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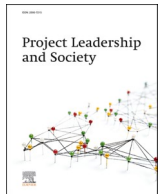
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Empirical Research Paper

Emotion regulation during decision making on projects

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ABSTRACT

The project management literature is very reticent about the emotions project management professionals experience when making decisions on projects. As part of research into the link between project governance, decision making and project performance, twelve project management professionals were interviewed about decisions made on projects. Four of the interviewees volunteered that they had experienced emotions while making their decisions, but on closer inspection it was found all twelve interviewees had experienced emotions when making their decisions. Several had regulated their own emotions, (intrinsic regulation), while making their decisions, and several had also regulated the emotions of the project team, (extrinsic regulation). In this paper we review the literature on emotions regulation, identifying the ways in which people regulate their emotions and strategies for doing so. We then describe the emotions experienced by the interviewees while taking their decisions, and how and why they regulated their emotions. We also describe how four of the interviewees regulated the emotions of the project team. We find it is common for project management professionals to have emotional responses to their decisions, to engage in intrinsic regulation, often to appear more confident, and to engage in extrinsic emotion regulation of the project team, often to build commitment and coherence. The results show that the emotion regulation literature provides guidance as to how to achieve better outcomes on projects through emotion regulation.

1. Introduction

Stingl and Gerdali (2017) conduct a comprehensive literature review of behavioural decision making on projects. They searched the International Journal of Project Management for its entire life up to 2015, (Volumes 1 to 33), the International Journal of Managing Projects in Business for its entire life up to 2015, (Volumes 1 to 8), and the Project Management Journal from 1999 to 2015, (Volumes 30 to 47). In 59 journal-years they identified 46 papers relating to behavioural decision making. They grouped the decisions taken into three schools: Reductionist, Pluralist and Conceptualist. In the Reductionist and Pluralist Schools, people take rational decisions. The major difference is in the Reductionist School people made honest errors, based on optimism bias, whereas in the Pluralist School people tell lies, which Stingl & Gerdali politely suggest is better phrased as strategic misrepresentation, (Flyvbjerg, 2007). Stingl & Gerdali also suggest in the reductionist school people are subject to group biases, (Jones and Roelfofsma, 2000): In the Contextual School people take naturalistic decisions, (Lipshitz et al., 2001). Stingl and Gerdali (2017) say in the Contextual School

people focus on process and context. Lipshitz et al. (2001) say there are four characteristics of naturalist decision-making:

1. *Process orientation*: rather than predicting what option will be implemented, naturalistic decision-making tries to understand the cognitive processes decision makers follow.
2. *Situation-action matching*: in the process, decision makers match options to the situation rather than make choices
3. *Context bound informal modelling*: decision-making is based on experiential knowledge rather than formal models.
4. *Empirical-based prescription*: Decisions should be based on descriptive models derived from expert knowledge, rather than formal models based on theory.

The project management literature has traditionally focused on rational decision making. Turner (2014, first edition 1993) for 21 years suggested that decision making on projects is rational. However, more recently, he has identified that naturalistic decision making is common, (Turner, 2020a, b). Klein and Wright (2016) suggest that 80% of

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decisions in business context are naturalistic.

In *Stingl & Gerald's* (2017) paper, there is an elephant in the room. Although they are talking about behavioural decision making, they make no mention of people experiencing emotions as they make decisions. To give them their due, they report what the papers they identified said, and the project management literature has been reticent on the topic of emotion. *Crandall et al.* (2006) and *Hoffman et al.* (1998) have the same elephant in the room. They give detailed descriptions of how experts make decisions, but never mentions the emotions they experience as they make their decisions. In one famous case a fire chief told his crew to evacuate the building moments before the floor collapsed. As the fire chief makes that decision there is no room for emotion, though immediately afterwards people are happy lives have been saved. But *Crandall et al.* and *Hoffman et al.* describe decisions taken by weather forecasters, army officers, medical staff and emergency service personnel, but make no mention of the emotions they experience.

As people take decision they experience emotions, (*Oullier and Basso, 2010; Tamir et al., 2015*), and we expect that to be the case on projects. As we said, the project management literature has been reticent on the topic. *Cerny* (2017) wrote her PhD on the topic and the Austrian Project Management Days in 2004 was about Projects and Emotions. But little has been published. Recently two conferences were held in the German speaking world, and a special issue was published of their journal, (*Schoper et al.2020*).

Not only do project management professionals experience emotions when making decisions, they also try to regulate their emotions and the emotions of other project stakeholders. Although the topic of emotion regulation is 40 years old, (*Hochschild, 1978*), it has been generating a lot of recent interest, and was the subject of a recent special issue in the journal *Emotion*, (*McRae and Gross, 2020*). Most work is on emotion regulation in social settings, but *Troth et al. (2018)* described emotion regulation in the work place, focusing on intrinsic regulation, the individual tries to change their own emotion, and extrinsic regulation, the individual tries to change the emotions of others. They focused more on extrinsic regulation.

As part of research into the link between project governance, decision making, and project performance, twelve project management professionals were interviewed about decisions they had made. They described 24 decisions they had made over fourteen projects. All twelve of the interviewees had experiences emotion when making their decisions, and ten had engaged in intrinsic emotion regulation, deliberately changing their emotions after the decision. Further, some of the interviewees deliberately set out to change the emotions of other project stakeholders, extrinsic emotion regulation. That led to three research questions:

RQ1: How do project management professionals experience emotion when making decisions on projects.

RQ2: How to project management professionals regulate their emotions when making decisions on projects?

RQ3: How do project management professionals regulate the emotions of other project stakeholders when making decisions on projects?

It might come as little surprise, that seven of the interviewees who changed their emotion after making the decision made themselves confident that the decision was going to work and the project was going to be a success. One made herself calm so she could better regulate the emotions of the other project stakeholders. Two became happy at the success of the project.

In the next section I present the growing field of emotion regulation. I then describe the methodology. I present all the results, and then give a more detailed description of some of the more interesting cases. There is not space to describe all the cases in depth.

2. Emotion regulation

People are motivated to engage in self-regulation, which involves

attempts to modify behaviour or mental states, to achieve desired outcomes, (*Tamir et al., 2013; Tamir, 2016*). It is the expected usefulness of an action that motivates them to perform it, (*Tamir et al., 2013*). There is a hierarchy of desired end states. More concrete subordinate end states serve more abstract superordinate ones, (*Tamir et al., 2020*). For instance a project manager wants to finish a package of work to time and cost to achieve a successful outcome for the project. Superordinate states are often called motives, and subordinate states goals. One form of self-regulation is emotional regulation, (*McRae and Gross, 2020*). People adopt what they believe are desired emotional states to achieve higher order objectives, (*Schwartz et al., 2018; Tamir et al., 2013; Tamir, 2016*). *English & Eldesouky* (2020) also suggest that emotion regulation is necessary to optimize interpersonal relationships, by influencing cognitive processes, emotion processes and self-processes.

People regulate their emotions for hedonic or instrumental reasons. (*Hochschild, 1978; Tamir, 2016*). Initial research focused on hedonic reasons. People may try to make themselves more happy, or feel more pain. *Hochschild* suggests that there are two levels of emotion management, surface acting and deep acting. Surface acting is feigning emotion, a shrug of the shoulders to send a message. Deep acting is trying to change one's emotional state to feel the new emotion. *Hochschild* calls deep acting emotion work, where people try to suppress undesired feelings and evoke desired feelings. People try to make themselves feel happy at weddings or sad at funerals. Sportsmen may try to make themselves feel angry at the start of a match because they think it improves their performance, (*Tamir, 2016*), and business men may try to make themselves feel angry ahead of a negotiation, (*Tamir et al., 2015*). *Hochschild* suggests there are three types of emotion work:

- Cognitive: changing ideas of images (*Preusner et al., 2020*),
- Bodily: changing physical symptoms, (breathing slowly)
- Expressive: changing gestures (*English and Eldesouky, 2020*),

She also suggests there are feeling rules. We have the right to feel angry; we should feel grateful. But also as suggested above, you should feel happy at weddings and sad at funerals. There is a distinction between what we expect to feel and what we should feel.

Tamir (2016) identified that there are potentially hedonic and instrumental motives in emotion regulation. There are two types of hedonic motive: prohedonic (to feel pleasure); and contrahedonic (to feel pain). She identified four instrumental motives: behavioural (to do); epistemic (to know); social (to relate); and eudaemonic (to be). Based on an extensive literature review, she identified types of behavioural, epistemic and social motives associated with the states of being happy, angry, fearful and sad, *Table 1*. Hedonic motives are about maximizing pain or pleasure in the present. Instrumental motives are aimed more at future states, (*Higgins et al., 2014*). With behavioural motives people

Table 1
Outcomes of four emotional states, (after *Tamir, 2016*).

Desired outcome	Emotion			
	Happiness	Anger	Fear	Sadness
Hedonic state	Pleasant	Unpleasant	Unpleasant	Unpleasant
Behavioural	Collaboration Creativity	Competition Confrontation Risk taking	Avoidance Risk aversion	Analytical processing Attention to details
Epistemic	Signals safety Self-enhancement	Signals injustice	Signals danger	Signals loss Self-verifies Recruits help
Social	Trust Help others	Dominance Blame Negative judgement	Signals danger Recruits help Ethnocentrism	

want to behave in ways that lead to desirable tangible outcomes. With epistemic motives, people want to know what is real about themselves and they context they work in. With social motives people want to create and maintain positive social emotions. Particularly, group emotions can increase group cohesion and facilitate collective action, (Porat et al., 2020). Further emotions can help form and maintain cultural identity. Eudaemonic motives relate to a desire for autonomy and competence, but Tamir (2016) did not identify how they relate to the four emotions in Table 1. Tamir is quite specific, the emotion to be adopted is the goal, and the desired outcome of adopting that emotion is the motive, (Tamir et al., 2020). Schwartz et al. (2018) introduce the concept of the construal level. If people construe things at a higher level, they want to achieve them over the longer term and treat them as superordinate objectives. Things they construe at a lower level, are less important. Self-regulation is influenced by the level at which people construe a situation. Self-control requires a higher level of construal. Schwartz et al. (2018) suggest that instrumental emotion regulation is largely adaptive and helps shape behaviour and cognition in a way that promotes goal pursuit.

Troth et al. (2018) consider emotional regulation in the workplace. English and Eldesouky (2020) consider emotional regulation in social settings, but mainly describe it in the context of friends, though they do briefly touch on the workplace. Troth et al. (2018) introduce a 2×2 model for emotion regulation in the work place. The first dimensions is intrinsic versus extrinsic regulation. Intrinsic regulation is where an individual regulates their own emotion; extrinsic is where they attempt to regulate another's emotions. The second dimension is whether they seek feedback or not. They then introduce three dimensions of emotion regulation: process models; emotional labour; and emotional intelligence. The process models are due to Gross (1998). Gross suggests people follow a process to regulate emotions. He suggests eight strategies for emotion regulation, (McRae and Gross, 2020):

1. Situation selection: deciding whether or not to engage
2. Situation modification: trying to modify the situation once engaged
3. Attention deployment – distraction: directing attention away from the emotional stimulus
4. Attention deployment – rumination: directing attention towards the causes and consequences of emotion
5. Cognitive change – reappraisal: reinterpreting the emotional situation
6. Cognitive change – acceptance: welcoming emotions
7. Response modulation – expressive: avoiding gestures
8. Response modulation – bodily: managing bodily responses.

Reappraisal is the strategy most used. In the workplace people can be expected to display certain emotions. As we saw before, they can do this by surface acting, faking the required emotions, or deep acting, modifying felt emotions to match expressed emotions. Surface acting is suppression, and deep acting is cognitive reappraisal. Emotional intelligence is the ability to connect, disconnect or alter emotional experiences and expressions effectively, and do this individually and interpersonally.

Izard et al. (1993) say there are five basic emotions: joy; love; surprise; sadness and fear. Plutchik (1980), identified eight basic emotions which he grouped into polar opposites: joy-sadness, anger-fear, trust-disgust, surprise-anticipation. The four columns in Table 1 are two pairs of the two polar opposites, joy and sadness, anger and fear. Interestingly an emotions discussed a lot in the cited papers is anger, adopted by sportspeople to make themselves perform better, business people to make themselves negotiate better, and by people in social settings to make themselves cope better. Other authors have identified much longer lists of emotions. Nummenmaa et al. (2018) give fourteen emotions: anger; fear; disgust; happiness, sadness; surprise; neutral; anxiety; love; depression; contempt; pride; shame; envy. They give a list of one hundred emotional, mental and physical states. They map where

some of the emotions are felt. I will later describe emotions which I think can be seen as a variant or mixture of some of the emotions above.

3. Methodology

A qualitative, inductive approach was adopted to do exploratory research, broadly following a radical constructivist approach, (Von Glaserfeld, 1995). The aim is to develop a viable representation of reality based on the experiences of the interviewees.

Interviews were conducted with twelve project management professionals, who described twenty-four decisions across fourteen projects, Table 2. Three interviews were conducted face-to-face, the rest using Skype or WhatsApp. About one third of project professionals are women, and that is the proportion of women interviewed. Interviewing more or fewer women might have led to bias. The decisions were made in several countries. In all but three cases, the project was located in the same country. At the time of the interview, AB was in Norway, GH in England, and IJ in the Netherlands. Otherwise the interviewee was located in the country where the decision was made. In the case of CD, the country is not stated, to maintain anonymity. Table 2 describes the organization and the interviewee's role. It gives the nature of the project, and its type using three types suggested by Müller and Turner (2007). In all but two cases the technology of the decision is the same as the project. All but two people describe one project with between one and three decisions. AB and QR describe two projects, each with one decision. Table 2 shows the issue and resulting decision. (The initials are a rather obvious code. Several of the interviewees wished to remain anonymous. Since many of them are well known people in the project management community, their identity could be guessed from their actual initials.)

Interviews were chosen because we were seeking to understand a phenomenon in its naturalistic setting rather than a constructed laboratory setting, Klein and Wright (2016). Shepherd (2015) says interviews are good for understanding a new phenomenon from historical accounts of participants. Braun and Clarke (2013) say interviews are suited to exploring understandings, perceptions and constructions of things people have a personal stake in. We were exploring the emotional response of project management professionals when making decisions, and how they regulate their emotions and the emotions of the project team. Fujii (2018) says interviews are useful for exploring the meaning people give to their social worlds or relationships. It is experience of relationships we are exploring here. She says the value of the data lies not in its accuracy, but in what they convey about the speakers' worlds, and how they experience them, which relates back to social constructivism.

The interviews were conducted following the Critical Decision Method, (CDM), a subset of Cognitive Task Analysis, (CTA), (Crandall et al., 2006; Hoffman et al., 1998). Hoffman et al. say CDM is designed to capture knowledge and experience in real world decision making, which is our aim under radical constructivism. Crandall et al. say CDM interviews elicit information about cognitive functions such as planning and sensemaking. They can probe actual incidents very powerfully. People describe challenges, subtle cues, background influences, and strategies that would not come to light in a structured interview or survey. The stories tell us:

- Cues and patterns experts perceive
- Rules of thumb they use
- Kinds of decision made
- Features making decisions tough
- Features making cases typical
- Features of rare cases

CDM interviews are organised around the recounting of a specific incident from the participant's experience, recalled in its context. There are four sweeps, as shown in the interview topic guide, Table 3.

The interviews were transcribed using otter.ai, and a story

Table 2
Interviews.

Case	Mode	Gender	Country Decision/ (Project)	Organization	Role	Project	Type of project/ (decision)	Issue	Decision
AB	Face to face	Male	Austria	Global supplier of software solutions	Global Program Director	Data warehouse	IT	Project about to fail	1 Modify or cancel
			England			Data warehouse	IT	Project about to fail	2 Modify or cancel
CD	Face to face	Male	Anon	European state government	Consultant Project Manager	Convert government department to government owned company	Organizational change	Prioritization of resources	1 General managers report to PM
			Anon					Trust of team members	2 PM steps down as CEO of his company
			Anon					Balance accounts to achieve deadline	3 Modify accounts to achieve balance
EF	Face to face	Male	England	Petrochemical manufacturer	Project Engineer	Biennial plant overhaul	Engineering	Is oil pressure adequate to perform job	Accept oil pressure and complete job
GH	Skype	Female	China	Chinese consulting and training company	Project Sponsor	Implementation of office automation and customer relationship management	Organizational change	People were resisting	1 OA system implemented first
			China					The CEO was not providing full support	2 CRM system implemented second.
IJ	Skype	Female	Austria	Energy Company	Consultant Project Manager	Creation of customer service centre, including call centre	Organizational change/ (engineering)	Client thought architect's design too expensive	1 Choice of new office layout
			Austria					Decision made rationally	2 Run facilitated workshop
			Austria					DZ emotionally attached to one solution	3 DZ attended workshop as facilitator
KL	Skype	Male	Netherlands/ (Germany)	Dutch tertiary institution	Associate Professor	Erasmus Plus program to develop training modules	Organizational change	Parties had different ideas about deliverables.	Accept ideas of German leaders and adapt later
MN	Skype	Male	Ireland/ (United States)	Hardware vendor, (Digital)	Program Director	Development of prototype for new service jointly with McKinsey	IT	People interpreted project goals and activities their way	1 Changed management style
OP	WhatsApp	Female	Austria	Consulting company	Partner	Holding of annual client workshop	Organizational change	New service not viable	2 Recommended non-adoption
			Austria					Covid 19 delayed workshop. What date might it be held?	1 Postpone workshop
QR	Skype	Male	Scotland	Aberdeen airport	Consultant Project Manager	Replacement of long range radar	Engineering/ (Organizational change)	Incoming helicopters could not be seen	1 Helicopters rerouted to be seen further out
			England	State owned enterprise	Consultant Project Manager	Implementation of SAP	IT	Data needed more cleansing than originally thought	2 Project delayed as cleansing done
ST	WhatsApp	Male	Italy/ (Uzbekistan)	Engineering design and construction	Commercial Director	Uzbekistan ethylene plant	Engineering	Submission of tender to client	Decision to tender
UV	Skype	Male	Australia	Manufacturer of railway vehicles	Project Manager	Manufacture and life-cycle support of railway vehicles	Engineering	Design of coupling fancier than needed adding cost	1 Choose simpler design
WX	Skype	Female	Australia	Financial services company	Program director	Reducing cost base	Organizational change	External consultants did not understand business	2 Question design
								CEO wanted to interrogate project results any time.	3 Seek support of stakeholders
									1 Internal person appointed program manager
									2 Project dashboard created

Table 3
Interview topic guide.

Interview topics
Sweep 1: Interviewee asked to reflect on a decision made on a project. They describe the project and the decision made
Sweep 2: Interviewee asked to describe timeline, and where decision sat in the project. Asked to describe events leading up to the decision.
Sweep 3: What influenced the decision, what tacit or explicit knowledge was used, and how was it influenced by the five psychological constructs.
Sweep 4: What alternatives were there to the decision made, and why was the actual choice made. What is the link to governance?
Context: What is the size of the project, the industry in which it took place, and the size of the parent organization.

constructed. A summary of each interview appears in the appendix.

4. Results

The story constructed for each interview is given in the appendix. All the decision can be said to have had a good outcome. That seems to reflect that people wanted to talk about successful decisions.

4.1. Emotions

As was said above, four of the interviews volunteered the emotions they experienced when taking the decisions. OP said she was sad and ST and UV said they were nervous. IJ said she risked losing her composure because she was becoming frustrated and nervous. Other project stakeholders were also becoming emotional.

Table 4 shows the interviewees emotional responses to their decisions. The second column shows their emotion in advance of the decision. The third column shows the impact based on Table 1. The fourth column shows the regulation strategy based on the strategies suggested by McRae and Gross (2020). The fifth column shows the regulated emotion. EF and OP did not regulate their emotions. ST's emotion is shown as changing, but the project went well and they formed a good relationship with the client, so the emotion changed because of events. KL's emotion is shown as changing again because the project performed satisfactorily, not as expected but satisfactorily. AB did not regulate his emotion for his first decision, and QR did not regulate it for his second. The last column shows the impact of the regulated emotion based on Table 1.

In Table 4:

- Nervousness is a weaker form of fear
- Frustration is a mixture of sadness and annoyance that things have not worked as expected.
- Annoyance is a weaker form of anger.
- Satisfaction is a weaker form of happiness or joy
- Calm is a stronger form of neutral
- Confidence is a weaker form of pride with happiness.

5. Interesting cases

In this section I have space to describe four cases, which I have chosen because I think they illustrate well the emotions felt. They also illustrate the use of extrinsic regulation.

5.1. Rescuing failing computer projects

AB was Global Program Director of a software supplier, and in that role he was often asked to rescue failing projects. He described decisions he made to rescue two failing projects. AB was nervous both projects would fail. That would be very bad publicity for the company. It promoted risk aversion, to do the remaining projects as simply as possible. It signalled danger, and meant people were willing to help. It directed

attention towards the causes and consequences of emotion, and meant he reappraised the situation.

In the first project he did not want to change his emotion. Being nervous meant support was there. However, he wanted to change the emotion of the project team. He was called in because the project manager had resigned, and the team were all frustrated at the way the project was going. He said:

When I asked the individuals in the team, why are you here? What is it that you want to get out of that project? Then the typical answer was, the only thing I want to get out of this project is to get out of this project

He needed to make them confident it could succeed with the revised plan, and willing to keep on working on the project. They all continued to the end.

With the second project, when he found the fault and the solution, he became confident the project could now succeed. That promoted collaboration and signalled safety. It promoted his position, promoted trust, and promoted people helping others. He also needed to build team cohesion. He needed to make his company's team want to remain part of the team and become committed to the revised goals, (Porat et al., 2020). He said:

Once we had replanned the project, the project manager took over again. and implemented that plan that I developed with his team without major problems.

5.2. Converting a government department to a government owned company ahead of privatisation

CD was working with the national government to convert a government department into a government owned company ahead of its privatisation. He was faced with three decisions. With the first decision he was nervous and frustrated. His previous experience was that line managers would prioritise their work and not the project. He said:

It's understanding the psychology, it is understanding it's not rational

He therefore asked the CEO to make the general managers report to him for the release of resources. He felt the line managers may have welcomed the decision. He said:

The decision gave them a bit of relief, because then they could blame it on me if ordinary business issues within the line weren't performed.

He needed to understand the causes and consequences of emotions and modify them. Once the change was made, he was confident the project would succeed, and that promoted collaboration, signalled safety, promoted trust, and meant people were willing to help. But also he needed to make the general managers trust him.

With the second decision, he was nervous that if he remained CEO of his company, the project team members may not trust him. He needed to understand the causes and consequences of emotions and modify them. So he stepped down as CEO of his company for the duration of the project. That built confidence with the impacts above. But he also needed to build trust in the project team and facilitate cohesion. He needed people to want to be members of the project team, (Porat et al., 2020).

With the third decision, he and the IT manager found at the last moment that the balance sheet of the government department did not balance. That caused frustration, because it meant the transfer to government owned company could not go ahead. It promoted analytic processing, and attention to detail. He said:

Table 4

Interviewees emotional responses to their decisions.

Case	Base emotion	Impact	Regulation strategy	Regulated emotion	Impact
AB1	Nervousness	Promoted risk aversion Signalled danger Recruited help	Rumination Reappraisal		
AB2	Nervousness	Promoted risk aversion	Rumination Reappraisal	Confidence	Promoted collaboration Signalled safety Facilitated cohesion Promoted self Promoted trust Promoted helping others
CD1	Nervousness and Frustration	Signalled danger to self Recruited help from others Promoted analytic processing Promoted attention to detail	Modification Rumination	Confidence	Promoted collaboration Signalled safety Promoted trust Promoted helping others
CD2	Nervousness	Signalled danger to self	Modification Rumination	Confidence	Signalled safety Facilitated cohesion Promoted trust Promoted helping others
CD3	Frustration	Promoted analytic processing Promoted attention to detail	Selection Modification Distraction	Confidence	Signalled safety Promoted trust Promoted helping others
EF	Anticipation		Rumination		
GH	Frustration	Signalled loss Recruited help from others	Modification Reappraisal	Confidence	Promoted collaboration Signalled safety Promoted trust Promoted help
<i>Case</i> IJ	<i>Base emotion</i> Nervousness and Frustration	<i>Impact</i> Promoted avoidance Signalled danger Recruited help from others Signalled loss Recruited help from others	<i>Regulation strategy</i> Selection Modification Rumination Reappraisal	<i>Regulated emotion</i> Calm	<i>Impact</i> Promoted collaboration Promoted creativity Group cohesion Signalled safety Promoted trust Promoted helping others
KL	Annoyance	There was potential for confrontation Signalled injustice There was potential for blaming others and negative judgement	Selection Modification Rumination	Satisfaction	Promoted collaboration Promoted Creativity Signalled safety Enhanced self Promoted trust Promoted helping others
MN1	Frustration and Annoyance	Promoted analytic processing and attention to detail Signalled loss Recruited help from others Promoted confrontation Signalled injustice Increased dominance	Selection Modification Rumination Reappraisal	Confidence	Promoted collaboration Promoted creativity Signalled safety Enhanced self Promoted trust Promoted helping others
MN2	Nervousness	Promoted risk aversion Signalled danger Recruited help from others	Rumination Acceptance	Confidence	Promoted collaboration Signalled safety Promoted trust Promoted helping others
OP	Sadness	Promoted analytic processing and attention to detail Signalled loss Recruited help from others	Selection Rumination Acceptance		
<i>Case</i> QR1	<i>Base emotion</i> Frustration	<i>Impact</i> Promoted analytic processing and attention to detail Signalled loss Recruited help from others	<i>Regulation strategy</i> Selection Modification Rumination Reappraisal	<i>Regulated emotion</i> Confidence	<i>Impact</i> Promoted collaboration Promoted creativity Group cohesion Promoted culture Signalled safety Promoted trust Promoted helping others
QR2	Frustration	Promoted analytic processing and attention to detail Signalled loss Recruited help from others	Rumination Reappraisal		
ST	Nervousness	Promoted avoidance Promoted risk aversion	Rumination	Happiness	Promoted collaboration Promoted creativity

(continued on next page)

Table 4 (continued)

Case	Base emotion	Impact	Regulation strategy	Regulated emotion	Impact
UV	Nervousness	Signalled danger But also there was Analytic processing and attention to detail	Selection Modification Rumination Reappraisal	Confidence	Signalled safety Enhanced self Promoted trust Promoted helping others
		Signalled danger Recruited help from others But also there was Analytic processing and attention to detail			Promoted collaboration Promoted creativity Facilitated cohesion Signalled safety Enhanced self Promoted trust Promoted helping others
Case	Base emotion	Impact	Regulation strategy	Regulated emotion	Impact
WX1	Annoyance	Promoted confrontation Increased dominance	Rumination Acceptance	Confidence	Promoted collaboration Promoted creativity Promoted culture Enhanced self Promoted trust Promoted helping others
		Promoted collaboration Promoted creativity Promoted confrontation Increased dominance			Promoted collaboration Promoted creativity Promoted trust Promoted helping others
WX2	Anticipation and Mild annoyance	Promoted collaboration Promoted creativity Promoted confrontation Increased dominance	Rumination Acceptance	Confidence	Promoted collaboration Promoted creativity Promoted trust Promoted helping others

We thought, well, what are the pros and what are the cons here of this, and we found that the end justifies the means. And in a very practical way

The balance sheet was already a mess. By adding another small bit of mess they could make it balance. Their strategy was to accept the problem, modify it and try to distract attention. Now, when they took the decision to the government committee responsible for making the final decision, they had to exude confidence. They had to appear that everything was as it should be. This signalled safety, promoted trust, and meant people were helping others. There also needed to be cohesion of the people involved.

5.3. Avoiding emotional breakdown

IJ was the most interesting case. She was a consultant, working with an energy company to implement customer support, including a call centre. They had to agree the design of the office. She was nervous and frustrated. She strongly believed that the architect's solution was better than the simpler, cheaper solution, but could see the client opting for the simpler solution, which she thought would damage the call centre. It was making her very emotional. She said:

I was very emotional when I was going to this meeting

She felt she was avoiding the situation, and was aware of the danger and the potential loss. She sought help from other people. She selected to address the problem and sought to modify it. She directed attention towards the causes and consequences of emotion, and sought to reappraise them. She decided she had to make herself calm, and adopt an air of being happier. She said:

I took myself out of the discussion. I was only facilitating. This was strange for the client because he thought I would come in and fight. But I thought no, I take myself out, and take out my emotions because I was very emotional, and I would have been offending.

This promoted collaboration and creativity, signalled safety and trust and meant people were helping each other. She was aware that the client was becoming annoyed, because they thought the architect's solution

was unnecessarily expensive. She said:

The client's project manager was also very emotional

She had to make them calm as well, and get them to address the problem in a structured way. They all addressed the problem with analytic processing and attention to detail, which goes with sadness. Perhaps their calm involved an element of sadness in that they could not agree a solution. But they addressed the problem in an analytic way, looking at the requirements of the solution, rather than the pros and cons of the two suggested solution, and found a much better solution, one that was more expensive than the simpler solution, but simpler and cheaper than the architect's solution. IJ said:

The more we discussed the requirements, the less emotional the whole thing got, and this is how we could then at the end make a decision

5.4. Design of couplings for a railway carriage

UV was project manager with a manufacturer of railway rolling stock. He was working on a project to make carriages for a railway in Sydney. He was seeking a simpler design for the couplings. UV was nervous because he thought the engineer would use his power within the organization to make sure his preferred solution was the chosen one, and that would upset UV's relationship with the engineer. He suspected the engineer would use his power in the organization to get his way: He said:

I was very nervous about this going into it because I did not have a particularly positive relationship with the engineer who was one of the leading experts in his field and the kind of person who gets away with being difficult because not only of the level of his expertise, but because he knew he was essentially irreplaceable.

It signalled danger and he sought help from others. But also, he adopted analytic processing and attention to detail, associated with sadness. Perhaps there was also an element of frustration. He chose to address the problem and modify it, and direct attention towards the causes and consequences of emotion, and seek to reappraise the situation. He said:

I was just getting all the pieces in place to get the right decision.

He had to appear confident, to the other members of the project team. UV was doing emotion work, (Hochschild, 1978), changing ideas and images. He said:

I just saw an option which balanced the needs of the project at that particular time. And one, which was ideal from an engineering perspective.

That promoted collaboration and creativity, and signalled safety. His self-confidence enhanced his self-image. His confidence promoted trust and enabled him to seek the help of others. He also had to manage the cohesion of the project team, getting people to believe in the solution.

6. Discussion

The results of this research are not very surprising, but they have not been extensively studied previously in the project management literature. In the work of Stingl and Gerdali (2017), Crandall et al. (2006) and Hoffman et al. (1998), project management professionals and other experts experiencing emotions while making decisions is an elephant in the room. Some work has been done on emotions on projects, (Cerny, 2007), and more recently by Schoper et al. (2020). That latest work is concurrent with this study. This study had three research questions:

RQ1: How do project management professionals experience emotion when making decisions on projects.

RQ2: How to project management professionals regulate their emotions when making decisions on projects?

RQ3: How do project management professionals regulate the emotions of other project stakeholders when making decisions on projects?

6.1. Experience of emotions when making decisions

Stingl and Gerdali (2017) looked at behaviours of project management professionals when they make decisions on projects, but they did not identify emotional responses. That is because none of the papers in their extensive literature review, which looked at all the papers in the International Journal of Project Management and the International Journal of Managing Projects in Business up to 2015, and all the papers in the Project Management Journal from 1995 to 2015, mentioned project management professionals experiencing emotions when making decisions. Stingl & Gerdali looked at what they called errors, lies and misunderstandings. People making rational decisions either make unforced errors or engage in strategic misrepresentation. People making naturalistic decisions may misinterpret the process or context. Sense making, (Weick, 1995), is a key part of naturalistic decision making, so good sense needs to be made.

In this research twelve project management professionals were interviewed about decisions they had made. They described 24 decisions across fourteen projects. Four of the interviewees volunteered that they had experienced emotion while making the decisions. Two said they experienced nervousness, one experienced sadness, and one said she was becoming frustrated which meant she risked losing her composure. However, on rereading the transcripts of the interviews, it was observed that all twelve interviewees experienced emotion on all 24 of the decisions.

The most common emotion was nervousness, which signalled danger, promoted risk aversion and sought help from others. The next most common was frustration, which signalled loss, promoted attention to detail and sought help from others.

6.2. Intrinsic regulation

Of the four interviewees who volunteered experiencing emotions when making their decisions, three said they regulated their emotions. The two who were nervous, made themselves appear confident. This

may have been surface acting, (Hochschild, 1978). It was important that they appear confident to other project stakeholders. They may have continued to be nervous. The person who risked losing her composure made herself calm. This was deep acting, (Hochschild, 1978). It was critical that she was calm and did not lose her composure. The fourth interviewee remained sad. Sad was her response.

On closer inspection of the interview transcripts, ten of the interviewees regulated their emotions, though two of those only did it on one of their two decisions. The most common regulation strategies were rumination and reappraisal, but selection, modification and distraction were also used, (McRae and Gross, 2020). Decision makers who were nervous, worked to make themselves appear confident. That may often have been surface acting, but with AB and CD it was more deep acting. It was critical for both of them to exude confidence. With KL and ST it was more a change of emotion as the project evolved in a way they were happy with.

6.3. Extrinsic regulation

AB engaged in extrinsic regulation. He had to build the confidence of both project teams and make them committed to revised objectives of the project, (Troth et al., 2018). The first team was frustrated, and they needed to believe that the temporary solution would work, and that the final solution would be available against the revised delivery date, in spite of the previously missed targets. He also needed to build the confidence of the client. On the second project it was also important to rebuild cohesion with the project team, (Porat et al., 2020), and between the project team and client project team.

CD had three decisions. In the first, the reporting relationships of general managers were changed. He needed to build the confidence of the general managers and make them trust him. With the second decision it was also about building the trust of the other project team members. With the third decision, the government was not aware that the modification had been made to the balance sheet. But the people working on the subsequent transition had to be guided to work needed to rectify balance sheet and made confident that it could be achieved.

IJ had to win the support of the client project team. There was a risk of conflict. Making herself calm was a key first step. If she had lost her composure that would have aggravated the conflict. She had to build the collaboration, cohesion and trust of the client project team. They were becoming annoyed because they believed the simpler solution satisfied their needs. But by managing the solution of the problem in a certain way, she managed to make them calm as well, and achieve their trust and support for the solution.

UV also needed to build the cohesion of the project team, (Porat et al., 2020), and make them believe in the adopted solution, (Troth et al., 2018).

7. Conclusion

Stingl and Gerdali (2017) showed that up to 2015, the project management literature had not considered the emotions that project management professionals experience when making decisions, and had not considered that project management professionals may engage in intrinsic and extrinsic regulation. The German speaking community has recently considered emotions on projects, (Schoper et al. 2020), but they have focused more on the emotions people experience than on the regulation of emotion. This research explored the emotions project management professionals experience when making decisions, how they engage in intrinsic regulation, often to make themselves appear more confident, and in extrinsic regulation, to build the cohesion and commitment of the project team. We did not explore extrinsic regulation of external stakeholders. (Derakhshan et al., 2019).

7.1. Theoretical contributions

Although the first writings on emotion regulation were 40 years ago, (Hochschild, 1979), the field itself is about 20 years old, (Gross, 1998). But it is only recently that the field has truly grown, (McRae and Gross, 2020). Because interest the field is new, it has not up to now received much attention in the project management literature. This work as shown that project management professionals do experience emotion when making decision, (that there is an elephant in the room), and that they do try to regulate their own emotions, (intrinsic) and the emotions of other project stakeholders, (extrinsic), (Troth et al., 2018). Usually, they try to increase their own confidence to create an air of likely success for the project, and they try to build team cohesion and commitment to the objectives of the project.

7.2. Practical implications

The results show that the emotion regulation literature provides guidance as to how to achieve better outcomes on projects through emotion regulation. The interviewees regulated their own emotions to promote collaboration and trust, signal safety and build cohesion, and that lead to better project performance. They also regulated the emotions of the project team to build cohesion and commitment. The ten interviewees who regulated their emotions and the emotions of other project stakeholders were all highly experienced project professionals, with years of experience. But it could be useful to provide younger project professionals with guidance and training on how they can regulate their emotions and the emotions of other project stakeholders.

7.3. Limitations

This work was a surprising outcome of other research. The data was not gathered with the intention of investigating emotional experience or regulation in decision making on projects. We stumbled upon an elephant in the room. It may be useful to do further targeted work, perhaps involving a survey asking more focused questions.

I gave my friend an elephant in the room for their birthday. They said, "Thank you." I said, "Don't mention it."

Conflict of interest

No conflict of interest.

Appendix. Summaries of the Interviews

AB was Global Program Director of a software supplier, and in that role was often asked to rescue failing projects. He described two cases. In the first, the design department in California was late supplying the software solution. What stimulated AB's involvement was the project manager resigned, but the client was considering cancelling the project. Working with one of the team members, AB developed an interim solution which provided the client with most of the desired functionality, while the design department delivered the full solution. The interim solution satisfied the client's needs more quickly than cancelling the project and starting again. In the second, communication between the client and project team had broken down. The client said the project team were not delivering the desired outcome, while the team complained the client kept changing their minds. It turned out the problem was a misinterpretation of the word "prototype" in the contract. A clearer interpretation led to a successful outcome.

CD was CEO of the consulting arm of an accounting company in the capital of a European country. He was working with the government to convert a government department into a government owned company ahead of its privatisation. The project was subject to time constraints because the government committees that approved the transition only met once every six months. As is common on projects, the departmental

managers were prioritizing their own objectives and not the project, so CD asked the CEO to make them report to him as project manager for the duration of the project. There were people from several consulting companies working on the project, so CD thought being CEO for his own company created potential conflicts of interest. He stepped down for the duration of the project. One Friday evening, CD and the leading general manager were preparing the final recommendation to go to the relevant government committee the next week. They noticed the balance sheet did not balance. The accounts were in fact a mess. If they delayed the recommendation, it would be six months before it was considered again, and there was no certainty they could solve the problem. So they introduced a fudge factor to make the balance sheet balance, and the conversion to government owned company went ahead.

EF was working for a petrochemical company. He joined three weeks previously having just finished his PhD. They were doing the biennial overhaul of a plant, and during the shutdown changed the catalyst in the main converter. Closing the vessel required the full bore closure of a high pressure vessel. This had not been done since the plant was built 12 years previously. JT was asked to research how to do the job, and was then asked to be the manager present as it was done. The job required an oil loop to be raised to 1500psi, (about 100 atm's pressure). At about 1480psi the oil loop sprang a leak. The pressure gauge was flipping between about 1450 and 1510 psi. The fitter supervisor turned to JT and asked what they should do. "What! You are asking me? I have only been with the company three weeks." But he was the only manager present with authority, so said finish the job. (Sink or swim was the culture of the company.) There was probably a 10% factor of safety on the oil pressure, and starting again was impossible.

GH was senior manager with a consulting company in Shanghai. They were implementing office automation, (OA), and customer relationship management, (CRM). GH was sponsor. People were resisting because they did not like the change, they didn't fully understand it, and it made it more difficult to disassemble. The CEO was also not fully supportive. The company had 200 employees, which is the second crisis of growth, where the founding entrepreneur finds they no longer know everything going on in the business, (Handy, 1993). The OA and CRM systems meant the CEO became more remote. They decided to implement the OA system first, which people found more acceptable. Once they had acceptance of the OA system, they implemented the CRM system. The CEO was now fully supportive because the company had grown to 240 people, and other CEOs persuaded him of its importance.

IJ was a consultant, working with an energy company to implement customer support, including a call centre. They had to agree the design of the office. An architect had prepared a design, which the client thought was too fancy and too expensive, and preferred a simpler modification of existing space. They arranged a meeting to agree the solution. Emotions were running high. IJ decided that rather than having a meeting where they discuss the pros and cons of each solution, they should run a workshop where they discuss the requirements for the office space. She was convinced the simpler, cheaper solution would not work, but was becoming emotional about it. She did not want to lose her composure, so decided to attend the meeting as facilitator and not overtly contribute her opinion. (She slipped it in as facilitator.) They discussed the requirements, and reached a compromise solution, closer to the architect's than the simpler modification.

KL is an academic with a Dutch tertiary institution. They won as part of a consortium sponsorship under the EU's Erasmus Plus Program to conduct research to develop project management training for technicians using problem based learning. There were three institutions involved, KL's, a technical university in Berlin, and a Danish University. The Danish university were only interested in problem-based learning. However, GS and the German partner had different ideas about what the training solutions would encompass. The German partner was the lead institution, so KL accepted their ideas, and modified the outputs later to achieve what he wanted. Senior governance in his institution were only interested in the kudos of doing an Erasmus Plus project, and that it

should not lose money. They had no interest in what it should deliver. KL was satisfied with the outcome: he made a profit, he continues to work with the German partner, and obtained some useful training solutions.

MN was a senior program manager with Digital. Digital is a case study considered by Schein & Schein (2017), who say it operated a very flexible, cooperative environment, with people able to make their own decisions and challenge authority. MN was program manager to develop a prototype for a new system solution. They had a meeting in New York on Thursday to plan the program. MN flew home to Ireland. He returned on Monday, and found people were modifying the plans. They were doing the Digital thing, developing their own versions, and modifying the plans to suit their regions. Usually this worked well, but not on this program. There were strict time and budget targets. MN imposed a strict command and control approach. He told people democracy was suspended. The prototype was successful, but MN thought the business environment had changed, and so the new business was longer profitable. He persuaded the steering committee not to launch.

OP is partner in a consulting and training company. (IJ is the other partner.) They were planning to hold a workshop at the end of March., which their relatively new company has been holding every year, and this year a record number of people registered. However, in early March people started expressing doubt about whether they could attend because of Covid 19. OP and IJ realised they would have to either cancel or postpone the workshop. Because that caused them sadness, they delayed making the decision by ten days, but eventually postponed it. They would have had to do that because the planned date was after Austria imposed complete lockdown. They had to decide when to postpone it to. Options ranged September to December; they chose November. They prepared new marketing material with the new date, hoping that is not wishful thinking.

QR was consultant project manager with an airport in Northern Scotland. They have two radars for guiding helicopters from North Sea oil fields. One has a range of 100 miles, and is used to line up helicopters for their approach. The other has a shorter range and watches the helicopters as they land. Under existing way of working, the helicopters were making the approach over a ridge, and so the short range radar could not see them until they were very close. They had to rebuild the long range radar and it would be shut down for six months. They needed a new solution for the approach. If instead the helicopters came around the headland and over the harbour, they could be seen 10 miles out by the short distance radar. This required the helicopter operators to change their procedures. The pilots had to be much more aware of other helicopters in their vicinity, and to communicate with each other to line up their approach. It took people well outside their comfort zones, and the interim solution was probably less safe, but there was no alternative. Careful management meant in the event it operated safely. QR was also working with a government owned company to implement SAP. They were ready to do the final transfer of data before commissioning, when they found it required more cleansing than thought. They had to delay commissioning by four months with significant impact on time, cost and reputation.

ST was commercial director with an engineering design and construction company. In the mid-1990s, they were preparing a bid for an ethylene plant in Uzbekistan. This was the first time they had worked in what was recently the former Soviet Union. They were doing the final decision to tender before submitting the bid. It required a very thorough analysis of risks. One risk was the transport of heavy equipment to site. Uzbekistan is a double landlocked country, so they had to check roads, tunnels and bridges they would take the equipment along. They submitted their bid. ST said he lost sleep, but was happy when the project was successful and they formed a good working relationship with the client.

UV was project manager with a manufacturer of railway rolling stock. He was working on a project to make carriages for a railway in Sydney. The contract was a life-cycle contract, so the company was responsible for the design, manufacture and maintenance of the

carriages through their 30 year life. He was responsible for the design and manufacture of the couplings. The design engineer was developing a Rolls Royce solution. JP thought a simpler solution was possible, with fewer components, which would be cheaper to manufacture, cheaper to maintain, and would be more reliable. Procurement said one of the additional components was difficult to obtain. UV arranged a design meeting where he hoped they would choose the simpler design. UV was nervous because the design engineer was an expert in the field who behaved knowing he was irreplaceable. In advance of the meeting, JP consulted with the client, the reliability engineer and procurement, who all agreed the simpler design was preferable. At the design meeting the engineer was outnumbered four to one so accepted the simpler design. UV said he was surprised that following the meeting his relationship with the engineer improved.

WX is a senior manager with a financial services company in Australia. The CEO set a target of reducing the cost base by 10% in two years. An external consultant was made program manager, and another firm of consultants were working with him. The two firms of consultants could not work together because their internal rules would not allow them to use each other's systems. Also the external consultant was not a successful program manager. He did not understand the culture of the organization or its ways of working. He was more skilled at designing the solution than managing its implementation. WX was made program manager, and the two firms of consultants moved to advising on the design of the solution. There were thirteen sub projects and they were given roughly half each. The CEO also wanted to see in real time the progress of the projects, so they developed a project dashboard. That could be based on one of three systems, that of either of the firms of consultants, or an internal system. The internal system was not as sleek as either of the consultants' systems, but since neither firm could work with the other's systems, and they wanted one system for all 13 projects, they chose the internal system. One of the firms of consultants continued to push for the adoption of their system. Their strategy as a company is to lock the client into using their systems, which locks the client into using them. Their advice is based on what is best for them and not what is best for the client. They were told where to go.

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