Big Construction Projects: A Space for Control and Care

Olga Iermolenko

Abstract

There are significant differences in how project managers are recommended to engage in control in big projects that are strictly limited in time, scope, and costs, and how managers actually do that in practice. How care is implicated in control in large-scale construction projects, subject to overruns and uncertainties, is rarely discussed. The experiences in controlling and care-giving of key people involved in the construction of two complex projects in Norway and Ukraine are analyzed. The findings reveal that control and care play similar roles in the projects, although their nature and forms differ significantly. Being emotionally charged, care complements control efforts by enhancing trust, empathy, help, lenience in judgment, and courage among project participants – important aspects that traditional controls alone can rarely reach. Projects themselves, not only people involved in them, become objects of care, and managers should strive to balance between 'care for people' and 'care for projects'.

Keywords:
care, complexity, control, the iron triangle of project management, overruns, sport, uncertainty

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1. Introduction

The purpose of this paper is to recognize the importance of care efforts in addressing projects' complexities and uncertainties and to illustrate that care is an integral and essential part of a management control system (MCS) for big construction projects. Despite recent advancements in controlling techniques, use of communication technologies, automation of business processes and planning, deviations in the iron triangle parameters of time, scope, and costs are nothing new in the construction industry. Big- or megaprojects are often completed with significant cost escalations, time overruns, and other deviations. The most common reasons for deviations are design changes, risks and uncertainties, inaccurate evaluation of project duration and scope, complexities, and non-performance of subcontractors (Olawale & Sun, 2010). The role of project managers is to cope with the above-mentioned challenges proactively, in a timely manner, and with minimal additional financing (Pollack et al., 2018).

In cases of not having control over projects, not meeting stakeholders' expectations, and missing important milestone deadlines, project managers often become scapegoats (Fulk et al., 2013). To avoid this, a significant part of the project management and accounting literature recommends project managers to spend additional time on planning and risk management (Flyvbjerg, 2007) and implementing a versatile system of strict management controls over the iron triangle parameters throughout the project's life cycle (PLC) (Kerzner, 2013; Olawale & Sun, 2010). In other words, managers are recommended to build a robust MCS to safeguard the project's timely progress and performance. However, several limitations are reported in the use of 'traditional' MCSs of big unique construction projects, including budgets, contracts, accounting reports, rules, and procedures, as they cannot detect, prevent, and handle different uncertainties related to stakeholders' pressures, optimism bias, asymmetry of information, excessive opportunism, and other human-related aspects and uncertainties, which in sum represent a danger to project progress (Krauss et al., 2021; Paulsson & Alm, 2020; Klakegg et al., 2016; Flyvbjerg, 2014; Baade & Matheson, 2016).

In large complex projects, uncertainties arise during the whole PLC, not only at the initial stages when all the planning and risk management is performed (Revellino & Mouritsen, 2017; Samset & Volden, 2016). Thus, often, project managers cannot plan for all risks and uncertainties that will arise later, and must therefore be prepared to tackle them in an 'un-programmed' way (Sahlin-Andersson, 1992; Blomquist et al., 2010; Söderlund, 2004). Non-conventional organization strategies and control approaches must be sustained throughout the whole PLC (Sahlin–Andersson, 1992; Blomquist et al., 2010), in addition to traditional controls (Curry et al., 2019). To analyze these 'non-conventional' strategies that managers select and sustain for the sake of their projects, the concept of *care* is mobilized in this study. Care refers to the provision of what is perceived necessary for the project. Often, these are some 'extra' efforts of project managers that are not required by the contract.

This paper focuses on specific events and actions, which trigger caring reactions (Tomkins & Simpson, 2015), and their effects on big construction projects' organization and performance. Together with control, care is seen as a means to "avoid, repair and minimize damage" (Mumford et al., 2020, p. 2) of unforeseen uncertainties at the individual and organizational/project levels. Care is operationalized as 'leaping-in' or 'leaping-ahead' modes of intervention in the affairs of the world and the efforts of others, with the desire to encourage and enable others (Tomkins & Simpson, 2015). This paper asks the following research question: *How is care implicated in control in big construction projects subjected to overruns and uncertainties?*

I analyze experiences of care-giving and controlling provided by 'key persons' involved in steering two complex construction projects in different contexts. These are two famous sports arenas in Europe: the "Holmenkollen" ski jump arena (Oslo, Norway), built for the World Ski Championships in 2011, and "Donbass Arena" (Donetsk, Ukraine), one of the largest stadiums in Eastern Europe, designed and built to UEFA elite standards for Euro 2012. Through qualitative data, care is shown as a natural part of managers' acceptance of personal responsibility and a central element that activated controls and predetermined the timely completion of the studied projects. Care is shown to depict aspects that traditional controls cannot achieve, such as mutual trust, lenience in judgment, access to help, enabled participation, and cooperative knowledge transfer (Heuts & Mol, 2013; von Krogh et al., 2000). This contributes to the management control and project management literature, which has not yet fully recognized the importance of care in addressing the complexities and uncertainties that remain significant issues in most megaprojects.

2. Theoretical lenses

2.1. Uncertainties and overruns in big projects – there is more to control than meets the eye

Control is an indisputable and essential part of any project. In project management, *control* refers to the control over the iron triangle parameters of time, scope, and costs – whether the project is delivered by the due date, within budget, and to an agreed level of quality, performance, or scope. By means of the applied strategies and mechanisms (MCSs), control contributes to the project's timely progress and performance, despite uncertainties, risks, and other complexities (Pollack et al., 2018). Diverse construction megaprojects, whose budgets exceed six figures, and which are strictly limited in time – especially those publicly financed – are sensitive to overruns (Flyvbjerg, 2014). The most common reasons for overruns are design changes, risks and uncertainties, inaccurate evaluation of project duration and scope, complexities, and non   performance of subcontractors (Olawale & Sun, 2010). In cases of overruns, considerable pressure is exerted on the project management by stakeholders and media (Baade & Matheson, 2016; Klakegg et al., 2016; Paulsson & Alm, 2020). The media is reported to contribute to the creation of controversy around megaprojects and the scapegoating of key persons involved in project management (Krauss et al., 2021; Fulk et al., 2013). This often leads to changes in the project management team which do not necessarily contribute to better performance, especially in the short run. Thus, a strong MCS that can detect and cope with complexities and uncertainties in a large construction project is a must.

However, the numerous reports and studies of project overruns indicate that MCSs often fail to serve their intended functions: to cope with project risks and uncertainties and ensure the project's timely progress and performance (Flyvbjerg, 2007; Loch et al., 2011; Sommer & Loch, 2004; Winch, 2010; Revellino & Mouritsen, 2017). Thus, the connection between project uncertainties and MCS is not always linear – more planning and control are not necessarily needed when new uncertainties arise (Winch, 2010). Considering their extraordinary character, unique construction projects often cannot follow the regular program and rely on diagnostic controlling (Styhre, 2012; Geraldi et al., 2010; Sahlin–Andersson, 1992) – *there is more to control than meets the eye*. Often, architects redraw, or the progress offers new solutions and technologies, and changing, selecting, rethinking, redefining, improvising, and maneuvering become inevitable (Sommer & Loch, 2004; Söderholm, 2008). Project managers must tackle those issues and uncertainties by giving 'extras' to their projects – and in an 'un-programmed' way – instead of simply relying on rationally designed frameworks (Hewege, 2012).

Thus, during the whole PLC, proactive control mechanisms, such as informal conversations and meetings, presence at the construction site, 'friendship' with contractors and other stakeholders, etc., must be in place as well (Barber & Warn, 2005; Curry et al., 2019; Müller & Turner, 2007, 2010). In this regard, instead of managing performance by traditional controls, managers should seek additional 'repair mechanisms' that enable performance (Mouritsen, 2005). The core of these repair mechanisms is a human interaction, which is described as a good management tool to supplement the traditional MCS (Curry et al., 2019; Preston, 1986). That is, effective controls hinge on individuals being able to share their viewpoints and personal, true beliefs about the situation with other team members (Cicmil et al., 2006; Kelly & Barsade, 2001). An important body of literature addresses the above-mentioned aspects and issues via the notion of *care*. Although the concept of *care* originally emerged in care services, it is now widely used in organization, leadership, valuation, and knowledge-creation studies (e.g., Antoni et al., 2020; Mumford et al., 2020; Fotaki et al., 2019). However, it is a relatively novel term in project management and management control literature, and therefore the relationship between control and care is not yet defined or conceptualized in the context of big construction projects. In the following section of the paper, a definition of care and an explanation of how it is operationalized in this study are provided. It is followed by a discussion on the role and possible interplay between care and control in big construction projects.

2.2. Nothing holds together without care

There is no universal definition of care, and there are numerous (hybrid) ways of enacting it. In general, care may be understood as serious attention, a feeling of concern and interest. Concern and care can have similar meanings; both come from the Latin *cura*, but they express different things. Care does not replace concern, it does something else; care has stronger affective and ethical connotations than concern (de la Bellacasa, 2011). Caring involves different emotional and psychological aspects that make managers/leaders not let things slide. Enactment of care is not an entirely philanthropic, altruistic, and selfless practice (Antoni et al., 2020; Fotaki et al., 2019; de la Bellacasa, 2011). Organization and business research have noted the complex ways in which enactment of care is interwoven into control (Mumford et al., 2020; Sewell & Barker, 2006). "Caring is not an option but a vital necessity…nothing holds together in a livable way without caring relationships" (de la Bellacasa, 2011, p. 100). Thus, it may be assumed that not even an MCS holds together without care.

Care may be seen as the way a manager behaves towards his colleagues and subordinates (Vie, 2009, 2012a, 2012b; Von Krogh, 1998; Tomkins & Simpson, 2015). In this regard, care-giving may mean direct assistance in the development and growth of employees (Kroth & Keeler, 2009; Fotaki et al., 2019) but also nurturing their autonomy and independence (Tomkins & Simpson, 2015). Managers may undertake different types of effort and activity to facilitate care in projects (Von Krogh, 1998): (i) an incentive system with a particular focus on access to help and on other behavior that encourages care in organizational relationships; (ii) mentoring activities and training programs, which allow senior members to grow and actualize their full potential; (iii) trust, openness, and courage, as explicitly stated values by project managers and as formulated expectations for the behavior of project participants; (iv) project debriefings and other forms of learning-oriented conversations that foster a sharing experience among project participants and enhance the personal learning of each individual; and (v) social events likely to stimulate good relations.

Based on the philosophy of care (Heidegger, 1962), depending on the situation, caring leaders engage in *'leaping-in'* or *'leaping-ahead'* modes of care (Tomkins & Simpson, 2015; Mumford et al., 2020). 'Leaping-in' is when one person intervenes to take over from another, be this a task, a problem, a conversation, or a relationship. In projects, this means that project managers/leaders know how to manage the challenge, and that is why they 'leap-in' to take over, rescue the situation (Tomkins & Simpson, 2015). 'Leaping-in' happens frequently (monthly, daily), as the dynamics of task-ownership shift. 'Leaping-in' provides a direct substitution for the care recipient when he is struggling, with the caregiver taking over control and directing the solution. 'Leaping-ahead' is a more complex term and may be described in a single word as empowerment or encouragement, while 'leaping-in' means correcting (Tomkins & Eatough, 2013; Tomkins & Simpson, 2015). 'Leaping-ahead' paves the way for the care recipient to act for himself, through the caregiver facilitating or pointing out possibilities or options for action which the other can engage in his own way or his own terms (Mumford et al., 2020). In this sense, it is an ability to engage in the 'bigger picture'. 'Leaping-ahead' opens up the possibility of several ways forward, while 'leaping-in' helps fix the situation, due to the knowledgeability of the caregiver.

There can be different implications of caring efforts for projects – such as enabled participation and cooperation, trustful relations, exchange of ideas, and free sharing of personal knowledge – that, all together, produce conditions for safeguarding the project's progress and performance. On the contrary, untrustworthy behavior, constant competition, imbalances in giving and receiving information, and a 'that's not my job' attitude endanger the project's performance (Cicmil et al., 2006; Kelly & Barsade, 2001; Vie, 2012a). Constructive and helpful relations speed up communication, enabling organizational members to exchange their concerns and personal knowledge and discuss different ideas freely. Care gives rise to a particular behavior in relationships, summarized as mutual trust, active empathy, access to help, lenience in judgment, courage, and their interplay (von Krogh et al., 2000). Emotional support from project managers in enabling the project's performance – through ordinary activities like listening and chatting (e.g., instead of constant demands for reports and explanations of projects delays, etc.), as well as behaving with care towards employees – can influence the project's progress. High-care relationships can overcome mistrust, fear, and isolation and promote knowledge sharing (Vie, 2012a). Care and emotional stability maintain the atmosphere of trust and courage, to fulfill the project's objectives (Vie, 2012b). Overall, good relations purge ineffective communication and lower distrust, fear, and other negative outcomes of an unhealthy project environment (Von Krogh, 1998).

2.3. Possible interplay between care and control

Although there are no studies, explicitly focusing on the role and interplay of care and control in big construction projects, analysis of the literature makes it possible to define several important aspects, in which care may complement control (see Figure 1). Traditionally, control is seen as a rational and systematic process [the left part on Figure 1] – it is concerned with defining and fixing failures. Therefore, control helps with getting back on track with the defined iron triangle parameters. In this sense, control may often lead to punishment to assure timely progress and performance of a project. According to Mumford et al. (2020), in a project setting, the aims of care are also to avoid, minimize, or repair damage of unforeseen uncertainties. Here, *caring* is an activity in which control is implied – both *caring about people* and *caring for*

the project's progress and timely performance, that is, keeping projects under control through 'extra' efforts that may not always be visible to other participants. Mumford et al. (2020) call these efforts 'veiled care' – some actions that could be unnoticed by care recipients but enable them to take action.

Care concerns questioning what is appropriate to improve things (Heuts & Mol, 2013). Unlike control, care efforts are directed towards reciprocation that often creates moral obligations to return the favors (Vie, 2012a; 2012b). Although all people can influence each other, moral obligations are stronger to favors of managers, than other people, due to their position and formal authority (Cialdini, 2001; Vie, 2012b). Projects are limited in time and in this way mutual care is one of the tools that might prevent the burnout of people working on a project. Care includes love and emotional attachment and a sense of duty to make the project 'good' (Heuts & Mol, 2013). Managerial care includes managers' active contributions, rather than judgments (Heuts & Mol, 2013). Figure 1 illustrates that control and care have their unique forms and different nature, but at the same time, the ultimate role of care and control may be similar. In this respect, it is interesting to investigate the relation between the two in practice.
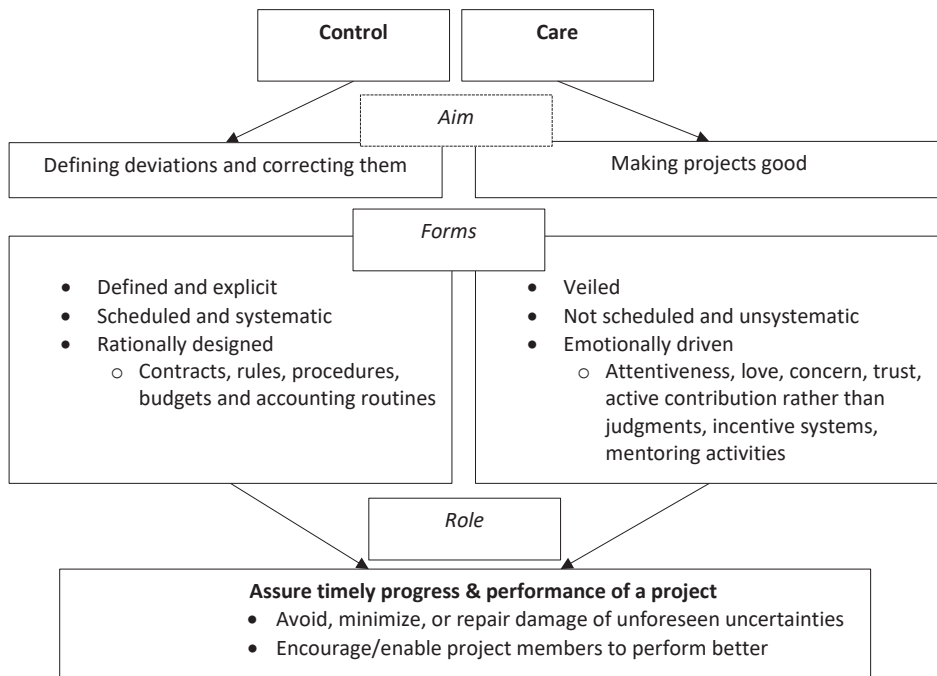

Figure 1. Control vs. care in big projects

The literature analysis above highlights the complex nature of big construction projects and the demanding process of organization and control. It is shown that to be effective, control must be complemented by other, 'extra' efforts, which, in this paper, are described through the

notion of care. Care means investing efforts that are not required by the contract but perceived as necessary for achieving project performance goals by project managers. Care is enacted via 'leaping-in' or 'leaping-ahead' (Tomkins & Simpson, 2015) modes of intervention in the affairs of the world (care for projects) and the efforts of others (care for people), with the goal of correcting the situation or encouraging others to take action. This is assumed to contribute to the final goal – to activate or supplement the chosen organization and control strategies and assure projects' timely progress and performance. Potentially, there are differences in terms of how the care-control aspect is present in public and private projects, due to statistics indicating that private projects are less subjected to budget and time overruns than their public counterparts (Amoatey et al., 2015; Flyvbjerg, 2014; Klakegg et al., 2016). In particular, the private project's organizing and controlling approach could contain more care, as well as more control or vice versa, and therefore be more progressive.

3. Research method

In order to analyze how care is implicated in control in big construction projects subjected to overruns and uncertainties, knowledgeable informants were sought. Ideally, fieldwork would have followed the informants in their project's related control initiatives. This was, however, not easy to achieve, and therefore the study proceeded with interviews. With some effort, it was possible to talk to people from the 'project management world'. The informants are considered experts in relation to practices in which they were routinely (professionally) involved (e.g., project managers, directors, engineers). As the purpose of this research was descriptive-exploratory, interviewing proved a sufficiently helpful research method. Semi-structured open-ended interviews were conducted with six 'first persons' of the big construction projects[1] – those who were personally involved in the projects' progress and quality control work.

In the Holmenkollen project, the project director, who acted as the chief financial officer (CFO), the main engineer, who was responsible for quality control, and the project manager on the main contractor's side, who ensured project progress and quality control, were interviewed in March-April 2011 in Norway. In the Donbass Arena project, the project manager, who was responsible for the project's progress and quality control, the project director, who acted as CFO, and the project manager on the main contractor's side, who ensured the project's progress and quality control, were interviewed in April and December 2011.

The informants were generous with their expertise, and interviews lasted between one to three hours. Interviews were conducted just a few weeks after the formal completion, therefore enabling the capture of very fresh memories from the site. To ensure procedural reliability and credibility (Flick, 2009; Mason, 2002), different techniques were used. Firstly, all personal interviews were tape-recorded and then transcribed. At the end of each interview, the conversation was summarized, and clarifying follow-up questions were asked if the interviewer needed more clarification. Further, interviewees were contacted after the personal interviews (mostly via e-mail) to ask additional questions.

As these two sports venues were very important for both countries, which were preparing to host prestigious international sports events: the World Ski Championships in Oslo in 2011 and the Euro 2012 football competition in Ukraine, they became local symbols of these regions

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[1] The initial project director of the Holmenkollen project and project manager of the Donbass Arena project were blamed for poor project progress and performance and were replaced. Unfortunately, I could not take into account the personal opinions of these people. However, it is not my intention to speculate whether the problem lay in the complexities of the projects or the project managers' abilities to cope with those complexities. I examine the construction process and the experiences of people I was able to talk to in person.

and attracted considerable attention from the mass media in the studied countries and abroad. Thus, special attention was also given to selecting and translating secondary data, which were collected in languages other than English (e.g., in Russian, Norwegian and Ukrainian). These data are publications on the official websites of Arup Sport, Donbass Arena, ENKA, and Holmenkollen (accessed 2011-2012), project brochures with short reports about project realization, and news in the mass media (publications in the press between 2005 and 2011 in *Vårt Land*, *Dagbladet*, *Teknisk Ukeblad*, the Norwegian News Agency, and the Ukrainian News Agency, UNIAN), as well as video press conferences and films about project progression available on YouTube.

Interpretative sense-making (Welch et al., 2011) took place while theorizing from this study. The aim was to understand the actors' subjective experiences and to provide a thick description of their initiatives. Although historical events could not be observed unfolding over time, it was possible to reconstruct the historical context of the two projects, based on documentary evidence, reports, and other secondary data and interviews with managers. As such, the informants were invited to talk as if they were their own ethnographers (Heuts & Mol, 2013; Mol, 2002). The basic aspect of this approach is to persistently ask questions about the specificities of activities that informants tend to take for granted (Mol, 2002). This invites them to take a fresh look at their own practices, rather than getting stuck in relating their opinions (Heuts & Mol, 2013).

Interviews were subjected to the following topics for discussion: peculiarities of big projects (e.g., standards, stakeholders, project limitations, etc.); most striking important sources of risks and uncertainties; how the uncertainties were handled and through what kind of (control and other) tools; what managers and the project management team learned from the project. At some point during the interviews, the interviewer always asked, "If I were you, what should I have done to safeguard the mega construction project's progress?" or "Now, after the project is completed, what have you learned from this and what would you do differently, if you had the chance?" During interviews, managers gave the impression that they would long remember all the project details and even the relationships during the projects. None of the interviewed managers had difficulties or doubts in answering any questions, and it seemed that they left a part of their souls in their job. Concerning the concept of care, the author did not start with the idea of using this to explain how managers deal with uncertainties in projects. It was a natural choice after data collection was completed. Many of the care aspects were detected through managers' emotions, pride, and passion during the interviews while telling stories and sharing their experiences about the projects and results achieved.

Previous research indicates that projects are dependent upon the contexts in which they are undertaken (Winch, 2010); consequently, managerial approaches for dealing with uncertainties are likely to be discerned, as they embody different assumptions about trust, organizing, leadership, reward systems, construction norms, business traditions, etc. In order to obtain plausible research results, it was assumed that projects in different contexts (e.g. Ukraine vs. Norway) should provide a rich comparison (Flick, 2009; Mason, 2002). Two projects were studied: one in Norway and one in Ukraine. These countries are both situated in Europe but have different types of economies, traditions, and norms. Norway is a stable, well-developed country with standards of living that are among the highest in the world. Ukraine is a relatively young country, with an unstable economy, and weak political and legal systems; it has an underdeveloped infrastructure and transportation, and a high level of corruption and bureaucracy.

The studied projects differ in terms of ownership type: Holmenkollen is publicly financed, while Donbass Arena is a privately financed project. Being technically different (construction of a steel jump vs. a football stadium), the projects display interesting project-related similarities in terms of the iron triangle parameters (Table 1). Both constructions were completed in three years, and both faced similar constraints and experienced strong pressures from stakeholders during the PLC. Much speculation and pressure emanated from the media and sports associations, such as the Fédération Internationale de Football Association (FIFA) and the International Ski Federation (FIS), which kept a close watch over the implementation of the projects. Several changes in the design of the construction projects were undertaken at the execution stage. The initial drawings were altered significantly at least three times, resulting in changes in the scope of works, and consequently influencing budget estimates. Another similarity was the large number of multinational contractors and sub-contractors.

Table 1. Information about projects

KEY CHARACTERISTICS	HOLMENKOLLEN	DONBASS ARENA
Industry	Sport	
Contractors	More than 20	Around 15
Final costs	USD 400 mln	
Initial plans	USD 125 mln	USD 185 mln
Budget overruns (final costs compared to initial plans)	320%	216%
Terms of realization	Around 3 years	
Initiation of the project	2005–2006	2004–2005
Actual start–completion of the project	2008–2011	2006–2009
Time overruns	2 years	1 year
Main architecture	JDS Architects (Denmark)	Arup Sport (UK)
The most crucial performance indicator	Time	Budget

The next section will describe major findings from the two studied projects concerning control and care. The input variables are not the primary concern of this paper, nor are detailed comprehensive descriptions of the MCS. Cost escalations during the PLC are examined and their reasons are briefly defined. The reasons for deviations are described around the following categories (Olawale & Sun, 2010): design changes, risks and uncertainties, complexities and inaccurate project estimations, and issues with subcontractors not fulfilling the obligations. This typology appeared to be relevant for both projects.

4. Empirical findings
4.1. The Holmenkollen project
Holmenkollen is a large ski-jumping hill located in Oslo, Norway. It is a popular tourist attraction and the only steel jump in the world. The generator of the project and the venue owner, Oslo Municipality, was responsible for the development of this project (Figure 2). Two contracts were signed: the owner-designer contract, which involved planning, design, and construction

administration, and the owner-contractor contract, which involved construction. An indirect, third-party relationship existed between the designer, Dipl.-Ing. Florian Kosche AS, and the contractor, Terramar AS (Atkins Norway AS from 2015), due to these two contracts. The project director, who served as CFO of the project, represented the interests of Oslo Municipality.
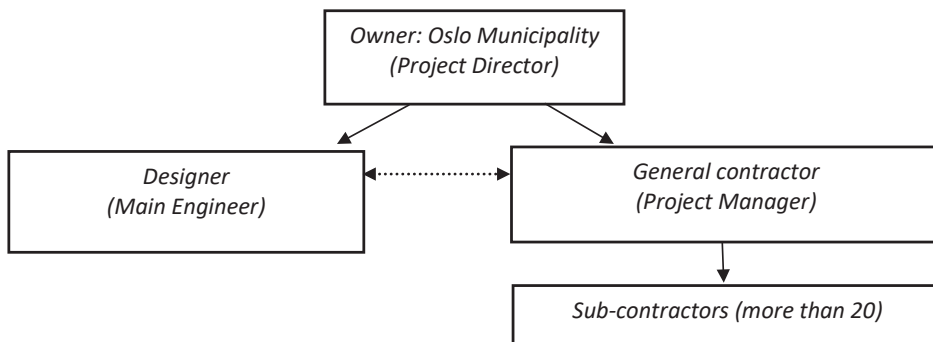
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                    ┌─────────────────────────┐
                    │  Owner: Oslo Municipality │
                    │    (Project Director)     │
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Figure 2. Main parties of the Holmenkollen project

Time was crucial in the Holmenkollen project, as it took a long time to make decisions and plans. When the project began, Oslo Municipality did not know exactly what to build or how. Uncertainties arose, regarding how much money should be spent on the project. Among politicians from Oslo Municipality, many disagreements concerned the design, for example, whether it should be just a ski-jump arena or a monument – a visiting card for Oslo. The project owner had no experience in this field and in the beginning, did not engage engineers and architects, but was actively involved in project calculations, based on the sums of money that could be spent.

In 2006, the project was estimated to cost NOK 310 million. The municipality launched an architectural design competition to rebuild the hill. The politicians agreed on the sum of NOK 653 m (around USD 100 m; currency exchange rates for 2011) for the construction project. According to the informants, a situation had arisen, which qualified specialists call "*content without engineering*" (Project Manager), in which planned costs were calculated without the involvement of engineering specialists and other professionals. The lack of detailed elaboration led to the underestimation of costs. Lack of agreement between project parties made the tasks even more complicated. After the municipality realized that the project would not be finished before the scheduled testing ski-jump championship in February 2010, they decided to stop the planning and engineering stages of the project and proceed directly to execution.

Shortened planning and engineering stages led to additional gaps in the earlier risk analysis. Priority was given to the ski jump itself since the infrastructure could also be improved after the ski jump was ready. By 2008, the cost had accelerated to NOK 1.2 billion (USD 200 m), and, by the following year, it had reached NOK 1.8 billion (around USD 300 m). The City Commissioner for Business and Culture, who served as a project director at that time, had to leave the position due to inability to ensure the project's progress and significant cost overruns. A consultant report ordered by the municipality concluded that the pressure to find cost savings to remain within the budget, which was underestimated to start with, resulted in slower progress, which again resulted in higher costs. Although construction was late to begin, the test-

ing competition on Holmenkollen was planned to start in February 2010. The project had to be finished at any cost. "*We could not postpone any dates for the Testing Championship. We had to build an arena on time at any cost. Otherwise, the world's sport community and other project stakeholders – all would blame us for our failure. Personally, it meant that I would lose my reputation*" (Project Director). The total costs for the upgrade of the national arena and infrastructure, including new ski stadiums, ended at around NOK 2.4 b (USD 400 m), which is 320% more than the initial estimate (USD 125 m).

In the early stages, the decision-making process was slow and totally controlled by Oslo Municipality. The main engineer and project manager, worried about progress and inopportune decisions, negotiated the right to begin the construction process. They could, in principle, wait till the politicians all settled down, but concern about the project's timely completion was more important than the remaining complexity and uncertainty regarding how much the municipality would be willing to spend. Further, to speed up the decision-making process, managers started negotiating their rights to decide for themselves, in frames agreed with the project's owner. In the execution phase, the project manager gained the right to make decisions without agreement with the client – up to NOK 1,000,000 (around USD 170,000). Later, the project manager's subordinates were also given the right to make their own judgments and decisions without the project manager's agreement – up to NOK 30,000 (around USD 5,000). *"It was especially relevant to be able to serve the project within the defined limits; that also enhanced courage in making decisions, stimulated experimentation and trust between the project's participants"* (Project Manager). *Mutual trust* and *encouragement* between the different parties of the project became part of the MCS.

Taking the visions of the main stakeholders (e.g., FIS, sportsmen, Norwegian Ski Association, Holmenkollen Arena operator, etc.) into consideration was an important factor of the project's success. Many issues were negotiated during press conferences and special meetings and, later, with external consultants and different levels of the project's management. Each party was encouraged to voice an opinion because the sports arena was built first and foremost *"for people to be happy"* (Project Director). This caused several changes in the design, due to new demands by stakeholders: from simply rebuilding the existing ski jump to fully dismantling it and constructing a monument – a symbol of Oslo. The architects were inspired by this decision and engaged in significant redrawing. However, caring for the project and assuring its progress and performance also meant having the courage to provide limits and make difficult decisions that would be considered the best possible solutions in particular situations.

As the date of the trial championship could not be postponed, the managers who understood the complexity and implications of various costly changes suggested finding good enough and realistic solutions, to complete the project on time. The project manager commented that there are particular moments in projects that require *courage,* for example finding *freezing points* in the design and saying "enough" to architects and engineers.

> It was important to stop the architects because they could improve the project an infinite number of times. There is no limit to improvements and creativity; thus, it is important to find a crucial point where you reduce uncertainty and do not make any changes that lead to additional costs, time and changes in quality, which are important limitations of the project. (Project Manager)

Following the tender process, an issue arose that required maneuvers: finding yet another *freezing point* and establishing personal contacts for the sake of the project. By Norwegian law, competition between potential contractors (tenders) is required. At that time, tendering in public sector projects was a closed procedure, with clients making judgments based on the tender price (the cheapest bid); companies' reputations were not fully considered. Complicated relations with some suppliers and difficulties in working in international teams impacted the project. Sometimes, the supplied construction materials did not meet quality requirements and had to be returned to the sub-contractors; for example, using steel of another quality was not acceptable for safety reasons. Instead of relying on contracts and going to court or claiming penalties for not fulfilling obligations, the project director decided to solve the delivery situation by establishing *personal contacts* with sub-contractors in different countries, by visiting them, and hand-shaking. According to the project director, this was the only way to establish, e.g., continuous supplies of steel from Poland and deliveries of other materials from Italy without interruption. This made it possible to implement better control of deliveries and, later, to trust their contractors.

The impact of nature (so-called force majeure) was also a source of uncertainty during the PLC. Although responses to weather conditions were included in the risk management plan, nobody expected that wintertime in Oslo would reach record low temperatures and wind during the arena's construction. The project team had no additional time, having to undertake the main construction works during September – December 2009. To keep the workers safe and healthy, the managers developed a scheme of changing positions and providing hot drinks and food. This caused additional expenditure but kept staff healthy and, ultimately, saved time on construction. Although the *care for people* and their health was an expressed priority, in this situation *care for the project* outweighed it, as the project had to move forward no matter what.

Interviewees have mentioned with regret that they did not develop an incentive system, simply because they lacked time. However, because skiing is the most popular sport in Norway, project managers tried to motivate workers by getting them to understand that a unique ski arena would become a symbol of the country and add some prestige to their CVs. The creation of a special working atmosphere and self-motivation were vital in the project. Too much pressure on personnel was considered inappropriate, as it could create an atmosphere of distrust and apprehension: *"You lose your authority and gravitas in the project if you become a dictator. That will never work in Norway"* (Project Director). Managers thought it better to create an atmosphere in which every worker believed that he or she was an essential part of doing something good and important, thus making it possible to achieve an effect from the attitude: *'it's everyone's job'*.

Since the project attracted close attention from mass media, which was, on one hand, involved in maintaining the special spirit behind the creation of a symbol of Oslo, while, on the other, criticizing the project's progress. The interviewed managers mentioned that, at some point, they decided to focus solely on the project, without considering media pressures: *"You cannot stop it [media], so put it 'aside' and do your job properly"* (Main Engineer). Thus, selectivity and attentiveness to more salient issues were also on the project manager's agenda.

The formal MCS consisted of monthly reports and regular meetings with the director of the project, who received all the information from the project manager (frequency: one month and two weeks, respectively). During some problematic phases, when planned tasks were poorly performed and/or many activities were postponed for different reasons – for example, problems with delivery or unsatisfactory weather conditions – there were two-weekly reports

and weekly meetings, reflecting the project manager's *concern* about the project's progress. At the 'peak' of the project, the reports became more frequent. Kick-off meetings (three to four hours every month/every two weeks at the "peaks") and personal observations on the project helped to modify and accomplish project tasks. Electronic tools were also used, such as Microsoft Outlook and OPERA Project (Microsoft Excel-based tool, a Norwegian analogue of MS Project). This software was used for detailed planning, assigning resources to tasks, tracking progress, managing budgets, analyzing workloads, etc. It gave an opportunity to visualize the project's progress via diagrams and analyze project progression. However, this information had a merely historic character, and managers did not specify the real value of those tools. Therefore, the groups of 'matrix' managers used weekly or daily follow-ups, together with ICT, personal control, and observations.

Informal communication was considered more effective than formal, since, in this way, managers "*became an inseparable part of the project*" (Project Manager). When even weekly meetings were not enough to provide the entire picture of progress, it became important to be on the construction site and provide *access to help*: *"I literally lived at the construction site till the project was finished. The project became like a child that was growing and needed more care"* (Project Director). Managers were constantly present at the construction site, not to deliver punishment for bad progress but to listen and chat with the matrix managers and ordinary workers and *provide necessary support.* The interviewed managers were open to communication with middle-level executives and workers, who could come to them anytime they faced problems.

According to interviewees, the major lesson learned from the project is that 'time is money'. In terms of their big construction projects, where time was crucial, time 'wasted' on detailed planning and budgeting for project costs reduced the time available for execution. As a result, the schedule shrank, many tasks were performed simultaneously, and project managers had to invest extra effort to keep the project going. Key people adapted to the situations and coped with uncertainties by caring about people, providing access to help and personal involvement. Informal conversations and established friendships with contractors, as well as mutual trust, were very useful. The decision-making process became efficient with a formalized limit of responsibilities. Observations at the site, as well as chatting and listening, were a natural part of the project manager's care for the project's progress. The main engineer also mentioned that, before taking any kind of responsibility in big construction projects, managers *"should absolutely love what they do"*, because it requires not only time and labor but also enormous mental effort and sacrifice.

4.2. The Donbass Arena project

The Donbass Arena was the first stadium in Eastern Europe to be designed and built in accordance with UEFA elite standards, for Euro 2012. Construction was launched in June 2006, when a contract with the Turkish company ENKA was signed. After construction was completed in 2009, the arena received several awards, including the Best Construction Prize of Ukraine. The contract chosen for the construction of Donbass Arena differed from that of Holmenkollen. The client was a private investor, the owner of the football club, "Shakhtar Donetsk". The model replaces two traditional contracts with three contracts (see Figure 3): owner-designer, owner-construction project manager, and owner-builder (general contractor).

The decision-making process was time-consuming at the start of the project. Even simple questions that did not lead to an increased budget were negotiated between ENKA and Donbass Arena, because it was implicated in the contract. The choice of designer and contractor
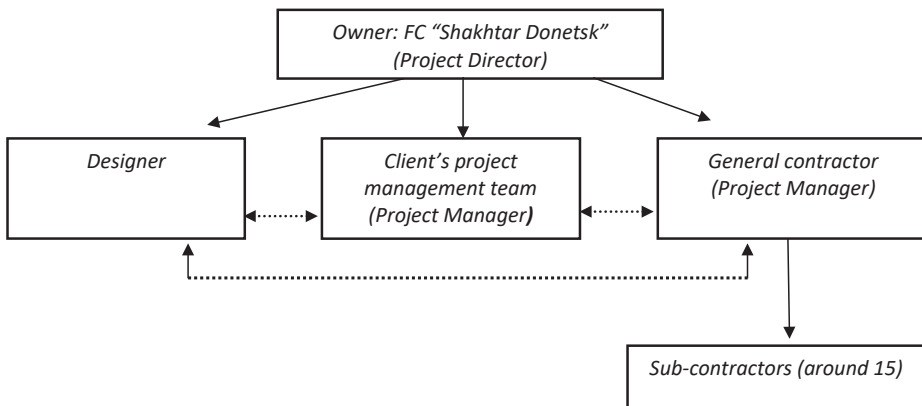
Figure 3. Main parties of the Donbass Arena project

was based on open tender procedures. Initially, the project manager's role was to provide construction advice to the designer, on the owner's behalf, design advice to the constructor, again on the owner's behalf, and other advice if necessary. The construction project's management company was an additional party engaged in direct construction. The project manager and his team provided assistance to ENKA, which was not able to cope alone with the Ukrainian legislation. After taking responsibility for the project, ENKA started choosing sub-contractors independently. At the same time, the client's service group checked all tender procedures and could influence the decisions of ENKA. Due to long negotiations with the architects and contractor, the project ran late. The manager of the client's project management team was fired, blamed for poor progress, and replaced by a more experienced professional project manager. Instead of the planned two years to construct Donbass Arena, it took three years. The total costs of the project increased significantly, compared to the initial calculations.

The Donbass Arena stadium was completed one year later than originally projected, but the time dimension was not as significant as in the Holmenkollen project, because construction started more than five years before the start of Euro 2012. The project's budget and time schedule were well defined in the contract from the beginning of the project's execution in 2006. The initial estimated cost of the project was USD 185 m. In 2007-2008, the financial crisis hit Ukraine and the Ukrainian currency was devalued in relation to the US dollar. In order to fulfill the initial cost plans assigned for the project, cheaper substitute materials were used by ENKA, but they appeared to not be good enough for the construction project. In 2008, the project managers felt that it was impossible to achieve the planned results within the frame of the earlier defined budget, so the budget was renegotiated. Later, costs increased, due to some uncertainties, which were not (could not be) taken into account at the start of the project: e.g., frequent changes in Ukrainian legislation and construction norms, causing changes in the design of the arena and consequent increases in the project's costs; problems with the mentality of workers, who did not show up after several holiday celebrations; client's desired changes in the design of the arena at the end of the project, etc. The final sum of project costs and the surrounding park reached USD 400 m.

As the project was financed by a single private investor, the client's role was decisive in terms of the design of the sports arena and the amount of money that could be spent on construction. Some design changes occurred because of changes in the owner's visions and new

ideas, which arose after the project had started. Near the final stages of this project, the illumination system (millions of lights) had to be replaced, because it did not seem sufficiently fancy for the owner during the first trial. Other changes also occurred in the middle and late stages of the project, because of new construction standards issued in Ukraine (including new requirements for roofs).

The client demanded the most effective use of financial resources, and the project management team closely monitored all spending. At the beginning of the project, there was no mutual trust among key participants. As the project evolved, involved parties understood that the strict control over each activity and the inability to make even simple decisions without the client's confirmation negatively impacted progress. The project manager negotiated *the right to implement decisions* without confirmation from the director of the project. The decision-making limit was set to USD 30,000. The director of the project also had limited ability for decision-making (up to USD 100,000) without confirmation from the client. Decision limits were also provided for the main contractor, thus stimulating *mutual trust* between participants later in the project.

Communication problems became significant in the project. The official correspondence language was English (stated in the contract). Neither the Turks nor the Ukrainians had a good command of English, especially at the beginning of the construction process. To communicate, they had to use professional interpreters that knew how to translate words but did not know the specifics of the project management discipline and practice, construction norms, materials, etc. The interpreters often failed to provide 'meaningful' translations. This led to numerous misunderstandings. To fix the situation, the project's managers abandoned official translations and communicated with the help of facial expressions, gestures, spontaneous drawings, and body language. With time, this problem became less significant, as both project management teams improved their language skills, as a consequence of trial-and-error learning. Despite the significant challenges of working in an international team, both sides of the project – contractor ENKA and the team of Donbass Arena – succeeded in caring for workers and motivating people to work, gaining trust in each other over time.

Access to help was provided by the client's project management team to different foreign contractors that were unable to cope with the Ukrainian business context, different bureaucratic procedures, and customs. For example, the construction of the roof was renewed a couple of times, because German subcontractor specialists had to harmonize their project with Ukrainian norms, which changed several times in one year. ENKA frequently faced problems at customs with the import of construction materials. To navigate the situation, the client's project management team assigned Ukrainian specialists to help with customs authorities, courts, etc. *Access to help in solving complex tasks, mentoring activities and training programs* also evolved with the project.

The team included many people aged between 50 and 60, who had gained their experience in Soviet and post-Soviet times. They were offered training to improve their knowledge concerning construction materials and technologies, ICT, and construction techniques. Considerable attention was paid to *team building and corporate culture* during the whole PLC, involving competitions and several arrangements for workers and their families. Another aspect was managers showing their own good working example, *"being there for people, giving your support and full dedication to the project"* (Project Director). A *bonus system* was implemented to improve motivation and get people more interested in productive work. The incident of Ukrainian workers (surprisingly to ENKA) not showing up for work during the project's first Christmas/

New Year holidays was not made a big issue. A new (to ENKA) routine was established, and longer Christmas/New Year vacations were planned for the following years.

Different motivational systems were used by the client organization and the main contractor, each of which included both financial and nonfinancial incentives. ENKA used a system of bonuses in the case of over-fulfilment of the plan's results. Workers had one day off every 15 days. Every three months, all workers could fly to Turkey to visit their families at the company's expense. An important nonfinancial incentive was the prestige of working for ENKA, a well-known company in Turkey. Donbass Arena also had a system of financial bonuses, based on results achieved during the calendar year (in the case of improved quality, time-saving, and economy). One tool for encouraging people to perform tasks efficiently was the setting of a good example and the performing of tasks by the project manager and other 'top people' in the project. This built *relationships of respect* and a special climate among team members. Sports competitions between employees, fishing with their families and Turkish colleagues, etc. are examples of nonfinancial incentives used by the client organization to strengthen team spirit and provide encouragement to complete the project with over-fulfilment of the planned results.

The impact of nature (so-called force majeure) was also visible in the Ukrainian project, as many outdoor tasks were performed during the winter seasons, which are quite harsh, especially for Turkish workers. Changing positions, switching plans to perform more indoor work during extremely cold periods, providing hot food and drinks were also elements that helped to manage the situation.

The iron triangle parameters (quality, costs, and schedule) were controlled on both sides: (i) on the side of ENKA by the Department of Quality (men in 'blue helmets'), and (ii) on the side of Donbass Arena by the Department of Technical Supervision. Kick-off meetings, regular compulsory reports (that could also be provided on demand of the project manager), and ICT tools (the team used 'Spider project', a project management package) were employed. However, the teams spent much time on negotiations. Work meetings between the project managers of ENKA and Donbass Arena were held daily (despite not being mentioned in the contract). Regarding certain vital issues, meetings could even take place two or three times a day. At the beginning of the project, these meetings lasted about 1.5 hours; however, to improve efficiency and not waste time on dalliance, managers admitted that they learned to communicate faster, get straight to the point, and solve problems immediately. They learned to spend approximately 10-20 minutes on meetings (instead of 1.5 hours), after finding a 'common language', using handwriting, drawings, sketches, and other figures, instead of formal reports, and templates.

Among the major lessons learnt from the project, interviewees stated the importance of being prepared to learn by doing, in order to be ready to handle unexpected events during the PLC. Clear project goals, incentive systems, corporate culture, and different team-building activities were good means of ensuring the project's progress, especially in combination with a bonus system.

Despite the many significant projects challenges described in this section, the interviewed project managers seemed to express great ability in taking control over their project's progress. Surprisingly, despite considerable case differences, e.g. project ownership (public vs. private), bidding process (open vs. closed), country (Norway vs. Ukraine), and sports industry (skiing vs. football), and assumed significant differences in terms of control-care applied approach, surprisingly, many more similarities than differences were discovered. Managers faced similar challenges that were tackled in similar ways, which I analyze in the following section.

5. Discussion

5.1. Big construction projects: A space not only for control but also for care

Interviewees describe practices where control is not a matter of casting judgments after the fact but, rather, of project managers engaging in various activities that they perceive to be important/necessary in particular situations to care for their projects (beyond formal contracts). Thus, care organically complements control in specific situations. Care-control efforts embodied the motivation of people by providing one's own examples of good work, when perceived needed, spending a lot of time behind office doors (Heuts & Mol, 2013) – at the construction site, in press conferences, in negotiations with stakeholders, etc., instead of demanding and reading reports; establishing communication and mutual understanding with employees and contractors, despite language and other cultural differences; changing work positions (e.g. while cold); arranging trips to families (when working abroad), and team-building and other activities, that maintained a healthy working atmosphere. As the findings indicate, projects become arenas for exercising care that contributes to solving problems, implementing solutions, forming and strengthening relations, developing professional competencies, and having a pleasant time. Interviewed project managers were identified as being emotionally attached to the projects, which is in line with the literature on caring leadership (Mumford et al., 2020; Tomkins & Simson, 2015). They discussed some aspects with considerable passion and pride but also displayed regret and anger about others.

Empirical findings indicate that, indeed, it is simply impossible to totally de-risk a project and implement it without any deviations (Geraldi et al., 2010; Revellino & Mouritsen, 2017). Despite difficulties, design changes, cost overruns, and budget negotiations, both studied projects may be considered successful. These are cases of learning, knowledge exchange, and dialogue, where the initially stated and mapped intentions, preferences, and conditions did not remain stable throughout the PLC, as a result of working with the projects and caring about achieving the best project outcomes. Project participants made their projects open to 'revisions' (Söderholm, 2008) and 'trial-and-error' (Sommer & Loch, 2004) – they renegotiated budgets, changed the designs, and tried to find better materials to improve quality and ensure safety.

Those interviewed also consider the studied projects successful, as they met or even exceeded stakeholders' expectations. Both arenas became landmarks and were completed in time – before important sport competitions. However, both were completed at double their budgeted costs (compared to initial estimations), which, from the iron triangle perspective (Pollack et al., 2018), constitutes a managerial failure. That outcome can be attributed to the cumbersome pre-execution stage of both projects and staff changes, but also to the fact that, even at the final stages of execution, new uncertainties appeared and required maneuvering.

Both projects were subject to numerous negotiations and daily meetings, as part of care efforts undertaken by managers (Vie 2012a,b). Building the atmosphere of 'doing something big and important' was an essential control element in both. In the Ukrainian case, managers developed a more complex motivational system (a formal system of bonuses and non-monetary motivation, e.g. best worker of the month, fishing competitions, (re)training programs for employees that needed to advance their knowledge in using software and new building materials, etc.). Norwegians did not have a formalized incentive system and mostly used nonfinancial incentives and preset payments for work. Both projects used budgets and performance measures, progression reports, kick-off meetings, negotiations, ICT tools, the help of external consultants, research and design institutes. The difference lay in the frequency of diagnostic

actions. In both control systems, budgets were considered equally important but were not met and were corrected over time.

As seen, project managers used different care efforts and modes (Tomkins & Simpson, 2015) to positively influence the project's progress and performance. It is observed that most 'leaping-in' (e.g., presence at the construction site, proving advice and instructions) and 'leaping-ahead' (e.g., the established limits of responsibilities and gained trust) work was done at the start of the projects. The 'leaping-ahead' efforts bore fruits throughout the PLC. Care in different dimensions involved actors with different epistemic properties (de la Bellacasa, 2012; Mol et al., 2010). Although earlier studies suggest that care of people is at the core of leadership (Tomkins & Simpson, 2015; Vie 2012a,b), this study reveals that the non-human dimension of care is also important (e.g., sports arenas, manager's reputation).

It is observed that both projects initially suffered from the implementation of 'clarity strategies' (Sahlin-Andersson, 1992). It took time to engage project participants in constructive dialogue and reciprocal feedback, gain trust, and establish a common language. There was a turning point in the planning and execution stage when care became 'feasible' and contributed to project completion. It was revealed that at 'peaks', when project managers realized they were behind all schedules and budgets, they started focusing on finding 'good enough' options and solutions. Caring in these cases meant 'prioritizing' and 'selecting' what to care about *more* and what *not to care about* at all (e.g., mass media, in the last stages of the Holmenkollen project; abandoning official translations and substituting them for gestures and hand drawings, in the Donbass Arena project). For both projects, implementation was a complex process, including something extra that is not easy to capture (Mumford et al., 2020), for example, improvisation, persuasion, and care for people and project progress. Thus, managers should be blamed – not for increased control but, perhaps, for not caring enough.

6. Conclusions

In this paper, I investigate how care is implicated in control in big construction projects subjected to overruns and uncertainties via analysis of the experiences in controlling and care-giving of key people involved in the construction of big projects in Norway and Ukraine. The research question has organically appeared after the analysis of the literature on organizing and control in big construction projects that largely neglected the role and significance of care in the big projects' setting. As the current study indicates, the organization and controlling of projects is a fruitful field for researchers interested in studying 'care' and its relation to project control and progress. Care has appeared to be an important element that complemented control in an uneasy job of managing unique construction projects, limited in time, scope and costs, subject to different stakeholders' pressures and other complexities. It seems that only in tandem control and care can contribute to a more robust MCS, suitable for a big construction project.

Findings indicate that despite the fact that managers controlled and cared about their projects, unexpected events occurred and significantly impacted progress and final costs. However, it can also be assumed that, in cases of 'careless' administration (i.e., being too focused on technical control over the iron triangle parameters, instead of seeing the bigger picture on what is necessary for the project) (Müller & Turner, 2007; 2010), the projects would face the problem of 'letting things slide', resulting in more significant cost increases and time overruns. In the studied cases, mutual trust, empathy, help, courage, and lenience in judgment – enhanced through care (Von Krogh, 1998) – positively impacted the projects' progress. Thus, it

may be claimed that unique construction projects that are limited in time need a special set of managerial skills that include emotional competencies and care (Ashforth & Humphrey, 1995; Vie, 2012a).

The research reported here contributes to the accounting and project management literature in several ways. Firstly, this research raises the issue of 'careless' and 'careful' administration and their implications for projects. It is recognized that care is one aspect of MCS, but this does not render it less important. This research reminds business schools and professional bodies, such as the Project Management Institute (PMI), not to forget the human aspects of control and management (such as care) in their teaching programs, because 'careless administration' is not necessarily the only approach that students and future managers need to learn.

This study contributes to the discussion on what project managers actually do in practice (Tengblad, 2012) and how they use control and care during the whole PLC (Blomquist et al., 2010; Söderlund, 2004). This paper adds to Vie's (2012b) call for more research to examine whether managerial care is influenced or limited by the industry sector, as there is some evidence that construction projects' managers must be as rational as possible during the whole PLC. For instance, Styhre (2012) argues that construction managers do not have time to care as they just must keep fixing unanticipated problems at the construction site as quickly and as effectively as possible. On the contrary, this study illustrates that in a big construction projects' setting, caring efforts should be exercised from the start of the project, because it takes time for care effects to be felt by project participants and, thus, to safeguard the project's progress in time. Thus, rather than understanding management control as a purely technical activity, it is demonstrated that the control process is socially constructed and includes several psychological aspects (Hall, 2016).

For practitioners, doing something has priority over measuring it (Jordan & Messner, 2012). MCSs may be described as a 'point of orientation', which, however, important, should not exclusively guide managers' decisions and actions (Jordan & Messner, 2012). It is necessary to think about the practices, processes, and people behind the indicators, in order to derive possible areas for improvement. Thus, care should not be separated or excluded from control, as caring covers other aspects that control alone cannot achieve. Caring in these settings means 'not abandoning the ship when it sinks'; caring means extending boundaries and finding new solutions to complex problems. Managers modify MCSs with care and face uncertainties; they mobilize MCSs with care to produce project results. Care requires passion, patience, inspiration, and gut feeling.

Another interesting contribution of this study concerns the nature of care. Although care is emotionally driven and often unconscious (Mumford et al., 2020; Heuts & Mol, 2013; Vie, 2012a; 2012b; Cialdini, 2001), this study shows that it may also appear as strategic (for example, managers establishing personal contacts with sub-contractors to assure non-stop supplies of construction materials). This is perhaps due to the rich experience of project managers that are able to sense the situations that need care. Further, the paper shows how managers strive to balance between 'care for people' and 'care for projects'. As projects become 'children' of their creators and define their reputation, project managers provide them with the best care [make them good]. This contributes to the literature on care, showing that actors with different epistemic properties (de la Bellacasa, 2012; Mol et al., 2010), i.e. non-humans, also become objects for care.

An implication of this research for practice is that project owners, managers, politicians, and other key persons should recognize the need to exercise care in different dimensions, not

only control. This is relevant because numerous expensive infrastructure projects, Olympic construction projects, etc. are in most cases completed with significant cost escalations. With more knowledge on care and caring efforts, managers may be "less surprised by the burdens of managing and thus better prepared to bear them" (Vie, 2012b, p. 160).

Analysis and comparison of two projects, different in terms of the ownership structure and realized in two different contexts, give an opportunity to transfer the results of this study also to other big construction projects. Several limitations of this study need to be highlighted, though. Firstly, there are limitations related to the methodological approach. Only a limited number of people who contributed to the projects' control and progress were interviewed. Thus, only the caregivers' perspective (Mumford et al., 2020) and their subjective experiences, feelings, and interpretations were analyzed. The aspects of 'time and space' (Quattrone & Hopper, 2005) may play an important role while studying care-control aspects in big projects. That is, the evaluation of a project's success or failure depends on the stakeholder focused on, the manager interviewed and when.

The study does not try to provide universal 'care-control models' and 'recipes'. Rather, through two different cases, it shows that control is a complex social construction and practice, bound up with other people's interests and other project elements, captured via care – the provision of what is perceived necessary for the project. In terms of future research, it could be interesting to investigate other people's perspectives on control and care. Especially relevant is understanding how ordinary employees (care recipients, in terms of Mumford et al., 2020) perceive the care-control aspect in projects. This study would benefit from its extension to other empirical contexts and the use of another research technique, such as shadowing (McDonald, 2005; Tengblad, 2012; Vie, 2012b) the project managers and other project stakeholders in action.

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