., Butz et al. 2003). It has also been argued that emotional states are more intense during anticipation than during retrospection (cf. Harvey & Victoravich 2009). It is very important to understand this aspect in IS projects too, as expectations about an upcoming event have the power to

shape one's subsequent emotional response for better or worse (cf. Denny et al. 2014). Individuals often use this ability in ways that are not productive, such as anticipating the worst possible scenario. However, it is very difficult to make clear distinctions between positive and negative emotions because good and bad can be seen as two sides of the same coin and either type of emotion can serve good or bad purposes (cf. Solomon & Stone 2002; Pfister & Böhm 2008). Solomon and Stone (2002) highlight that good/bad and pleasurable/painful emotions have different origins and meanings and represent qualitatively different dimensions. That being said, what is good or beneficial for someone need not be pleasurable, and what is harmful might be satisfying on some occasions. Furthermore, many emotions may constitute complex appraisals and thus consist of a combination of pleasurable and unpleasurable aspects (ibid.). Thus, positive and negative aspects are not mutually exclusive in emotional experiences (cf. Pfister & Böhm 2008); it is more likely that emotional experiences are ambivalent. For example, anxiety can be a powerful motivator of behavior, but it doesn't mean that it always will be; only properly regulated anxiety can help us pursue our goals.

Anticipatory emotions are interesting and important because they are inherently linked to time (past, present, future) or the ideas of have-been, could-have-been, actuality (present events), and potentiality (anticipated future events based on actuality and the past). Thus, according to Epstude and Roese (2008), anticipatory emotions play an important role in, for example, the regulation of our goals and ongoing behavior. Research on counterfactual thinking demonstrates that upward counterfactual thinking (i.e., thinking that something could have been better) makes an individual more likely to prepare for better future outcomes, albeit at the expense of increased negative affect. In contrast, downward counterfactual thinking (i.e., thinking that something could have been worse) reduces individuals' motivation to improve in the future and makes them more likely to savor a good outcome or to engage in mood repair following a bad outcome (cf. Epstude & Roese 2008). Anticipatory behavior is summarized by Butz et al. (2003: 3) as "a process, or behavior, that does not only depend on past and present, but also on predictions, expectations, or beliefs about the future." They highlight that anticipatory behavior is a crucial prerequisite for social interaction (ibid.). It also appears to be very useful for understanding different processes and outcomes of collective emotions in IS projects because "breaking" a harmful emotional process in an IS project would prevent severe mishaps and thus have a beneficial effect. Internal reflection and planning may help tremendously, especially in dynamic environments (cf. Butz et al. 2003).

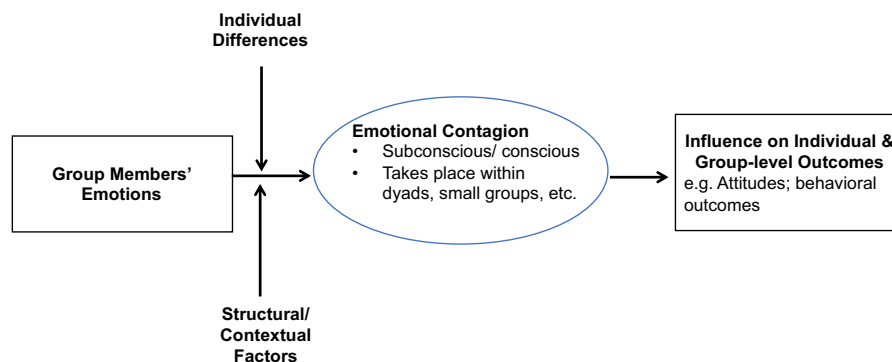
### ***Theoretical lens: Emotional contagion within organizations***

It has been outlined by Barsade et al. (2018) that there is a difference in how people share ideas and how they share emotions. For example, people need more verbal communication to share ideas than to share emotions. Indeed, sharing emotions does not necessarily require words, and nonverbal cues can play a crucial role in this process (cf. Barsade 2002; Epstude & Mussweiler 2009). Some scholars have noted that emotion-sharing is more likely to occur during face-to-face communication (Barsade 2002), but others have argued that it can also happen during online communication (Belkin 2009).

Regardless of whether we see or anticipate another person's emotional display, emotional contagion is a cognitive process, which first involves putting oneself in the other person's position first (consciously or unconsciously) and then is followed by emotional contagion (i.e., experiencing an emotion in response to another person's experience of a similar emotion) (Barsade 2002). Various scholars have highlighted that it is crucial to differentiate between affective convergence and affective divergence (Barsade et al. 2018). The former describes emotional contagion in which a person feels happy in response to another person's happiness, and the latter describes "counter-contagion," which occurs when observing another person's emotion causes one to feel a fundamentally opposed or different emotion, such as feeling happy in response to another person's pain (ibid.).

Both types of emotional contagion are important, and exploring them improves our understanding of what enhances or hinders personal relationships, social processes in organizations, and organizational practices (cf. Belkin 2009). It has been argued that we still have a limited understanding of the influence of shared social processes, including the sharing of emotions and emotional contagion (Barsade et al. 2018; Belkin 2009). We argue that it is not enough to focus solely on cognitive issues that occur in teams and groups in IS projects because shared emotions and possible emotional contagion may have a crucial effect on group interactions and dynamics and how group work is executed.

For decades, many scholars have claimed that negative emotions receive more attention from people and cues about negative emotions seem to be more relevant for people (e.g., Barsade 2002). It is crucial to understand the role of negative anticipatory emotions and their contagiousness in IS projects if they tend to elicit not only stronger emotional reactions and responses but also stronger behavioral and cognitive responses than neutral or positive emotions. Barsade et al. (2018) note that the effect of an emotional stimulus on the emotional contagion process is shaped by individual differences (e.g., in the characteristics of the receivers and senders) and structural/contextual factors (e.g., group characteristics and industry/occupation) in the setting in which emotional contagion occurs. In practice, negative anticipatory emotions may escalate into, for example, collaborational challenges, power struggles, conflicts, social judgements, and removal from IS projects by increasing negativity amongst the project members within dyads or larger groups. Moreover, they may lead to situations in IS projects in which even neutral emotions are presented in a hostile way. Such situations may become worse if the person in question is very expressive, in which case their emotions are more likely to be contagious (cf. Barsade 2002; Forgas 1990; Belkin 2009). Negative emotional contagion processes also tend to have different biased attitudes and behavioral outcomes at both the individual and organizational levels. It is hardly surprising that positive emotions have a favorable impact on individuals' and groups' self-efficacy in different tasks, group cohesion (approval, bonding, etc.), and job performance in groups (cf. Barsade 2002; Niedenthal & Brauer 2012). These factors alone do not ensure that the group will have good outcomes, but positive emotions will probably ensure that negative conflicts are less likely to occur. Figure 1 summarizes the key aspects of group emotional contagion.



**Figure 1. Simplified illustration of group emotional contagion (cf. Barsade et al. 2018; Barsade 2002).**

Following recent studies (e.g., Barsade et al. 2018), we argue that emotional contagion has four crucial elements: (1) it is comprised of distinct emotions and emotional states; (2) it occurs via either subconscious or conscious processes that occur when people are both elicitors and targets of emotional contagion; (3) it can take place within dyads, small groups, and organizations; and (4) it represents a type of social influence that affects not only how people feel but also what they subsequently think and behave.

With this literature-based understanding of anticipatory emotions and emotional contagion, we conduct an empirical study to explore and detail the role, consequences, and contagiousness of anticipatory emotions in an IS project.

## Method

This study is part of a broader research project that follows the development of a new customer relationship management (CRM) system for five public sector organizations (Alpha, Beta, Gamma, Delta, Epsilon) in Northern Europe. The goal of the new CRM system is to provide a centralized means of running key customer-facing processes at the organizations, including the collection of customer information and provision of web-based self-service capabilities. This agile IS development project started in 2013 and is still ongoing. The current expected completion date is in 2020, and Delta—the smallest of the five organizations—began to pilot the system in the fall of 2019. The project started when Alpha and Beta

decided to modernize their shared legacy system as it was coming to the end of its lifecycle. Gamma, which was using a different system that worked well, joined the project to provide a baseline for the new system. The three organizations chose to collaboratively develop a custom solution because of the budgetary constraints of all organizations and because a suitable packaged software capable of meeting the specific requirements of public sector organizations could not be found. Delta and Epsilon joined the project at a later stage as customers of the new system rather than project partners. The first author of this paper has been following the project from the beginning and conducts yearly interviews with the project participants.

### ***Project timeline: 2013–2019***

The project can be broadly divided into two phases: the inter-organizational (IO) collaboration phase (2013–2016) and the in-house company phase (2016 on). In the initial plan for the project (developed in 2013), the goal was to finish development of the system by 2016. In addition, an in-house company was to be established to continue the selling, maintenance, and upgrading of the new system. While the project was far from done in 2016, the in-house company (Sigma Ltd.) was still established, precipitating major organizational re-structuring and relocation.

At the beginning of the project, in 2013, the participating organizations (Alpha, Beta and Gamma) were all project partners with equal decision-making rights, though the costs were not split equally. The project was organized hierarchically into the management, steering, and project groups, each consisting of representatives from the three organizations. Members of the management group made decisions about all personnel and budgeting issues and defined general policies. Members of the steering group guided the project group and tried to resolve problems that arose in this group. The aim of the project group was to complete requirement specification, design, and programming work. For the programming work, many external software development companies were hired to assist the project group. However, the project suffered from many conflicts between members from Alpha and Beta in all groups. These conflicts carried over to external software developers, depending on whether their company had a contract with Alpha or Beta. As a result, the project work was duplicated and re-started many times. This led the project to run over time and over budget.

In early 2016, in line with the initial plan, Sigma Ltd. was established, and the project continued as in-house company work. The individual project members, previously employees of Alpha and Beta (public sector organizations), all became employees of Sigma Ltd. (a private sector organization). Alpha, Beta, and Gamma became the first clients of Sigma, later joined by Delta and Epsilon. These five client organizations are also shareholders of the company and sit on its board of directors. In practice, this structural change involved the dissolution of the project, steering, and management groups. While most of the project group members became employees of Sigma, most of the management and steering group members are no longer part of the project due to the restructuring. A CEO was hired externally to run Sigma Ltd. This was a chaotic phase for the project members. According to Alex, who acted as a project manager until 2016, it was especially chaotic because Sigma Ltd belongs to a different collective agreement than public sector organizations, which did not consider, for example, the implications of transferring employees as existing employees to a new agreement with worse benefits for them. It took time to come up with solutions, such as a model for compensating the shorter summer holidays. During this phase, the new CEO, Mason, received a lot of negative feedback. Alex noted that the changes caused “psychological damage” among the project members.

The employees relocated to different premises at the beginning of 2016, and at the end of the 2016, the new CEO, together with the project members, decided to establish three teams in the in-house company: a customer service team, a development team, and a user interface team. The previous employees of Alpha and Beta were purposefully mixed in these teams. The in-house company continued with the earlier strategy of outsourcing most of its software development activities, so external software developers were also divided between these teams. At the time of writing (April, 2020), the project is still ongoing, over three years delayed, and 6–7 million euros over budget.

### ***Data collection***

The shift to the in-house company in 2016 was a very critical phase, as it was accompanied by a change in roles and employers for many project participants, especially employees of the Alpha and Beta user organizations. More project members joined the IS project as either a new employee of Sigma Ltd. or an

outside consultant. New teams were established. In this study, we focus on the in-house company phase (2016–2019). We chose to perform a qualitative study with an interpretive approach (Klein & Myers 1999) because it allowed us to gain deep insights and reflect on the meanings that individuals assign to events, situations, and changes within the IS project. We collected data by interviewing as many project members as possible over time.

We conducted 75 interviews from 2016–2019 with 45 different people (software developers, UI designers, experts, shareholders, etc.). Some people were interviewed several times. As this was a very large and complex IS project, not all interviewees worked closely with each other. We used narratives in the interviews, i.e., the interview started by asking the interviewee to describe, in their own view, how the project has proceeded. This followed semi-structured questions (project -, in-house company -, and agile software development related) if the respondent did not already cover these. Examples of questions are the following ones: How has the collaboration proceeded? What are you expecting from the project at the moment? What are the biggest challenges of the project at the moment? How have others reacted to the changes? What kind of feelings has this project raised in you? In this paper, we decided to focus on the previously mentioned teams (customer service, development, and user interface teams), who work with each other at least weekly, and on 58 interviews (with 26 different people) conducted from 2016 to 2019. The data is rich because it is a follow-up study spanning a duration of four years and the nature of the interviews was very open. The participants appeared to trust the interviewer, frequently referring to them as their “therapist.”

Many things started to culminate and affect the relationships of the project members from 2016 onwards. During this organizational structure change, many new employees and software developers joined the project. The increase in the number of consultants led to a need to divide the experts, defined from 2013–2016 as product owners (Chloe<sup>1</sup>, Carol, Wendy, Nicole), software developers (architects, scrum masters), and user interface designers, into three groups. However, due to numerous changes over time (new people joining the project, collaboration challenges within and across teams, notice given by some software developers, etc.), which led the project team to shift people between the three groups, it became very challenging to track the changes within the groups even for employees of Sigma Ltd. However, the sub-groups were created in order to allow employees to focus on specific areas better than if all employees tried to be aware of everything all the time. Table 1 summarizes the organizations, their changed roles, the interviewees, and the number of interviewees from 2016–2019.

Organization	Organizations’ role in the project	Interviewees and their roles	Number of interviews (2016-2019)
Sigma Ltd.	An in-house company established in 2016 to continue IS development work. This company has grown constantly since its establishment.	Alex (Service manager) Chloe (Manager, 2016 onwards) Wendy (Expert) Carol (Expert) Nicole (Expert) Natalie (Expert) Jayla (Expert) Cecilia (Expert) Emily (Expert) Leah (Project assistant) Tyrone (Manager) Linn (UI designer) Selena (UI designer) Max (UI designer) Harry (Software developer) Michael (Software developer)	4 (beginning in 2013) 4 (beginning in 2013) 3 (beginning in 2013) 4 (beginning in 2013) 4 (beginning in 2013) 1 (2019) 3 (beginning in 2017) 3 (beginning in 2017) 2 (beginning in 2017) 2 (beginning in 2017) 2 (beginning in 2018) 3 (beginning in 2017) 1 (2018) 1 (2013) 2 (beginning in 2018) 1 (2017)

<sup>1</sup> All names are pseudonyms. Chloe started as a manager for experts and a project assistant in December 2016. Tyrone acted as a manager for software developers and UI designers.

		George (Application architect)	1 (2017)
Omicron, Supplier	Omicron is an agile software house founded in 2005 that aims to provide top-quality software development. At the time of data collection, the staff consisted of about 20 people.	Robert (Software developer) Tom (Software architect) Anthon (Software developer) Ethan (Software developer)	3 (beginning in 2014) 2 (beginning in 2014) 2 (beginning in 2018) 1 (2018)
Midén, Supplier	Midén is an agile software house founded in 2007 that develops digital business solutions. At the time of data collection, the staff consisted of about 50 people.	Justin (Software developer) Elbert (Architect) Jack (Software developer) Jimmy (Software developer) Thomas (Software developer)	3 (beginning in 2015) 2 (beginning in 2015) 1 (2019) 1 (2014) 2 (beginning in 2018)

**Table 1: The organizations, roles, interviewees, and number of interviews**

Although there were many challenges at the beginning of the project, a tremendous change can be perceived in the project members' narratives from 2016 onwards as the project members started to increasingly anticipate that the cooperation would not proceed smoothly. Many project members realized that the way in which they acted or communicated with each other was no longer respectful or constructive.

### **Data analysis**

All interviews were recorded and fully transcribed. In the first phase of analysis, the first author of the paper open coded the data, focusing on issues related to emotions. We analyzed the interviewees' descriptions with the aim of identifying project members' perceptions (cf. Myers & Avison 2002), including what kinds of emotions emerged and why as well as how the project members reacted to them and why. We did not have any specific theoretical framework in mind. During the first phase, we noticed that different anticipatory emotions (e.g., hope, fear, and worry) were involved in the IS project. Some of these emotions restricted project activities, and others pushed them forward. "Negative" anticipatory emotions (e.g., fear, worry, anxiety) clearly seemed to have more relevance to the project members, which led to convergence toward unpleasant communication and seemed to escalate into different conflicts and power struggles. It also became evident that the project members wanted to find scapegoats for challenges faced in the project. The project members noticed and reflected on this situation, commenting that the negativity was very contagious and had very harmful consequences. Many of them had started to anticipate that there would always be a difficult person to work with in the project. Thus, our results focus on the negative anticipatory emotions and their contagiousness. We believe that the vignettes presented below clearly show the harmful consequences that anticipatory emotions may have in the project.

The IS project members' (experts, software developers, UI designers) awareness that the atmosphere and emotions of others were contagious and had many harmful consequences captured our interest, leading us to focus more closely on anticipatory emotions, emotional contagion, and their behavioral consequences. At this stage of the analysis, we consulted different theoretical frameworks on emotional contagion. We chose the model of group emotional contagion (a process view) presented by Barsade (2002) and Barsade et al. (2018) as it was most helpful for analyzing trends in the data. During this phase of the analysis, we described several vignettes in detail. The process of identifying a scapegoat, emotional contagiousness among project members, and its consequences were very interesting and provided insight into anticipatory emotions and their contagiousness. We selected four vignettes that describe how anticipatory emotions (e.g., worry that someone is going to be difficult; worry that you are not immune to your group behavior) and their contagiousness among project members. These have a crucial impact on the behavior at both the individual and group levels. In the third phase, we looked at anticipatory emotions and emotional contagion and their behavioral effects in more detail (see the overview in Figure 2 in Discussion).

In the next section, we unpack the contagion of anticipatory emotions, the unfolding narratives, and the role of anticipatory emotions in behavior within the project.



## Case Findings

As described earlier, an IO IS project became an in-house company project in 2016. This turn of events produced substantial changes: (1) the employers and working contracts of some project members changed as they shifted from the public sector to the private sector, (2) a new CEO was recruited for the in-house company, and (3) the project moved to new premises. This raised a lot of questions and fear amongst the project members. In this phase of the project, it was notable that different negative anticipatory emotions (e.g., fear, anxiety, worry) started to emerge and spread among the project members.

Alex, who acted as a project manager until 2016, said that when project members were notified that they would move [new premises] in March, details about the move did not seem to be confirmed. However, when the decision to move was received, the information was missing in between that a decision of moving has been made and that the date of moving will become clearer, so the information came that they will move on specific date. According to Robert (a software developer at Omicron), *“The personnel were never asked for their opinions [about the relocation] in any way. We had this one staff info [session] where we were told that this has been decided [location X] and the event was like, everybody got the feeling that no comments are actually needed [...] we had thought that here we can express our concerns [...]”*

The new staff and software developers from the supplier organizations tried to protest the move, and the project members did not believe the explanations regarding why the news premises were selected. This caused anxiety (which took the form of, e.g., pondering about who was responsible for the situation) to spread among the project members, with various emotional and behavioral consequences. Many project members thought that the new CEO made the decision for selfish reasons: *“since he was the CEO of the other company in the neighbor, he just wanted his companies in the same building [...]”* (Tom, a software architect at Omicron). As the project members’ began to worry about the failed move, it had many behavioral consequences. For example, many project members realized that they started to seek a perpetrator of the situation: *“Somehow, I think that, almost every human being has this internal need to find someone to blame. That [is] why something is not succeeding, why something is backfiring [...] and then it starts that seeking a perpetrator [...] who is the person who is doing wrong. And then it is even more feeding that relationships are failing [...]”* (Chloe, a manager at Sigma Ltd.).

Most of the interviewees noted that negative attitudes about the work started to spread among the project members. Some of them consciously reflected on their own role and ways of acting in these situations. Even if the project members consciously tried, it was not always easy to behave in a constructive way and not feed negativity within their work community. Many software developers (e.g., Tom, Robert) noted that they recognized that the negativity was contagious, even if it was targeted towards the work (e.g., code) because it affected everyone within earshot. Tom thought that everyone had started to behave in a way that fed the negativity and wondered if it was too late to change this pattern. He, like many other project members, wondered if negative emotions were more contagious than positive ones in collaborative settings. According to Tom, it was much easier to notice when negative things are contagious: *“It doesn’t have to be targeted at people; it is invasive if it is focused at our project generally. Because in that case it focuses everyone who is staying within earshot [...] I think we should have intervened in time. But because everyone acts this way, it is contagious. And I don’t know if it is realistic or does it only feel so, that these negative things are more contagious than positive things [laughing] [...]”* (Tom, a software architect at Omicron).

Based on the interviews, it seemed evident that a negative attitude and negative anticipatory emotions regarding work elicited stronger emotional and behavioral responses than so-called positive emotions. It was also clear that unpleasant anticipatory emotions (e.g., worry, anxiety, fear) regarding collaboration were more likely to lead emotional contagion than pleasant emotions: *“I mean I am the victim of this existing culture, where everyone else is. When there’s a specific kind of negativity or a crossfire, it can be seen, and it’s contagious. It is harmful, but you’re not immune to your groups caused pressure and group behavior.”* (Justin, a software developer at Midén).

Below, we present four vignettes that unfolded between 2016 and 2019. These vignettes focus on the contagiousness of negative anticipatory emotions (e.g., fear, worry, anxiety) among the project members and the consequences of this contagiousness. We want to highlight that although these emotions are considered anticipatory emotions in this paper, they are not always anticipatory emotions. For example, one can feel anxiety during retrospection on past issues.

### **Vignette #1: Problems with the relocation of the project members**

When the project progressed after the significant structural change, the project members gathered together for an info event. The CEO briefed the project members on what was happening in the project. The CEO told the project members about the relocation, which triggered great resistance and even hate in regard to the CEO. These feelings were very contagious among the project members. As Chloe (a manager at Sigma Ltd.) said, *“it was told that we will relocate [to place X]. And it was such poison for this crowd that there was no sense at all [...] the coders, it can almost be said that some 50 percent were of the opinion that we’ll definitely not move to [X], that this is a really shitty thing. And now we’ve been treating the wounds but they have not yet [19 May 2016] healed [...] the situation at present is very difficult.”*

The project members felt that they did not have any chance to influence the changes, and some project members thought that the decision regarding relocation was done for selfish reasons because the CEO was a CEO for another company that was located in the same building as the new premises. Justin (a software developer at Midén) noted, *“He is the Epsilon’s CEO as well, and that’s why these premises, because Epsilon is on the other side of the wall and he knew there was empty space here. So here’s some kind of synergy; he gets both of his companies under the same roof. We experienced that he only optimizes his own work [...] It’s sort of like a mixed signal, like come here to me [...].”*

Many shared Justin’s view. Some project members were a bit more reserved in expressing their disappointment and frustration about the situation: *“It is not fun at all and I really did not hope that this would go like this, but I think [...] probably I should not say this, but in my opinion, the CEO has handled these things poorly [...].”* (Chloe, a manager at Sigma Ltd.). Some project members were more severely affected by this change, and their language conveyed anxiety about the situation, which elicited very strong emotional responses: *“with the new CEO [...] we have kind of been kept in the dark and fed shit [...] so what is a challenge, that if you start from the situation that everything is crap, it is somewhat bad. And now that it has been difficult to identify what went wrong, as all little things go slightly wrong, so you only get a bad feeling [...].”* (Wendy, an expert at Sigma Ltd.).

Some project members (e.g., Chloe, Robert, Justin, Tom) stated that the CEO has to pay a high cost for the situation, as the issues were considered only from the company’s perspective. They thought that the CEO did not understand and that his actions probably destroyed trust, respect and other factors that cannot be purchased.

Many project members gave feedback on the situation, but they felt that this was seen as whining. The project members felt that their messages/feedbacks did not get through and their perspective was not considered or taken seriously. Many project members described the same information event that led to an “icy encounter” between them and CEO. According to Robert, *“We just had a staff info [session] on this Tuesday and we were told that feedback is welcome and you can give some, but then there was an icy silence. It has been long since I have been present at an event so cold [...] that they have been able to silence people quite well. An atmosphere of fear exists where we previously communicated openly about issues [...].”* (Robert, a software developer at Omicron). Justin also stated that *“there had been an info event on Tuesday [...] I could not attend myself. Three consultants and one of our product owners all described the situation or the atmosphere with the same words, that it was an icy encounter [between them and the CEO].”*

Our findings indicate that, in this case, negative emotions were socially shared and escalated among the project members until, as Tom described, everyone started to hate the new CEO. This had not only emotional but also behavioral consequences; project members expressed their worry, disdain, or anger by remaining silent and withdrawing into themselves: *“The CEO wasn’t very negotiable, and it was an awful first work assignment from a new CEO, to express the reluctance to talk about anything. Now everyone hates him. All of his held announcements are awkward, no one makes contact. If he comes here then he pulls out some kind of monologue, are there any questions. Nope – everyone is silent. I think it’s based on an emotional reaction level, since we weren’t able to talk with him once [...] we’re not going to talk now either”* (Tom, a software architect at Omicron).

As the situation continued, the CEO was not able to connect with the new subordinates and the consultants hired for the project from different IT companies, and it was felt that his way of doing things was like that of a dictator. The situation escalated into worry and speculations. For example, one software developer compared it to a Machiavellian move in which the leader’s only motive is to achieve his own goal, regardless

of the morality or popularity of the decision or the unemotional coldness it causes amongst project members: *“It makes me think about what might lie in the background of such decisions [...] I hope I am wrong, but one possibility is that some managers have a culture such that through a divide and conquer method they get, let us say that parking space benefits are given out to some people and not to others, so a conflict is created between people, so [...] from a certain viewpoint, it is easier to manage people [...] I hope I am wrong [...]”* (Robert, a software developer at Omicron).

We also assume that emotions and their contagiousness in this case were probably triggered even stronger by power relations, and this probably constituted a crucial contagion factor (e.g. the subordinates started to hate the new CEO). Many project members stated that regardless of the challenges they had faced earlier, they had still an ability to enjoy others' company and, for the most part, work on issues constructively. For example, Justin (a software developer at Midén) stated that although they [project members] had their own problems in the project work, they were able to work together and even have fun together: *“We make [a] hassle, we shout and quarrel, but we have fun. And then there is this outside somebody; there is a kind of emotional wall now [...]”*.

### ***Vignette #2: Problems finding agreement about how to proceed***

The changes in personnel just before and after relocation created a situation in which *“there was not any widespread agreement what they were doing”* (Jimmy, a software developer at Midén). According to many project members, when new people joined, they often started to redo everything. Many other project members shared Jimmy's worry that there was no clear outline for the project and acknowledged the risks related to this.

The risk of redoing work manifested after Midén joined the project. Midén performed a quality audit of the existing data model and stated that major changes to the architecture were needed. Through this position, being the quality auditor, Midén gained a lot of power to define how to proceed with software development. This probably had a lot of consequences on emotions and their contagiousness in the end. Samuel (a software developer at Midén) had an idea about how specific parts of the development work should be done. However, if his suggestion was followed, a large part of the earlier work would have had to be recoded.

Even though several project members worried about whether it would be a good idea to continue, the process of redoing the work began. However, Samuel was not able to evaluate how long it would take: *“After a long and bumpy discussion, however, was that we're going to rewrite the section [...] So basically [...] Samuel was working on it individually for months, and at that point [August] our old software developer Tim came back, who'd been away for six months. Tim was shocked to hear that we were rewriting the section, and he questioned if we thought it through, since this was a huge expense. He didn't insist, however [he] proposed that he thinks there should be an estimate made [...]. And this initiated a huge fight as the dude who had been leading the coding felt as if he was being betrayed [...] it was a situation where no one was really able to say anything against it, but in a way there were such good reasons to do things in that way so it couldn't be stopped [...]”* (Chloe, a manager at Sigma Ltd.).

Regardless of the shared increasing worry that started to become contagious among the project group members, Samuel continued working. His way of working was considered difficult for almost everyone else as he was not able to adapt to anyone else's ideology of working. Alex (a manager at Sigma Ltd.) described Samuel as follows: *“He was a lone rider that knew how things were supposed to be done [...] He was sufficiently patient until exhaustion [...]”* Other software developers started to suffer from the situation to varying degrees, as described by Chloe. However, there were several reasons why the software developers did not want to bring the issue up first. For example, Samuel was thought to be a very challenging person and impossible to engage in compromises, and there was also a friendship between Samuel and Justin, who came from the same company. Some project members, such as Robert, highlighted that they tried to avoid confrontations.

It became impossible to hide the challenges after Samuel did not follow the decisions and alignments made by software developers. The project members stated that he always had a reasoning for his actions, but Chloe and Robert highlighted that he did not do anything in an agile manner. According to Chloe (a manager at Sigma Ltd.), these issues escalated, leading the atmosphere to become toxic *“for a good amount of time.”* Justin came from the same company and was Samuel's friend, so he felt that he needed to *“watch out for things he says.”* He discussed this situation with other project members, who felt that this situation was difficult as well. Justin agreed with Robert, another software developer, that he would adopt a bigger role

confronting Samuel due to his friendship with Samuel. Justin wanted to make sure that Samuel “*would not get angry [...]*.”

This was also not an easy situation for Robert. He became worried about his own behavior as he started to say nasty things to Samuel because, according to him, this was not normal behavior for him. It affected him so much that he wanted to change to a different team. Many software developers and experts highlighted that worrisome signs were evident before the actual challenges with Samuel started to emerge and culminate. For example, Robert’s and Justin’s interviews indicated that there was a “*collective wisdom of red flags*” that things would not go well since the beginning. Robert highlighted that “*He’s professionally a smart guy, but even in the beginning there were some red flags which should’ve been considered [...]*.” “*This one person had fights with so many people and they were all based on [the fact] that this person had very strong opinions and whenever anyone disagreed, he’d use everything in his power to get his own thoughts through [...]*” (Robert, a software developer at Omicron).

Many project members highlighted that he managed to get his way almost every time, and they started to see Samuel as the reason for the challenging situation. This caused the other project members to begin to have discussions without him about what they were going to do. There was only one person (Carol, an expert at Sigma Ltd.) who liked Samuel’s way of thinking and doing things: “*she [Carol] was a perfect counterpart and so a working pair was created that no one could really do anything about, since now there were two stubborn workers who had a similar idea [...]*” (Justin, a software developer at Midén).

Alex (a manager at Sigma Ltd.) thought that it was a coincidence that Samuel found a person who agreed with his ideas. This allowed Samuel (a software developer at Midén) to highlight that he discussed things with the product owners and they agreed that he should carry the plan out. In other words, Samuel had legitimacy to act. Alex thought that Carol did not realize what she was doing as she was not really working as a product owner and only partially moved to the development team to solve a technical problem. Many project members (e.g., scrum masters, Justin, and Robert) began to try to solve things. Chloe tried to intervene and talk about this issue with Carol several times, warning her that it would not be possible to continue in this way. However, the project members realized that things would not change, regardless of how hard they worked to achieve change. Justin highlighted that it is impossible to change a person if they do not want to change. Chloe noted that the situation started to get very tense and they “*tried getting Samuel into line,*” but this did not work. For this reason, the other project members started to wonder if they need to remove either Samuel or Carol from the project.

Information about the conflict spread to Samuel’s company, Midén, and the CEO became worried about how things would go (i.e., anticipation spread to the supplier organization) because the situation sounded like it would be difficult for him, too. He was ready to make a change and ask Samuel to switch to another project. Chloe, Robert, and Justin described that they did not remove Samuel immediately, but kind of wanted to give Samuel a chance, hoping that “*he was making a positive difference*” (Robert). However, the situation was not easier after several months, and the project members, including Alex and Justin, discussed the issues for hours with Samuel. According to Alex, “*it was all for nothing [...] He didn’t recognize any of these critiques or their reasons as to why they were being addressed.*”

Even though the situation was difficult for everyone, the project members made a collective decision that Samuel had to leave the project because the group dynamic did not work. Wendy (an expert at Sigma Ltd.) noted that “*it was like a drama queen- spirited decision [...]*,” and Chloe and Wendy stated that “*in the end it [the decision] came pretty fast.*” Both Chloe and Wendy assumed that Alex was making a conscious choice regarding the timing by removing Samuel when Carol was on holiday. Chloe explained that “*there were all the ingredients for a catastrophe [...] it was told about on Thursday to Samuel, and on Friday he didn’t show up to work.*” Many project members, including Alex, Chloe, Wendy, and Justin, thought that this likely affected Carol since she was not involved in the conversations: “*Carol took this pretty toughly because she’d been out of the whole loop that he was going to be kicked out*” (Chloe, a manager at Sigma Ltd.).

### ***Vignette #3: Problems with a “fresh start”***

It seemed for a while that the issues were solved and the project work could continue as everyone was in better spirits. The idea that things would start to go better was very contagious among the project members; as Wendy described, “*Samuel’s leaving definitely cleared up the air [...]*.” Many project members shared her view; Justin outlined that the cooperation between teams improved “*since we didn’t have to battle with this stubborn guy.*” Justin (a software developer at Midén) also noted that people were more open to

hearing other people's points of view. Chloe (a manager at Sigma Ltd.) emphasized that *"when Samuel left, there was freedom sensed between the software developers [...] they view this as that they can finally sleep normally [...]"* However, it seemed that this positive atmosphere and emotional attitude after Samuel's (a software developer at Midén) departure lasted only a short while, as the group needed to recode Samuel's work. This proved more challenging than they could have assumed, and the project members increasingly sought a perpetrator of the situation, either consciously or unconsciously. The project members found it easy to blame Carol, who felt that she was made into a scapegoat.

While Carol (an expert at Sigma Ltd.) was on leave in spring 2017, the project members gathered to discuss Carol's behavior and "flaws." Carol stated, *"I was away for a week and when I came back [...] on the first day, Chloe [Carol's boss] came there and was like, 'We need to talk, Carol' [...] Then she said that the others feel like you look down on others [...]"* Carol consciously tried to change her behavior and be quieter in project meetings. However, from her perspective, it was unfair that other people got together and approached her as a group to try to silence her: *"The worst part is that they dwelled on this thing for one week together, and then attacked as a group [...] then after that, for a few weeks I couldn't basically say anything. So, no matter what I said, it was immediately me talking over others [...] This spring I've taken so much shit about my actions [...] I was well aware that I had to try a lot harder"* (Carol). Carol was very offended that others were not eager to cooperate to improve the situation and grew anxious. She also questioned the logic behind this feedback, as she was advised not to withdraw. She felt that she had to withdraw if other people felt that she was too invasive but were not eager to give feedback on how she should act: *"And in that moment, I felt like this fucking sucks, I'm confessing here, that yes, I did behave badly. And now I'm trying to improve it, can I get some help, and I'm being blamed for putting the responsibility onto others [...] It was paining me."*

It seemed that this situation caused verbal disputes in other settings, such as within the dyads, where Carol was not necessarily present: *"Richard [a software developer at Midén] came shouting at me [...] he pulled [a] serious fit of rage on Carol, he's always been a fiery guy [...] And then one morning he shouted at my face with his face all blue from the other side [...] he shouted at me like Carol is a fucking tyrant [...], she doesn't know what she's talking about, she decides on things she doesn't understand [...] Then I tried calming him and then he left back to his spot [...]"* (Nicole, an expert at Sigma Ltd.).

#### **Vignette #4: Problems with the collaboration continue**

Samuel's leaving and Carol's silencing did not seem to solve the challenges within the project teams. Many project members, such as Robert, Carol, Chloe, and Justin, explained that the behavior in the group changed powerfully over time. Moreover, it seemed that new difficult people were identified: *"there's new difficult people like Richard, who is seriously bitchy at the moment [...]"* (Carol, an expert at Sigma Ltd.). Robert also described that the project members started to look down on each other and the style of communication about, for example, technical tools was very unfriendly: *"work is despised and mocked, and there are system etiquettes being written where it's basically said that 'a person who's done shit like this should be fired', [that] kind of stuff [...]"* (Robert, a software developer at Omicron). Many interviewees stated that it was mainly Richard, a software developer, who communicated in this way. Justin explained that Richard mocked everyone else's decisions and system development solutions, thinking that his ideas are the best ones. However, several software developers highlighted that he had to backtrack regarding many of his statements since they did not work. Nicole stated that she had heard Richard sitting by his laptop and swearing silently to himself and that there was one situation in which Richard suddenly *"hit or kicked the wall with full power and shouted that 'oh Satan's shit and fucking hell, oh fucking fuck' [...]"* Richard's rage caused fear in Nicole: *"I got scared as to what was happening here. He's constantly angry and angsty, but to start being like that physically, you can't just do that at your workplace [...]"* (Nicole).

Justin stated that the other project members started to view his way of acting as *"trying to piss others off [...] some people don't agree to listen to him, or don't take him seriously."* The project members felt that there were extreme difficulties related to communicating and working with Richard, and some gave Richard feedback about this. Justin saw that it had an effect: *"He has changed his behavior, but all of it has left a spice on this soup."* However, according to Carol, Richard was a very stubborn person whose social skills are unlike others'. Carol had noticed some difficulties between Robert ( a software developer at Omicron) and Richard: *"Robert has clearly burned his coil on Richard so bad that Robert starts burning up real fast [...] so if Richard starts dealing with something once he's interfered with so many things, so that he's*

*maybe made solutions independently, so everything hasn't gone along the rules, then Robert experiences it as that here starts the twisting again and so he might freak out at some point."*

Robert, who worked closely with Richard, was very worried and anxious about the situation, and he thought that either he or Richard would need to leave the project as collaboration felt impossible: *"I think this certain person [Richard] is the wrong kind of person to be in a project, and if that can't be seen [...] I've started to get this feeling that I should be looking at other options."* Robert's work motivation started to decrease, and he expressed his worries and fears to others. However, he became very cautious in this phase because some project members did not look on his actions very well, interpreting the situation as looking down on employees of the software company. Some wondered if Robert's motive was to make his own company's developers seem more competent and professional. Robert felt that his hands were tied in this phase and that his worries and fears were not considered from the right perspective: *"maybe they experienced that since Samuel already had to leave from them, and the other one is the company's worker, they're just trying flush their own workers away. Very unpleasant [...] they kind of tied my hands by questioning if my interest was to make this other company seem bad [...] I thought that, okay, let's check this, let's go on summer holiday and check in after that. But what's sad in my opinion is that kind of behavior is looked at and accepted, and kind of just tossed aside"* (Robert).

There were ups and downs regarding the situation, and Robert's sadness and physical fatigue started to increase. According to Robert, it seemed that others were not as affected by the situation as he was. However, the summer holiday was coming, as was parental leave for him, and he thought that the breaks could solve the problems i.e. he might feel differently after the breaks. After the holidays, Robert adopted a different tactic to solve the situation, as it still bothered him and he was still worried about the situation with Richard. He talked with several people participating in the project about whether he could ask an outsider to help with this hard situation in the project, and he was allowed to do so. He said that he had gotten acquainted with the non-violent communication (NVC) technique and asked a person who had done training regarding NVC for their work to train him: *"I've tried other ways to solve this problem [...], I asked an outsider to keep our retro [...] the situation had just exacerbated [...]. So then this person, who came to run it, had done some of the workshops on NVC [...] And the aim was that we'll do some practicing that we act a certain situation in front of others [...]"* (Robert).

Robert suggested that everyone plays a different role [taking some communication examples] and explained that Richard was in 'on the play' in the beginning as well. However, according to Robert, Richard noticed the reason for this exercise [that they went through some earlier situations that have happened between people in the project], and he did not like it at all: *"but when he [Richard] understood what it was about, he denied the whole thing and left. Then we acted with some other people, who had been present when we had the conflict [...] So, we acted the situation, went through it, what interests people have or what motives or what emotions they've gone through, and why they act like and other stuff, and what I realized later, or heard from elsewhere, was that Richard took it really seriously, and thought I was trying to basically fire him"* (Robert). Many project members, such as Justin, also thought that Richard reacted very strongly to this: *"I heard about it afterwards from a few sarcastic comments that 'who fucking comes here to talk about emotions like what the fuck'. But yeah, it is a tough topic."* The intervention of the outsider consultant only made things worse, and it was Robert in the end who gave up and left the project. Things did not get easier after that; many project members noted that people were really irritated and the bad behavior towards each other became increasingly contagious. Richard later left the project, too, as he was not eager to continue.

It seemed that the original worry (who the scapegoat is) remained: *"Samuel was difficult when he left and so Richard became difficult. Richard left, and I've been wondering who the next difficult person is. Feels like there's always someone who turns out to be a difficult person"* (Chloe).

## Discussion

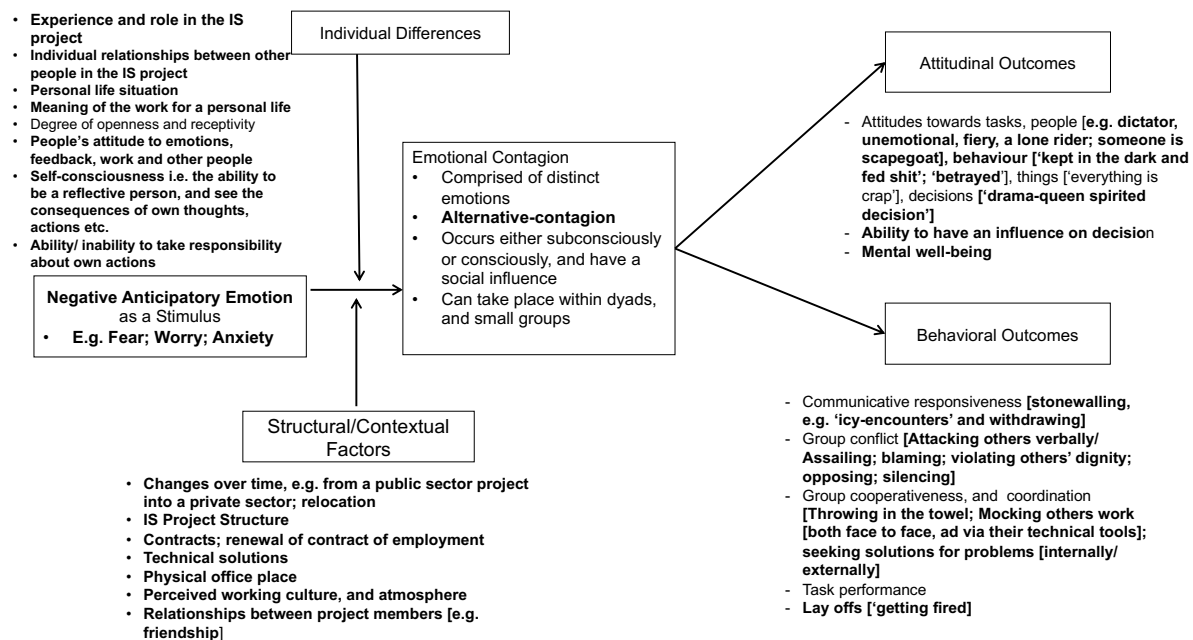
The aim of this qualitative case study (Klein & Myers 1999) was to explore the role and consequences of anticipatory emotions in IS project work and how contagiousness emerges. We found that anticipatory emotions and emotional contagion had crucial roles, especially in situations where people faced problems, and seemed to escalate into new problems. People felt positive anticipatory emotions in our case too, but it seemed that they were much less likely to be contagious, and if they were contagious, they did not

necessarily have substantial positive consequences for the project work. One reason for this may be that the project members were experiencing significant organizational changes and pressure. Thus, we decided to focus mostly on those negative anticipatory emotions and their role and consequences in IS project work. We thought that we would obtain a much clearer picture of negative anticipatory emotions, which are more likely to cause severe challenges in IS projects. Our case shows that negative anticipatory emotions (e.g., fear, worry, anxiety) were contagious amongst the project members and that these emotions seemed to emerge as emotional states (e.g., feelings of anger, pain, sorrow, rage), as shared attitudinal outcomes (e.g., a shared attitude that someone is very selfish or that there is a scapegoat for problems), or as shared behavioral outcomes (e.g., attacking someone as a group). We want to highlight that anticipatory emotions are not necessarily only anticipatory; anxiety may be felt during retrospection as well. However, it is argued by previous scholars that when an emotion such as anxiety relates to an upcoming event, it may have more severe consequences, as it determines how the person will approach the situation. Our case shows examples of how different anticipatory emotions caused people to collectively behave in the same way, such as refusing to communicate with the CEO.

As outlined in the paper, we still have very limited knowledge about the role and consequences of anticipatory emotions in IS projects. The model of group emotional contagion (e.g., Barsade et al. 2018) allowed us to look at, describe, and contribute to the knowledge on anticipatory emotions and emotional contagion processes in an IS project over time. Although studies in the IS field have investigated collaborative issues in IS projects for decades (e.g., Levina 2005) and there has been growing interest in investigating and understanding emotions in IS project settings (e.g., Beaudry & Pinsonneault 2010; Stein et al. 2015), there is room for studies that focus on and take into account project members' emotions and their consequences over time. It is argued in other fields, such as psychology, that research on emotions has focused too much on individuals' emotions and what happens to individuals when they experience different emotions while overlooking the effects of such emotions on other people (cf. Belkin 2009). In our research, we highlight that it is crucial to understand how project members share emotions and how emotions are contagious at not only the dyad or team level but also the organizational level (cf. Barsade 2002; Belkin 2009; Niedenthal & Braver 2012). We argue that in order to better understand human behavior in IS project settings, we need to understand the association between what triggers us to feel and behave as we do, how emotions become contagious, and consequences at both an individual and organizational level.

Elaborating on different triggers and their consequences can improve not only the academic, but also a practical understanding of serious hassles between the employees at work. Barsade et al. (2018) state that it is crucial to understand the association between anticipatory emotions and their behavioral consequences amongst team members, even though team members spend only about one-fifth of their working day with their teammates. Our study highlights that different anticipatory emotions are involved in IS projects, and some heavily restrict and damage project activities. "Negative" anticipatory emotions clearly converged toward unpleasant communication and often seemed to escalate into different conflicts and power struggles. It was also evident that the project members wanted to find scapegoats for challenges faced during the project. We adopted a model of group emotional contagion as a theoretical lens (Barsade et al. 2018), and it provided us with an opportunity to explain the relationship between anticipatory emotions and emotional contagion, and how they influence individual- and group-level outcomes. Compared to Barsade et al.'s 'Affective Stimulus' (Emotion, Mood, Trait affect), we talk about 'Negative Anticipatory Emotion as a Stimulus' (e.g. fear; worry; anxiety). Barsade et al. (2018) divide individual differences into receiver -, and sender characteristics. In their study receiver characteristics were for example the following ones: 'Attraction to sender of the affective stimulus', 'Collectivistic-individualistic tendencies', 'Commitment to team', 'Degree of openness and receptivity', 'Demographics (age, gender, race, ethnicity)', 'Extroversion and emotional reactivity', 'Peoples' attention to emotions, social cues, and feedback'.

The emotional contagion includes almost the same as Barsade et al.'s model, though we have also identified 'alternative-contagion' in this section too. We have also given a lot of concrete examples on attitudinal outcomes, and behavioral outcomes, and they bring a lot of contextual information (IT project). All of those concrete examples in attitudinal outcomes and behavioral outcomes (e.g. 'kept in the dark and fed shit', 'stonewalling, e.g. icy-encounters' etc. come from our findings. Our findings revealed initial insights how individual differences and structural/contextual factors may impact the connection between negative anticipatory emotions and emotional contagion in IT projects. Moreover, we elaborate in detail the harmful consequences of these emotions in the project. Figure 2 summarizes our findings, bold fonts are the added insights from our study.



**Figure 2. The model explaining the role and consequences of negative anticipatory emotions in IS project work (cf. Barsade et al. 2018).**

Our study indicates that contagion occurs for anticipatory emotions regarding not only the work itself but also other project members in an IS project group (cf. Barsade 2002). The project members described that others' attitudes are contagious even if they are only within earshot and that the project members are the victims of the existing culture, among other insights. Many project members had believed that humans need to find someone to blame when something is not succeeding; in fact, this belief was evident in every vignette we described in this study. Interestingly, this practice (seeking a perpetrator) continued throughout the years; there was always someone to blame, consciously or unconsciously, and this attitude was contagious. Our findings show that not only did the project members pay more attention to negative information and negative emotions but also negative attitudes and events related to work elicited stronger emotional and behavioral (even cognitive) responses than so-called positive ones. In the IS project we investigated, people started to become aware of the emotion contagion. However, this awareness did not prevent emotional contagion. The project was very challenging, and it ran out of the time and budget. Moreover, pressure was high due to big changes. These issues surely had an effect on how people were able to become accustomed to changing situations. Many issues led to emotional contagion despite awareness that it was happening.

Based on our interviews, we can argue that emotional contagion processes have both individual- and group-level impacts on attitudes and behaviors, among other things (see Figure 2). We noticed that anticipatory emotions are clearly part of future behavior, and forthcoming practices, with both restrictive and productive effects (cf. Barsade 2002; Davis et al. 2009). Davis et al. (2009) highlight that several theories assume that anticipatory emotions have specific effects on particular choices. Thus, it could be argued that anticipatory emotions are very strong inputs for decision-making processes. In our case, the anticipated worry that the situation regarding Samuel would not change led the project members to collectively decide that Samuel would not continue to work on the project. Understanding these kinds of processes and outcomes is very important in IS projects because it could help prevent harmful emotional processes in IS projects. It seems that the sooner an intervention occurs, the more harmful consequences are prevented.

Our case clearly showed that one person's emotions and behavior may trigger similar emotions (both implicitly and explicitly) and behaviors in other people. In addition, it seemed that emotional contagion fostered emotional synchrony between individuals, especially in bad situations. However, we propose a new form of emotional contagion (alternative contagion) in which emotional contagion may happen but the



other person's worry may raise fear in another person. Our study contributes to the existing IS literature by showing that anticipatory emotions may produce very harmful behavioral patterns with serious consequences in an IS project. However, as the project proceeded, we found that anticipatory emotions may be useful, even after long period of harmful behavioral patterns. For example, project members may try to find a way to break specific behavioral patterns. Thus, it is crucial to balance the effects of anticipatory emotions on behavior (cf. Butz et al. 2003). Our study also indicates that it is crucial to understand different anticipatory mechanisms, as they can prejudice processes (cf. vignette #1), leading project members to lose focus or waste time for example with 'unnecessary tasks'. Unclear focus or a lack of widespread agreement may lead to negative anticipation and manifest in competitive processes (cf. vignette #2). In our case, anticipatory emotions appear to be an extremely important precondition for social interaction in IS projects (cf. Butz et al. 2003). Compared to the Barsade's et al. studies (e.g. 2018) our study focuses on an IT project context, answering to their call to take a step further, and show how emotional contagion in different settings influences for example on the attitudinal, cognitive, and behavioural outcomes. While Barsade et al. (2018) have recognized the influence of technology within organizations on emotional contagion, they have not investigated it in the context of IT projects. The longitudinal nature of our study brings also various different nuances on the structural and contextual factors, for example by showing how organizational changes over time (e.g. from a public sector project into a private sector) may result serious consequences on attitudinal and behavioral outcomes.

This study has some limitations. For example, we focused only on the role of negative anticipatory emotions, and their behavioral consequences. Future research should examine which kinds of anticipatory emotions may occur in the context of IS projects and the behavioral consequences that arise, such as in cases where positive anticipatory emotions foster project work. We also think that it is extremely important to understand alternative contagion in more detail and counter-contagion in the context of IS projects by examining whether there are situations in which anticipatory emotions cause one to feel a fundamentally opposed emotion (e.g., feeling joy from another person's sadness). There is also limited knowledge on vicarious anticipatory emotions (Niedenthal & Braver 2012), or how one may feel for others. For example, in our case, some leaders of user organizations worried about how the CEO would cope with the new tasks. Future research is also needed to understand individual differences, for example to explain reasons in more detail why some people may be more sensitive to emotional contagion than others in the same situation. Based on our research, we also recognize that emotions and their contagiousness at work are often triggered by power relations, or by authority issues i.e. the relative power position of the individuals, may constitute a crucial contagion factor (e.g. the subordinates started to hate the new CEO).

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