Management Control, Intrinsic Motivation and Creativity
How Can They Coexist?

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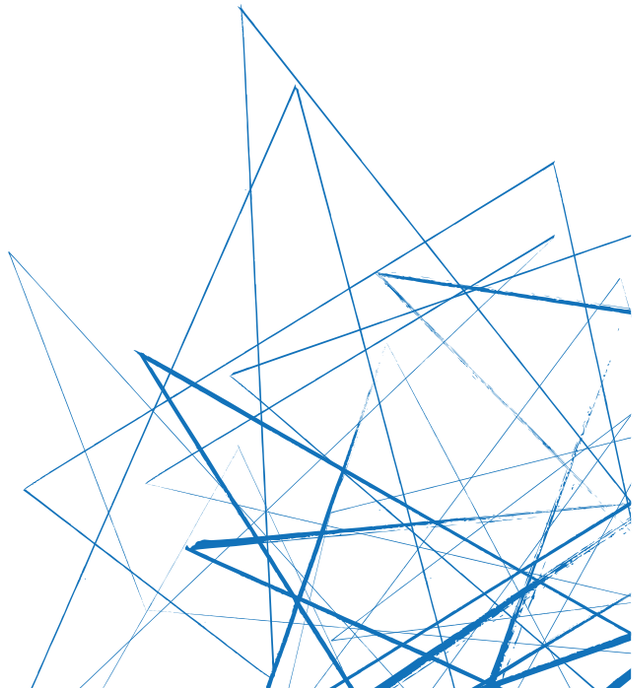

MANAGEMENT CONTROL, INTRINSIC MOTIVATION AND CREATIVITY – HOW CAN THEY COEXIST

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Mikkel Godt Gregersen

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To Vasuda

Preface and acknowledgements

This PhD thesis came to life between January 1st 2012 and December 31st 2016. Primarily the writing took off during a visit to Melbourne January to March 2015. It has been a bumpy ride but somehow, I always knew that I would finish – I just didn't know how until I almost could see the finish line. The main reason for why I always knew, is because of all the amazing help and support I have received throughout the whole process.

First and foremost, I would like to thank my supervisor, Allan Hansen. Allan, you never pressured me or told me when, what or how to do things but was always there when I needed you – with good advice and discussions, patience and always positive and in a good mood. In many ways, I experienced the perfect balance between freedom, structure and social relatedness with you, which kept my intrinsic motivation intact and made me able to reach the finish line in one piece.

And Vasuda, my amazing and always supporting girlfriend. No matter how high or low I have been you always gave me love and support. And when I almost lost faith in myself you always had enough for both of us. Thank you for always being there for me through the past five years, and thank you for saying yes to being there for and with me in the future.

I also owe a big thanks to my case company "ARC", you know who you are. You opened your doors and welcomed me into your exciting and creative world. I am so grateful for all the help, support and openness I got from you and feel very

lucky to have been able to do research in such a fantastic and interesting company. ARC, You rock!

Thank you, Assessment Committee, Ivar Friis, Josep Bispe and Martine Cools, for taking the time to read my thesis, giving me constructive feedback and taking me through my defence. And Ivar and Josep for likewise at my 2nd WIP seminar. Thank you David Possen for proofreading the whole thing for me. Thank you Jan Mouritsen, for helping me getting started on the PhD, and Carsten Ørts Hansen, for helping me finish. You both provided me with the right "incentives". Thank you Sof, for being an awesome head of PhD School. And thank you, all my great PhD colleagues whom I shared frustrations and hallway with, Adela, Anne, Baller, Cheryl, Ida, Irene and Martin. I never felt that I suffered alone.

Last, but not least, thank you family and friends for understanding and still calling and writing. Morten, never stop asking if it is time for a beer on a Tuesday night.

English summary

This thesis consists of a cape and three papers. The overall research question is: *How can intrinsic motivation and management control coexist in a creative environment and how can coordination be possible in such a context?*

The cape ties together the research done in the three papers. It is divided into six sections. The first section introduces the concepts of intrinsic motivation, creativity and management control. This is followed by a section on management control in a creative context. These two sections frame the thesis and introduce the setting in which the research has been done. The third section presents the research approach, which is the application of basic needs as social mechanisms. Social mechanisms are used to explain one event by a previous event by identifying the causal links between the two events. Basic needs are the needs for feelings of autonomy, competence and relatedness. In section four, social mechanisms are positioned as a middle-ranged paradigm between the Interpretive and the Functionalist paradigms. Section five discusses the findings of the three papers and finally section six provides the answers to the research question as a conclusion.

The first part of the conclusion is that intrinsic motivation and management control can coexist under the conditions that all three basic needs, i.e. autonomy, competence and relatedness, are supported. This can happen when control takes point of departure in the individual employee. The second part of the conclusion is that coordination (via management control) is possible in a creative context if control interacts directly with the creative process.

Paper 1 is a conceptual paper. It reviews 45 years of psychology research on the conditions for intrinsic motivation to exist, and applies the findings to a variation of two types of management control, namely budgeting and performance appraisals. The theory about the boundaries between intrinsic and extrinsic motivation is called the Cognitive Evaluation Theory (CET). The review is done through the lens of basic needs as mechanisms, which has the advantage that the effects from external regulation on intrinsic motivation can be understood as the isolated contributions through each of the three basic needs. In particular, the trade-off between the needs for feelings of autonomy and competence is challenging and often the reason for motivation crowding-out. The paper finds that external regulation and management control often have an undermining effect on the feeling of autonomy, but a supporting effect on the feeling of competence through structure provision. The net effect on intrinsic motivation is hence ambiguous but can be explained through basic needs understood as mechanisms.

Paper 2 is a case study. It explores the role of narratives as a control mechanism in creative processes in an architectural firm, and shows how they can guide design decisions and take important roles in controlling the architectural project. It illustrates how top management's requests for narratives for projects in the architectural firm, together with the project team's accountability for such narratives, become a way to inspire, and simultaneously constitute direct actions within a creative process of developing new architecture. It is observed that narratives, in combination with visualisations, play a distinct role in terms of developing the concept that defines each individual architectural piece developed by the firm; and it is suggested that such narratives thereby produce a distinct type of accountability and transparency within the creative process, aligning the outcome with the firm's overall visions and objectives.

Paper 3 is likewise a case study. It shows that despite apparently demotivating management control by intervention, intrinsic motivation can be sustained in creative environments. The paper shows that despite the seeming removal of the basic need for feeling of autonomy by management intervention and surveillance, motivation crowding-out does not necessarily occur; consequently, people can remain intrinsically motivated in a creative environment. Specifically, the paper shows how architects can, in the short term, internalise management intervention via basic needs substitution and hence sustain intrinsic motivation. Basic needs substitution occurs when a decreased feeling of autonomy is offset by increased feelings of competence and relatedness. A main condition for the substitution effect to happen is that employees agree on the premise that the creative quality is not sufficient and hence acknowledge a stronger need for structures in the remainder of the process in return for a lesser need for autonomy.

Danish summary

Denne afhandling består af en kappe og tre artikler. Den overordnede problemformulering er: *Hvordan kan indre motivation og management kontrol sameksistere i et kreativt miljø, og hvordan kan koordinering finde sted i denne kontekst?*

Kappen binder forskningen udført i de tre artikler sammen og er opdelt i seks afsnit. Det første afsnit introducerer begreberne indre motivation, kreativitet og management kontrol. Dette efterfølges af et afsnit om management kontrol i en kreativ kontekst. Disse to sektioner indramme afhandlingen i den kontekst forskningen er udført. Det tredje afsnit præsenterer tilgangen til forskningen, hvilket er *basale behov* forstået som sociale mekanismer. Sociale mekanismer bruges til at forklare en begivenhed ud fra en tidligere begivenhed, ved at identificere de kausale links mellem de to begivenheder. Basale behov er behovene for følelse af autonomi, kompetence og relationer. I afsnit fire positioneres sociale mekanismer som en midterstilling mellem det interpretive paradigme og det funktionalistiske paradigme. Sektion fem diskuterer resultaterne af de tre artikler og sektion seks konkluderer.

Den første del af den konklusion er, at indre motivation og management kontrol kan sameksistere, under forudsætningen at alle tre basale behov (autonomi, kompetence og relationer) er understøttet. Dette er muligt når kontrol tager udgangspunkt i den individuelle medarbejder. Den anden del af konklusionen er, at koordination (via management kontrol) er mulig i en kreativ kontekst, hvis kontrol interagerer direkte med den kreative proces.

Artikel 1 er en konceptuel artikel. Den gennemgår 45 års psykologiforskning omkring grænsen mellem indre og ydre motivation, og anvender resultaterne fra denne gennemgang på to typer management kontrol, nemlig budgettering og præstationsvurderinger. Teorien om grænsen mellem indre og ydre motivation kaldes "Cognitive Evaluation Theory" (CET). Gennemgangen anlægger en betragtning om at basale behov kan forstås som mekanismer, hvilket har den fordel, at effekterne fra ekstern regulering på indre motivation kan forstås som summen af de isolerede bidrag fra hvert af de tre basale behov. Især afvejningen mellem behovene for følelse af autonomi og kompetence kan være problematisk og ofte årsagen til "motivation crowding-out". Artiklen konkluderer, at ekstern regulering og management kontrol ofte har en underminerende effekt på følelsen af autonomi, men en understøttende effekt på følelsen af kompetence gennem forbedret struktur. Nettoeffekten på indre motivation er tvetydig, men kan netop forklares gennem anvendelse af basale behov, forstået som mekanismer.

Artikel 2 er et casestudie. Den undersøger hvilken rolle narrativer har som kontrolmekanisme i de kreative processer i et arkitektfirma, og viser hvordan disse kan støtte designbeslutninger, koordinere og kontrollere det arkitektoniske projekt. Artiklen illustrerer hvordan topledelsens anmodning om et narrativ og projektgruppens ansvarsfølelse overfor dette, inspirerer og giver retning i projekterne. Det vises hvordan anvendelsen af narrativer som styring bidrager til at virksomhedens overordnede visioner og mål bedre afspejles i projekterne og medarbejdernes adfærd.

Artikel 3 er ligeledes et casestudie. Den viser, at til trods for tilsyneladende demotiverende indgriben fra ledelsen kan indre motivation opretholdes. Til trods

for at følelsen af autonomi tilsyneladende undermineres ved ledelsesmæssig indgriben, kan den indre motivation opretholdes gennem *basale behov substitution.* Denne substitutionseffekt indtræder hvis den lavere understøttelse af autonomi afføder en simultan forbedret understøttelse af følelserne af kompetence og relationer. En vigtig forudsætning for at dette kan ske er, at medarbejderne er enige med ledelsen i at indgriben er nødvendig, grundet for lav kreativ kvalitet. Således afhjælpes substitutionseffekten af et øget behov for struktur på bekostning af et reduceret behov for autonomi.

Table of content

1.0. Introduction

This thesis deals with the issues of intrinsic motivation, creativity, and management control, and in particular with combinations of these. Intrinsic motivation and creativity are fragile matters but critical in business today, not only in creative industries but in any innovative environment. Management control, on the other hand, while also a necessity in any business today, is at risk of thwarting intrinsic motivation and creativity if not done properly (Amabile Teresa 1996; 1998; Amabile et al. 2005; Ford 1996; Oldham and Cummings 1996; Woodman, Sawyer, and Griffin 1993; Osterloh and Frey 2000; Frey and Jegen 2001). How is this seeming dilemma solved? That is, how can firms stay creative and innovative without losing control – and is it possible even to support both intrinsic motivation and control simultaneously by applying the right types of control mechanisms? These are some of the underlying themes this thesis considers by examining three distinct combinations of the three factors. In conclusion, the thesis shows that coexistence of intrinsic motivation, creativity, and management control is possible. In the existing literature, we already have indications of this, however, the three papers which are included in this thesis offer a distinctive but related angle to demonstrate this important and comforting point.

A common theme in all three papers is the idea that events and behaviour should be explained, and that social mechanisms can be applied for that purpose. The aim is to understand *how* and *why* the three components (intrinsic motivation, creativity, and control) can coexist, and not just to propose law-like relations among them, or merely to describe these in depth. Social mechanisms are a middle-range research approach positioned between building law-like correlations and describing events in full depth. Mechanisms are *frequently occurring and*

easily recognizable causal patterns that are triggered under generally unknown conditions or with indeterminate consequences. They allow us to explain, but not to predict (emphasis original) (Elster 2007; 2015). Here follow brief descriptions of the three components at issue: intrinsic motivation, creativity, and management control.

Intrinsic motivation (IM) is *the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn* (Ryan and Deci 2004). IM has been related to well-being in general, and particularly at the workplace. Intrinsically motivated people learn better and find better solutions to complex problems, although extrinsically motivated people work faster and in a more focused way (Ryan and Deci 2000). IM is a necessity to creativity, and since innovation is part creativity and part execution, IM is hence also a necessity to innovation (e.g. Adler and Chen 2011). IM is, in other words, an absolutely critical component for any viable business today. The challenge with IM is just that it cannot be bought or forced, but relies on people's inherent enjoyment of doing a task. No bonuses or threats will make people intrinsically motivated; on the contrary, the IM will crowd-out and extrinsic motivation will take over. Three basic needs must be fulfilled for a person to contain IM; these are the feeling of autonomy, the feeling of competence, and the feeling of relatedness. These basic needs must all be in place: when one or more is lacking, theory and practice shows that then a person will not be intrinsically motivated.

Creativity is the creation of something novel and useful (Hammer 1976; Woodman, Sawyer, and Griffin 1993; Amabile et al. 1996). Creative industries[1]

[1] Advertising, architecture, art, crafts, design, fashion, film, music, performing arts, publishing, R&D, software, toys and games, TV and radio, and video games (and sometimes also education).

obviously rely heavily on creativity, but most people are capable of being creative in their own manner. And innovation, as mentioned, also requires creativity – plus a business model well-suited for execution. In order for a person to be creative, he must possess domain relevant knowledge, creative thinking-skills, and intrinsic motivation (Amabile 2006). Knowledge and skills can be taught and bought, but IM requires the environment to be right. This is the reason for why IM is considered the most critical component of the three; the "other two" are assumed to be in place by hiring the right people and by continuous training. Group creativity further needs a low level of standardization, a low level of group cohesion, and a democratic and collaborative management style (Drazin, Glynn, and Kazanjian 1999; Davila 2000; Gilson et al. 2005; Nixon and Burns 2005). Finally, for an organization to be creative, risk-taking must be encouraged and uncertainty not avoided. A flat structure with wide spans of control and conflicts are also found to be beneficial, together with a perceived fair climate (Shalley and Gilson 2004; Woodman, Sawyer, and Griffin 1993).

Management control is the third factor of interest to this thesis, and should be understood in the broadest possible sense. Throughout this thesis, management control is defined as *all the devices or systems managers use to ensure that the behaviours and decisions of their employees are consistent with the organization's objectives and strategies* (Merchant and Van der Stede 2012, p.5). Management control is both the hard devices, such as budgets and other control systems, as well as more general process constraints (which will be explored particularly in paper 2, where we claim that a narrative can be perceived as a type of control mechanism). Lastly, management control is also soft behavioural control as management intervention and surveillance.

My perspective on the way in which management control establishes this consistency that Merchant and Van der Stede focus on in the quote above and hence create value for the organization, is because management control has the potential to contribute to the fulfilment of the overall objective of an economic organization, which is to create value through *coordination* and *motivation* (Roberts 2007; Milgrom and Roberts 1992). For the purpose of this thesis, management control is, to a large extent, understood as a coordinating and motivating force directly interacting with intrinsic motivation and creative processes. However, this ambition to motivate and coordinate employees to establish a consistency between what the employees work for and what the organization strives for is also filled with tension. One of these tensions is, as introduced above, that as an external influence, management control threatens the existence of intrinsic motivation, and hence of creativity. This is the overall theme for this thesis.

The link between management control on one side and IM and/or creativity on the other side has as mentioned been researched before. In particular, the link between management control and creativity has been the most frequent object of this past research. And much of the research provides the reassuring evidence that the two sides can coexist. Also, circumstantial pieces of evidence suggest conditions under which it is possible and other conditions under which it is not. But where correlation seems to have been well established, causality seems to be scarce in this research. I.e., the *that* it is possible has been confirmed and the *when* to a certain extent, while the *how* or *why* are still largely unexplored. This thesis goes beyond correlation to explore the deeper causal links between the two sides in order to understand how control and coordination can thwart intrinsic motivation and/or creativity sometimes, and at other times support them.

Management control practiced in a creative environment opens up for some interesting challenges exactly because of this tension just described. One approach is to theorize over possible outcomes, which is obviously important for many reasons and will be done in one of the papers. But another approach is to observe as an empirical phenomenon to identify and understand how theoretical links look and work in practice. This is the reason for why this thesis investigates the causal links by the use of case studies. And because IM really is the object at stake when control is at risk of "killing creativity" (Amabile 1998) and in many other instances where e.g. wellbeing or learning are at stake, the thesis focuses on the link between control and IM in order to understand the deep relationship. As it turns out, one actually needs to delve yet another step deeper to fully understand the link, which is why basic needs as social mechanisms are applied. This will become clearer soon but first, the overall research question is presented together with three sub questions.

This thesis seeks to answer the following research question: How can intrinsic motivation and management control coexist in a creative environment, and how can coordination be possible in such a context? The overall research question will be answered with the aid of the following sub-questions:

- *How does management control affect intrinsic motivation?*
- *How can management control direct and guide employees' actions in creative settings?*
- *How can intrinsic motivation exist under management control by management intervention and surveillance?*

The three articles in combination make up a complete account of previous research by a literature review followed by empirical cases exploring an IM-supporting process and a process gone wrong. The literature review offers a deep understanding of how several types of external regulation often found in relation with management control, affect IM through the three basic needs. Next, a case study of an architecture firm shows how creative processes can both support creativity and provide control simultaneously, by coordinating the team's creative effort without undermining IM. This is possible because the team has the freedom to set up its own boundaries around the creative processes by coming up with a narrative the project must adhere to. The narrative hence supports by offering structure and coordination to the team while at the same time allowing freedom of choice to the team. Last, another case is presented to show that IM can exist even if a manager takes over the process and starts micro managing. This is (only) possible under three distinct conditions: 1) The team members had initial freedom to be creative (starting with the narrative), 2) the team members are ambitious and always want to create the best possible product and 3) the team acknowledges that the end product will not be "good" if management intervention does not occur.

The answer to the overall research question is provided by piecing together the three sub questions. The answer comes in two parts because the question does. First, intrinsic motivation and management control can coexist in a creative environment if people like what they are doing and feel support for all three of their basic needs, which are the needs for feelings of autonomy, competence, and relatedness. Management control in creative environments should be designed particularly to offer support for all three basic needs by taking its point of departure in individual needs for structure, in order to support autonomy (or at least not thwart it). If intervention is required and autonomy is hence in danger of

being thwarted, then internalisation through a stronger need for the feeling of competence should ensure that IM will be left intact (this will be labelled basic needs substitution later on). Second, coordination via management control is possible in a creative environment if control interacts directly with the creative process. Following are abstracts of the three papers.

The first paper develops an understanding of how external regulation in general, and management control in particular, affect intrinsic motivation – *the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn.* In order to do so, three psychological basic needs understood as mechanisms that cause intrinsic motivation – namely, feelings of autonomy, competence, and relatedness – are invoked in order to explain the relationships between management control and intrinsic motivation. The analysis shows that external regulation and management control often have an undermining effect on feeling of autonomy, but a supporting effect on competence through structure provision. The net effect on intrinsic motivation is hence ambiguous. The paper contributes mainly by providing a more detailed account of the relationships between intrinsic motivation and management control. The high level of detail is provided as a result of introducing the three basic needs as mechanisms. This is done in order to exploit their explanatory power in terms of understanding the effects of management control on intrinsic motivation. The paper hence offers a new perspective on the motivational effects of management control: an understanding that better unfolds the matter's complexity. In particular, the paper demonstrates how the effects of the design choices related to two management controls (budgeting and performance appraisal) should be understood not as unidirectional, but in a multidirectional way.

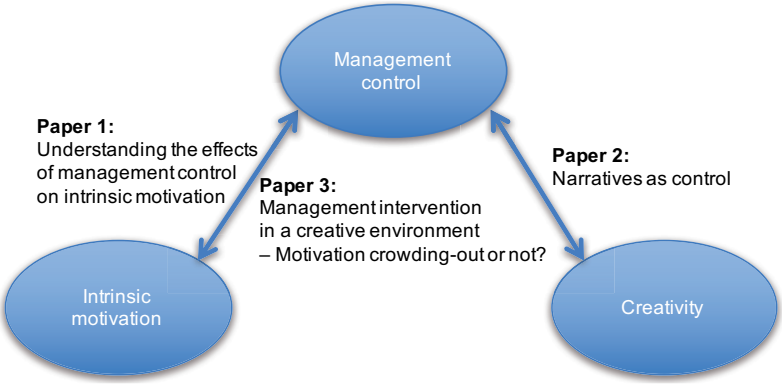
The second paper explores the role of narratives as a control mechanism in creative processes in an architectural firm, and shows how they can guide design decisions and take important roles in controlling the architectural project. The paper illustrates how top management's requests for narratives for projects in the architectural firm, together with the project team's accountability for such narratives, become a way to inspire, and simultaneously constitute direct actions within a creative process of developing new architecture. It is observed that narratives, in combination with visualisations, play a distinct role in terms of developing the concept that defines each individual architectural piece developed by the firm; and it is suggested that such narratives thereby produce a distinct type of accountability and transparency within the creative process, aligning the outcome with the firm's overall visions and objectives. The paper contributes to research in several ways. First, it contributes to our understanding of how narrative can be understood as a particular type of control. Second, it shows how Elster's (2000) constraint theory and notion of conventions can be used to elaborate on how the narrative functions as a control system. Finally, it adds to the relatively recent discussions of how control and creativity are phenomena that are not necessarily in opposition to one another, but in fact can complement each other.

The third paper shows that, despite apparently demotivating management control by intervention, intrinsic motivation can be sustained in creative environments. Intrinsic motivation, defined as *the self-desire to seek out new things and new challenges*, is a critical element for creativity. According to Self-Determination Theory (SDT), people must feel support for three basic needs – namely, the feelings of autonomy, competence, and relatedness – in order to be intrinsically motivated. The paper shows that despite the seeming removal of the feeling of

autonomy by management intervention and surveillance, motivation crowding-out does not necessarily occur; consequently, people can remain intrinsically motivated in a creative environment. Specifically, the paper shows how architects can, in the short term, internalize management intervention via basic needs substitution and hence sustain intrinsic motivation. The paper mainly contributes to the literature on management control, motivation, and creativity by demonstrating mechanisms of how crowding-out can be avoided through a process of internalization via basic needs substitution. Whereas the internationalization processes have already been theorized in the SDT literature, hardly any research provides empirical insights into how the consequences of external regulation for the three basic needs may offset one another in a management control setting.

The three papers in combination bring together a more holistic view of intrinsic motivation, creativity, and management control. Paper 1 looks strictly at the link between intrinsic motivation and management control from a conceptual point of view, without taking account of creativity. Paper 3 explores the same link, but as a case study in a creative context. Paper 2, which is also a case study, explicitly investigates the link between creativity and control, though without direct references to intrinsic motivation. Many overlapping points will be brought forward at a later stage; but for the purposes of each individual paper, isolating each piece of research to the interactions between just two of the three variables makes their points stand out more clearly. Figure 1 offers a graphical overview of the thesis framework just described:

Figure 1. Thesis framework



In this cape and the three articles, many theoretical elements are brought to play including the ones presented in figure 1. Before I move on with a more detailed introduction and description of each of these elements, I will briefly give an overview by relating them to one another.

According to the research question, the thesis seeks to explain *how* the three elements in figure 1 can coexist. Hence it will explore the relationships or links between the elements to develop an understanding of how one affects or influences another. In particular, how management control affects IM. To understand this link, the concept of mechanisms is brought to play. Applying mechanisms means identifying the causal links between two events to understand the correlation. Mechanisms are used throughout the thesis as the lens through which I analyse and understand the theoretical and empirical observations I make. Mechanisms are hence represented by the arrows between the circles in figure 1.

In the thesis, IM is at stake because of external influence in general and management control in particular. The mechanisms through which IM is affected are basic needs, which are fundamental to IM. So, when any external regulation is present, the three basic needs are affected differently and the final impact on IM can be understood as the combined effect from each of the basic needs. This is why the basic needs in this context are understood exactly as mechanisms. So, when basic needs are mentioned, it is implicitly understood that these are mechanisms and when mechanisms are mentioned it is (mostly) implicitly understood that the mechanisms in play are the basic needs.

Even though basic needs as mechanisms are used more or less consistently throughout the thesis, one paper has less than the other two. The paper on narratives as control does not apply basic needs and mechanisms in such an explicit way as the other two. This has to do with the relationship being explored in this paper, which is between creativity and control without explicit references to IM. And because basic needs are the foundations for IM, these are not brought into play either. So, in a way, the narratives-paper is looking at the relationship between control and creativity at a higher level than the other two papers and hence applies a different analytical lens. But even though the same lens is not explicitly used does not mean that it cannot be applied, which will be described later in this cape.

In the narratives-paper *Constraint Theory* will be applied instead of mechanisms and basic needs. Constraint theory brings together control and creativity in an elegant way making it obvious as the theoretical lens. Basic needs as mechanisms could also very well have been applied but the concept of constraints just seemed

to be too obvious not to be used. Jon Elster (2000) explains how arts need constraints in order to be creative and how a particular type of constraints – *conventions* – function as a type of social control. Elster thus more or less argues for why conventions can be understood as coordination mechanisms in creativity. The arrow between control and creativity in figure 1 is therefore represented by constraint theory as conventions.

Management control is the last concept I will explain and put into context before proceeding further with the thesis. Management control will be defined shortly but should in overall terms be understood as all structures put in place in order for management to be able to communicate and coordinate with its employees. It should be understood in the broadest possible sense including not only formal systems but also processes, rules, norms, etc., which all serve the purpose of aligning the employees' behaviour with the firm's overall objectives. Management control is hence external regulation and IM (and creativity) are affected by it via the basic needs, which we can understand by applying mechanism thinking.

The thesis primarily contributes to research by offering two distinct approaches. First, by offering insights through two empirical cases describing in detail how control through coordination can support IM rather than undermine it in a creative environment. Second, by offering explanations of *how* it supports through the three basic needs, which are understood as mechanisms, and hence propose an explanation of how one observable external factor affects another through unobservable causal links.

The structure of the thesis is as follows. Section 2 gives a brief overview of how management control is understood with links to motivation and creativity. Section 3 explains in depth what mechanisms are, and how they are used in the thesis to explain via causal links. Mechanisms are applied in two ways, namely, via basic needs and in constraint theory. Both of these approaches are described in section 3. Section 4 positions social mechanisms as a middle-range paradigm between the objective and the subjective approaches, or between the functionalistic and the interpretive paradigms. Section 4, logically, also includes a section on research methodology. The chosen methodology for the two empirical papers is the case study, and the reasoning behind this will be elaborated. Finally, section 5 discusses the three papers as a joint contribution, and section 6 concludes the thesis. Section 7, 8, and 9 are the three papers. The discussion and conclusion (section 5 and 6) can be read before the three papers, although they will certainly make more sense after reading the papers, since they discuss these and reach a conclusion on their basis.

2.0. Management control in a creativity context

This thesis deals with management control in the context of creativity. It concerns not only more traditional management control systems, such as budget control and performance appraisal, but also such softer controls as procedures and behavioural controls. The latter types of control are often needed to support motivation and facilitate coordination, as this thesis argues. And as my survey of some of the best-cited definitions of management control indicates, it has now become uncontroversial to include soft systems in the category of management control alongside more formal controls. In what follows is a brief review of some of these definitions, followed by some of the research done in management control in the context of creativity – which is the setting for this thesis.

The definition of management control used consistently throughout the thesis is taken from Merchant and Van der Stede (2012, p.5), who state that "Management control, then, includes all the devices or systems managers use to ensure that the behaviours and decisions of their employees are consistent with the organization's objectives and strategies. The systems themselves are commonly referred to as *management control systems* (MCS)." They further clarify that these systems include, besides the ones focusing on measured performance, direct supervision, employee selection and retention, and codes of conduct. The latter focus on encouraging, enabling or, sometimes, forcing employees to act in the organization's best interest. It is common to include informal components, and in particular managerial behaviour, in the definition. Other examples of definitions of management control include "mechanisms through which an organization can be managed so that it moves towards its objectives" (Ouchi 1979), belief and interactive control systems (Simons 1995), informal personal and social controls

(Chenhall 2003), formal and informal mechanisms, processes, systems, and networks (Ferreira and Otley 2009), as well as systems, rules, practices, values and other activities management put in place in order to direct employee behaviour (Malmi and Brown 2008). All of these descriptions of management control seem to encapsulate the idea of both hard and soft control.

In the case study discussed here – that of an architecture firm – creativity is the context of the management control at issue. Following is a brief overview of some of the issues and challenges that management control meets in a creative environment. Creativity can mean many things. Meusburger (2009) estimates that over a hundred different analyses can be found in the literature. In general, "we tend to associate creativity with the arts and to think of it as the expression of highly original ideas". In business, "originality isn't enough. To be creative, an idea must also be appropriate – useful and actionable." (Amabile 1998). A number of researchers define creativity as the production of novel and useful ideas in any domain (Hammer 1976; Woodman, Sawyer, and Griffin 1993; Amabile et al. 1996). Creativity has been studied intensely over the last fifty years in various domains like psychology, sociology, organizational theory and management, and it can be studied in many dimensions (Ditillo 2010). One possible way of characterizing creativity is by unit of analysis investigated with a link to the disciplinary framework adopted (Ditillo 2010; Runco 2004; Rhodes 1961). Here follows a brief synopsis of some of the most relevant contributions in creativity research.

Individual creativity (output) is the product of three components (inputs), which are creative-thinking skills, expertise, and motivation. The first component – the

way people think – is regarded by many as the input required in order for creativity to be the output. But technical, procedural, and intellectual knowledge is also a prerequisite for creativity. Finally, motivation, or more specifically intrinsic motivation, is required as well: “an inner passion to solve the problem at hand leads to solutions far more creative than do external rewards, such as money” (Amabile 1998) . Runco (2004) supports this argument by emphasizing that intrinsic motivation frequently (in personality research) includes intrinsic motivation as a core characteristic of creative persons. Specifically, it was shown in one study that people who worked on a creative challenge were less creative if they expected external evaluation than the ones not expecting it (Amabile 1979). Specifically, on the topic of creativity and control, Wynder (2007) examined the effect of process-based control on creativity, when domain-relevant knowledge is high or low, respectively. He found that control impedes creativity when domain-relevant knowledge is high and vice versa for low domain-relevant knowledge. Wynder concludes that when knowledge is high, it is important to take special care to ensure that the right type of control is used in order to support creativity. In general, Wynder further previous arguments to the effect that people with high level of knowledge should be given high freedom in their creative processes in order to be creative.

Amabile (1988) finds that the most promoting factor for creativity is freedom, mentioned by 74% of their respondents, where *operational autonomy* was the most important type of freedom. The same study showed also that the second most inhibiting factor for creativity was constraints (48% of respondents) in the form of lack of freedom in deciding what to do or how to accomplish the task, or a lack of sense of control over one’s own work and ideas (p.147). Controlling or limiting supervision is expected to diminish creative performance, because the experienced

control will shift attention away from the task and towards the external influence, and thus undermine intrinsic motivation (Deci, Connell, and Ryan 1989; Deci and Ryan 1985; 1987). In a study by Oldham and Cummings (1996), it was found that supportive and non-controlling supervision produced the most creative work as was expected, and vice versa, i.e. controlling supervision impedes creative work. In another study, it was found that in the presence of creative co-workers, a high degree of supervisor close monitoring decreased creative performance, compared to a low degree of supervisor close monitoring (Zhou 2003). Rietzschel, Slijkhuis, and Yperen (2014) argue that close monitoring negatively affects job satisfaction, intrinsic work motivation, and innovative job performance for employees with a low need for structure, because it decreases autonomy and causes people to feel controlled. The opposite is true for people with a high need for structure. Choi, Anderson, and Veillette (2009) hypothesize that "close monitoring" should correlate negatively with creativity, but are inconclusive on the tested effect, since the variable is a combined one, and as they remark in their discussion, it can be interpreted both as engagement (positive) and controlling (negative).

Early research on creativity has almost solely focused on the individual level, neglecting the macro perspective of creativity in groups and organizations. In order to achieve creativity at the group level, low standardization, a low level of group cohesion, and a democratic and collaborative leadership style are required. (Drazin, Glynn, and Kazanjian 1999). Gilson et al. (2005) investigates the relations among standardization, creativity, and performance among 90 empowered teams of service technicians, and find that performance is not affected by standardization in highly creative environments, while low standardization mediates a strong positive correlation between creativity and performance. According to Nixon (2005) and Davila (2000), performance measurement

systems, especially in the form of non-financial measures, adopted in the creative context of product development research projects, affect performance in a positive way when they provide information directed to coordination, learning, and uncertainty reduction.

Shalley and Gilson (2004) conclude that four factors in the organizational climate are particularly important for facilitating creativity. Specifically, fostering an environment where (1) risk taking is encouraged and uncertainty is not avoided, where (2) a flat structure exists with wide spans of control, where (3) conflicts are found to be beneficial for creativity, and where (4) there is perceived to be a fair climate will enable employees to focus on their work and not worry about how decisions are being made or individuals are being treated. Woodman, Sawyer, and Griffin (1993) propose that creativity will increase by availability of slack resources, will decrease by restrictions on information flows and communication channels within the system, will be increased by organic organizational design (e.g. matrix, network designs, collateral group structures), and will be decreased by restrictions on information exchange with the environment. Adler and Chen (2011) apply SDT and self-construal to put forth15 propositions on the coexistence of creativity and control in large-scale collaborative creativity contexts. Based on Perceived Locus of Causality (PLOC) (Ryan and Connell 1989) and the concept of independent and interdependent self-construal (Markus and Kitayama 1991), they argue that creativity and control can coexist under certain conditions in large-scale collaborative creativity set-ups. The thesis explores the mechanisms that determine whether management control can motivate and coordinate, or might fail at doing so.

3.0. Mechanism-based explanations – a key aspect of my research approach

Each of the three papers seeks to explain certain events in order to understand how these come about. This section will outline how explanation requires the identification of causal links between events, as opposed to describing correlations. What follows is an overview of the concept of mechanisms, which are intended precisely for use in explanation. While Elster's definition of mechanism is applied throughout the three papers, the more general description and discussion of mechanisms offered here aims to show that this is a common and well-accepted approach to explanation in social science.

During the past decade, social mechanisms and mechanism-based explanations have received considerable attention in the social sciences. The basic idea of a mechanism-based explanation is quite simple: At its core, it implies that proper explanations should detail the cogs and wheels of the causal process through which the outcome to be explained was brought about (Hedström and Ylikoski 2010). There are many different definitions of mechanisms, but the most accepted ones share some general ideas. First, a mechanism is identified by the kind of effect or phenomenon it produces. Second, a mechanism is irreducibly causal notion. Third, the mechanism has a structure. When a mechanism-based explanation opens the black box, it discloses this structure. Fourth, mechanisms form a hierarchy. While a mechanism at one level presupposes or takes for granted the existence of certain entities, it is expected that there are lower-level mechanisms that explain them (Hedström and Ylikoski 2010). Explanations are answers to questions (Hempel 1965; Salmon 1998; Woodward 2004). Only by knowing the nature of the explanatory task at hand can one determine which details of a mechanism are relevant to include and the appropriate degree of

abstraction (Ylikoski 2010). Some of the most important social science contributions to the mechanism approach, according to Hedström and Ylikoski (2010), have given different definitions of mechanisms, still adhering to the common characteristics outlined above. These are presented in table 1 below.

Table 1: Alternative mechanism definitions

A mechanism is a structure performing a function by virtue of its component parts and component operations and their organization. The orchestrated functioning of the mechanism is responsible for one or more phenomena. (Bechtel and Abrahamsen 2005; Bechtel 2006; 2008)
A mechanism is a process in a concrete system that is capable of bringing about or preventing some change in the system. (Bunge 1997; 2004)
A mechanism for a behaviour is a complex system that produces that behaviour by the interaction of several parts, where the interactions between parts can be characterized by direct, invariant, change-relating generalizations. (Glennan 2002)
Mechanisms are entities and activities organized such that they produce regular changes from start to finish. (Machamer, Darden, and Craver 2000; Darden 2006; Craver 2007)
A mechanism explains by opening up the black box and showing the cogs and wheels of the internal machinery. A mechanism provides a continuous and contiguous chain of causal or intentional links between the *explanans* and the *explanandum*. (Elster 1989)

Mechanisms are frequently occurring and easily recognizable causal patterns that are triggered under generally unknown conditions. (Elster 1999)
Mechanisms are frequently occurring and easily recognizable causal patterns that are triggered under generally unknown conditions or with indeterminate consequences. (Elster 2007; 2015)
Mechanisms consist of entities (with their properties) and the activities that these entities engage in, either by themselves or in concert with other entities. These activities bring about change, and the type of change brought about depends on the properties of the entities and how the entities are organized spatially and temporally. (Hedstrom 2005)
A causal mechanism is a series of events governed by law-like regularities that lead from the explanans to the explanandum. (Little 1991)
A model of a mechanism (a) describes an organized or structured set of parts or components, where (b) the behaviour of each component is described by a generalization that is invariant under interventions, and where (c) the generalizations governing each component are also independently changeable, and where (d) the representation allows us to see how, by virtue of (a), (b), and (c), the overall output of the mechanism will vary under manipulation of the input to each component and changes in the components themselves. (Woodward 2002)

Adapted from Hedström and Ylikoski 2010 except for Elster (2007; 2015), which is included to make comparison easier.

Jon Elster has probably been the most influential advocate of mechanisms in the social sciences, and his many books are full of excellent examples of mechanism-based thinking in action. His idea that mechanism-based explanation open up black boxes and show the cogs and wheels of the internal machinery captures quite well the mechanism-based spirit. However, the various definitions of mechanisms he has provided have been a source of some confusion (Hedström and Ylikoski 2010). That Elster's latest definition from 2015 is identical to the one from 2007, and very similar to his 1999 definition, indicates that Elster has reached a perceived satisfactory definition of mechanisms as *frequently occurring and easily recognizable causal patterns that are triggered under generally unknown conditions or with indeterminate consequences.* They allow us to explain, but not to predict (emphasis original) (Elster 2007; 2015). We will adapt this definition of a mechanism when analysing our data by explanation, understood by Elster (2007) as follows.

The main task of the social sciences is to explain social phenomena. This is not the only task, but it is the most important one, to which others are subordinated, or on which they depend. The basic type of explanandum is an *event*. To explain it is to give an account of why it happened, by citing an *earlier event* as its cause (Elster 2007, p.9). Other types of explanations can be *fact-event, event-fact,* or *fact-fact*, but will not be the issue at hand. According to Elster (2007), there are seven not-to-dos when applying explanations: 1) Causal explanations must be distinguished from *true causal statements*. To cite a cause is not enough: the causal mechanisms must also be provided, or at least suggested. 2) Causal explanations must be distinguished from statements about *correlations*. 3) Causal explanations must be distinguished from statements about *necessities*. For example, if someone with terminal cancer falls off a bridge, the cancer does not *explain* the event of death. 4)

Causal explanations must be distinguished from *storytelling*. A genuine explanation accounts for what happened as it happened. To tell a story is to account for what happened as it *might* have happened. 5) Causal explanations must be distinguished from *statistical explanations*. To apply statistical generalizations to individual cases is a grave error. Elster labels this *methodological individualism*. 6) Explanations must be distinguished from *answers to "why" questions*. 7) Causal explanations must be distinguished from *predictions*. Sometimes we can explain without being able to predict, and vice versa.

The idea of mechanisms as *causal patterns that are triggered under generally unknown conditions or with indeterminate consequences* is illustrated by using mutually exclusive mechanism pairs (Elster 2007, p35-50). A few examples are conformism vs. anti-conformism (e.g. doing what your parents do vs. doing the opposite), spillover vs. compensation effect (e.g. if one works hard, one also packs a vacation with activities vs. relaxing to compensate for hard work), and wishful thinking vs. countermotivated thinking (e.g. believing what one hopes vs. disbelieving what one hopes). Proverbs often state mechanisms and often occur in mutually exclusive pairs. Take for instance the following proverbs adapted from Elster (p.37-38): "Absence makes the heart grow fonder" vs. "Out of sight, out of mind", "Forbidden fruit tastes best" vs. "the grapes are sour", and "Like father, like son" vs. "Mean father, prodigal son". Looking a bit closer, we might notice that these are in fact not mutually exclusive pairs, but rather conditional effects. One could maybe imagine that the heart grows fonder if the emotions are strong, whereas weak emotions easily vanish. And if the grapes were forbidden instead of unreachable, maybe they would taste much better. And regarding the father, maybe the conditional proverb would say that a nice father gets a conforming son

while a mean father gets an anti-conforming one. Through this paper we will see many examples of seemingly mutually exclusive pairs when it comes to effects on intrinsic motivation. Hopefully these will seem less exclusive when mechanism thinking is applied in the papers.

3.1. Basic Needs Theory understood by mechanisms

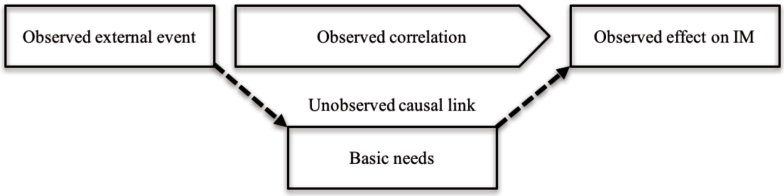
In papers 1 and 3, basic needs are applied in order to understand how events external to individuals affect their motivation, and specifically their intrinsic motivation. In paper 1 the discussion is conceptual, as the paper is conceptual in character; but in paper 3, the analysis and discussion is based on a case study that includes several interviews with architects.

As a starting point, I am interested in exploring mechanisms that can explain and potentially determine how external regulation by management control affects motivation. In order to understand the motivational effect from external influence, one must first understand Basic Needs Theory (BNT). BNT is concerned with three basic needs, which are the need for a feeling of autonomy, the need for a feeling of competence, and the need for a feeling of relatedness. Following Vansteenkiste et al. (2010, p.131-133), the need for autonomy (deCharms 1968) refers to the experience of volition and psychological freedom. With autonomy, one experiences choice in and ownership of behaviour, which is perceived as emanating from the self and is in accord with abiding values and interests. Autonomy-supportive individuals promote the volition of those they socialize. In contrast, controlling individuals direct the thoughts, feelings, and behaviours of those they socialize by use of external pressuring tactics. The need for competence (White 1959) refers to the experience of “effectance” and structure in one’s pursuit

of goals. It has been proposed that autonomy support and structure are contrasting socialization styles (Reeve 2009). BNT maintains that autonomy support is not a laissez-faire socialization technique in which guidance is lacking and unlimited freedom is granted – which certainly would reflect the opposite of a well-structured environment (Jang, Reeve, and Deci 2010). Although guidelines may structure and limit behaviour, such restrictions are not necessarily experienced as controlling. Rather, people are more likely to personally endorse and volitionally follow social norms that are introduced in an autonomy-supportive way. The need for relatedness (Baumeister and Leary 1995) refers to the experience of reciprocal care and concern for important others.

BNT is often expressed almost as a type of social law-like correlation between an external event and individual motivation. In the thesis I understand basic needs as a less strict mechanism through which the effects of external regulation by management control and individual motivation interact. The purpose of applying the concept of mechanisms to basic needs is to connect an individual in the context of an external event with the incremental effect on IM that the individual feels after the event has occurred. In other words, the concept of mechanism is used to frame the identification (*recognize*) of the basic needs (*causal patterns*) that are affected during external events (*triggered under generally unknown conditions*) in order to understand the indeterminate impact on IM (*indeterminate consequences*). As illustrated in figure 2 below, external events affect intrinsic motivation, which can be observed in the case of experiments (paper 1) or described in interviews with architects (paper 3). Observing the correlation between an event and an effect is just the first step to understanding the causality in play. Being able to *explain* relies on identifying the underlying basic needs and how each of these are affected by the external event.

Figure 2. Basic needs understood as mechanisms



Having identified the need for feeling of autonomy, competence, and relatedness, we are now closer to an actual explanation of the observed correlation. Each basic need contributes to intrinsic motivation, and in cases where the effects are opposite, we can still explain why this is so by referring to the underlying isolated effects, which are additive to a certain extent and hence are substitutes, as will be discussed later in the papers. Trying to predict the effect on IM by an external event is possible, although not certain. This is exactly one of the main reasons for why basic needs are well understood as mechanisms: they lead to potentially *indeterminate consequences*. This happens in most instances when structure lowers autonomy but support competence, so that the net effect is ambiguous. Alternatively, if autonomy and competence are affected by ambiguous external events that are hard to identify precisely, basic needs are *triggered under generally unknown conditions*. In this thesis, the first is the case; while the latter might easily be the case in another situation, where an effect on IM is observed without knowledge of exactly what triggered it.

Basic needs are used in paper 1 and 3, in other words, to link external events to effects on IM in order to explain the mechanisms underlying the correlation. Other mechanisms are in play in paper 2, which will be explained in the following subsection.

3.2. Less is more – or how constraints can enhance creativity

In the second paper on how narratives are used as control mechanisms, mechanism-based explanations are not explicitly applied. Instead, *constraint theory*, which is another concept due to Jon Elster, is applied because it very accurately encapsulates how narratives can function both as creativity enhancers and as controlling mechanisms simultaneously. I will here argue for how constraints can enhance creativity, and how we can understand "less is more" as a control mechanism, by drawing on Elster's own discussion of the matter in his book "Ulysses Unbound" (2000). He introduces the concept of constraint theory as follows. "… I want to locate constraints that individuals impose on themselves within the broader field of what one might call 'constraint theory.' At a very general level, the present book illustrates the proposition that sometimes *less is more* or, more specifically, that sometimes there are benefits from having fewer opportunities rather than more" (emphasis original) (Elster 2000, p.1).

Jon Elster argues that in artistic creation, creativity is the ability to *maximize artistic value under constraints* (p.200). Constraints can be both self-imposed and imposed from the outside. No matter the form they have potentially positive impact on the creativity. "When an artist chooses to be constrained, we must assume it is because he believes he will benefit artistically from having a smaller choice set" (p.176). "Constraints must leave room for choice. For there to be something for the artist to *create,* the work of art must not be like a crossword puzzle in which there is one and (ideally) only one arrangement of letters that satisfies the constraints. The creation of work of art can in fact be envisaged as a two-step process: *choice of constraints* followed by *choice within constraints*" (emphasis original) (p.176). In a somewhat more controversial claim, Elster argues that "… both choice of constraints and choice within constraints can be

represented as a form of maximization. Specifically, artists try to *maximize artistic value*" (emphasis original) (p.178).

First, in order to understand why constraints might be necessary for creativity to exist, why less is more, imagine the opposite. Elster compares creativity without constraints to daydreaming, and shows how easily this escalates, since everything is possible. This makes the point very clear: that unconstrained creativity is not really that creative, because of the lack of scarcity. "Daydreams escalate. Before I can spend the $10,000 that my poker partner bet because he thought I was bluffing, I revise the figure to $100,000; then I put it in gold at $40 dollars an ounce, spend a couple of years hiking home from a plane crash in Northern Canada, phone my broker to sell and hit the $800 dollar market, and start plotting to invest my two million in something easily good… By then I realize that it is all counterfeit if I can make it up so easily. There is no suspense, no surprise, no danger" (p.183).

There are hard constraints and soft constraints or *conventions*. Hard constraints are formal, physical, or financial constraints. "Conventions, as the word indicate, are restrictions that constitute a specific genre such as the sonnet or the classical symphony" (p.190). Hard constraints come in the form of intrinsic constraints (e.g. architects' limitations by structural constraints of their material), imposed constraints (e.g. budgets and regulations), and self-imposed constraints (e.g. artist's choice of format like size of canvas and drawing with charcoal or when movie makers once in a while choose to shoot in black and white). Soft constraints, or conventions, are of the form applied in paper 2, and hence of most relevance for the remainder of the discussion. "Yet, although such *inventions* of

constraints may be infrequent, the *choice* of subjecting oneself to an artistic convention is very common indeed" (p.196). In paper, 2 the *choice* to use a narrative as a constraint in the creative process can be argued to be self-imposed, but when it becomes standard in all projects, this becomes a *convention* within the firm and hence a tool for optimizing the creative value (what Elster labels artistic value).

"In one view, artistic conventions are like social norms – non-instrumental rules of behaviour maintained by the sanctions that others impose on violators. In another view, conventions are like coordination equilibria – useful but arbitrary devices similar to the rule of driving on the right side on the road. Whereas social norms are enforced by others, coordination equilibria are self-enforcing." Social norms are characterized by four features: 1) they are non-outcome oriented; 2) they are shared, and this is common knowledge; 3) they are enforced by social sanctions; and 4) they are also sustained by the internalized emotion of shame. A "coordination equilibrium", on the other hand, is characterized by two distinct features: 1) When all follow the convention, nobody wants to deviate, and 2) when all follow the convention, nobody wants anyone else to deviate (p.197-198). In other words, when individuals find themselves in a coordination equilibrium, no one can be better off by deviating, which is a rather strong sustaining mechanism because it is internalized. Social norms are less internalized in that social sanctions and internalized shame both are more external compared to the coordination equilibrium.

Elster further argues that coordination conventions with time become social norms, further strengthening the convention. In this case, the narrative as a

convention is certainly shared and common knowledge. Arguably, a narrative as a constraint can be identified with both types of conventions. In the paper, we merely argue that narratives are constraints of the convention type, but follow Lewis (1969), whom Elster (2000) draws on, in that we do not further argue that they be categorized as norms or equilibria. The truth is that it is probably a bit of both. According to Lewis (1969), a convention is a generally agreed-upon decision rule among a group of individuals that implies a particular behavioural pattern as a reaction to a specific social situation. The next section positions mechanism-based explanations as a middle-range research position between the interpretive and the functionalistic paradigms.

4.0. Positioning the research approach

In the following I will position my research approach. It is based on Burrell and Morgan's "Sociological Paradigms and Organizational Analysis" (1982). While many other and more recent approaches could have been selected, Burrell and Morgan's framework has been chosen because it is well established in many management control discussions and also fundamental to many newer ones. Second, this is not intended as a lengthy discussion, but merely as a fundamental research positioning.

4.1. Positioning the traditional research paradigms

Burrell and Morgan argue that there exist two opposed assumptions about the nature of science, namely, the *objective* and the *subjective* view. *Ontologically*, the objective view holds that 'reality' is external to the individual – imposing itself on individual consciousness from without and of an 'objective' nature. The subjective view believes the opposite, i.e., that 'reality' is internal to the individual – the product of individual consciousness and of a 'subjective' nature. Logically, then, *epistemologically* the objective view believes that it is possible to identify and communicate the nature of knowledge as being hard, real, and capable of being transmitted in tangible form, i.e., that knowledge can be acquired. The subjective view, on the other hand, holds that 'knowledge' is of a softer, more subjective, spiritual or even transcendental kind, based on experience and insights of a unique and essentially personal nature, i.e. that knowledge has to be personally experienced. Associated with ontology and epistemology, but conceptually separate, are the assumptions of *human nature*. On this he objective view takes a *deterministic* standpoint. It regards human beings and their experiences as products of the environment: one in which humans are conditioned to their

external circumstances. On the other end of the spectrum is the subjective view, which takes a *voluntaristic* standpoint. It attributes a much more creative role to human nature: on its perspective, 'free will' occupies the centre of the stage, and man is regarded as the creator of his environment, the controller as opposed to the controlled, the master rather than the marionette. The ontology and epistemology belonging to these two dimensions are described in a bit more detail below, followed by some methodological considerations.

Ontology is the philosophy of the nature of beings, and seeks to answer questions like "what is reality?" and "what exists?" Ontologically, the objective view subscribes to *realism*, while the subjective view subscribes to *nominalism*. Realism postulates that the social world external to the individual cognition is a real world made up of hard, tangible, and relatively immutable structures. Whether or not these structures are labelled and perceived, they still empirically exist, and the social world exists independently of the individual approach to it. Reality exists on its own, independent of the individual. On the opposite end, nominalism assumes that the social world external to individual cognition is made up of nothing more than names, concepts, and labels used to structure reality. Nominalists do not admit to there being any 'real' structure to the world, and the 'names' used to describe it are regarded as convenient tools describing, making sense of, and negotiating the external world. In other words, reality only exists as a social subjective construction, not as an empirical objective one.

Epistemology is the philosophy of knowledge, and seeks to answer questions like "how do we do research?" and "what is of relevance?" On the basis of one's ontological view, an epistemology follows logically. A realist, believing in a hard

and tangible social world, has a *positivistic* approach to how and what to 'measure'. Positivists seek to explain and predict what happens in the social world by searching for regularities and causal relationships between its constituent elements. This approach is shared with natural sciences. Hypotheses are either verified or rejected, and the growth of knowledge is essentially a cumulative process in which new insights are added to the existing stock of knowledge, and false hypotheses eliminated. This way of building knowledge relies on generalization and law-like relations. On the other end of the epistemological spectrum, under the subjective dimension and nominalist ontology, is *anti-positivism*. This epistemological approach denies the utility of searching for laws and underlying regularities. On this approach, the social world is essentially perceived as relativistic, as something that can only be understood from the point of view of individuals. The standpoint of the 'observer' is rejected, because one can only 'understand' by occupying the frame of reference of the participant in action.

The three sets of assumptions outlined above have direct implications of a *methodological* nature. The objective view, treating the social world as if it were a hard, external, objective reality, takes a *nomothetic* approach to methodology. It is likely to focus upon an analysis of relationships and regularities between the various elements that it comprises. Its concern, therefore, is with the identification and definition of these elements, and with the discovery of ways in which these relationships can be expressed. The issues of importance to this approach are thus the concepts themselves, their measurements, and the identification of underlying themes. This perspective expresses itself most forcefully in a search for universal laws that explain and govern the reality being observed. The subjective view, not surprisingly, subscribes to an opposed methodological approach, which is labelled

the *ideographic* approach. This subjective approach stresses the importance of the subjective experience of individuals in the creation of the social world. The principal concern is thus with an understanding of the way in which the individual creates, modifies, and interprets the world. In extreme cases, the emphasis can be on what is unique and particular, rather than on what is general and universal. The concept of an external reality is questioned. This approach is of relativistic nature, and can in extreme cases be perceived as 'anti-scientific' based on the ground rules commonly applied in the natural sciences.

Up to this point, we have been concentrating on what Burrell and Morgan refer to as *assumptions about the nature of social science*. These assumptions led to a development of the objective and the subjective dimension. In what follows, we shall take a closer look at another dimension, which Burrell and Morgan label *assumptions about the nature of society*. This dimension will be much less developed, because there is much less ambiguity about the standpoint of the thesis in regard to this. The two dimensions at issue here, namely, *the sociology of regulation* and *the sociology of radical change,* are fundamentally based on a debate between order and conflict. Order entails stability, integration, functional coordination, and consensus. Conflict, on the other hand, involves change, conflict, disintegration, and coercion. Probably the most well-known philosopher subscribing to the conflicting dimension is Karl Marx. The order-conflict distinction turns out to be problematic, though, which is why the authors suggest the notions of 'regulation' and 'radical change'.

The 'sociology of regulation' refers to the writings of theorists who are primarily concerned to provide explanations of society in terms that emphasize its

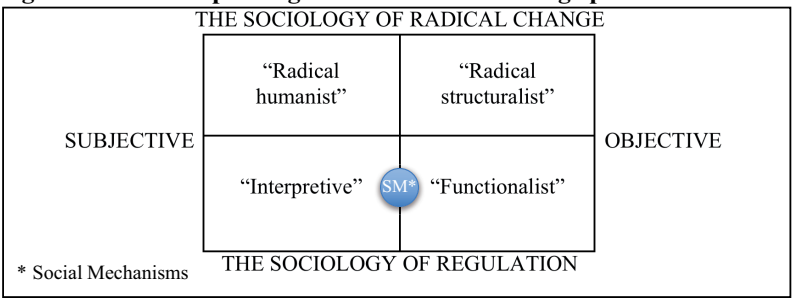
underlying unity and cohesiveness. It is a sociology that is essentially concerned with the need for regulation in human affairs; the basic questions it asks tend to focus on the need to understand why society is maintained as an entity. Its polar opposite is the 'sociology of radical change', whose basic concern is to find explanations for the radical change, the deep-seated structural conflicts, the modes of domination, and the structural contradictions that its theorists see as characterizing modern society. It is a sociology that is essentially concerned with the man's emancipation from the structures that limit and stunt his potential for development. The basic question which it asks focus upon the deprivation of man, both material and psychic. Table 2 below summarizes the two dimensions.

Table 2. The regulation – radical change dimensions

The sociology of REGULATION is concerned with	The sociology of RADICAL CHANGE is concerned with
(a) The status quo (b) Social order (c) Consensus (d) Social integration and cohesion (e) Solidarity (f) Need satisfaction (g) Actuality	(a) Radical change (b) Structural conflict (c) Modes of domination (d) Contradiction (e) Emancipation (f) Deprivation (g) Potentiality

Two dimensions in each of the two sets of assumptions about nature of social science and nature of society adds up to four paradigms. These four paradigms are depicted in the figure below.

Figure 3. The four paradigms and the middle-range position



The radical sociologies are not relevant for this thesis, but could easily be imagined to be revived. An effort to understand radical changes in the macro environment, such as Brexit and the election of Trump, together with the rise of many populists around Europe (Marine Le Pen in France, Geert Wilders in Holland, and the Danish People's Party in Denmark) would require a radical sociological approach. Even in business, many established business models are under pressure, and new ways of doing business are emerging. This is very real currently in the hotel industry, for example, with Airbnb challenging the status quo, or with Uber taking on the taxi industry. Modes of social interaction and communication is a third example of how radical changes have emerged with the introduction of such digital social media as Facebook, LinkedIn, YouTube, etc.

4.2. Positioning social mechanisms within the traditional research paradigms

The social mechanism-based approach to social theory takes a middle-range position. It should not be confused with a purely descriptive approach that seeks to account for the unique chain of events that lead from one situation or event to another. Nor should it be confused with social laws (Merton 1968a; Hedström and Swedberg 1998). Before giving a stronger account of mechanisms occupying a

middle-range position in sociology, it is worth noting the interesting aspect of its interdisciplinarity. Francis Crick for example, a Nobel laureate in biology, prefers to think in terms of "mechanisms" and not "laws", because "laws" are generally reserved for physics (Crick 1989, p.138). And in cognitive psychology, "the information-processing approach assumes that perception and learning can be analysed into a series of stages during which particular components ('mechanisms') perform certain transformations or recoding of the information coming into them" (Bower 2014, p.138). In economics, too, mechanisms have a prevailing position, as, e.g., Schumpeter writes: "by economics – or, if you prefer, 'economics proper' – we denote the interpretive description of economic mechanisms that play within any given state of those institutions, such as market mechanisms" (1989, p.293).

According to Hedström and Swedberg (1998), Robert Merton has brought one of the most suggestive discussions of mechanisms as middle-range theorizing. "The point is to locate a middle ground between social laws and descriptions and 'mechanisms' constitute such a middle ground" (1968b). Harré (1970) suggests that mechanisms are characterized by their explanatory power. Regarding correlation, he notes that in order to explain the relationship between them (input and output), we search for a mechanism. The search for mechanisms means that we are not satisfied with merely establishing covariation between variables or events. According to Hempel (1942; 1962), deterministic laws are quite unlikely in the social and the historical sciences. The "laws" that can be invoked in the social sciences are instead of a probabilistic nature. Mechanism-based explanations usually invoke some form of "causal agent" (Bhaskar 1978). In the social science, the "causal agents" are always individual actors, and intelligible social science explanations should always include explicit references to the causes

and consequences of their actions. Finally, Boudon offers a couple of notes on the difference between statistical laws and causal mechanisms. “We must go beyond the statistical relationship to explore the generative mechanism responsible for them” (Boudon 1976, p.117). “Causal analysis does not explain the [statistical] chart. It simply summarizes it. *Understanding* a statistical structure means in many cases building a generating theory or model … that includes the observed empirical structure as one of its consequences (Boudon 1979, p.51-2).

Hedström and Swedberg (1998) state in summary that mechanisms are characterized by four core principles: 1) Action; 2) Precision; 3) Abstraction; and 4) Reduction. 1) A mechanism-based explanation is not built upon mere association between variables, but always refers directly to causes and consequences of individual action oriented to the behaviour of others. 2) The second principle captures the essence of middle-range sociology: *Sociology should not prematurely take on broad-sweeping and vague topics or try to establish universal social laws (which are unlikely to exist in any case). It should instead aim at explanations specifically tailored to a limited range of phenomena. This limited range is not synonymous with some small area of society; the same mechanism can often be found in many places in society* (emphasis inserted). Principles 3 and 4 state that effective theorizing should be able to eliminate irrelevant factors and provide a tight coupling between *explanans and explanandum* (emphasis original). The second principle summarizes the paradigmatic debate between the objective, functionalistic view that law-like relations exist, and the subjective, interpretive view that understanding individuals is the only way to know what is true. Mechanisms should be able to explain correlations (which are not laws) by providing an understanding of the underlying individual behaviour leading to these correlations. The middle-range position has

consequences for the present research method as well. This thesis is based on a single case study, which is further explained and put in perspective in what follows.

4.3. Case studies as research method

Much as social mechanisms occupy a middle-range position in the paradigm matrix, so too the case methodology occupies a middle position compared to methodologies suiting the interpretive and functionalist paradigms, respectively. The table below summarizes the two paradigms and the possible methods that follow from them.

Table 3. Objective and subjective paradigms summarized

Nature of science	**Subjective**	**Middle-range**	**Objective**
Paradigm	Interpretive	Social mechanisms	Functionalist
Ontology	Nominalism		Realism
Epistemology	Anti-positivism		Positivism
Methodology	Ideographic		Nomothetic
Possible method	Ethnographic	Case study	Experiment/survey

To put case studies in perspective as a research method, the two ends of the spectrum – experiments and surveys on one end, and ethnography on the other, will be briefly outlined. The positivistic approach implies measuring the effect from one or more independent variables on a dependent variable, taking into account moderating and mediating effects. The outcome of this approach is a generalizable statistical model capable of prediction. Input into the model can, e.g., be experimental data and/or survey data, which is then coded numerically, and variations of regression analysis determine the law-like relationships between the independent and the dependent variables. On this approach, the researcher typically starts with a hypothesis to guide the design of the experiment or questionnaire, which is tested for significance by the statistical model. It is assumed that following the same procedure in future studies will lead to same result, which is labelled replicability (Saunders, Lewis, and Thornhill 2009). On the other end of the spectrum is ethnography, which usually requires lengthy stays in the "field", and emphasizes deep analysis:

"Ethnography is about telling a credible, rigorous, and authentic story. Ethnography gives voice to people in their own local context, typically relying on verbatim quotations and a 'thick' description of events. The story is told through the eyes of local people as they pursue their daily lives in their own communities. The ethnographer adopts a cultural lens to interpret observed behaviour, ensuring that the behaviours are placed in a culturally relevant and meaningful context. The ethnographer is focused on the predictable, daily patterns of human thought and behaviour. Ethnography is thus both a research method and a product, typically a written text. Ethnographers are noted for their ability to keep an open mind about the groups or cultures they are studying. However, this quality does not imply any lack of rigor. The ethnographer enters the field with an open mind, not an empty

head. Before asking the first question in the field, the ethnographer begins with a problem, a theory or model, a research design, specific data collection techniques, tools for analysis, and a specific writing style. The ethnographer also begins with biases and preconceived notions about how people behave and what they think – as do researchers in every field" (Fetterman 2010, p.1).

As with the paradigm, the case study approach adopts a methodological middle-range position. According to Yin (1981), the case study does not imply the use of a particular type of evidence, and it can be investigated by using either qualitative or quantitative evidence. Evidence can come from fieldwork, archival records, verbal reports, observations, or any combinations of these, and there is no requirement for the data collection method either. "A common misconception is that case studies are solely the result of ethnographies or of participant observations, yet it should be quickly evident that numerous case studies have been done without using these methods (Allison et al. 1971) … What the case study does represent is a research strategy, to be likened to an experiment, a history, or a simulation, which may be considered alternative research strategies" (Yin 1981, p58-59).

The choice between methods amounts, according to Yin (2009), to three factors. These are the form of the research question; whether the research requires control of behavioural events; and whether the research focuses on contemporary events. The research question is the most important of the three. If the question is of the form "who", "what", "where", "how many", and "how much", then surveys or archival analysis are most appropriate. "What" could also indicate an explorative approach, which would be appropriate as a starting-point for further inquiries. All

the types discussed here are appropriate for exploring. Beyond this, “what” is just another form of “how many” or “how much”, and hence has the purpose to measure something. Like “what”-questions, “who” and “where” are likely to favour surveys or archival studies, which have their advantages when the research goal is to describe an incidence or to *predict* outcomes. “How” and “why”-questions, on the other hand, are more *explanatory,* and deal with operational links needing to be traced over time, better answered by the use of experiments, historical methods, or case studies.

Having decided on the form of research question, Yin (2009) distinguishes between two further questions. These pertain to control of behavioural events, and focus on contemporary (or historical) events. First, if control of contextual variables is required, then an experiment is the best suited method. If, on the other hand, event and context are hard to separate, then a historical or case study is the most appropriate. And finally, if the research involves contemporary events and not historical ones, the case study is probably to be preferred over the historical one. In sum, the case study is preferred when researching contemporary events where the relevant behaviours cannot be manipulated, and where the aim of the research is to understand “how” or “why” events occur.

Many researchers still do not approve of the case study approach as a proper research method. This is most likely due to one or more of the following four traditional prejudices against case studies. First, the case study approach is difficult to get right, and much case study research has been sloppy, not following systematic procedures, or has allowed equivocal evidence or biased views to influence results. Because other methods are more systematic and well-

documented, it might be easier to avoid these traps with these other methods. Second, some might confuse statistical generalizability with analytical generalizability. Case studies provide generalizable insights to theoretical propositions, but do not represent a sample of any population. Third, and with some accuracy, case studies do take a long time to get right, and do produce massive amounts of documentation. Nevertheless, with a bit of experience, and assuming that one does not conflate a case study with e.g. an ethnographic study, this problem is not a large one. Finally, with the revival of randomized field trials or "true experiments" with the aim of establishing causal relationships, case studies seem too fall short because they cannot provide exactly this. Still, thinking of case studies as complements to these might also give some justification for them, even in these cases (Yin Robert 2009).

Defining what a case study is often merely to repeat the topical applications of the case study. For example: "The essence of a case study, the central tendency among all types of case study, is that it tries to illuminate a *decision* or set of *decisions*: why they were taken, how they were implemented, and with what result" (Yin Robert 2009, p17). Other cases besides *decisions* might include individuals, organizations, processes, etc. A better-suited definition of the case study as a research *method* thus needs to be elevated a level beyond topic. Accordingly, a case study should be defined as a twofold approach, beginning with the scope of the case study, followed by data collection and data analysis strategies[2]: "A case study is an empirical inquiry that a) investigates a contemporary phenomenon in depth and within its real-life context, especially when b) the boundaries between phenomenon and context are not clearly evident." In other words, a case study is suited for *understanding* a real-life phenomenon in depth, but where phenomenon

[2] For the purpose of this section emphasis is on the first part of the twofold approach.

and contextual conditions are hard to separate. An experiment, for example, assumes and requires deliberate separation of phenomenon and context 'controlling the environment'; surveys can deal with both, but their ability to investigate the context is very limited, because of the limited number of variables (and hence questions) available (Yin Robert 2009, p.18).

5.0. Discussion

Throughout the three papers, different aspects of management control, intrinsic motivation (IM), and creativity have been explored. Each of the papers has investigated a link between a type of management control and one of the other variables – although the paper on management intervention was set in a creative context, thus dealing implicitly with all three variables. The first paper was a conceptual paper, whereas the two others both explored case studies in an architecture firm, which is why creativity played an important part in both of them. The conceptual paper deals strictly with the link between external regulation and management control, and IM, without any references to creativity. The paper on how narratives can function as a type of control mechanism deals almost exclusively with the link between management control as coordination and creativity, without any direct references to IM. The last paper involves all three variables, since the link between management control and IM is investigated in the context of creativity. This discussion will examine how each of the three sub-questions have been answered over the course of the three papers, and how the method in this thesis is distinct from that of other research.

5.1. How each of the sub-questions are answered

The first sub-question, on how management control affects IM, is answered primarily by means of the first paper. That paper takes a conceptual perspective, and concludes based on a review of Cognitive Evaluation Theory (CET) and basic needs theory that the net effect on IM can be both positive and negative, and that the sign depends on how the three basic needs are affected – most specifically on how the feelings of autonomy and competence are traded off. But all three papers in fact touch upon the link between some type of management control and IM.

Paper 2 does not directly look at IM, but going a bit deeper into the effects of narratives as control, it emerges that CET can easily be used to understand how constraint theory in general, and narratives in particular, can be an effective management control mechanism in a creative environment, because it is likely to support IM through the three basic needs. This will be discussed in the next paragraph. Finally, the third paper looked at a very particular type of management control, which was management intervention, and concluded that IM should also be understood through basic needs, and that basic needs substitution could sustain IM.

One of the features of the narrative as a constraint is that it is the project team, and not top management, that formulates the narratives. The role of top management is to call for the narrative, not to dictate what it should be (although top management do in some cases help the team in formulating it). Thus, the creation of the narrative is initially thought of as a bottom-up process, and not a top-down. Nor it is a company value or norm that the team necessarily should comply with or internalize. Rather, the narrative is initially empty, and the team should fill it out. In a CET perspective, the bottom-up approach supports autonomy because the team drives the process, not management. Being responsible for the creation of the narrative that subsequently directs the design internalizes the PLOC, giving the architects a feeling of control and freedom. Simultaneously, when the team solves the challenge of coming up with a narrative and concept that satisfies their own and management's critical view on architecture, this supports the feeling of competence. Further, the process of working in a team and of everyone having a say supports the feeling of relatedness. In other words, the process of creating the narrative – the concept phase – is intrinsically motivating, and hence creativity supporting. Both embedded cases support this indirectly, inasmuch as the project

directors speaks of great teamwork and a great work environment together with a high level of creativity in the two cases where the narrative works well, indicating intrinsic motivation.

The second sub-question, on how management control can direct and guide employees in creativity settings, is primarily answered through the paper on how narratives can function as a type of control mechanism. But the two other papers also treat this question, although implicitly, since IM is a requirement for creativity (as has been stated many times previously in the thesis). So, by showing how management control and IM can coexist, it has simultaneously been shown what is required for management control to direct and guide in creative settings (and hence coexist with creativity). The paper on narratives as control reveals a specific control mechanism that supports creativity because it interacts with the creative process and enhances creativity. It does so by simultaneously coordinating the team members' work and framing the creative process. The two other papers do not show how creativity is enhanced, but rather set forth conditions for how not to undermine creativity by not undermining IM. If IM is a condition for creativity, then a condition for management control to coexist with creativity is not to undermine IM. The path to understanding how creativity can coexist with control hence goes via the three basic needs, and further elaborates on our understanding of how external regulation and management control either support or undermine creativity through IM. In sum, there seem to be two conditions for management control to coexist with creativity. A strong condition is that control should enhance creativity through interaction of processes; and a weak condition is that control should not kill creativity by not undermining IM.

The last sub-question about management intervention and IM is answered via a very specific mechanism, which is labelled the basic needs substitution effect. It turns out that it is possible to sustain intrinsic motivation even if the feeling of autonomy is drastically decreased. This requires that feelings of competence and relatedness are similarly increased for the substitution effect to be positive. Looking at the conceptual paper, this is not surprising, and can easily be understood by the same framework by which budgeting and performance appraisal are analysed. But where the conceptual paper points at likely outcomes of standard management control systems, the substitution effect is an empirical phenomenon observed in a real-life case. In other words, where Self-Determination Theory and Cognitive Evaluation Theory make it possible for us to *understand* the substitution effect, it does not give any indications of under which conditions we might observe this specific phenomenon. In many ways, the conceptual paper about external regulation and management control is a predecessor to this account of basic needs substitution – and admittedly, the conceptual paper started as a literature review for the paper on basic needs substitution. This sub-question is the only one not answered indirectly by all three papers because the narratives paper explores what happens when processes function well, while this question has to do with the opposite effect, namely, what happens when processes do *not* function well.

5.2. How this study compares to other research on creativity and control

In this section, I will limit my positioning of how my own findings relate to the current body of literature to a positioning against two papers which very explicitly address the key issues that I am concerned with in this paper. The papers are Davila and Ditillo (2014) and Adler and Chen (2011).

Davila and Ditillo (2014) show how control for creativity has two dimensions – a directional one and an inspirational one. In the abstract, they note that "the study supports the idea of control systems as facilitators of creative activities rather than barriers to intrinsic motivation." This thesis agrees that intrinsic motivation must be supported but goes beyond that. It demonstrates exactly *how* and *why* different external regulations affect intrinsic motivation. Davila and Ditillo's study is a mixed method including a survey and hence more in line with the functionalistic paradigm. This thesis offers less generalizability but richer insights into the social mechanisms at work. While Davila and Ditillo's work categorizes management control into directional and inspirational systems, this thesis shows, as one point out of many, how there can be an overlap between the two types of systems and how management and leadership can function in these settings. So, while Davila and Ditillo's study and this thesis do not disagree, Davila and Ditillo give general implications and explanations while this thesis offers a deeper understanding of the mechanisms although without the same broad generalizable applications.

Directional systems establish the boundaries that define the creative space and also work as interfaces with the rest of the company. Their aim is to coordinate team members' efforts rather than to reduce variation and motivate defined objectives. Following this description, both narratives and weekend booklets, which are the two central control systems in the two case studies, seem to fall into the category of directional systems. In short, narratives are coordination mechanisms and booklets work as interfaces with the rest of the company. Inspirational systems, on the other hand, guide the creative process to enhance the novelty of the end result and generate the variation required to surprise the customer. Following this description also seems to lead to the idea that narratives and management intervention, which is a direct consequence of weekend booklets, fall into the category of inspirational controls. In conclusion, Davila and Ditillo show how

systems fall into two categories while this thesis, among many things, shows how some systems can function as both inspirational and directional systems. The functionalities shown in the thesis are circumstantial and the mechanisms and basic needs applied help understanding to a much deeper level exactly how and under which circumstances.

Adler and Chen (2011) look at creativity and control mechanisms in creative businesses. They conclude that creativity and control can coexist. This thesis does not disagree with the conclusion but takes it a step further into the mechanisms of how and why the two can coexist. The basic needs and mechanisms required for their coexistence are explored in depth in this thesis. Adler and Chen do not directly talk about basic needs and mechanisms per se but refer to Perceived Locus of Causality (PLOC), which is closely related to the basic need of autonomy discussed in this thesis. They also discuss independent and interdependent self-construal, which are related to all three basic needs although not directly linked in the paper. So, while Adler and Chen acknowledge the dilemma and necessary trade-off between structure and freedom, they only set up general conditions for overcoming this conflict. This thesis acknowledges the trade-off and delves deeper into exact case based mechanisms to show *how* this trade-off can happen.

Adler and Chen (2011) develop 15 propositions of which the first four are used to show that creativity and control can coexist. Proposition 1 and 2 state that creativity is best supported by intrinsic motivation while control is best supported by identified motivation. Proposition 3 claims that both intrinsic and identified motivation can coexist. This leads to proposition 4 concluding that large-scale collaborative creativity will be best supported when contributors have simultaneously high levels of identified and intrinsic forms of motivation. While this thesis does not directly disagree with this statement, it offers a potentially

deeper explanation to coexistence than types of motivation. The explanation is instead based on mechanisms of basic needs, which are considered the very roots to types of motivation. So, when Adler and Chen refer to identified motivation, this thesis would rather express it as internalisation via individual acceptance of the need for collective structures around the creative processes, which ultimately stem from the need for a feeling of competence.

The thesis hence offers a deeper explanation to existing research by applying basic needs as mechanisms. This applies not only to the two pieces of research by Davila and Ditillo and Adler and Chen but to most research done on control, creativity and motivation – at least this is my claim.

6.0. Conclusion

This thesis has dealt with the overall research question of how intrinsic motivation and management control can coexist in a creative environment, and how coordination is possible in such a context. The thesis has done so by exploring three sub-questions answered through three papers with overlap, so that each paper contributes to each sub-question, although each paper apparently primarily answers one of the sub-questions. The three sub-questions are: 1) How does management control affect intrinsic motivation (IM)? 2) How can management control direct and guide employees' actions in creative setting? and 3) How can IM exist under management control by management intervention and surveillance? An underlying assumption of the following argument is that creativity requires intrinsic motivation and coordination, and that management control delivers both.

To answer the first sub-question, on how management control affects IM, we turn to basic needs. Management control is external regulation, and affects IM through the three basic needs, the needs for feelings of autonomy, competence, and relatedness. Autonomy and competence can be challenging to support simultaneously, while relatedness can be considered as a moderator or contextual variable. It can support IM more or less in isolation, and hence does not rely (much) on a trade-off. Management control, on the other hand, provides structure to support competence, but at the same time is at risk of undermining autonomy because of external Perceived Locus of Causality (PLOC). To support both autonomy and competence, the point of departure for management control must stem from within the individual in order to internalize the PLOC, which otherwise will risk resulting in "controlled" motivation (motivation crowding-out). Building

support structures around "autonomous" motivation, in order both to enhance learning and focus and to mitigate feeling of failure, supports the feeling of competence. Internalisation can happen, for example, through mutual agreement on the need to shift from an autonomous process to a more controlled (structured) one. This can preserve IM impact via basic needs substitution.

With regard to the second sub-question, on how management control can direct and guide employees' actions in creative setting (and hence coexist), understanding that IM is the basis for creativity is a critical element. If management control does not crowd-out IM, then in principle it has the potential to coexist with creativity. As was concluded under the previous sub-question, such coexistence presupposes that all three basic needs be sufficiently supported. With controls in place that do not hinder IM, the first requirement for coexistence of "control" and creativity is fulfilled. If management control is to do more than just "control," but actually enhance creativity by coordinating and motivating creative processes, then the control mechanism must interact with the creative processes themselves. Constraint theory (Elster 2000) points to creativity being a two-step process, where the first step is choice of constraint, and the second is choice within constraint. It has been shown how a constraint can motivate and coordinate the creative process, which serves the dual purposes of controlling and enhancing creativity at the same time. Constraint theory thus points toward a second requirement for control and creativity to coexist, namely, mutual support for creative structures and coordination.

In the paper "Narratives as control," it has been shown how a narrative can accomplish this by a bottom-up approach to the choice of constraint (the narrative)

in combination with a sufficiently constraining constraint to structure the second step of developing the architecture (choice within constraint). A particular point the paper makes is how coordination and motivation in creative settings can occur simultaneously. This was touched upon previously in the thesis as an important objective of economic organizing and hence management control. A sub-conclusion to how control can direct and guide in creative settings is simply that it does so by coordinating of the creative process. In summary, management control can direct and guide employees' actions in creative settings through coordination, which happens through interaction directly into the creative process.

Finally, intrinsic motivation can exist even under what could be labelled "strict management control" by intervention and surveillance, provided that employees internalize the need for intervention. While the idea of internalisation is not new, this thesis offers a specific mechanism by which internalisation can occur, which is through basic needs substitution. For the substitution effect to be effective, employees must agree with the need for stricter control (lowered autonomy) in the process as a trade-off for better structure (increased competence) to support the creative process. This requires the employees to have had freedom in the beginning of the process, and also at the time of intervention, to acknowledge that the creative output is not good enough, and that something "disruptive" needs to be done. For disruptive measures to be accepted, it is further required that the employees have a mind-set of doing the best they can – always. Secondly, working alongside good colleagues is necessary to support the feeling of relatedness. Basic needs substitution is hence an internalisation mechanism and is possible because individual basic needs' contributions to IM are additive.

The final conclusion is twofold because the research question is as well. First, intrinsic motivation and management control can coexist in a creative environment if people like what they are doing and feel support for all three of their basic needs, which are the needs for feelings of autonomy, competence, and relatedness. Management control should be designed to offer support for all three basic needs by taking its point of departure in individual (or at least in the employee's) needs for structure, precisely in order to support autonomy. The feeling of relatedness moderates the support of IM by autonomy and competence. If intervention is required and autonomy is hence in danger of being thwarted because regular procedures or processes are not sufficient, then internalisation should ensure that IM will be left intact. Basic needs substitution is a mechanism by which internalisation leaves IM intact via this substitution effect. Secondly, coordination via management control is possible in a creative environment if the control interacts directly with the creative process. Constraint theory postulates that creative processes have two phases: first, the choice of constraint, and second, choice within constraint. This thesis has shown how the constraint itself can become a control mechanism, and hence can coordinate the creative process during the second phase of choice within constraint. It was shown how a narrative could be such a constraint and coordinator; but other types of constraints also seem possible for effective coordination of creative processes.

6.1. Managerial implications

Based on this thesis a few recommendations for managers in creative environments seem to be at hand. There is one recommendation based on each of the three sub-questions. The logic is that the first sub-question looks at support of IM in general by carving out the basic needs as mechanisms for many types of generic external regulations and management controls. The second sub-question

looks more specifically at creative processes when things are going well and hence the recommendation will suggest how to design well-functioning processes. The third sub-question looks at what happens when things do not go so well and thus the recommendation is about under which circumstances intervention is sustainable. A critical assumption is that IM is required for creativity to exist.

Recommendation #1: Consider the three basic needs. While knowledge and creative thinking skills are also critical, they are outside of the scope of this thesis. But intrinsic motivation is critical and hence it is a prerequisite to fulfilling the three basic needs. Consequently, employees need freedom and professional support while being surrounded by good colleagues. Freedom and professional support have the potential to become opposing forces, which is why it is important to start with the individual employee when figuring out how he or she needs support in his or her professional development. Milestones and goals are set up to support individual objectives, and supervision is supposed to be supportive. Feedforward interviews and positive feedback are important elements of supporting IM, together with frequent conversations about professional development. These should take place at least on a monthly basis. In order to support relatedness, people can very well be different in skill sets, background, etc., but they should all believe in the same set of values on which the company is founded, in order to align their understandings of how things are done and to ensure their agreement on the firm's objectives.

Recommendation #2: Creative processes should support coordination together with IM. Constraints of the convention type can function as a coordination mechanism, as well as supporting creativity by structuring the process, hence

supporting the need for a feeling of competence. The process should be bottom-up, to support the feeling of autonomy, and should take place as a team discussion and effort, to support the feeling of relatedness. Recommendation #3: In case the creative product is not living up to standards, management intervention is possible, albeit under certain strict guidelines. First, the employees must have had sufficient time, creative freedom, and resources allocated to feel that they have had the opportunity to do well on their own. Second, they must agree that they failed in their efforts to make things work on their own, in order for them to accept management intervention. Third, the employees must agree that it is important to do the best they can every time, and not give up. And fourth, the employees must feel good relations with the co-workers, in order to support a feeling of relatedness. Note that the third and fourth criteria require that employees have somewhat similar values, and that these include high quality standards.

6.2. Future research

While some questions have been answered throughout this thesis, others have not. The conceptual paper – namely, the one on management control's effects on IM – transfers effects from psychological experiments onto different types of management controls. But while we have also seen how internalisation can occur when employees agree on the need for management intervention, we did not consider the same effects on management control in general, although employees might also agree on the need for such management controls as budgets, in general, and hence internalize the external regulation. More research in practical settings on the effects of management control on IM is needed in order to understand the actual mechanisms. Basic needs might help us understand the actual effects occurring when observed, while at this stage we can only speculate on what will happen.

Another idea for future research is related to the two-phase process of constraint creativity. While we have seen how the second phase functions well as both coordination mechanism and creative enhancement, the first phase is still somewhat a mystery. So how the narrative is used to produce the architectural product, to control and coordinate, is well described and analysed. But how the narrative, or constraint in more general terms, is created in the first phase, is much less obvious. It actually seems more or less random how the constraint, which is the narrative, is created. Between 10 and 100 options are created, of which one is selected to be the final constraining narrative; but how is it selected, and how do the architects come up with the options to begin with? If creativity is the ability to create within constraints, what then is the ability to create constraints? Perhaps creativity is actually only the ability to create or choose suitable constraints – and the ability to work within such constraints is more or less straightforward if the constraint is a good one.

Finally, and regarding the last research sub-question, it might be interesting to investigate further the conditions for internalisation. This research shows that internalisation is possible via basic needs substitution. But when exactly can the manager, for instance, intervene? Does it need to squeeze the process to the extreme, or could it be done well in advance? What is more, is it necessary for the manager to work along with the employees on the project, or is it sufficient for him to provide guidelines and follow up on these? Since the substitution effect is rather undeveloped, more research is needed in order to understand more clearly what exactly is going on and what the criteria for successful intervention are.

Understanding the effects of management control on intrinsic motivation

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Abstract:

This paper develops an understanding of how external regulation in general, and management control in particular, affect intrinsic motivation – *the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn.* In order to do so, three psychological basic needs understood as mechanisms that cause intrinsic motivation – namely, feelings of autonomy, competence, and relatedness – are invoked in order to explain the relationships between management control and intrinsic motivation. The analysis shows that external regulation and management control often have an undermining effect on feeling of autonomy, but a supporting effect on competence through structure provision. The net effect on intrinsic motivation is hence ambiguous. This paper contributes mainly by providing a more detailed account of the relationships between intrinsic motivation and management control. The high level of detail is provided as a result of introducing the three basic needs as mechanisms. This is done in order to exploit their explanatory power in terms of understanding the effects of management control on intrinsic motivation. This paper hence offers a new perspective on the motivational effects of management control: an understanding that better unfolds the matter's complexity. In particular, the paper demonstrates how the effects of the design choices related to two management controls (budgeting and performance appraisal) should be understood not as unidirectional, but in a multidirectional way.

1. Introduction

This paper develops an understanding of how external regulation in general, and management control in particular, affect intrinsic motivation – *the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn* (Ryan and Deci 2004). Motivation has been intensely studied in psychology and related domains for longer than the concept of management control has existed. In particular, intrinsic vs. extrinsic motivation has been debated from the beginning of the 1970s, and the debate is still ongoing. The issue with intrinsic motivation is that it is fragile and easily lost if circumstances are not right and people feel external pressure, for instance. The reason for action, perceived locus of causality (Ryan and Connell 1989), can change if a person becomes aware of external sources (i.e. management control) of reasons to act. Such sources can include rewards, punishment, or even egocentric reasons, which can "crowd-out" (Frey and Jegen 2001) the interest and enjoyment of the task.

The literature suggests that in order to feel intrinsically motivated, a person must have three basic needs satisfied, which are the feeling of autonomy, the feeling of competence, and the feeling of relatedness. If any one of these basic needs is not sufficiently satisfied, a person cannot feel intrinsically motivated. And beyond that minimum, higher satisfaction of each basic need is better. This paper exploits the insights provided by the literature and conceptualizes the effects that each of the three basic needs may have on intrinsic motivation as mechanisms that explain something more about the relationships between management control and motivation.

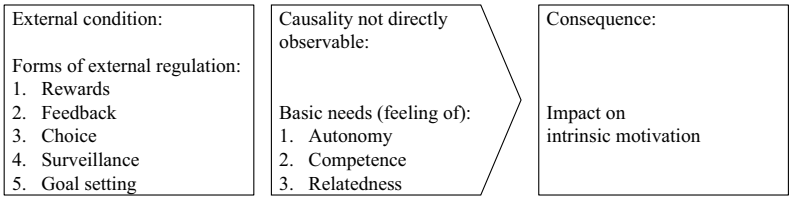
In its discussion of management control and motivation, this paper applies a *mechanism* approach with implications both for the perspective that I can offer on knowledge production and for the insight that I can provide on the relationship between control and motivation in this paper. The mechanism approach takes a mid-range position in social science (Hedström and Swedberg 1998). The causal effects that I discuss are not social laws, but rather are conceptualized as mechanisms, i.e., *frequently occurring, and easily recognizable causal patterns that are triggered under generally unknown conditions or with indeterminate consequences*. Such mechanisms allow us to explain, but not to predict (emphasis original) (Elster 2007; 2015).

It is not uncommon to discuss behavioural aspects of management control. Since Anthony (1965) introduced the concept with the purpose of *effectively and efficiently resource allocation*, much management control research has focused on human behaviour,[3] and a timelier definition of management control hence focuses more on these aspects. Merchant and Van der Stede (2012), for example, define the concept of management control as *all the devices or systems managers use to ensure that the behaviours and decisions of their employees are consistent with the organization's objectives and strategies.* This paper thus follows a long tradition of studying management control by its relevant human and behavioural impact. And no doubt that intrinsic motivation is recognized by most as a critical human behavioural element of any viable business today.

[3] Ouchi (1979, 1980) for example identifies culture, or "clan control", as an alternative to market and bureaucracy, and Simons (1995b, 1995a) developed a four-lever control framework to support both the constraining functions and the inspiring forces. Other examples are enabling vs. coercive (Adler and Borys 1996, Ahrens and Chapman 2004), control as packages for multiple purposes (Malmi and Brown 2008), creativity vs. control (Adler and Chen 2011), inspirational vs. directional control (Davila and Ditillo 2014), and the role of innovation in management control (Chenhall and Moers 2015), just to mention a few.

This paper shows how external regulation in general, and management control in particular, affects intrinsic motivation in multiple dimensions depending on type and design. The paper develops an understanding of these effects by looking closer into three basic needs – the feeling of autonomy, feeling of competence, and feeling of relatedness – thereby conveying the mechanisms used for explaining the interrelations between intrinsic motivation and control. The paper is a theoretical paper with no empirics. Although no empirical data has been collected specifically for the purpose of the paper, it does build on more than 40 years of psychological empirical studies in the field of intrinsic and extrinsic motivation and several hundreds of studies during this period of time. The overall analysis of the paper is divided into two main parts. First, it develops an understanding of how external regulation in general effects intrinsic motivation through the mechanisms of the three basic needs. It does so through an extensive literature review of the psychology literature on the distinction between intrinsic and extrinsic motivation. Second, the causal understanding developed in the first part is applied to different management control system designs in order to pinpoint probable effects on intrinsic motivation from management control. Figure 1 illustrates the causal pattern from external regulation in general, via basic needs, to specific impacts on intrisic motivation.

Figure 1. Mechanisms as causal pattern from external regulation to intrinsic motivation



The remainder of the paper is divided into six sections. Section 2 is dedicated to basic needs seen through the lens of mechanisms – *frequently occurring and easily recognizable causal patterns that are triggered under generally unknown conditions or with indeterminate consequences* (Elster 2007; 2015). Mechanisms are used to *explain and understand* the effect of management control on intrinsic motivation (section 4 and 5). The mechanisms linking external regulation and management control to intrinsic are basic needs, which are described in the second part of section 2. The three basic needs are feeling of autonomy, feeling of competence, and feeling of relatedness. Basic needs are the foundation for intrinsic motivation, and without all basic needs fulfilled intrinsic motivation is not achievable, according to Self-determination theory.

Section 3 reviews the psychology literature on intrinsic motivation, in order to identify effects on intrinsic motivation from external regulation. First the development of Cognitive Evaluation Theory (CET) is briefly traced, followed by reviews of five specific types of external regulation on intrinsic regulation. The section is concluded by the development of four propositions on how external regulation affects intrinsic motivation via mechanisms of basic needs. The five types of external regulation considered are rewards, feedback, choice, surveillance & evaluation, and goals. In sections 4 and 5, the propositions are applied to four different budgeting designs and three different performance appraisal (PA) designs[4]. Section 4 discusses and exemplifies the potential effects on intrinsic motivation from four different types of budgeting, which are participative

[4] Budgeting is chosen because this is one of the most important and widely used management control systems, and performance appraisal because such systems are frequently designed to provide for some of the motivational issues that many other MCSs suffer from. The approach taken in this paper is inspired by Otley (1999), who proposed a five-element framework for analysing the operation of management control systems, and discussed the inclusion of elements on three MCSs, which were budgets, EVA, and BSC (2005). This paper focuses on the behavioural aspects of management control, which is why not all five elements are present in the analysis and new have been added. Three (four) elements are overlapping, which are goal setting, rewards, and feedback (and performance measures). The two elements from Otley's framework regarded without motivational effects are objectives and strategies and plans, while the two "new" elements are choice and monitoring (where monitoring is equivalent to performance measures and obviously included in Otley's setup, although not explicitly mentioned).

budgeting, line-item budgeting, flexible budgeting, and hard-to-achieve budgets. Section 5 is dedicated to a discussion of how three different types of PA effect intrinsic motivation. The three types are: Judgemental vs. objective, self-assessment vs. leader assessment, and feedforward interview vs. feedback. In most of the seven cases from budgeting and PA, there are obvious effects and some surprising effects, which are identified and explained by the use of mechanisms. Finally, sections 6 and 7 offer a discussion and conclusion.

This paper mainly contributes by its depth of explanation of effects on intrinsic motivation from external regulation and management control. Other research has applied psychological concepts to management control, but to my knowledge no one has applied the concept of mechanisms and basic needs to this depth and degree of explanatory power. This paper hence offers a new perspective on the understanding of motivation in general, and in particular how management control might simply undermine motivation instead of facilitating it, because the complexity of motivation has been underestimated.

2. Mechanisms and basic needs

This section introduces mechanism-based explanations as interpreted mainly by Jon Elster. Subsequently it introduces three psychological basic needs, and shows how these can be understood, by applying the concept of mechanisms, as causal links connecting external influence to behavioural outcome in the form of intrinsic motivation. In what follows, the psychological research is read through the lenses of the mechanism approach; hence it is important to introduce that at this point.

2.1. Mechanism-based explanations

During the past decade, social mechanisms and mechanism-based explanations have received considerable attention in the social sciences. The basic idea of a mechanism-based explanation is quite simple: At its core, it implies that proper explanations should detail the cogs and wheels of the causal process through which the outcome to be explained was brought about (Hedström and Ylikoski 2010). Explanations are answers to questions (Hempel 1965; Salmon 1998; Woodward 2004). Only by knowing the nature of the explanatory task at hand can one determine which details of a mechanism are relevant to include and the appropriate degree of abstraction (Ylikoski 2010). Jon Elster has probably been the most influential advocate of mechanisms in the social sciences, and his many books are full of excellent examples of mechanism-based thinking in action. His idea that mechanism-based explanation open up black boxes and show the cogs and wheels of the internal machinery (Elster 1989) captures quite well the mechanism-based spirit (Hedström and Ylikoski 2010).

Elster himself seems to have reached a perceived satisfactory definition of mechanisms as *frequently occurring and easily recognizable causal patterns that are triggered under generally unknown conditions or with indeterminate consequences.* They allow us to explain, but not to predict (emphasis original) (Elster 2007; 2015). This definition of a mechanism is adapted when analysing data by explanation, understood by Elster (2007) as follows. The main task of the social sciences is to explain social phenomena. This is not the only task, but it is the most important one to which others are subordinated, or on which they depend. The basic type of explanandum is an *event*. To explain it is to give an account of why it happened, by citing an *earlier event* as its cause (Elster 2007, p.9). Other

types of explanations can be *fact-event, event-fact,* and *fact-fact,* although these are not as common.

The idea of mechanisms is illustrated by using mutually exclusive mechanism pairs (Elster 2007, p35-50). The notion is that seemingly comparable conditions can lead to opposite outcomes. A few examples are conformism vs. anti-conformism (e.g. doing what your parents do vs. doing the opposite), spillover vs. compensation effect (e.g. if one works hard, one also packs a vacation with activities vs. relaxing to compensate for hard work), and wishful thinking vs. countermotivated thinking (e.g. believing what one hopes vs. disbelieving what one hopes). Proverbs[5] often state mechanisms and often occur in mutually exclusive pairs. Take for instance the following proverbs adapted from Elster (p.37-38): "Absence makes the heart grow fonder" vs. "Out of sight, out of mind", "Forbidden fruit tastes best" vs. "the grapes are sour", and "Like father, like son" vs. "Mean father, prodigal son". Looking a bit closer we might notice that these are in fact not mutually exclusive pairs, but rather conditional effects. One could maybe imagine that the heart grows fonder if the emotions are strong where weak emotions easily vanish. And if the grapes were forbidden instead of unreachable, maybe they would taste much better. And regarding the father, maybe the conditional proverb would say that a nice father gets a conforming son while a mean father gets an anti-conforming one. Through this paper we will see many examples of seemingly mutually exclusive pairs when it comes to effects on intrinsic motivation. Hopefully they will seem less exclusive when we apply the concept of mechanisms at later stages of the paper. Next, however, mechanisms are applied by the use of basic psychological needs.

[5] "A proverb has been passed down through many generations. It sums up, in one short phrase, a general principle, or common situation, and when you say it, everyone knows exactly what you mean." Moreover, proverbs often state mechanisms (in the sense here) rather than general laws. Consider, in particular, the striking tendency for proverbs to occur in mutually exclusive pairs (Elster 2007, p37).

2.2. Basic Needs Theory and mechanisms

The motivational aspects of psychology are captured within Self-Determination Theory (SDT), developed and updated by Edward Deci and Richard Ryan since 1971. It is based on explaining the effects on motivation from external influence on individuals pursuing completion and mastering of a given task. SDT is made up of five sub-theories, of which two are relevant for the purpose of this paper. A third theory is moderately relevant and thus briefly mentioned as well. Each sub-theory describes and explains parts of the motivational mechanisms behind human behaviour under the influence of external factors. Cognitive Evaluation Theory (CET) distinguishes between Intrinsic Motivation (IM) and Extrinsic Motivation (EM). CET together with basic needs theory are the two theories mainly relevant for the purpose of this paper. Organismic Integration Theory (OIT) focuses on the distinction between four (or five, including amotivation) types of EM depending on degree of internalization, with an overall frame of controlled- vs. autonomous motivation (and amotivation). IM is at the outmost end of the OIT spectrum, opposite amotivation, i.e. extreme autonomous motivation.

The key to understanding both CET and OIT is Basic Needs Theory (BNT), which is the most fundamental theory of the five. BNT is concerned with three basic needs[6], which are the need for feeling of autonomy, the need for feeling of competence, and the need for feeling of relatedness. "BNT specifies three dimensions of the social environment that support (rather than thwart) those needs. Specifically, autonomy-supportive (rather than controlling) contexts support

[6] Additional basic needs could be considered. In this paper, however, the three basic needs seem adequate for the purpose, and so by Occam's razor will remain the only ones treated. Overlapping theories expanding on SDT have been developed mainly by business thinkers, e.g., that motivation presupposes Mastery, Membership, and Meaning (Kanter 2013a, 2013b, 2004, 2001) or Autonomy, Mastery, and Purpose (Pink Daniel 2010). Combining the three theories would add a fourth basic need, Meaning (or Purpose), "Meaning: Repeat and reinforce a larger purpose. Emphasize the positive impact of the work they do. Clarity about how your products or services can improve the world provides guideposts for employees' priorities and decisions. As part of the daily conversation, mission and purpose can make even mundane tasks a means to a larger end" (Kanter 2013b).

autonomy, well-structured (rather than chaotic and demeaning) contexts support competence, and warm and responsive (rather than cold and neglectful) contexts support relatedness" (Vansteenkiste, Niemiec, and Soenens 2010). Following Vansteenkiste et al. (2010, p.131-133), the need for autonomy (deCharms 1968) refers to the experience of volition and psychological freedom. With autonomy, one experiences choice in and ownership of behaviour, which is perceived as emanating from the self and is in accord with abiding values and interests. Autonomy-supportive individuals promote the volition of those they socialize[7]. In contrast, controlling individuals direct the thoughts, feelings, and behaviours of those they socialize by use of external pressuring tactics[8]. The need for competence (White 1959) refers to the experience of "effectance" and structure in one's pursuit of goals. It has been proposed that autonomy support and structure are contrasting socialization styles (Reeve 2009). BNT maintains that autonomy support is not a laissez faire socialization technique in which guidance is lacking and unlimited freedom is granted – which certainly would reflect the opposite of a well-structured environment (Jang, Reeve, and Deci 2010). Although guidelines may structure and limit behaviour, such restrictions are not necessarily experienced as controlling. Rather, people are more likely to personally endorse and volitionally follow social norms that are introduced in an autonomy-supportive way. The need for relatedness (Baumeister and Leary 1995) refers to the experience of reciprocal care and concern for important others[9].

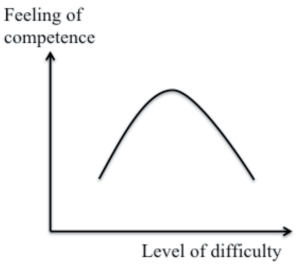
[7] E.g. by providing the amount of choice desired by the person being socialized, offering a meaningful and realistic rationale when choice is constrained, and trying to understand the other's perspective.

[8] E.g. controlling language or punishments, or more subtle techniques of manipulation, including conditional regard (Assor, Roth, and Deci 2004), guilt induction (Vansteenkiste et al. 2005), and shaming (Soenens and Vansteenkiste 2011).

[9] "Interpersonal support, as described within the socialization literature (Davidov and Grusec 2006), is provided through warmth (or the ability to amicably connect with others and to partake in mutually enjoyable activities) and responsiveness to distress (or the ability to empathize with and respond to others' unpleasant feelings in a way that provides solace and comfort). The importance of interpersonal support has been highlighted by such theories as attachment theory (Bowlby 1988) and acceptance–rejection theory (Rohner 2004). According to SDT, interpersonal support is necessary for the satisfaction of the need for relatedness, as it fosters a sense of connectedness, love, and understanding within relationships" (Vansteenkiste, Niemiec, and Soenens 2010).

In general, the basic need for feeling of autonomy is a function of perceived locus of causality (PLOC) (Ryan and Connell 1989; Ryan and Deci 2000), such that an *internal* PLOC corresponds to a high feeling of autonomy, while an *external* PLOC corresponds to a low feeling of autonomy. External PLOC is also referred to as *controlled* motivation, while internal PLOC corresponds to *autonomous* motivation (Gagné and Deci 2005; Deci and Ryan 1987). The feeling of autonomy is supported when individuals feel free to make their own choices and actions, and particularly when there are no consequences for their behaviour, good or bad. On the other hand, individuals feel controlled when they feel being evaluated, watched, or told what or how to do something. Any external influence controlling behaviour will have this effect. "More specifically, SDT postulates that when people experience satisfaction of the needs for relatedness and competence with respect to a behaviour, they will tend to internalize its value and regulation, but the degree of satisfaction of the need for autonomy is what distinguishes whether identification or integration (autonomous motivation / internal PLOC), rather than just introjection (controlled motivation / external PLOC), will occur" (Gagné and Deci 2005).

Where the feeling of autonomy is a rather simple relationship, competence is more complex because of at least two conditions. First, competence relies on not just one variable but two: namely, level of difficulty and structure. Second, the feeling of competence is an inverse U function of (perceived) difficulty, inasmuch as a task perceived to be (too) easy does not make an individual feel competent (anyone can do it), while on the other hand, a task that is too difficult does not support the feeling of competence either, because it makes the



person feel failure. The level of difficulty of a task that best supports the feeling of competence is hence a challenge that is ambitious to pursue, but possible to achieve. This inverse U relationship is illustrated by the graph. Feeling of competence is a positive function of structure. Structure stems from coordination, clarity, and support, and the better the structure is around a task, the better it supports the feeling of competence. Obviously, structure, being an external factor, can have a negative effect on the feeling of autonomy, which is why these two needs can be argued to go against each other. To support autonomy, structure should not be perceived as controlling.

The feeling of social connections is not discussed as substantially as the other two basic needs, and it was also the last of the basic needs to be recognized (Baumeister and Leary 1995). The feeling of relatedness is supported when individuals feel socially included rather than excluded. It is a type of social structure, and potentially any process or event can be relatedness-supportive irrespective of the type of process or event. It can be argued that whereas the feeling of competence is activated by formal structures, the feeling of relatedness is activated by informal structures. The interpersonal support context, being an external factor (as structure is), will also have an effect on autonomy, which is why it must be brought along in a non-controlling manner in order not to undermine the feeling of autonomy.

Understanding why certain external events might undermine IM goes via the basic needs. Applying the concept of mechanisms to basic needs, aims at bridging an individual in the context of an external event, and the incremental effect on IM the individual feels after the event has occurred. In other words, the concept of

mechanism is used to frame the identification (*recognize*) of the basic needs (*causal patterns*) that are affected during external events (*triggered under generally unknown conditions*) in order to understand the indeterminate impact on IM (*indeterminate consequences*). The effect on feeling of autonomy is mostly one-dimensional, and the direction thus easy to determine. Further, the five types of external influence chosen all have autonomy-undermining characteristics, which makes the isolated effects somewhat obvious. The feeling of competence, on the other hand, is more complex and multidimensional, and thus it is harder to determine how it is affected. Additionally, all five types of external influence have embedded structures, which support competence and hence make the net effect on IM ambiguous. The feeling of relatedness is not depending very much on the type of external regulation but rather on the environment within which the regulation happens. Relatedness will be discussed to the extent it is relevant.

The next section reviews a considerable body of literature on CET and discusses the various effects in the light of the basic needs, in order both to identify the underlying mechanisms affecting intrinsic motivation and to generalize for later analysis of management control.

3. Cognitive Evaluation Theory and the effects of different types of external regulation on intrinsic motivation

In this section the development of Cognitive Evaluation Theory (CET) is described. CET, a sub-theory of SDT, is about the distinction between intrinsic and extrinsic motivation, and in particular how external regulation affects and potentially crowds out intrinsic motivation. Subsection 3.1 traces the development of CET, and subsections 3.2 – 3.5 review the main literature and findings on five

types of external regulation as specified in figure 1, namely: rewards, feedback, choice, surveillance, and goal setting. In each of subsections 3.2 – 3.5, the mechanisms are discussed as summaries of how external regulation affect IM. The section is concluded by subsection 3.6, in which four propositions are developed.

3.1. Development of Cognitive Evaluation Theory

In the early 1970s, the undermining effect from external motivators on intrinsic motivation was relatively unexplored; motivation crowding theory (Frey and Jegen 2001) was only formalized 30 years later. Edward Deci was one of the pioneers in gaining a deeper understanding of motivation through experiments, which eventually led to the Self-Determination Theory (Deci and Ryan 1985). His paper "The Hidden Costs of Rewards" (Deci 1976), based partly on his book (Deci Edward 1975), could very well be considered the first review on manipulating motivation by experiments. Deci outlines the idea of Victor Vroom (1964) that "people engage in behaviours because they expect these behaviours to lead to specific outcomes that they desire", which he also referrers to as Theory X (McGregor 1960) or scientific management (Frederick Winslow Taylor). Following this, Deci discusses a few contributions more aligned with Theory Y, e.g. Meyer (1975) on how pay-per-performance has serious shortcomings because managers do not control intrinsic rewards, and Likert (1961; 1967) on the importance of subordinates' perceived sense of support and personal worth. Finally, Deci describes recent experiments showing how financial rewards (Deci 1971; 1972a; 1972b), threats of punishment (Deci and Cascio 1972), and close supervision (Lepper and Greene 1975) can undermine intrinsic motivation through changed perceived locus of causality. He also describes how positive feedback can enhance, and negative feedback can diminish, intrinsic motivation through internal feelings of competence and self-actualization (Deci 1971). The irreversible effect

of undermining intrinsic motivation by extrinsic motivation is sometimes referred to as the *overjustification effect* (Deci 1971; Lepper, Greene, and Nisbett 1973; Reiss and Sushinsky 1975; Lepper and Greene 1976).

At the same time as Deci did his first experiments, Kruglanski, Friedman, and Zeevi (1971) found "strong support to the experimental hypothesis predicting higher quality of task performance and motivation in the absence (as opposed to presence) of extrinsic incentives." Amabile, DeJong, and Lepper (1976) showed that deadlines also could have a diminishing effect on intrinsic motivation, as did Smith (1976) in regards to external evaluations. Condry (1977) reviewed a considerable number of similar studies, and concludes that "…compared to nonrewarded subjects, subjects offered a task- extrinsic incentive choose easier tasks, are less efficient in using the information available to solve novel problems, and tend to be answer-oriented and more illogical in their problem-solving strategies. They seem to work harder and produce more activity, but the activity is of a lower quality, contains more errors, and is more stereotyped and less creative than the work of comparable non-rewarded subjects working on the same problems. Finally, to return to the point of departure, subjects are less likely to return to a task they at one time considered interesting after being rewarded to do it."

Building on Deci (1975) and Condry (1977), Ryan, Mims, and Koestner (1983) review the literature through this standardized vocabulary and add new literature, of which a few of the most widely cited are mentioned here. Fisher (1978) found that a feeling of personal control over performance and a feeling of competence were both positively related to intrinsic motivation in experiments. Swann and

Pittman (1977) and Harackiewicz (1979) both found a positive effect on intrinsic motivation from positive feedback, and a negative effect from task-contingent rewards, and that these effects were of more or less the same magnitude, thus offsetting each other. Swann and Pitman (1977) also found that choice increased intrinsic motivation with children. Boggiano and Ruple (1979) demonstrated that feedback on perceived competence compared to an absolute standard did not undermine interest (intrinsic motivation), whereas feedback based on a social comparison had an impairing effect on interest. This was true for middle elementary school children, but for preschool children the social comparison did not have an effect. This is in alignment with findings from Enzle and Ross (1978). Deci et al. (1981) showed that competition significantly lowered intrinsic motivation, and that this effect was strongest within the group of females. Finally, Ryan (1982) found that controlling feedback undermined intrinsic motivation relative to informational feedback, and that ego-involvement likewise undermined intrinsic motivation.

Ryan et al (1983) offers two main conclusions based on their integration study. First, task-contingent rewards can have an undermining effect on intrinsic motivation where task-non-contingent rewards do not have the same undermining effect. And second, performance-contingent rewards can either increase intrinsic motivation with respect to no-feedback/no-reward controls when informationally administered, or decrease intrinsic motivation when administered controllingly. In either case, performance-contingent rewards, like all other rewards, tend to lower intrinsic motivation relative to no rewards if there is identical feedback within the same interpersonal context. For a comprehensive summary of the first 15 years of research on the interplay between extrinsic and intrinsic motivation, see Deci and Ryan (1985).

3.2. The effects of rewards and feedback on intrinsic motivation

Following Deci and Ryan's establishment of the Self-Determination Theory (1985), much research was done on the topic, not necessarily directly disagreeing with Deci and Ryan but with moderating conclusions. Rummel and Feinberg (1988) found that "within strictly defined parameters the phenomenon defined by Deci exists", although calling for "closer supervision of the operationalization of variables based on the theoretical framework". Dickinson (1989) reviews Lepper's overjustification hypothesis (1981) and Deci's motivational theory (Deci and Ryan 1985), and concludes that the effect from extrinsic rewards on intrinsic motivation is "transient and not likely to occur at all if extrinsic rewards are reinforcing, non-competitive, based on reasonable performance standards and delivered repetitively." Wiersma (1992) shows with his meta-analysis that the overjustification effect is only justified "when intrinsic motivation is operationalized as task behaviour during a free-time measure", contrasting task performance measures and indicating that intrinsic and extrinsic rewards are additive. Tang and Hall (1995) also do a meta-analysis on the overjustification effect, and are in general supportive, although they do find some discrepancies in situations where there theoretically should be none, like non-contingent and unexpected rewards. Eisenberger and Cameron (1996) argue, based mainly on Cameron and Pierce (1994), that the "negative effects of rewards on task interest and creativity have attained the status of myth, taken for granted despite considerable evidence that the conditions producing these effects are limited and easily remedied". They further argue that the only detrimental effect is observed when intrinsic motivation is measured as free time spent on the task without consideration of output quantity. Jenkins et al. (1998) find a positive relationship between incentives and quantity, thus indirectly contributing to the discussion on intrinsic motivation.

In the most comprehensive[10] meta-analysis to date, Deci, Ryan, and Koestner (1999a) refer to "the four previous meta-analyses". They summarize that "there appears to be consistency … with only the Eisenberger and Cameron (1996) and Cameron and Pierce (1994) meta-analyses reporting different conclusions". In summary, they note, "in general tangible rewards had a significant negative effect on intrinsic motivation for interesting tasks." Verbal rewards (positive feedback) were found to have significantly positive effects and non-expected and non-task-contingent tangible rewards were found not to undermine intrinsic motivation, in alignment with motivational and attribution theories (1999a). Lepper, Henderlong, and Gingras (1999) find that the literature has been more correctly captured by Deci et al. (1999a) than by Cameron and Pierce (1994). Eisenberger, Pierce, and Cameron (1999) respond to Deci et al. (1999a), by making a new meta-analysis, and once again question the undermining effect on intrinsic motivation from rewards and CET, suggesting "General Interest Theory" as a new theoretical approach to understanding the effects. Finally, Deci et al. (1999b) argue that Eisenberger et al. (1999) confused locus of control with locus of causality and that their new meta-analysis, concerning performance-contingent rewards, is flawed in the same ways similar to their three previous ones. They conclude that "it is finally clear that the 'accepted reality' of the undermining effect is in fact a reality after all and that CET remains the most viable account yet offered for the complex set of results" (p.699). For an overview of the specific effects, see Table 1.

Soon thereafter, two more meta-analyses were published in 2001. Deci, Koestner, and Ryan (2001) conclude, based on their meta-analysis from 1999, that instead of tangibly rewarding schoolchildren for reading and learning (and thus undermining

[10] Deci et al. use 128 studies (including unpublished dissertations) in their meta-analysis, compared to 45, 20, 50, and 34 in the previous four, and lay forward several conclusions in line with their own and others' previous findings starting with Deci (1971), formalized by Deci and Ryan (1980, 1985) in their cognitive evolution theory (CET).

intrinsic motivation), more focus should be put on "developing interesting learning activities, to provide more choice, and to ensure that tasks are optimally challenging" (and thus facilitating intrinsic motivation). Cameron, Banko, and Pierce (2001), on the other hand, claim to find no effects and positive effects in scenarios where Deci et al. (1999a; 1999b) found negative effects, arguably because Deci et al. collapsed different types of rewards[11]. Finally the 10th meta-analysis on the topic is mostly in line with Deci et al.'s (1999a) by finding that incentives alone have little impact on intrinsic motivation, but that incentive contingencies have a strong impact. Controlling (direct salient) incentives are undermining, while less controlling (indirect salient) incentives have a positive effect on intrinsic motivation (Cerasoli, Nicklin, and Ford 2014).

Expected task-contingent tangible rewards thwart autonomy by shifting PLOC from internal to external. Expected non-contingent rewards (or feedback) and non-expected rewards (or feedback) do not affect the feeling of autonomy because the task is independent of the reward (or feedback) or carried out before it is announced. If non-expected rewards get too frequent, expectations might build up. On the other hand, expected task-contingent tangible rewards can be supportive for the feeling of competence if given as a type of positive feedback, as a complement to positive feedback to support the argument, and/or in a clear and structured way in relation to targets and learning for future mastery. In these cases, the reward confirms competence; and in the latter case, it structures accomplishment of the task and future competence.

[11] With regard to performance-contingent rewards, for example, whereas Deci et al. find a negative effect, Cameron et al. find that this category includes rewards offered for each unit solved, rewards offered for doing well, rewards offered for surpassing a score, and rewards offered for exceeding others. On the last two (surpassing score & exceeding others), Cameron et al. find no effect respectively positive effect. They also confirmed many negative effects (see Appendix C for a graphical comparison). Cameron et al. (2001) conclude, based on their findings, that "rewards do not have pervasive negative effects when minor improvements to Deci et al.'s categorization of reward contingencies are made and all available studies are included."

Table 1. Summary of effects from Deci et al. (1999a)

<table>
<tr><th>Measure
Reward type</th><th colspan="2"></th><th>Free-choice behaviour</th><th>Self-reported interest</th></tr>
<tr><td colspan="2">All rewards</td><td>All studies considered, rewards did significantly undermine intrinsic motivation for interesting activities</td><td>All studies considered, rewards did not significantly affect self-reported interest for interesting activities</td></tr>
<tr><td colspan="2">Verbal rewards</td><td>Positive feedback did significantly enhance intrinsic motivation (apply for college students not for children)</td><td>Except for 3 outliers positive feedback significantly enhanced intrinsic motivation (age neutral)</td></tr>
<tr><td colspan="2">Tangible rewards</td><td>When all tangible-rewards studies were considered together, the effect was highly significant in undermining intrinsic motivation – although heterogeneous across expected and unexpected tangible rewards</td><td>The composite showed significant undermining relative to no rewards – not heterogeneous for expected and unexpected tangible rewards but same analysis was conducted for theoretical and parallel research reasons</td></tr>
<tr><td colspan="2">Unexpected tangible rewards</td><td>As predicted these did not show effect on free-choice behaviour</td><td>Did not show effect on self-reported interest</td></tr>
<tr><td colspan="2">Expected tangible rewards</td><td>Significantly undermined intrinsic motivation (moderate effect) – heterogeneous effect undefined (theoretically it could stem from reason for reward)</td><td>Significantly undermined intrinsic motivation – heterogeneous across contingencies</td></tr>
<tr><td colspan="2">Task-noncontingent rewards (E.g. monthly salary)</td><td>No significant effect</td><td>No significant effect</td></tr>
<tr><td rowspan="3">Task-contingent rewards (Hennessey 2000)</td><td>Engagement-contingent rewards (reward for trying)</td><td>Clearly indicate that engagement-contingent rewards undermine intrinsic motivation (stronger effect on children than college students)</td><td>Indicate that engagement-contingent rewards undermine intrinsic motivation</td></tr>
<tr><td>Completion-contingent rewards (reward for completion)</td><td>The results indicate that completion-contingent rewards significantly undermine free-choice behaviour</td><td>Completion-contingent rewards were found to undermine self-reported intrinsic motivation</td></tr>
<tr><td>Performance-contingent rewards (reward for doing well or up to standard)</td><td colspan="2">Two complications with this reward category:

1) Whether or not the control group also got the feedback conveyed by the reward
2) Rewards could convey negative feedback if participants thought that they didn't get the maximum reward</td></tr>
<tr><td colspan="2"></td><td>Overall, performance-contingent rewards had a negative effect on free-choice intrinsic motivation. Ranking the four types starting with the most undermining type:

• Reward a direct function of performance, i.e. high performance high reward and vice versa
• Rewards that were coupled with positive feedback, compared to positive feedback without rewards, showed significantly undermining effects
• Maximum rewards and no feedback, i.e. no negative feedback from not receiving less than maximum
• Reward coupled with negative feedback, since negative feedback undermines sufficiently so there is little left to be affected by the rewards (few studies)</td><td>No significant effect on self-reported intrinsic motivation</td></tr>
</table>

Verbal feedback given in a controlling way impacts autonomy negatively in the same way a task-specific tangible rewards does due to its externalizing function of PLOC. Verbal feedback given in a supportive way does not affect the feeling of autonomy as much because it starts with the individual, and hence has higher degree of internal PLOC. No feedback supports the feeling of autonomy best, because no external influence is present. Positive verbal feedback supports the feeling of competence because it confirms competences. It must be specific to be credible. Negative verbal feedback undermines the feeling of competence because of the opposite mechanism as positive. Constructive and/or supportive feedback (both positive and negative) can add to the feeling of competence through its structuring function.

3.3. The effects of choice on intrinsic motivation

A resent meta-analysis showed that providing choice enhanced intrinsic motivation, effort, task performance, and perceived competence (Patall 2013). And there is broad support for this conclusion. In learning, choice can increase motivation, depth of engagement, the amount learned in a fixed time period, and perceived competence and levels of aspiration (Cordova and Lepper 1996). Choice can enhance performance even when the choices are clearly irrelevant to task difficulty (Murayama et al. 2015) and choice of homework can result in higher intrinsic motivation to do homework, higher perceived competence, and better test scores as a consequence (Patall, Cooper, and Wynn 2010). Choice is a biological need for perceived control (Leotti, Iyengar, and Ochsner 2010), can give an illusion of control with higher confidence as a consequence even with random outcomes (Langer 1975), can make boring tasks more interesting (Patall 2013), and can increase task persistence (Swann and Pittman 1977). Choice can also mediate pay, in the sense that with low choice, high pay decreases intrinsic

motivation, while high choice gives the opposite effect (Folger, Rosenfield, and Hays 1978).

But choice is also complex, and must be offered in the right way. Controlled choice can be ego-depleting, while autonomous choice is not (Moller, Deci, and Ryan 2006). Moreover, despite generating more positive feelings, choice does not necessarily produce more engagement, personal connection to the material, or learning (Flowerday and Shell 2015). Controlling for situational interest can even show negative effects on engagement (Flowerday, Schraw, and Stevens 2004), so if choice is to enhance intrinsic motivation, it needs to be designed in such a way that it increases internal locus and volition (Reeve, Nix, and Hamm 2003). Too much choice can be overwhelming. When presented with 6 choices rather than 24 or 30, people were more likely to purchase, reported greater subsequent satisfaction with their selections, and wrote better essays (Iyengar and Lepper 2000). Finally, choice is culturally based in that Anglo-American children were more intrinsically motivated when making own choices compared to Asian-American children. And the Asian-Americans even showed increased intrinsic motivation when choices were made for them by trusted authority figures or peers (Iyengar and Lepper 1999).

Perceived free choice supports the feeling of autonomy via internal PLOC. Choice with external PLOC (e.g. suggestive or associated with consequences) feels controlling and is thus autonomy-undermining. No choice falls in between the two alternatives, i.e. is more autonomy-supportive than controlling choice but less than free choice. Being able to make an informed choice supports the feeling of competence because the person feels sufficiently competent to solve the challenge

of making the choice. The opposite is true if the person feels unable to make a good choice (e.g. if there are too many options or not sufficient information available). Choice further supports competence if an individual can express preferences through choice and hence structure a process by means of needed support and empowerment.

3.4. The effects of surveillance and evaluation on intrinsic motivation

One of the first research studies on the effect from surveillance on intrinsic motivation was Lepper and Greene's (1975) study showing that monitoring via a television camera, in order to evaluate performance, had undermining effects on children's subsequent interest (intrinsic motivation) in a novel activity of solving a puzzle. In a somewhat similar setup, Plant and Ryan (1985) found support for this finding. Pittman et al. (1980) found that an increased level of personal surveillance linearly decreased intrinsic motivation, despite no clarifying reason for surveillance, which by Enzle and Anderson (1993) was interpreted as a reaction to implicit expectations of evaluation. They set up an experiment where participants were either not under surveillance, under surveillance due to curiosity (non-controlling), or under surveillance for the sake of later evaluation or enforcing rules (controlling). Only controlling surveillance undermined intrinsic motivation, indicating "that it is not surveillance per se that is important, but the belief that the surveillant intends to exercise social control". Subjects being told they would be evaluated subsequently showed less intrinsic motivation even though the evaluations were positive (Harackiewicz, Manderlink, and Sansone 1984), and in learning evaluations have similarly shown detrimental effects on intrinsic motivation (Benware and Deci 1984). Both surveillance and evaluation are integral to social control, limiting self-determination; they thus reduce intrinsic motivation (Deci and Ryan 1987).

Other experimental studies have researched the effect on creativity (intrinsic motivation is prerequisite to creativity) with analogous findings. Amabile et al. (1990) find strong support for expected evaluations to undermine creativity but not technical performance, and some support for surveillance to undermine creativity. Oldham and Cummings (1996) found employees to be most creative when they worked on complex, challenging jobs, and were supervised in a supportive, non-controlling fashion (as opposed to controlling supervision). In a study where the presence of creative co-workers could be high or low, and close supervision also could be high or low, creativity was higher when close supervision was low, and the level of presence of creative co-workers positively moderated this effect (Zhou 2003).

Controlling and perceived evaluative surveillance lowers the feeling of autonomy because it has external PLOC. Supportive supervision supports the basic need for autonomy better because it has (more) internal PLOC. Absence of surveillance or supervision supports autonomy the most due to lack of external influence. Supportive supervision supports the basic need for feeling competent because it helps supporting and structuring a given process while the person is still able to feel trusted. No supervision or surveillance is neutral, while controlling and perceived evaluative surveillance lowers the feeling of competence. The latter because the person does not feel trusted to do the right things, while control and surveillance do not help structuring the process either. Supportive supervision and the presence of co-workers positively support the feeling of relatedness because this feels inclusive.

3.5. The effects of goal setting on intrinsic motivation

A meta-analysis (Rawsthorne and Elliot 1999) concluded that the pursuit of performance goals has a larger undermining effect on intrinsic motivation relative to the pursuit of mastery goals. Positive, competence-confirming feedback (vs. non- or disconfirming) moderated this effect because *ego-involved persistence* (Ryan, Koestner, and Deci 1991) was avoided. Inducing a performance-avoidance orientation vs. a performance approach (Elliot 1997; Elliot and Church 1997; Elliot and Harackiewicz 1996) was also found to have an undermining effect. Some of the important studies leading up to this found, e.g., that students who pursued mastery goals rather than performance goals were more efficient learners and believed that success followed effort (Ames and Archer 1988); that learning goals rather than performance goals promote challenge-seeking and mastery-oriented responses to failure (Elliott and Dweck 1988); that performance goals intrinsically motivated achievement-oriented participants, while those low on achievement orientation were motivated by mastery goals (Harackiewicz and Elliot 1993); that only performance goals grounded in avoidance of failure (performance-avoidance vs. performance-approach) undermine intrinsic motivation (Elliot and Harackiewicz 1996; Elliot 1999); and finally that performance target goals enhance intrinsic motivation relative to mastery target goals in a (higher-order) performance purpose goal context (Harackiewicz and Elliot 1998).

The finding that setting performance goals can outperform mastery goals in enhancing intrinsic motivation challenges conventional wisdom in a way that resembles how rewards have proven effective in enhancing intrinsic motivation in combination with specific target goals. E.g. Grant and Dweck (2003) found that performance goals could boost performance when goals were met, while active

learning goals were more motivating in the face of challenge. Normative goals did not undermine motivation and outcome goals (wanting a good grade) were equally related to learning goals and ability goals. Other research shown that avoidance goals are more damaging than approach goals, and that performance approach goals can be more motivating than mastery approach goals (Elliot and McGregor 2001; Murayama, Elliot, and Yamagata 2011). Other results indicate that mastery goals are more clearly related to adaptive outcomes than performance goals (Wolters 2004), suggesting that performance goals have the potential to be more motivating than mastery goals. Despite these results, suggesting that some types of people become more intrinsically motivated by performance goals than by mastery goals, Vansteenkiste, Lens, and Deci (2006) conclude that intrinsic goal framing is more supportive than extrinsic goal framing for both intrinsically and extrinsically oriented individuals.

Pursuing mastery goals yields a higher degree of internal PLOC (less controlling) than pursuing performance goals because mastery goals are more subjectively rooted and performance goals easier externally evaluated. Consequently, mastery goals support the feeling of autonomy better than performance goals. Not pursuing goals is not perceived as controlling, and is therefore most supportive for the feeling of autonomy of the three alternatives. Clear, specific, and well-coordinated goals (both performance and mastery) support the feeling of competence by structuring goal pursuit. Realistic but hard-to-reach goals support the feeling of competence best because of the inverse U shape between level of difficulty and feeling of competence. In sum, performance goals have the potential to support the feeling of competence better than mastery goals, if they offer better structure through clarity and specificity.

3.6. Generalizing the effect of external regulation on intrinsic motivation

External regulation is most often autonomy-undermining because of its externalizing effect on PLOC. Exceptions are when additional choices are provided, which can be interpreted as the reverse process of choices being subtracted, and hence externalizing PLOC. The more specific the external regulation is focused on an outcome or objective, the more autonomy-undermining it is. This applies directly to task-specific expected rewards, mastery goals vs. performance goals, and controlling vs. supportive choices. Regarding surveillance, which is really about expected evaluation, the specificity of the task under surveillance will be a positively correlated function of the externalizing effect of the surveillance. Feedback works the same way as rewards, which means that they must be expected to have effect. This leads to proposition 1:

> *Proposition 1. Ex ante external regulation is generally autonomy-undermining. The more specific and focused the regulation is, the more autonomy-undermining it is.*

When it comes to the feeling of competence, there are two circumstances involved: the structure provided by external regulation and the level of difficulty of the task at hand. As seen in most cases where external regulation undermines autonomy, it has the potential to have the opposite effect on the feeling of competence via its structuring function. Level of difficulty and competence confirmation turned out to be more of an after-the-fact condition more in line with verbal feedback. This leads to propositions 2 and 3:

Proposition 2. Ex ante external regulation has the potential to provide structure and hence to support the feeling of competence. The more specific and focused the regulation, the more structure it potentially provides.

Proposition 3. Alignment of a task's level of difficulty with actual competences is most supportive for the feeling of competence. Ex post competence confirming external regulation is supportive for the feeling of competence.

The third basic need, feeling of relatedness, is only directly mentioned in the part concerning surveillance, where it is stated that the presence of co-workers positively moderated creativity (which requires intrinsic motivation). Logically, it would seem that the more human interaction a situation provides, the more potential there is for support of the feeling of relatedness. This leads to the final proposition:

Proposition 4. The feeling of relatedness is potentially better supported by more human interaction rather than less.

In what follows, the findings from the review, condensed by the four propositions above, will be applied to two types of management control, namely, budgeting and performance appraisal. Various designs of the two will be evaluated.

4. Understanding the potential effects of MCS design on intrinsic motivation: Illustrated by budgeting

"Budgeting is a near-universal organizational process" adopted by 97% of respondents in the most comprehensive survey available (Merchant and Van der Stede 2012, p.309). Operating budgets are the fastest adopted MCS in start-up companies (Davila and Foster 2007) and the second fastest adopted MCS in product development start-ups after time control (Davila, Foster, and Li 2009). Budgeting must be seen as an integrated part of the total system of organizational control, and must synchronize with its context, including cultural control, in order to function (Flamholtz 1983). Budgets are contingent on size, functional differentiation, and level of automation, and managers have a lower propensity to create slack when actively involved in the budgeting process (Merchant 1984; 1985). Budgets are also used as tools for negotiation, creating upward flow in information (Covaleski and Dirsmith 1983).

"A budget is management's formal quantification of the operations of an organization for a future period" (Zimmerman 2014, p.220). The budgeting process often takes a bottom-up approach (p.224), and also functions as performance measurement and reward systems (p.226). The management cycle in regards to budgeting can, in short, be broken down into four *steps*: Planning, Execution, Reporting, and Reviewing (Needles Belverd 2005, p.896). Hansen and Van der Stede (2004) point to four *purposes* of budgeting and planning: operational planning, performance evaluation, communication of goals, and strategy formation. Merchant and Van der Stede (2012) later updated these purposes to: planning, coordination, facilitating top management oversight, and motivation, which are overlapping in the sense that the latter expresses benefits

while the former expresses functions. “Plans and budgets become targets that affect managers’ motivation because the targets are linked to performance evaluations and, often, various incentives” (Merchant and Van der Stede 2012, p.309) and that “allowing employees to participate and to have influence on the process of setting their performance targets can have several benefits” (p.317).

In the following, four different budgeting design choices are discussed to illustrate the potential mechanisms they can mobilize. The designs are: participative budgeting, line-item budgeting, flexible budgeting, and hard-to-achieve budgeting. Other designs could have been chosen, but these are considered to be representative examples.

4.1. Participative budgeting – bottom-up vs. top-down

Because budgeting serves both decision management and decision control purposes, trade-offs between bottom-up and top-down approaches must be made in the design or change of the budgeting-system. “Bottom-up budgeting, in which the person ultimately being held responsible for meeting the target makes the initial budget forecast, is called *participative budgeting.* Participative budgeting supposedly enhances motivation of the lower-level managers by getting them to accept the targets. Whether budgeting is bottom-up or top-down depends in part on where the knowledge is located” (Zimmerman 2014). Participative budgeting is important in creating improved vertical information flow in general (Parker and Kyj 2006), it increases job satisfaction, motivation, and performance (Chenhall and Brownell 1988; Shields and Shields 1998; Libby 1999), and offers a source of structure and certainty (Marginson and Ogden 2005).

Compared to the top-down approach, participative budgeting has many obvious positive effects on intrinsic motivation by addressing all the basic needs. The feeling of autonomy is better supported because it offers a higher degree of free choice to the lower-level manager, who is empowered to come up with the initial forecast and hence has a higher degree of internal PLOC. The feeling of competence is better supported because it is likely to yield better alignment of actual skills and needed skills in order to achieve the budget targets, as well as better coordination of targets, skills, etc. via improved communication. Participative budgeting is also likely to enhance the feeling of relatedness assuming that the increased interaction takes place in a supportive environment.

The potential downsides are primarily due to possibly undermining the feeling of competence. This is most likely to happen if the empowered person does not possess the needed skills, knowledge, or interest to come up with the initial forecast. In this case the less structured approach can create a feeling of incompetence because of too much uncertainty in the process. Another risk is that the empowered person sets too low targets without management being aware of this because of insufficient or incompetent involvement from management. In this case the targets get too easy and will not support the feeling of competence. The latter type of management involvement is also likely to have a negative effect on the feeling of relatedness. In summary, participative budgeting is likely to have a positive impact on intrinsic motivation, assuming sufficient skills, knowledge, and interest on the part of both the empowered person and management.

4.2. Line-item budgeting

"*Line-item budgets* refer to budgets that authorize the manager to spend only up to the specific amount on each line item". Line-item budgets reduce agency problems because managers cannot reduce spending on one item and divert the savings to items that enhance their own welfare. Line-item budgets provide an extreme form of control in that the manager does not have the decision right to substitute resources among line items as circumstances change, which needs approval from a higher level in the organization. Line-item budgets are quite prevalent in governments, as well as in some other organizations, although typically with fewer restrictions (Zimmerman 2014). In a survey of 120 traded companies, it was found that among units reporting directly to the CEO, 23% could not substitute among line items, 24% could substitute if they received authorization, 26% could substitute within specified limits, and the remaining 27% could substitute in order to improve the unit's financial objectives. This indicates that line-item budgets are prevalent even at fairly high levels in for-profit organizations (Christie, Joye, and Watts 2003).

As stated above, line-item budgeting provides an extreme form of control in that it removes decision power from the person managing the budget. Increased control is undermining for the feeling of autonomy because of external PLOC. In the same manner, this increased control also takes away the manager's opportunity to show good judgement and make the right decisions, which is likely to be perceived as low trust from top management and hence undermine the feeling of competence. In addition, the feeling of relatedness is likely to be lowered if the line item setup substitutes for discussion and negotiation on the budget, meaning less interaction. As always, there are also potential contrary effects on the feeling of competence. In this case increased structure can support the feeling of competence better than a

non-line-item setup. This is most likely to happen if the person in charge of the budget has low skills, knowledge, and/or interest in the area, and thus needs support in the allocation of funds in order to not spend them in an unwise way. In conclusion, line-item budgeting is likely to lower intrinsic motivation via all three basic needs, assuming that the manager perceives him- or herself to be sufficiently competent.

4.3. Flexible budgeting

A flexible budget is stated as a function of some volume measure and is adjusted for changes in volume. Flexible budgets are better than static budgets for gauging the actual performance of a person or venture *after controlling for volume effect* – assuming the person or venture is not responsible for the volume changes. Each line item in the budget is stated in terms of how it varies with volume and is prepared at different volume levels. Flexible budgets should obviously be used when the manager's decisions has a direct impact on volumes. A little less obvious, but nevertheless important, is the usage of flexible budgets when the manager's actions influence the effects of volume changes, e.g., by reducing the holding of perishable inventories during economic downturns (Zimmerman 2014). Of 219 publicly traded U.S. firms, 48% use flexible budgets for manufacturing costs, but only 27% use flexible budgets for distribution, marketing, R&D, or general and administrative expenses (Cress and Pettijohn 1985).

Flexible budgeting most probably increases intrinsic motivation via all three basic needs. Volume, being an external factor beyond the control of the responsible manager, will add to the feeling of being controlled, and accordingly will contribute to a higher degree of external PLOC than not having to account for this

factor. Similarly, not having one's results polluted by factors outside one's abilities makes these results better aligned with targets that better indicate actual achievements. Not only does it provide better basis for feedback, but it also provides better structure moving forward, because the individual is more aware of actual expectations. Relatedness is not likely to be effected largely although there is an opportunity for supportive interaction when (or if) the budget is updated with new volume numbers. In conclusion, flexible budgeting is probably impacts intrinsic motivation positively via all three basic needs without any obvious opposite effects on intrinsic motivation.

4.4. Hard-to-achieve budgeting

Difficulty measured by probability of reaching set goals has motivational impact. A field study of 54 profit centres in 12 corporations found that budget targets were set to be achieved on average eight or nine years out of ten, and that when combined with other control system elements, this could even lead to improved motivation (among many advantages). This is in contradiction to most textbooks and research literature that recommend "tight but achievable" budget targets[12] (Merchant and Manzoni 1989). Goal-setting theory (Locke and Latham 1990; 2002) suggests that "specific, high (hard) goals lead to a higher level of task performance than do easy goals or vague, abstract goals such as the exhortation 'do one's best'. So long as a person is committed to the goal, has the requisite ability to attain it, and does not have conflicting goals, there is a positive, linear relationship between goal difficulty and task performance." The authors point at four mechanisms or mediators, of which one is that "goals may simply motivate one to use one's existing ability, may automatically 'pull' stored task-relevant

[12] Most authors describe this to be less than 50% (e.g. Horngren and Foster (1987), Horngren and Sundem (1987), Otley (1987), Hopwood (1974), Shillinglaw (1982), and Dunbar (1971)), while only few recommend 50% or higher (e.g. Anthony (1985) and Welch et al. (1988)).

knowledge into awareness, and/or may motivate people to search for new knowledge. The latter is most common when people are confronted by new, complex tasks. As we will show, such searches may or may not be successful" (Locke and Latham 2006).

"This theory, which has received substantial empirical support, is an example of the theories that do not differentiate kinds of motivation. Thus, characteristics of goals (e.g., their difficulty) are used to predict work outcomes, but no attention is given to the fact that different goal contents and different types of regulation of goal pursuits lead to different qualities of performance (Sheldon and Elliot 1999; Sheldon et al. 2004). Furthermore, Locke and Latham do not differentiate the concept of performance in order to examine differences between the types of goals and regulations that predict algorithmic versus heuristic performance. In contrast, SDT proposes that autonomous motivation and intrinsic goals are better predictors of effective performance on heuristic tasks (Vansteenkiste et al. 2004), whereas the two types of motivation do not differ in predicting effective algorithmic performance, particularly over the long term (McGraw 1978). Thus, SDT maintains that differentiating motivation and goals provides an integrated means of relating characteristics of tasks and interpersonal environments, as well as individual differences, to types of performance and well-being" (Gagné and Deci 2005).

As stated in above quote, goal setting theory and hard-to-achieve goals might have positive motivational effects on performance that do not necessarily translate to greater motivation. This increased performance is likely to be extrinsically motivated rather than intrinsically motivated. First, hard-to-achieve targets have a

controlling effect on one's effort, externalizing the PLOC and thus undermining the feeling of autonomy. Second, since the goals are only reached rarely, it is likely to generate a feeling of failure. One could argue that this should not be the case because the responsible manager is aware that targets are hard to reach. This argument seems flawed, however, since the motivational effect on performance emerges from the exact same feeling of pressure that produces the feeling of failure. And since the pressure has an effect on performance in that people will work harder towards the target to try to reach it, they will automatically feel some kind of failure when not reaching it, even when realizing this early on. If individuals did not believe ex ante that they could reach the target, they probably would not work very hard towards it – meaning that since they *are* working harder, then they do believe they can reach it. Not reaching it is thus likely to create a feeling of failure ex post, because one did not live up to one's perceived potential. That being said, there are some structuring forces in place that enhance the feeling of competence. Clear, focused, well communicated and well defined targets, along with frequent feedback, support the feeling of competence, and are also likely, if carried out in a supportive way, to support the feeling of relatedness. Since the interaction is very target-focused, however, there is a danger that the feeling of pressure will undermine the feeling of relatedness. In conclusion, hard-to-achieve budgeting is likely to impact intrinsic motivation negatively, mainly because of external PLOC and a high risk of feeling failure undermining both feelings of autonomy and competence.

4.5. Budgeting summarized

Table 2 below summarizes the main results from the above discussion of the effects on intrinsic motivation via basic needs from the four different types of budgeting. These effects are called "basic needs mechanisms" because they are

potential effects without being certain. As the discussion has revealed, for most budgeting types the net effect can go both ways, depending on the exact conditions. The effects are by no means to be regarded as true or false, but merely as an illustration of some of the potential effects and mechanisms in play.

Table 2. Most likely (potential) basic needs mechanisms and budgeting types

Basic need / Type	Feeling of autonomy	Feeling of competence	Feeling of relatedness
Participative vs. Top-down	↑ Compared to top-down, the participative approach offers a higher degree of free choice and hence a higher degree of internal PLOC	↑ Participative budgeting is likely to give better alignment of actual skills and needed skills to fulfil the budget, which support the feeling of competence (potential downside if management is not sufficiently involved) ↑ Potentially better coordination via communication regarding targets, skills, etc. ↓ Less structure is potentially unsupportive for the feeling of competence. This is most likely applicable for people with low knowledge or interest in the area ↓ If the person empowered sets too low targets without sufficient or competent management involvement, it is potentially unsupportive for the feeling of competence because of the "too easy" problem	↑ Increased (supportive) involvement is likely to support the feeling of relatedness
Line-item* vs. Non line-item	↓ Increased control undermines the feeling of autonomy via external PLOC	↓ Line-item budgeting removes (some) personal judgement of the best way of allocating funds, which undermines the perceived trust (from management) in one's ability to make sound decisions ↑ High degree of structure is potentially supportive for the feeling of competence. This is most likely applicable for people with low knowledge or interest in the area	↓ Likely to lower the feeling of inclusion and hence relatedness, because line-items might be perceived as an alternative to personal interaction via discussion and negotiation
Flexible vs. Static	↑ Isolating for external factors beyond the person's control support the feeling of autonomy, because less external influence leads to higher degree of internal PLOC	↑ Flexible budgeting is likely to increase the feeling of competence because targets and measures are within one's own control and feedback is related to own achievements. Also, provides better structures for expectations	(↑) The interaction in connection with updating the budget might potentially bring positive support for the feeling of relatedness, but the effect is probably small

Hard-to-achieve **vs.** **Achievable**	↓ Goal setting externalizes PLOC leading to undermining of the feeling of autonomy	↓ Hard-to-achieve goals are likely to undermine the feeling of competence because not reaching goals make one feel failure ↑ Clear, focused, well communicated and well defined targets combined with frequent feedback function as structure and hence support the feeling of competence	↑ Frequent interaction in connection with feedback is supportive for feeling of relatedness ↓ Feeling of external pressure might be unsupportive for the feeling of relatedness

* Assumed non-negotiable

As stated in the introduction, budgeting is a very frequently used management control system. Performance appraisal is less widely used, but it is nonetheless important for this discussion of intrinsic motivation because it adds to the human side that budgeting might seem to neglect, and thus has the potential to add positively to the impact on intrinsic motivation. The next section analyses three types of performance appraisals in a manner similar to the above discussion of budgeting.

5. Understanding the potential effects of MCS design on intrinsic motivation:

Illustrated by performance appraisal

Performance Appraisal (PA) Systems are "formal methods of planning and evaluating employee performance that involve employee interviewing (typically annually) to discuss work goals or behavioural standards and the individual's achievement in terms of them. In goal-based systems, new goals can then be agreed for the next year or period." Besides performance planning and feedback, PA systems are also used as inputs to decisions about pay, promotions, and employee development (Boxall and Purcell 2011, p.216). There are three main methods to collect data, which are objective production, personnel, and

judgemental evaluation[13] (Muchinsky 2012). Judgemental (rated) evaluations are the most commonly applied with a large variety of evaluation methods. Typically, the PA process involves a combination of self-assessment, peer assessment, and manager assessment, in that order, to mitigate conflicts and facilitate communication (Muchinsky 2012).

Although good intentions, a huge variety in the interview approach along with several biases has been identified, leading to e.g. potentially under-recognized high performers and over-recognized low performers (Boxall and Purcell 2011, p.217). A similar point is made by Murphy and Cleveland (1995), who suggest treating PA as a communication and social process, for the purpose of "identifying what the rater is trying to convey to the organization", instead of a measurement process. They recommended applying a four-component model for research and practice in appraisal. First, Rating Context: "an understanding of the rating content … may enhance the implementation, utilization, or change of PA systems." Second and third, Performance Judgment and Performance Rating: "judgments represent private evaluations; ratings represent public statements about ratees' performance." And finally, Evaluation: "how organizations should evaluate the information that is communicated to them by raters."

The following three sections discuss judgemental vs. objective assessment, self vs. manager assessment, and Feedforward vs. feedback interviewing. Section 6.4 summarizes the main effects identified on intrinsic motivation from PA.

[13] Or simply objective and rated performance (Hunter and Hitt 2000)

5.1. Judgemental vs. objective performance assessment

The *objective* assessment consists of measures such as sales figures, production numbers, the electronic performance monitoring of data entry workers, etc. Although dealing with unambiguous criteria, these measures are usually incomplete because of criteria contamination and criteria deficiency[14], resulting in reduced validity of the measure. Regardless of such shortcomings, objective measures are relevant and important in the PA process (Muchinsky 2006). *Judgemental*[15] assessment relies on the rater (self, peer, or manager), and is thus subject to human biases and errors. Because of biases and errors an essential element is rater training, i.e. the "process of education raters to make more accurate assessments of performance, typically achieved by reducing the frequency of halo, leniency, and central-tendency errors". The main methods used in judgemental PA are: First, Graphic Rating Scales, where subordinates are rated typically on a 5 or 7-point scale. This is the most common method. Second, Employee Comparison Methods, which is best in large organizations and can be used to identify and dismiss the lowest 10%. Last, Behavioural Checklist and Scales, where managers keep a record of behaviour perceived relevant to job performance (Muchinsky 2012).

Objective measures share many resemblances with budgeting information, and can obviously also be actual budget figures. These are already dealt with in previous section, which is why the focus here is on how the use of subjective assessment impacts intrinsic motivation. Because judgemental or subjective assessment can be personalized and tailored to the individual employee, the potential to make this individual feel more at the centre of discussion than with objective measures is

[14] Criteria contamination refers to the part of the actual criteria that is unrelated to the conceptual criteria, i.e. outside the employee's control. Criteria deficiency refers to the part of the conceptual criteria not measured by the actual criteria, e.g. quantity does not necessarily determine quality.
[15] Also labeled subjective and managers' assessment (Moers 2005, 2006, Bol and Smith 2011, Bol 2011)

high. Objective measures will probably feel more controlling because they apply to all and are standardized. Because of the internal PLOC, this is thus supportive of the feeling of autonomy. What is more, the feeling of competence is also likely to be well-supported by this approach because the personalized feedback can potentially better pinpoint things that have been done well, while at the same time giving constructive feedback on the things that can be done better in the future, which provides structure for future learning and mastery. Finally, the same argument more or less applies to the feeling of relatedness, because a focus on the individual is likely to make him or her feel more special, included, and important. The risks concerning judgemental assessment relate to the training of the rater. Without proper education, subjective feedback might come across as vague and unclear, which can produce the opposite effect and undermine the feeling of competence because the employee does not understand what he or she has done wrong – nor how to correct it. And subjective feedback that is critical might come across as negative personal criticism, which possibly will make the employee feel alienated. In conclusion, judgemental rating has a strong potential to support intrinsic motivation through all three basic needs because of the personalized approach. This requires, however, that the rater has the proper education; if not, the impact on intrinsic motivation might very well go the other way and undermine it.

5.2. Self-assessment vs. manager-assessment

While assessment can be performed along reporting relationships (usually top-down), net assessment can include peer and self-assessment. Peer assessment is defined as assessment performed by colleagues along both horizontal (similar function) and vertical (different function) relationships. Self-assessment is when individuals evaluate themselves. In general, an optimal PA process involves a

combination of multiple assessment modalities. One common recommendation is that assessment flows from self-assessment, to peer-assessment, to management assessment – in that order. Starting with self-assessment facilitates avoidance of conflict. Peer feedback ensures peer accountability, which may yield better results than accountability to management. Management assessment comes last for need of recognition by authority and avoidance of conflict in case of disagreements. It is generally recommended that PA be done in shorter cycles to avoid high-stakes discussions, as is usually the case in long-cycle appraisals (Muchinsky 2012).

This discussion assumes that self-assessment serves as a complement to manager assessment, not as a substitute. In its support of all three basic needs, a combination of self-assessment and manager assessment is very likely to better enhance intrinsic motivation than can manager assessment alone. When self-assessment is added to manager assessment, the feeling of autonomy is supported because letting the individual voice his or her personal opinion at the outset internalizes the PLOC, as opposed to the case where an external person is giving an opinion. And because the employee can focus on individual issues, both positive and negative, the opportunity for providing personalized structures supporting this is good. The employee also has the chance to focus on and emphasize his or her own strengths, which is further likely to add to the feeling of competence. Lastly, starting with the employee can make him or her feel included in the process and appreciated as someone who has something to bring to the table, furthermore supporting competence. Only in extreme cases, I believe, can self-assessment undermine intrinsic motivation. This might be in cases where the employee is especially insecure and does not like to take initiative; this could then undermine the feeling of autonomy, because the person feels pressure to do so anyway. Another case could be where the manager strongly disagrees with the

employee's point of view, and uses the initial input to air this disagreement. This will most likely detract from the feeling of competence and – when done in a confrontational manner – also from the feeling of relatedness. As mentioned, these are considered extreme cases, and with a minimum of education (much less than is required for judgemental assessment) they should be possible to avoid. In conclusion, self-assessment as a complement to manager-assessment is deemed very likely to support intrinsic motivation well through all three basic needs because of its personalized starting point.

5.3. Feedforward interview for performance management

Budworth et al. (2015) shows how job performance is improved by applying a feedforward interview (FFI) to the traditional PA interview. "The FFI is intended to enhance performance and improve manager-subordinate collaboration by focusing on the positive aspects of employee experiences instead of focusing on what is "wrong" (Kluger and Nir 2010)." The FFI focuses on success stories from employees seeking to create the same facilitating conditions for success in the future by developing a knowledge base of best practices through dialogue between a manager and a subordinate. "The FFI is based on the theory of appreciative inquiry. The foundations of appreciative inquiry can be found in social constructivism (Berger & Luckmann, 1966). The concept has been explored as part of the positive psychology movement (Seligman et al. 2005). The basic premise of this theory is that dialogues that focus on strengths, successes, and values are transformational, and thus facilitate a productive change in behaviour (Whitney and Trosten-Bloom 2003). At the core of appreciative inquiry is the notion that eliciting stories of success can assist in the identification of conditions that could support future high performance. Appreciative inquiry has been applied to a variety of contexts, including developing leadership capacity in organizations

(Bushe and Kassam 2005) and improving personal relationships (Kelm 2005). Kluger and Nir (2010) have applied appreciative inquiry to the performance management process by developing the feedforward interview methodology" (Budworth, Latham, and Manroop 2015).

FFI is likely to support intrinsic motivation through all basic needs. Focusing on the individual contributes to internal PLOC, and focusing on strengths and structure supports the feeling of competence. Finally, positive communication is designed to support the feeling of relatedness. This method seems to be designed for the purpose of intrinsic motivation.

5.4. Performance appraisal summarized

Table 3 below summarizes the above discussion of how different designs of performance appraisal systems effect intrinsic motivation, and points to some of the most important and likely contributing mechanisms.

Table 3. Most likely (potential) basic needs mechanisms and PA types

Basic need / Type	Feeling of autonomy	Feeling of competence	Feeling of relatedness
Judgemental vs. Objective	↑ Judgemental assessment has the potential to provide personalized feedback tailored to the individual's personality, better than objective measures have, and thus has a higher degree of internal PLOC, supporting the basic need for feeling of autonomy	↑ Because judgemental assessment provides personalized feedback, it has the potential to support the feeling of competence via rater's choice of specific supportive feedback. The same argument goes for structure. ↓ If the rater is not properly educated, the feedback can become vague and unclear and thus give the opposite effect	↑ The personal form, as opposed to objective benchmarks, is likely to be supportive for the feeling of relatedness ↓ If feedback is subjective, critical, and unclear, it can easily appear as personal criticism, which is likely to undermine the feeling of relatedness. Again the rater's education is important
Self vs. Manager	↑ Self-assessment as a complement (not substitute) to manager assessment adds an element of feedback starting with the individual, which has internal PLOC and thus will add to the feeling of autonomy	↑ Self-assessment as a complement (not substitute) to manager assessment adds the opportunity for personalized feedback addressing the exact points the employee has, which is likely to support competence via the structuring features. Further, that the employee can emphasise his/her own strong sides and successes is also likely to add to the feeling of competence	↑ Self-assessment as a complement is likely to add to the feeling of relatedness because the employee feels included in the process and appreciated as someone who has something to bring to the table
Feedforward Interview vs. Feedback	↑ FFI takes point of departure in the employee resulting in internal PLOC supportive for the feeling of autonomy	↑ Feeling of competence is supported through focus on success both in the past and as structure for the future	↑ The positive communication supports the feeling of relatedness

Reading the discussions on PA and looking at the table makes it clear that many PA designs are likely to support intrinsic motivation through most or all three basic needs. Personalization is the critical component of this, and should be an important preliminary conclusion to the discussion on how some examples of management control systems affect intrinsic motivation. What follows is a more general discussion and conclusion.

6. Discussion

Management control and any other external regulation have motivational effects. Motivation is the energy for action and what makes people to act. We now know that motivation is not unitary, but that there are different types of motivation that function differently. Extrinsic motivation works best for productivity, while intrinsic motivation, on the other hand, better drives behaviour characterized by a low level of routine and a high level of cognitive complexity, e.g., in learning, creative, and innovative environments. In addition, job happiness is obviously related to intrinsic motivation. In many ways, the distinction between extrinsic and intrinsic motivation can be seen as parallel to the comparison between efficiency and effectiveness, because extrinsic motivation makes people work faster and hence more efficiently, while intrinsic motivation makes people better at making complex decisions, which is more in line with effectiveness. And equivalently, single-loop learning relates to extrinsic motivation because the task is well defined, while double-loop learning relates more closely to intrinsic motivation because of the embedded complexity.

We now know much more about intrinsic motivation, *the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn* (Ryan and Deci 2004). Intrinsic motivation is not (just) an input to this tendency and ability to stretch oneself, but more importantly, it is also a function of three distinct basic needs, the feeling of autonomy, the feeling of competence, and the feeling of relatedness. To understand intrinsic motivation, we need to understand these needs – at one and the same time independent, yet entangled by the external environment, influencing them all three simultaneously. Autonomy is best supported by freedom, which in most instances means less structure rather than more. Competence and relatedness, on the other hand, are

best supported by formal and social structures. In short, to support all three basic needs and thus intrinsic motivation, the process in question must take its point of departure in the individual to create an internal PLOC, and structures – formal and social – should support this. Examples of budgeting processes potentially supporting all three needs are flexible and participative, and with regard to Performance Appraisals (PA), judgemental assessment, self-assessment, and feedforward interviews (FFI) are all methods capable of supporting all three needs.

The idea of mechanisms, *frequently occurring and easily recognizable causal patterns that are triggered under generally unknown conditions or with indeterminate consequences* (Elster 2007; 2015), were applied in order to *explain* the motivational effects from management control on intrinsic motivation. There are often several mechanisms involved with each design choice in regard to budgeting as well as PA; it is then an empirical question which of them will be activated. The unknown conditions are the external influences via management control, while the easily recognizable patterns are the effects on the basic needs, which might or might not lead to certain intrinsic motivation consequences. In other words, when we recognize a pattern of influence from external regulation to basic need consequence it is easy to understand how this came about, but in general we cannot predict these effects, merely explain them when they occur. However, understanding *how* these mechanisms might function does help us to predict obvious motivation effects from management control systems and to facilitate avoidance of these in developing new systems – if more intrinsic motivation is the objective. Examples of obvious negative intrinsic motivation effects could be if top management introduces line-item budgeting for an independent department doing research, or hard-to-achieve budget control. One is

meant for tight control, and the other is meant for extrinsic motivation – but neither are meant for explorative behaviour, which requires intrinsic motivation.

The application of basic needs and intrinsic motivation to two distinct management control systems gave some interesting results. First, we saw that the two types of motivation, extrinsic and intrinsic, mostly work in opposite directions when it comes to goals, rewards, and monitoring (surveillance). Secondly we saw that the net effect on intrinsic motivation from external regulation depends on the magnitude of effects on particularly two needs – in particular, autonomy and competence. Intrinsic motivation seems to be an additive or multiplicative function of the basic needs, meaning that if one increases and another decreases, the net effect can go both ways. This is probably not completely true for very low values, but taking non-radical changes in consideration there will certainly be a trade-off. In order to understand the effect on intrinsic motivation from management control, and any other external regulation, we need to ask ourselves in principle a few simple questions in reference to the three basic needs. Is the PLOC internal or external? Is communication clear, are processes well structured, and support adequate? Is the level of difficulty aligned with actual competences? Is the process welcoming and socially including, or is it functional and socially excluding? Finally, what is the direction and magnitude of each of the effects? The last question is the hardest one, and relies heavily on experience and realization and understanding of the involved mechanisms.

One concrete example of where it is absolutely critical to get the right management control systems for intrinsic motivation in place is in creative and innovative environments. Creativity is the production of novel ideas, while

innovation is the successful implementation of creative ideas (Amabile et al. 1996). Creativity is the function of three variables, which are the individual ability to think creatively, expertise – technical, procedural, and intellectual knowledge – and intrinsic motivation (Amabile 2006). Creative thinking skills and expertise lie within the individual's boundaries, but intrinsic motivation, as we have seen, is the function of external influence from e.g. management control systems. Imagine a consultancy not giving their employees bonuses linked to performance – tangible task-specific rewards. Performance would drop, and the good people would leave. Now imagine an architecture firm giving their employees the same type of bonus – the most creative ideas get the highest bonuses. Of course, the most creative people would get the biggest bonuses, but the whole firm would become less creative because the Perceived Locus of Causality would shift from internal to external, resulting in controlled motivation, which is not supportive of intrinsic motivation, and hence will not support the creativity that a great architecture firm requires.

7. Conclusion

This paper has shown how different design choices related to two types of management control systems (budgeting and PA) have multiple effects on intrinsic motivation. Via a review of the psychology literature and the three basic needs – feeling of autonomy, competence, and relatedness – we saw how external regulation comparable to what management control (systems) can generate have very different effects on intrinsic motivation, depending on how the various basic needs were affected. To support all three basic needs, the point of departure of external regulation and management control must stem from within the individual in order to internalize the perceived locus of causality (PLOC), which otherwise will risk resulting in controlled motivation (motivation crowding-out). Building

support structures around this “autonomous” motivation, in order both to enhance learning and focus and to mitigate feeling of failure, supports the feeling of competence. Last, letting this happen in a socially including and welcoming atmosphere supports the feeling of relatedness.

We have seen how management control has, over the years, been analysed in many different contexts, including culture, inspiration and constraints, enabling and coercive, multiple purposes, creativity and innovation, and many more not specifically mentioned here, but covered by a vast literature on management accounting and control. This paper points to an important and somewhat overlooked context, which is how management control affects intrinsic motivation not only in a unidirectional but in a multidirectional way. In the future, motivation should not be perceived as a unitary measure but a complex one, and both with intrinsic and extrinsic features. And if support of intrinsic motivation is the objective of management control, the net effect must be understood through autonomy, competence, and relatedness – the need for freedom and structure at the same time. More research should be done in the area of management control and intrinsic motivation in order to understand the particular effects management control has in practice so that we no longer need to rely to such an extent on parallel-shifting effects from psychology experiments into the world of management accounting and control.

Narratives as control – On guiding actions and making intervention possible in creative processes in an architecture firm

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Abstract:

This paper explores the role of narratives as a control mechanism in creative processes in an architectural firm, and shows how they can guide design decisions and take important roles in controlling the architectural project. We illustrate how top management's requests for narratives for projects in the architectural firm, together with the project team's accountability for such narratives, become a way to inspire, and simultaneously constitute direct actions within a creative process of developing new architecture. We observe that narratives, in combination with visualisations, play a distinct role in terms of developing the concept that defines each individual architectural piece developed by the firm; and we suggest that such narratives thereby produce a distinct type of accountability and transparency within the creative process, aligning the outcome with the firm's overall visions and objectives. The paper contributes to research in several ways. First, it contributes to our understanding of how narrative can be understood as a particular type of control. Second, it shows how Elster's (2000) constraint theory and notion of conventions can be used to elaborate on how the narrative functions as a control system. Finally, it adds to the relatively recent discussions of how control and creativity are phenomena that are not necessarily in opposition to one another, but in fact can complement each other.

1. Introduction

This paper shows how narratives may function as a control mechanism in creative processes of developing architecture projects. Much research argues that conventional control mechanisms are obsolete when it comes to controlling creativity (Amabile Teresa 1996; 1998; Amabile et al. 2005; Ford 1996; Oldham and Cummings 1996; Woodman, Sawyer, and Griffin 1993) and that softer or more intangible control mechanisms—like clan control (Ouchi 1979; Ouchi 1980), belief and interactive control systems (Simons 1995b; Simons 1995a) and inspirational controls (Davila and Ditillo 2013)—have been characterized as more suitable for control of creative and innovative processes.

This paper illustrates how narratives that are used by top management in an architecture firm as a way to control the creative processes around the development of architectural projects represent such a softer, more intangible way of controlling the creative processes. As a control mechanism, the narrative has several similarities with clan control, a belief system, and/or inspirational control already discussed in the literature. However, it also represents a distinct way to coordinate and motivate the project team's actions and decisions, and entails a certain interaction between control and creativity.

In this paper, a narrative is defined as a type of catch line or catchphrase that expresses the architectural meaning and value of an individual architectural project in a short, concise, and catchy way, like "The Bridge is a branch". In the architecture firm that we studied, top management requested that each project team deliver, as one of the first tasks in the development process, *a narrative* that they would approve if they believed it reflected the firm's key aspirations and

visions of architecture. On the one hand, this made it possible for management to control the direction of the individual project and subsequently approve it (to influence the choice of constraint).[16] On the other hand, the narrative also made it possible to follow the remaining part of process in terms of the ongoing debates and actions, including the decision made to realize and materialize the narrative in the architectural outcome (the choices within constraints).

In general, the notion of narratives has been subject to different types of theories (Mumby 1993; Mouritsen, Larsen, and Bukh 2001; Davis 2002; Hyvärinen 2008). Many of these explain how narratives are constituted as social practices, and how they become socially accepted and grounds for collective actions. However, the aim of our paper is not to explain *how* narratives are created, but instead to focus on *the ways in which the type of narratives portrayed here function as controls* in the creative process when they have been created and are socially accepted.

Thus, the early stages of the development phase are very much about the "search for a narrative" for the project team. This implies that there are debates about different narratives within the project team, and that while some narratives are dismissed, others turn out to be durable, and are socially accepted and approved by management. The narratives create a certain transparency around the projects, producing a certain accountability among the team members which again bears implications for the actions and decisions made in the development process. Drawing on Jon Elster's constraint theory (2000), we show how narratives can

[16] Of course, top management's assessment and approval of the project is not based only on the narrative. Visualisation of the project, in the form of 3D illustrations of the architectural idea, also plays a major role. In combination, the narrative and the visualisation make up what in the architecture firm is referred to as the "concept" of the architectural product. However, what we focus on in this paper is the role that the narrative plays in the controlling the development process. Intriguingly, the narrative seems to be more durable/stable than the visual expression of the architectural project. Often, the narrative is used to develop the visualisation of the architectural idea. Further illustrations of the interaction between the narrative and the visualisation of the design are given in the case studies below.

function as a control mechanism in these creative processes, thanks to their constraining role in the process. We show how the first step of the process, where the narrative is developed, is a "choice of constraints" approach, and how the second step of the process, where the design is refined and detailed, is a "choice within constraints" approach (p.176). In our case study, we concentrate on the latter.

The paper contributes to research in several ways. First, it contributes with insights into how narratives can be understood as a particular type of control. Narratives have already been described as social controls in the movement literature (Davies, 2002) or as significant inputs/drivers for the development of an intellectual capital accounting in terms of knowledge narratives (Mouritsen et al., 2001). However, we illustrate how the qualitative statements that a narrative entail by itself offer guidance for actions and goal achievement in the creative processes, and hence imply management control. Second, the paper demonstrates how Elster's (2000) constraint theory and notion of conventions can be used to elaborate on how the narrative functions as a control system in terms of its constraining role, and subsequently gives rise to new creative ideas—though at the same time it is used to select and sort out different ideas. In this respect, Elster's theories can be used to further explain what it means that control systems have an inspirational as well as directional role, as suggested by Davila and Ditillo (2013). Finally, it adds to relatively recent discussions of how control and creativity are phenomena that are not necessarily in opposition to one another, but can coexist (Adler and Chen 2011; Grabner 2014; Davila and Ditillo 2014; Friis and Hansen 2015).

The structure of the paper is as follows. Section 2 describes how we theoretically conceptualize a narrative as a control device. Section 3 describes the methodology of the paper, and section 4 presents the background to the study, comprising industry knowledge and information about the case company. Section 5 is the analysis, where two illustrative cases of narratives as controls are presented; in section 6 we offer a discussion; and in 7 we briefly conclude.

2. Theory: Narratives as control - understanding a few key characteristics

This section presents the notion of *narratives as control*, which we suggest can be a way to understand how management conducts control in creative processes. We start the section by describing the particular perspective we have on the narrative, and the ways in which we suggest it can be portrayed as a control mechanism. Subsequently, we briefly describe what we mean by creativity, and how and why it has been portrayed in the literature as hard to control. Finally, we elaborate a bit more on constraint theory, which is the basis for characterizing narratives as a control mechanism in this paper.

2.1. Narratives as control

In this paper, we conceptualize a narrative as a distinct type of management control, one that is exercised along with other types of management control system elements to support creative processes. Inspired by Merchant and Van der Stede (2012), we define management control as *all the devices or systems managers use to ensure that the behaviours and decisions of their employees are consistent with the organization's objectives and strategies.* We suggest that narratives become a way to exercise management control because when management requests a

narrative from the project team that in a short, concise, and catchy way expresses the key idea of the architectural project, and which subsequently will be ratified by management if management believes it reflects the firm's vision and goals of architecture, this affords management a unique mechanism around which accountability within the project team can develop, and which can guide the project team's actions and decisions as they seek to visualize and materialize the narrative through the piece of architecture that they develop.

The notion that narratives can control and influence behaviour is not new. In his analysis of movement narratives, Robert D. Benford notices that: "Narrations constitute a pervasive and influential form of activity for collective actors across a wide array of social movements. … The narratives themselves function as internal social control mechanism, channelling and constraining individual as well as collective sentiments, emotions, and action" (Davis 2002, p53-75). Narratives are thus a powerful source of social control in these organizations. Mumby (1993), theorizing about narratives as social control, offers a somewhat similar interpretation, in that "Framed epistemologically, the concept of narrative has emerged as a way of challenging the foundational premises in which most knowledge generation is grounded" (p.5). Mumby bases his interpretation on Lyotard (1984), who uses the term *modern* to designate "any science that legitimates itself with reference to a metadiscourse of this kind making an explicit appeal to grand narratives, such as the dialectics of Spirit, the hermeneutics of meaning, the emancipation of the rational or working subject, or the creation of wealth" (1984, p. xxiii).

We suggest that at least five aspects of the project narrative are important for explaining why and how a narrative can be portrayed as a way of exercising control in development processes. These five aspects are the

- vision it communicates
- constraints that it provides
- convention it establishes
- empowerment it mobilises
- formal control it enables

These five aspects are well-known from the management control literature; but it is their combination with the use of narratives as a control mechanism that yields a distinct way of controlling the development process. Furthermore, we suggest that these five aspects of the narrative complement each other, and explain how and why it is that narratives have the power to control.

2.1.1. Narratives as the vision attached to the individual project

First, we suggest that one of the characteristics that explain why a narrative may become a control device is because it can communicate the vision for the architectural project, and furthermore be a way to translate the firm's overall value propositions into a specific project proposition.

The narrative's role as a vision has already been discussed in the accounting literature. For example, Mouritsen et al. (2001) introduce *'knowledge narratives'* as a key element in expressing the value proposition in firms, and hence taking a prominent role in management control via intellectual capital accounts. They

suggests that a knowledge narrative "is one which specifies the identity story of the '*capable firm*'—located in a version of a 'knowledge based' world—that is concerned with the need for 'innovation', 'flexibility', or other statements that represent the role of the firm in its world. This general story is then translated into management challenges, which embody the particular mechanisms that managers put in motion to enhance the knowledge narrative".

We follow Mouritsen et al. (2001)'s conceptualization of narratives—with one crucial difference. Whereas Mourtisen et al. see the interaction between the knowledge narrative and calculations and measures of intellectual capital as the premises for exercising control, we see the narrative's control function at the architecture firm studied as a consequence of the interaction between the narrative and the visual expression of the piece of architecture itself. In other words, the narrative does not need to be translated into measures and accounting in order to be forceful and controlling: the mere narrative story of the catchy one-line creates a standard that is transferable and mobile, and which acts as a standard – just like a performance measure. Furthermore, we also discuss the role of a narrative at the project level, and not at the firm level; so whereas Mourtisen et al. refer to one narrative per firm, we are engaged with multiple narratives for a single firm, reflecting the architectural firm's product portfolio.

In similar veins, narratives are closely related to Simons' notion of a firm's belief system. A belief system articulates "the values and direction that senior manager want their employees to embrace. Typically, belief systems are concise, value-laden and inspirational. They draw employees' attention to key tenets of the business: how the organization creates value ("Best customer service in the

world")…" (Simons 1995a, p.82). We suggest that the narrative can be seen as a specific operalisation or translation of the belief system that is valid for the individual development project. Thereby we follow others in studying the role of 'value systems' at the project level of the organization with respect to product innovation and creativity (e.g. Bisbe and Malagueño 2015) When we do not just stop here at state a narrative is a belief system or a value system is it because we believe that there are other important characteristics of the narratives that tell us more about how this particular type of control operationalize the visions and core values of the firm and how it affects the employees behaviour.

2.1.2. Narratives as constraints

Yet another important aspect is that the narrative not only provides a vision for the project, but at the same time becomes a constraint for the design choices that can be made. The theoretical lens that we apply in our conceptualization of the interactions between constraint and creativity is inspired by Jon Elster's (2000) *constraint theory* from "Ulysses Unbound". Elster suggests "that sometimes *less is more* or, more specifically, that sometimes there are benefits from having fewer opportunities rather than more." Under normal circumstances, most people would argue that more choices are to be preferred over fewer choices; but as quoted, even rational people will in some special cases wish to constrain themselves in order to achieve derived benefits from doing so. Elster gives several examples of how artistic creativity in the film industry has been enhanced due to constraint, such as the Hays Code that regulated film production in Hollywood in the 1930s-1950s. Friis and Hansen (2015) draws on Elster's constraint theory and illustrates, by means of an in-depth field study, how a management-control system – line-item budgeting – has positive consequences for the director of a Danish movie in terms of self-control and focus in the creative process (Friis and Hansen 2015).

"The process of artistic creation is guided by the aim of *maximizing aesthetic value under constraints*", writes Elster; and "creativity is the ability to succeed in this endeavour". (Elster 2000 ,p.200). "Artists may impose constraints on themselves in order to make better works of art" and by doing so "…we must assume it is because he believes he will benefit artistically from having a smaller choice set… The creation of a work of art can in fact be envisaged as a two-step process: *choice of constraints* followed by *choice within constraints.*" In a somewhat more controversial claim, Elster compares both choice of constraints and choice within constraints as a maximization of artistic value. Elster compares creativity without constraints to daydreaming, and shows how easily this escalates, since everything is possible. This makes the point very clear: unconstrained creativity is not really that creative because of the lack of scarcity.

Elster points to four types of constraints on creativity. First, there are *intrinsic constraints*, such physical limits in music or the structural constraints of the material in architecture. Second, there are *imposed constraints*, like the black-and-white format of pre-1926/27 films, or the Hays Code's constraints on the portrayal of romantic and sexual relationships. Third, there are *self-imposed constraints*, as when the painter chooses the size of his canvas, or to paint with charcoal rather than oil. Finally, there are *conventions*, which can be of the social norm type or of the coordination equilibrium type.

The narrative process that top management developed in our case company can be characterized using Elster's framework as imposing a constraint on the project team. Although this was not a self-imposed constraint, it was welcomed by the various project teams, as we will describe in the case, not least because it gave

them direction and enhanced the identity and vision of the architectural work. Furthermore, the process illustrated in figure 1 below also reflect the two stages of constraint execution which Elster suggests: the choice of constraints (the request and the ratification) and the choice within constraints (the design decisions and the monitoring).

2.1.3. Narratives as conventions

Furthermore, we suggest that successful narratives have many similarities with conventions. In fact, Elster suggests that soft constraints are *conventions* as opposed to hard constraints, which are formal, physical, or financial constraints. "Conventions, as the word indicate, are restrictions that constitute a specific genre such as the sonnet or the classical symphony" (p.190).

A narrative is a 'soft' type of control or a soft constraint. It is a qualitative statement, and if established and effective it becomes a set of shared beliefs, which almost serve as a decision rule in terms of the design of the architectural piece. According to Lewis (1969), which Elster (2000) draws on, a convention is a generally agreed-upon decision rule among a group of individuals that implies a particular behavioural pattern as a reaction to a specific social situation. Lewis' (1969) formal definition is: "A regularity R in the behaviour of members of a population P when they are agents in a recurrent situation S is a convention if and only if, in any instance of S among members of P, (1) everyone conforms to R; (2) everyone expects everyone to conform to R; (3) everyone prefers to conform to R on condition that the others do, since S is a coordination problem and uniform conformity to R is a proper coordination equilibrium in S." (1969, p. 42). Classical examples of conventions are, for example, the expectation that everybody drives

in the left or right side of the road, or the expectation that if a telephone conversation is disrupted, then the person that first called will call back (Lewis 1969, pp. 5-6).

However, although there are many similarities between Lewis's notion of a convention and the narrative we address in this paper, there are also differences. An important difference it that the narrative is much more fluent than local. It is a decision rule that applies only to the individual project, and lasts only as long as the project lasts. It is thus not a decision rule that applies to any projects other than the ones it is attached to.

2.1.4. Narratives as empowerment and formal control

The fourth and the fifth aspects we suggest are decisive for the way in which narratives work as control are its combination of empowerment and formal control. In our paper, we frame narratives as a type control that is initiated by top management, and hence a formal control; however, it is also a control system that involves the project team members significantly. Thus, management coerces the form of the control: "you must develop a narrative for each project"; but it is the team members that develop what the narrative is about.

Figure 1. Narratives as an iterative process

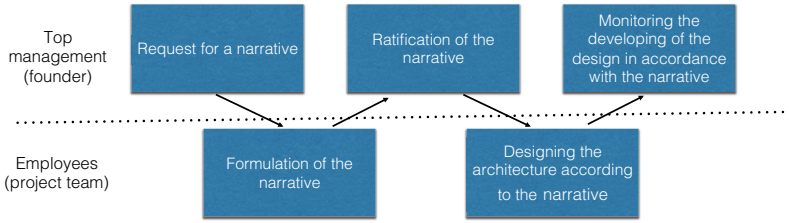


Figure 1 illustrates the process through which narratives become formal control involving employees. The figure draws on a decision-making model which is often used to portray decentralization in organizational economics and management accounting (Jensen and Meckling 1992; Zimmerman 2014). In this process of developing and shaping a narrative, the decision rights are divided between top management (the principal) and the project team (the agent) which is in parallel to what happens with other management control processes, e.g., budgeting (Zimmerman 2014, 237-268). However, one of the differences between a narrative and a budget is that in our case, is it a narrative that the project team is accountable for, and not a financial calculation. Nevertheless, it is still possible to discuss whether the project team's actions and decisions deviate from a standard – which is not expressed in numbers, but in a qualitative statement – and it is not a one-dimensional monetary scale but a 2-D or 3-D drawing and image of the architectural piece which makes compliance or non-compliance visible and comprehensible.

Thus, like any other control device, the narrative is something that will constrain the actions and decision of the project team because the team cannot shape any piece of architecture. The team can only create an outcome that complies with the

narrative. However, this is not something that necessarily conflicts with developing a creative outcome. To explain why this is so is our aim in the next two sections.

2.2. Creativity and control

Creativity is one of those words that is often used without too much reflection on exactly what is understood by the term. Meusburger (2009) estimates that over a hundred different analyses can be found in the literature. In general, "we tend to associate creativity with the arts and to think of it as the expression of highly original ideas." (Amabile 1998). Creativity in business needs an added layer, in that being "original" isn't enough. To be creative, an idea must also be appropriate – useful and actionable" (Amabile 1998). A number of researchers define creativity as the production of novel and useful ideas in any domain (Hammer 1976; Woodman, Sawyer, and Griffin 1993; Amabile et al. 1996). Creativity has been studied intensely over the last fifty years in various domains like psychology, sociology, organizational theory and management, and it can be studied in many dimensions (Runco 2004; Rhodes 1961).

Recent studies point to more concrete presumptions for creativity and control to coexist, and to frameworks for these control systems. Adler and Chen (2011) investigated the link between creativity and control within large-scale collaborative creativity via types of motivation spanned by perceived locus of causality (PLOC) and self-construal. They found that a combination of creativity and control is possible when intrinsic and identified motivations coexist and both are at a high level. Adler and Chen (2011) to a certain extent build on Cognitive Evaluation Theory (CET). CET states that in order to be intrinsically motivated

three basic needs must be met, which are the needs of feeling autonomy, competence, and relatedness (e.g. Deci and Ryan 1985). Davila (2014) summarizes Ditillo's and his own work on control and creativity in fashion companies (Davila and Ditillo 2013). He argues, "… *that this long-held belief - that creativity and management control do not mix at all - is untrue. My colleague, Angelo Ditillo, and I have spent the past four years studying creative teams in the fashion industry. This project has found that management control systems do play a crucial role in shaping the creativity of designers. But, in order to understand how we as management accountants add to settings where creativity is key, we must change how we view our contribution.*" Whereas "*Traditionally, management accounting concepts have focused on controlling how plans are implemented*", Davila and Ditillo find that in highly creative industries a different approach is needed. They identify two types of control systems, which are a *directional system* and an *inspirational system*. These are comparable but not equivalents to Simons' Levers of Control[17] (1995a; 1995b) in that Simons refers to *organizational* control, while Davila and Ditillo refer to *operational* or *project based* control. Like Davila and Ditillo, this paper has the individual project as unit of analysis.

3. Method

From September 2013 to June 2015, we followed the case company ARC (pseudonym) in depth as a single case study (Yin Robert 2009). The purpose was to gain knowledge about creativity and control for the purpose of one of the

[17] Simons (1995a, 1995b) claim that the Levers of Control framework can help managers to exercise adequate control in organizations that demand flexibility, innovation, and creativity. "Each of the four levers has a distinct purpose for managers attempting to harness the creativity of employees". Diagnostic control systems and boundary systems are framed as *constraining* forces, while the interactive control systems and belief systems are framed as *inspirational* forces. Davila and Ditillo (2013) set up a comparable frame of *directional* and *inspirational* controls, each consisting of three sub categories. In that sense the two frameworks seem very similar. The grand difference however, is that while Simons refers to *organizational* control Davila and Ditillo refer to *operational* or *project based* control.

authors' PhD thesis. As the research progressed, three clear topics emerged from the data and the literature; this first paper aims to develop an argument about one of these topics. During the whole period of almost two years we observed 50 management meetings, 20 office meetings, five strategy meetings, spent several weeks at the office working, participated in social gatherings, and attended the biannual study trip. During meetings, notes were taken. All interviews conducted were recorded and transcribed. The data collection process was roughly divided into three stages, the first two of which were designed to gain a general understanding and knowledge about the company to develop ideas for specific areas of research, which were then investigated in more depth in stage 3.

The three stages were as follows. In Stage 1, we sought to get to know the architecture industry and the case company in general terms. We did introductory unstructured interviews with the founder and the director of prequalification, involving communication about the history of the company and how they felt the identity of ARC had evolved. We also followed all management meetings and office meetings in order to experience the topics discussed and how communication was acted out.

Stage 2 was about understanding the company in more depth. Stage 2 was subdivided into another two stages: interviews with management and interviews with employed architects. We firstly conducted semi-structured interviews with the six project directors about the identity and processes of ARC, success and failure of projects, and motivation and demotivation during the processes. These topics were based on three criteria: understanding the processes in ARC, understanding how social control were enacted in ARC, and understanding how

motivation and creative processes seemed to be linked. These topics seemed to be the main topics of the literature. Each interview lasted on average 80 minutes. Following this, we interviewed all architects with a seniority of one year or more, as we wanted them to have at least a minimum knowledge about processes and culture of ARC. This amounted to 25 interviews of 70 minutes each, on average. All interviews were coded for the purpose of pattern matching, and a strong link between narratives/storytelling and the creative process seemed to emerge. We decided to move forward and investigate how storytelling was used to structure and control the creative processes.

In stage 3 we once more looked at the interviews, this time looking specifically for evidence of how narratives were used in the projects. We saw that narratives had two purposes: winning the competition and controlling the development process. In order to win competitions, there needed to be a good story and concept telling a compelling story about the project; that was not really a surprise to us. But second, and a bit more thought-provoking, it seemed that stories also had the ability to control the process—and that the sooner in the process the story line was clear, the better the process was flowing. Based on this, we interviewed five of the six project directors, once again with the aim of learning about the process in general, but also, and more specifically, about how the story line and concept were developed and used during the course of the project.

4. The case company

This section provides background information and context in order to understand how and why narratives are used in the projects that will be described and analysed in the following section (section 5). We first introduce the industry and

the case company, and briefly follow this with some insights into the case company's core values, its organizational goals, and not least its architectural philosophy. We do this because this information is important for understanding what it is that top management in the company are aiming at and using narratives for. In closing, we provide a bit more insight into how narratives are closely connected with visibility, along with the notion of an architectural concept in terms of managing the creative process of developing architecture in the case company. We finish the section with a description of some of the more classical control mechanisms ARC has put in place.

4.1. The architecture industry and brief company introduction

Architecture is at the core of creative industries (Caves Richard 2000; John 2013). Danish architects like Henning Larsen and Jørn Utzon are instantly recognized as flagships of Danish architecture, but a new approach in Danish architecture has recently changed the way many architects think and work. The following paragraph is from "The New Wave In Danish Architecture" on the recent paradigm shift in Danish architecture:

A new trend in Danish architecture emerged prominently during the 2000s. The consequences of the new mind set are barely visible yet. This was a decade when the architectural debate flourished in Denmark, and positions became sharply defined. The 2000s saw the breakthrough of several young architectural firms. Their projects, so the critics said, challenged basic assumptions in the Danish tradition. They marked a break with the esoteric character of Danish architecture. A break with a polemic slant from what Carsten Thau, professor at the Royal Danish Academy of Fine Arts, has referred to, with a smile, as "a band of

brothers." They inspire either enthusiasm or fear that valuable knowledge about Danish building tradition according to some critics is thrown out with the bath-water along with the time-honoured attention to detail and other cherished virtues of Danish architecture. But are these just the flagellants of Danish architecture who couldn't spot a shining talent at 30 cm's distance? Is this a story of decay or the contrary: a story of a development of some of the key aspects of Danish modernism? Or maybe both? A closer look at the generation that is so profoundly inspired by international trends reveals many similarities with the Scandinavian design tradition. A familiar figure is becoming more and more prominent in the debate: a patricide without a father, committed by a son who was never prodigal. (Weiss and Vindum 2012,p.14)

ARC is one of the new young architectural firms founded in the beginning of the 2000s. Since it was founded it has experienced an annual average growth rate of 40% in employees and is continuously gaining exposure in the press as one of the major Danish architectural firms. Until around 2011, Founder did most administrative tasks himself in collaboration with one other architect, together with leading and managing the company, and acting as creative director. In 2011 a layer of project directors was put in place together with a managing director, leaving Founder to focus on the role of creative director. With the more formalized organization along came more formalized processes and meetings on both operational and strategic levels. Mission, vision, and values are the same now as when the company was founded; but working formally with formulating a strategy has made it more transparent and easier to understand for new architects hired, as well as for us to grasp as researchers. In the next subsection, we outline how ARC has a philosophy of always discussing architecture based on visualized material in

order to be as concrete as possible, and always work with three levels of context and with a social dimension when developing architecture projects.

4.2. ARC's values, mission, and philosophy

This subsection contributes to a deeper understanding of ARC's strategy, which in the analysis section (section 5) will help bring clarity to how narratives assist management in implementing its values, mission, and architectural philosophy into the projects and the organization. During an ongoing series of strategy workshops, the management team allocated approximately one full day every six months in order to identify and formulate a strategy for ARC going forward. The product of these sessions was a dynamic strategy document crystallising Founder's values and philosophy and translating these into values, mission, vision, and strategy, together with indicators of how to implement and continuously support this in ARC. The following is an abbreviation of the latest version of the strategy document at the time we concluded our research in ARC.

> **ARC's values:** ARC's biggest strength is the people who work there. ARC believes in diversity when it comes to nationality, gender, and experience. It wishes to attract and keep the best people in the industry and want everyone to get a chance to develop personally and professionally. It wishes to create a good social environment and to ensure innovation, engagement, and job happiness among its employees. ARC believes in architecture based on a social and societal agenda, and in developing projects based on research and dialogue. ARC wishes to create a collaborative work environment around teamwork, a common sense of responsibility, and collective idea generation. ARC wishes to develop projects based on the users and the context, not the

architects' personal preferences. ARC wishes to be a company with a healthy, stable economy.

ARC's mission: ARC wishes to create an architectural epicentre in the social spaces in our cities and buildings. This is why each project must take point of departure in the particular potential context of each site and insist on creating value for the people and ecology that are going to inherit and shape our buildings and cities in the future. ARC wishes to build social and sustainable infrastructure for people's lives. To us, architecture is not about a certain style or form but more important, the ability to adapt to the local context, the social life, and the users. ARC wishes to create a professional community that develops specific innovative solutions tailored to each individual challenge with competences entailing physical realization of architecture, strategic planning, and research. ARC wishes to create an architectural paradigm shift based on social engagement. Architecture is a powerful tool to create this identity and social change. ARC wishes to redefine the public space based on new social, environmental, and infrastructural potentials. ARC wishes to generate dialogue between architecture, society, and the individual life, through exploration of various scales.

ARC's values are aligned with Founder's, and he can veto any formulation—which he sometimes did during the strategy meetings. The dialogue-based social approach to developing projects is particularly important to Founder, as well as the principle that nothing should be based on personal ideas but thorough research.

When Founder started ARC, he had some very strong-minded ideas about how things were going to play out.

> *"I worked there for four years. When I left I was offered to become partner but I thanked no – I wanted to do things differently … It was very competitive and hierarchical. He [the owner] did it deliberately. I wanted it to be the exact opposite way. Everyone should have a say and work together, that's what I believe creates the best architecture and best work environment. No matter how you see it, it's about the people … so we have a collaborative culture".*

Regarding how "everyone should have a say," Founder also expresses a determined opinion about how that is done in practice. Here he talks about the importance of always discussing architecture based on concrete visualisations rather than discussing ideas without visual backup.

> *"Talk is cheap. It's too easy to just talk about ideas without being able to show them. Show, don't tell. If everyone can see it, everyone can understand it. And if everyone can understand it everyone has an opinion about it. And then everyone should voice that opinion – that's what we try to tell them [new people]. And with some success I would say. I think they actually like that they are allowed to have an opinion … I think that is an important part of creating that team spirit".*

Founder's architectural philosophy and ARC's mission is context at all levels of scale together with a social profile. This means that a building should never be seen as a building in isolation, but always be perceived as a part of the urban space surrounding it, which again is a part of the city. The social profile means that the users of the project are at the centre of decisions. This is a philosophy set in stone if you ask any architect with a minimum of one year of seniority in ARC and in particular with the management. Following are a few quotes to illustrate this approach to projects.

Founder expresses the social aspect like this:

> *"...And because of the transparency that is in it, there is a big focus on understanding the users who need to use our buildings and cities. And so we put people at the centre and are very interested in the social aspect - How can architecture generate social synergies between people?"*

A project director addresses the context:

> *"What may define us is that we are a studio that tries to combine these three levels that we talk a lot about: the city, the architecture, and the urban space. To get the three things to play together. That you do not think about things in isolation."*

Another project director brings the two points together:

"We are good at thinking buildings together with urban spaces and city. So the three things are not separate disciplines. It is something we are thinking of as a whole. While we manage to make some really beautiful aesthetic solutions which have the three scales in itself. A good ARC project also has a social dimension. That it is made to humans and it is created for the user, and it is not architecture for architecture's sake. It is architecture that fits the site and the city and the social dimension in a really beautiful way."

4.3. ARC's management perspectives on working with narratives and story telling

According to management, narratives have dual functions in enhancing both the process and *the concept* – the final architectural delivery. What follows are quotes exemplifying both types of narratives used, starting with the importance of stories in the concepts (output) followed by the use of stories in the process. It is worth noting that we use the terms "narratives," "storytelling," or "stories" interchangeably, as "storytelling" and "stories" were often used to refer to the short and concise tales that we in our paper refer to as "narratives".

4.3.1. Narratives and the architectural concept

In the quote below, Founder is explaining that all architectural concepts are about telling a different story, and the particular narrative is the thing that differentiates the projects from one another:

"This culture house is a golden house because this particular city needed something that said 'pling' that could stand out – Because they needed that lighthouse. And this kindergarten almost perfectly blends in with the

surroundings because it's in a very traditional part of the city with a castle next to it, so it is very much played down. And the train station is based on a completely different logic, which is organic flow, because it is based on how people move around in this area. So we don't have a certain recipe or particular style; it's very much based on the specific situation."

Below are some of the many quotes from Project Directors emphasizing the importance of stories as part of the final concept deliveries. We have chosen to provide several quotes saying more or less the same thing in order to emphasize how deeply rooted this is in the (management part of the) organization.

"Simple solutions to complex problems that are easy to communicate … a simple solution you can explain to people and yourself."

"A good project has an exciting introductory story about what the project wants."

"The special thing about ARC's projects: they are well worked- and thought-out, and have a strong story."

"I have more focus on this storytelling thing now." [Compared to earlier on when he was an architect not a project director]

"A successful project works on all levels and has a clear, simple story. That you can tell it and that it fits [the project]. And that needs to be very, very clear."

"[To be good it is required] that we do some context related projects. Not standard solutions. And that you try to tell a story and to do something special."

"I think it has to do with this thing we want: to fabricate a story in relation to our projects."

4.3.2. Narratives and the architectural process

As mentioned previously, storytelling is not only important as a part of the concept (output) but also in developing the concepts (process). The following are a few examples of how management expresses the work with storytelling in processes.

Here a Project Director explains how the narrative helps the project to transform from an analysis to having its own identity, bringing the project to life so to speak. The narrative functions well if all relevant elements of the analysis can fit into the story:

"You do not think a building in isolation, but you wonder how it interacts with the urban space and into the city. So we are doing much analysis prior to a project. Makes it transform into a higher order narrative."

Another Project Director is explaining how they discuss the different concepts ("options" refer to multiple possible concepts) and make decisions based on the storyline developed early on in the process:

"When we argue for our options we mostly use storytelling … If you get a good start with the conceptualization the process very often gets much better."

"I don't like to overrule and say this and this. That's not our DNA. Instead I try to let the story decide. I just ask people to make an argument based on our concept [here referring to the storyline] … Mostly we agree on whatever I would have decided, but this way we all agree. Consent is super important".

Finally, one of the project directors explains how concepts are used during the process, and how concepts can have a constraining role in the projects:

"It is actually quite important to set constraints. It's almost the most important thing, I would say. To set constraints on yourself. Because it simply sharpens one's own way to design, and it sharpens the company's

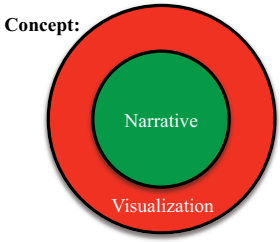
way of developing the project, because as I said, when you can do anything, where do you start then? If you only have some dogmas or something, then you have to be sharp within the dogma".

"Less is more. If the concept is weak, people run around like headless chickens. They ask [clarifying] questions all the time, and we spend a lot of time by the wall discussing … when it is a good story people just know what to do – the story defines it".

4.4. Narratives, storytelling, visualisation and the architectural concept

In addition to the use of narratives, it is also an established approach never to discuss projects without visualisations in ARC. As a result, all discussions must take their point of departure in graphical visual material, making the discussion concrete rather than general. When a project team meets to discuss a project, it is called a pin-up meeting, because the visualisations are pinned up on a board. Pin-up meetings are informal meetings in that there is no fixed format except that everything must be visual. A pin-up meeting takes place at "the wall", which is simply the wall of the office where all projects are represented by updated visualisations and models of the projects. Almost all project-related discussions take place at the wall. Other visual aids are the start-up booklet and the weekend booklets, which are visual up-to-date documents tracking the progress of the project. The start-up booklet is simply the first one, and weekend booklets are updated every Friday and distributed to Founder and the team.

As a consequence of this visual approach, a narrative only exists in isolation for a short while. As soon as the narrative is developed, the team generates an added layer of how the narrative can be implemented architecturally. This is the referred to as *the concept*, and is like a second order narrative. Architects in ARC use the term concept when they refer to the narrative because for them, the narrative cannot exist in isolation without the visual part. The reason why we focus on narratives in this paper, however, is because these turn out to have such a prominent role in guiding the process of developing the final architectural concept. Many of the processes studied demonstrate how different visualisations were tested against the narratives. Some were rejected, while others were accepted and incorporated in the concept. The narratives seem to have a gatekeeper role in letting some visual expressions through, while stopping others. The embedded figure expresses how the core is formed by the narrative, which, when wrapped in an added layer of visualisation, makes up the concept. Visualisations can take many forms. In the beginning of the process these are mostly sketches, but later on they becomes more mature and can be 2D and 3D drawings, simulations, or models made in foam or even wood or plastic.



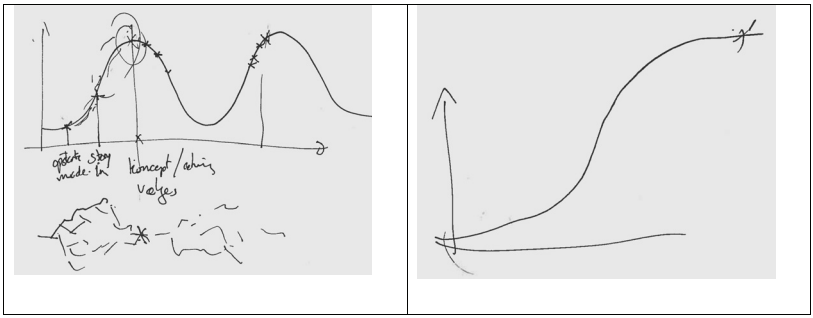
Up until now we have used the terms narratives and storytelling interchangeably. And for good reason: they go hand in hand. Much as you can't have a narrative in isolation without visualisation, you can't have a narrative without storytelling. The visualisation is really a story being told *around* or *about* the narrative. This will be much clearer in the two cases we present later, and one of the important points determining whether a particular narrative is a good or a weak control mechanism. The narrative is a one-liner, while the architectural piece tells a (visual) story

about context and has a social dimension. How the narrative transforms into a story about context and a social dimension is what we refer to as *storytelling.* Storytelling is thus the translation or transition from a one-liner into a visual representation of the research done on the site, the architectural philosophy and values of ARC, and how these two come together in the final architectural delivery.

Competition projects are often described in two phases: the concept phase and the production phase. These two phases tell us more about how the role of narratives is seen in developing a project. This two-phased process is illustrated by the two-humped drawing in the left panel of figure 2, drawn by a project director while explaining the process. The first phase is where the concept is being developed, and the second phase is where the architectural output is developed. The humps symbolize workload, and the cloud underneath symbolizes the amount of possible solutions (called options) to the brief (called a program). During the first phase, many options are boiled down to only one single narrative, which then during the second hump is developed into the final delivery ultimately handed in as ARC's response to the competition. The final delivery developed during phase two is the architectural representation of the narrative and storyline developed during phase one. If the narrative is not developed well during the first phase, the final delivery cannot develop well, leading to an end peak in workload instead of two humps. The end peak stresses the process and makes resource planning difficult; what is more, the usage of excess hours beyond the amount budgeted is bad for both the firm's economy and its work environment. This was also illustrated by the project director, in a drawing shown in the right panel of figure 2. According to the project director, it is important to develop an effective storyline in phase one in

order to be able to guide and control the second phase design process, which will be demonstrated in the two cases following in section 5.

Figure 2. A double humped process and an end peak process



More specifically, the narrative is the outcome of the first phase, which has three sub-phases in it. The first sub-phase is a start-up meeting where all team members are briefed. For the most part, practical matters are discussed, but sometimes ideas are also discussed here, depending on the project manager. In the second sub-phase, the story line is formed. This can take one meeting or it can take several, depending on how fast the team nails it. During the storyline phase, between 10 and sometimes up to more than 100 options are tested to find the right one. The right storyline is the one that best tells the story in the eyes of the team members and management. At this point in time, the narrative has not yet been formed, so testing really means discussing the three levels of context and the social dimension together with what a good simple story (narrative) could be. The story line sub-phase ends when the team, with acceptance from management, decides on one particular option. The third sub phase is the concept sub-phase, which is the last meeting of phase one. Here the chosen option – i.e., the storyline plus visualisation

– is refined and presented as *the concept*. The narrative is thus the crystallization of this story: a one-liner describing the core of the concept.

4.5. Other management controls in ARC

Of course, it is not only the narratives that control ARC's development processes. We will briefly touch upon three different 'classical management control systems' that mobilized types of constraint for the project teams other than those introduced by the narrative. These are budget control, project time management system, and a staffing overview. At the Monday management meetings, staffing and budget are discussed based on the systems. At these meetings, Founder, Managing Director, Project Directors, Director of Communication and Prequalification, and a secretary are present. Staffing is the most important point on the agenda, and is discussed based on a project-employee matrix spreadsheet. Each project is discussed, and staff is allocated based on expressed needs by the Project Directors on a day-to-day basis within the current week. Budget control is a spreadsheet containing a revenue line for each project summing up to the total revenue, and two lines in total for expenses in the sheet, one line for salaries and one line for all other costs. Monthly revenue in total, and disaggregated on projects, is compared to monthly costs; status by surplus / deficit is discussed; and the most important key figure is the sign of the expected annual result. The project time management system is not used on the project level but rather on the employee level, in order to make sure that people get proper time off if they have worked overtime on a project.

Besides the classical management control systems, there are coordination systems in place on several levels: the management level, the management-employee level,

and the project level. On the management level there are the weekly management meetings where current management issues are discussed, and biannual strategy meetings where more long-term issues are discussed. General information from management to employees and knowledge sharing about projects are done during biweekly office meetings, where management gives general information and where architects who worked on the project present finished projects.

In what follows we outline two cases in total. We aim at showing *how* the narrative was used for control through these cases.

5. Analysis: The role of narratives as control in architecture projects

This section analyses two architecture projects from ARC's project portfolio in order to illustrate the role that narratives have in these processes. The two projects won their respective architectural competitions, and were characterized as successful projects in terms of how well they were managed, in the eyes of the project directors. Thus it was solely a question of the project directors' sense of control of the project and whether they delivered a project of high architectural value. Intriguingly, these subjective perceptions of the project's success were determined to a wide extent by the role of the narrative; and in general, when we were presented with examples both of good projects that didn't win and of less good projects that did win the competitions, the good projects were those conceived of as having a strong narrative.

The two project names are pseudonyms: 1) CAMPUS SQUARE and THE BRIDGE. Each project analysis is structured, first, by an introduction to the

project characterizing its narrative, and then by a section providing insight into how the architectural outcome and its visualisation were developed. In the following, we analyze the ways in which the narrative exerts control by illustrating what Elster would refer to as "choices within constraint". We do not provide further insight into how the choices of the narratives were made by top management ("the choice of constraints"), which of course limits our analysis of the role of narratives as control mechanisms (on this we refer to section 4, where we describe the general creation process of narratives). Nevertheless, we believe that the empirical evidence we offer does provide important insight into how narratives control at least in some part of the process. Table 1 below summarizes the narratives, storylines, and examples for each project of how the narratives were used as control mechanisms.

Table 1. Two projects in ARC, their narratives and the controlling effects

Element / Case	Narrative	Story line	Examples of influence on behaviour and decisions in the development process
THE BRIDGE	The bridge is a branch growing between the city and the harbour	The 280 m long bridge takes shape as a branch gradually connecting and growing between the harbour edge and the city. Each turn offers new vantage points with unique views to the city, the historic surrounding landscape and the waterfront.	• The branch "controlled" the design of the bridge. • Every time a decision was made, it was based on choosing the option that looked most like a branch.
CAMPUS SQUARE	Smooth and gradual transition from green to urban	The square is laid out as an urban carpet floating over three bicycle parking hills, making room for 2.070 parking spaces both over and under the hills. Between the three hills, the heart of the new campus is located as a central meeting place, connecting the three main entrances of the university buildings.	• The story inspired the design of bicycle parking hills integrated into the surface. • The story helped guide the design of the transition from green space towards the university's urbanity. • During a design "crisis" regarding the bicycle hills, the story helped the architects select among solutions

In addition, we include a set of visualisations of the final architectural concept for each of the two architectural pieces in the case analyses below. The visualisations of the architectural concepts are of course images of the end results of the creative process. Nevertheless, it is our hope that they provide the reader with a better grasp of how the narrative and the visualisation went together in each of the projects and what it was that the narrative pointed toward in each of the studied cases.

5.1. The Bridge

This section provides insight to role that the narrative had in terms of controlling the development of a specific architectural project in ARC: The Bridge. First, we describe the narrative attached to The Bridge. Second, we give examples of how the narrative had a key role in guiding and coordinating the team members' work in the development process, both in narrowing the scope of the project and in providing guidance and constraints for the individual design decisions. Finally, we illustrate how realizing the narrative was conditioned by another type of constraint (the budget), which provides more insight into the interaction between multiple types of management control elements in the development process.

5.1.1. The narrative and its emergence

The BRIDGE is characterized as a good project by the project director not at least because the narrative of the project is so simple and powerful. "The BRIDGE is a branch" guided design decisions, and was a great story too.

The bridge is a branch reconnecting (growing between) the city and the port, which have been disconnected for many years. Users of the bridge can enjoy multiple vantage points every time it branches out. Again, the story line is a powerful story about context on both micro and macro levels, and with a focus on the users. The following is ARC's presentation of the BRIDGE:

> *The BRIDGE is a bicycle / pedestrian bridge and a harbour promenade located in a city on the Danish west coast. Until now, the city centre and the industrial harbour area have been left disconnected, denying the citizens' access to the potentially recreational waterfront. Wedged in between these two areas is the city park - a cultural forest landscape of steep hills and valleys. The BRIDGE will act as a unifying element and accelerator between these very different contexts: city, industry, and landscape. The bridge and promenade are designed using a 'branch' as an overall design parameter. The bridge is superimposed as a light hovering structure that finds its way, twisting and turning, from the city to the harbour in an unpredictable rhythm that branches out into vantage points, plateaus, stairs and connecting pathways. The bridge stands on a series of slender columns, and like stems in the forest, they interact with the old trees in the park. The whole project is executed using one unifying material: red corten steel that will speak the language of the forest, the rusty abrasion of the industrial harbour, and the significant historical brick buildings around the area.*

This is what the project director said about the project when asked just to talk about it:

> *"... it just worked very well because the concept of a branch [narrative] was so simple, and because we discovered it fast".*

The narrative of a branch emerged from the initial analysis, where the team felt that the bridge looked like a branch when put onto the maps. The branch was powerful because it was easy to tell a story of separation and reconnection and the vantage points made perfect sense in the beautiful setting. The project director puts it this way:

"And it was easy to communicate and understand both internally and externally – and that was also what it said in the newspaper on the front page; "The new promenade is a branch". On the wall [at the office] it said "The promenade" on top and right beneath was a picture of a branch with miniature people and bicycles on it".

According to the project director the image and story of the bridge as a branch was controlling the process by guiding each and every design decision made throughout the whole project. He once stated:

"It hung there and in a way controlled the rest of the project."

The narrative was initiated by the project group. In fact, it was one of the first tasks that the project team was going to do in the development process (see section 4 above). An architect explained about the process.

"When you are sitting in front of the computer and suffer a bit over the fact that you are not really getting anywhere, ideas start to pop up. Some ideas are better than others, and when you finally got one, it often appears a bit crazy in the beginning. But then you need to push your idea and story further. In fact, it is to a great extent about communication. It is about internal communication and how to get people on board. I made some drawings and presented the idea [about the branch]. When [the

Founder] saw it, he liked it. He said: Hey, let's go. Let's do it. It is great fun."

It was in this way that the narrative was initiated by the project team. Although it was not always easy to communicate what the narrative was, and although the narrative was harder to find for some projects than for others, the specific narrative for The Bridge was conceived as relatively intuitive and easy to attach to the project. An intern recalls the process in this way: "I think it was [the architect mentioned above] who once said: "Gosh, it is a branch". And I believe that all of us agreed."

5.1.2. The narrative and its guidance of decision-making

As the project was quickly conceived as convincing and valuable for external communication in ARC (as a catchphrase for the clients), the narrative also had significant value for the coordination of the project development process internally. The narrative brought clarity to the process, focussing the architects' initiatives and activities. An architect expressed it this way:

"once you've gotten a strong narrative – once the notion of the branch was introduced – a lot of design options are eliminated, which is very nice. It brings clarity to the project."

A strong narrative also facilitated communication between team members. An architect argued that:

"If I am working with two new interns and we begin the production—for example, if we start sketching out something about the bridge—then it is much better point of departure if I tell them that we are going to work in this universe [the branch universe, ed.] rather than if I just tell them to start up and make something beautiful"

For the Bridge, the narrative of a branch was a very visual one. The quotes from the project director below indicate that based on the narrative and visualisation of a branch, pretty much everything went smoothly, directed and inspired by this image. Architects that were part of the project team expressed it in this way:

"One could say that every time something was to happen to the bridge, we thought of it as a branch. If there were to be some stairs down from it, or a lift, we thought of a branch. Or these lookouts, or where the bridge meets the promenade, or where the promenade suddenly would need some bicycle parking".

"The whole time we were thinking about something that branched off. So in that way it was then a very active design tool, saying this should fit into the overall story and concept, it is a branch, so that is how we design".

Also, the idea that something can look more like a branch than other things reflects this accountability according to the visual expression, and the extent to

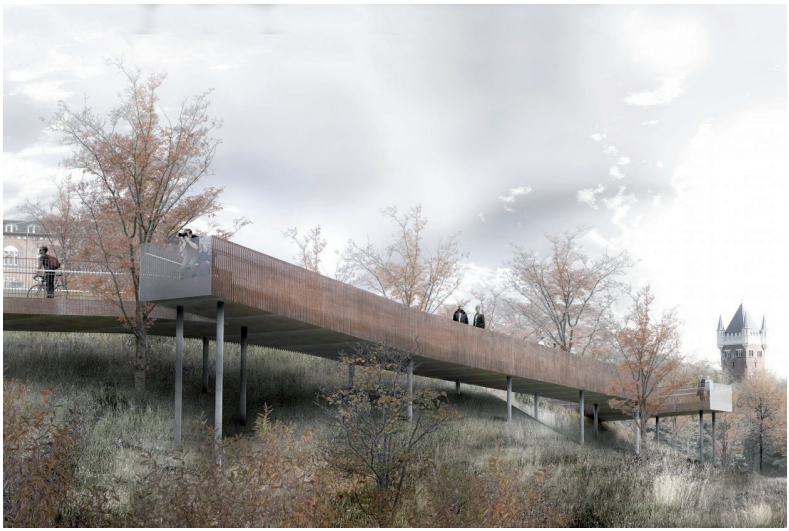
which the things that were added to the concept looked like a branch. As the architects stated, the narrative helped them select between several possible solutions:

> *"In fact, at a time when we had some different options for how these vantage points should be created, we ended up saying: 'Well, this looks more like a branch that breaks off in one direction or another' ".*

> *"Every time we had a few different options for some different ways to do it, it was the story with the branch that was decisive for how it was designed in the end".*

The project was considered a good project because it was a reasonably linear process. All deadlines were possible to meet, and all design decisions were ready when they had to be. One reason identified by the project director as particularly important for the project's success was:

> *"the fact that we made some important decisions early on about the story about a branch and the design, and that we stuck to these … This way it was possible to keep the whole project on track by using the story of a branch as point of departure during pin-up meetings and in weekend booklets".*



5.1.3. The narratives and financial constraints

Not only did the narrative furnish important guidance and constraints for the architects' design decisions, the financial resources (the budget) also provided significant constraints for the development of the bridge. Intriguingly, the branch and the ability to realize the architectural vision remained of first priority throughout the project. An architect expressed this in his summary of the team's discussions of the kinks:

> *"Yes, we had a very intense discussion about how many kinks we could make in the bridge construction. It turned out that we were under serious financial pressure at the end of the development process. We were afraid that the more plateaus [kinks, ed.] we cut off from the bridge construction, the higher the risk that our concept would die. It was very critical. We*

were firm. Typically we make a list of 3-5 things that we conceive to be the core elements for the concept, which must not die in cost savings and budget cuts. There are often other things that we can cut away without serious damages to the concept."

This illustrates not only how the financial constraints led to further specification of the architectural project, but also that cost savings and realization of the architectural vision/narrative were not always complementary. The fact that the project team identified the core elements in the project and kept them viable despite financial pressure could easily strengthen the architectural project; but on the other hand, it also clarified its vulnerability.

5.2. CAMPUS Square

This section explores the role of the narrative attached to the CAMPUS Square project. First, we introduce the narrative and explain how it emerged. Subsequently, we provide further insight into how the narrative guided decision-making in the design process. Finally, we reflect on how the realization of the narrative was conditioned by other types of constraints in the development process (financial constraints, concerns for safety, etc.).

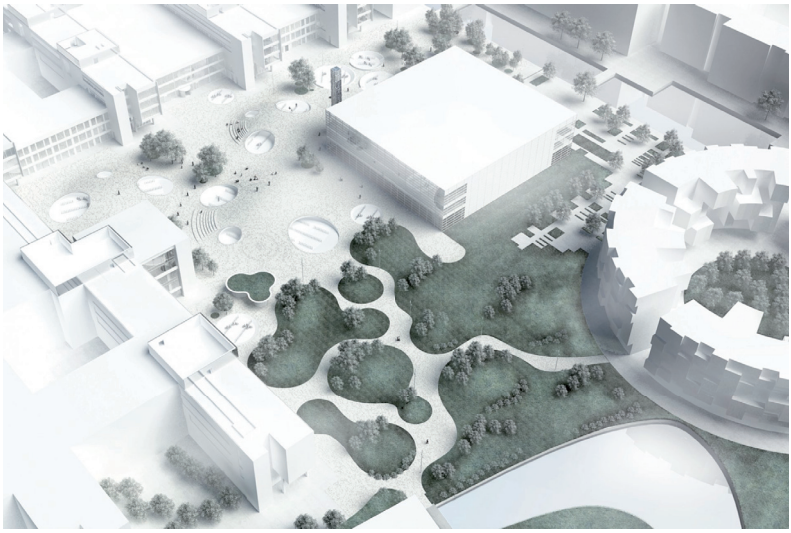
5.2.1. The narrative and its emergence

CAMPUS Square is a project to which the narrative of the "smooth and gradual transition from green to urban" was attached, and the storyline tells about all three levels of context and the social dimension (the users). The quote below is from ARC's own presentation of the project, which very deliberately includes the

square itself, the surroundings (nature and school), the city (one of the biggest squares in the city), and not least the users, who gain a central meeting spot and many and integrated bicycle parking spaces (because they need it).

CAMPUS Square is a new urban space and student's campus for a University near Copenhagen. With its approximately 20.000 m2, CAMPUS Square will be one of the biggest public squares in Greater Copenhagen. The new square is located between the university buildings and the neighbouring nature reserve. The urban space of the university in the north is connected to the nature reserve in the south through a gradual transition, making CAMPUS Square a hybrid of both park and square in one. The square is laid out as an urban carpet floating over three bicycle parking hills, making room for 2.070 parking spaces both over and under the hills. Between the three hills, the heart of the new campus is located as a central meeting place, connecting the three main entrances of the university buildings. The new CAMPUS Square will be a well-functioning campus square, offering a vast variety of urban spaces, highly accessible for all users.

The main challenges were to create a space for the very social, urban functions of a university square; to provide an adequate solution for the massive number of bicycles; and to create a fine transition between the urbanity of a university square and the remoteness of the neighbouring nature reserve. Having decided that the project should tell a story of a smooth and gradual transition between urbanity and nature, integrated bicycle parking became a consequence of the smooth look. The concept became a gigantic fluctuating urban carpet, creating covered bicycle parking underneath and a central meeting point at the heart of the square – a concept which development was driven by the initial narrative of a smooth transition between the rural and the urban.



The narrative was developed bottom-up by the project team with the principal project architect taking the lead of the process. She reflected about the process of the narrative development as follows:

> *"I made these six diagrams of ideas, in which direction it could go... the main idea was already in these first diagrams. And then you start combining them by making options and developing the concept…. The gradient was there from the beginning... I would say the idea [came from me]. Then in the first weeks, it was Ben, the intern, and I that worked on it."*

Subsequently, the narrative and the visualisations of the project were discussed with colleagues and the founder at the wall, and these discussions were perceived

by the principal architect in this way: “It’s really more about getting eyes onto it, and seeing what they see, and getting something out of it.”

5.2.2. The narrative and design decisions

What follows are quotes from the interview with the project director, signifying how the narrative of smooth and gradual transition from green space to urban space, represented by the design of a floating carpet, inspired and directed the architects in their search for finding suitable solutions to the challenges emerging during the process.

> *“How the story is used? That's the whole story of the design. It's like the story behind the project. Being able to tell a story. Why you're doing it that way…[…]… We would try to integrate bicycle parking as much as possible, because it was the biggest problem. Getting the 2,000 bikes in the square, and half of them should be covered. And then you had to integrate the green with urban space, all within a university square. And therefore it is also a gradual transition from the very green to the more urbane. And there we have it. The green hilly landscape meets the urban hills. So it actually came quite easily”.*

During a design crisis where the bicycle parking spots were the issue, the narrative inspired the team to come up with the solution. Visual gradual transition was translated into a physical floating carpet, which, during the design crisis, limited the team to think within this narrow frame (within constraints), saving time

because the whole team could focus on just this one thing within the same frame of reference.

> *"Once we had a bit of a crisis. We had chosen a concept of a magic carpet-like thing. We said we need many bicycle parking spaces and we must have covered bicycle parking spaces, and then we had to figure out how to combine it. That's when we got the idea of integrating the bicycle parking."*

The architect reflects on the narrative's role for the number and placing of the hills in the architectural piece:

> *"we started talking about which pockets are going to be the undercover bicycle pockets, and where are they placed, and why are they placed like that? And it was always questioned: "Why is it actually 3? Why isn't it 2 or 5 or 1?" And it was quite easy to decide that. Also in the team to say, by using those 3, for example, you still create this heart in the centre space. So the driving factor was to have this heart of the square defining where and how the bicycle hills were situated, and were seated. And why making these round shapes, rather than having this corner lift it up? We create a border instead of having a flow into the square, and into the area."*

5.2.3. The architectural vision meets other constraints

Of course, the design of the Campus Square was not just a matter of realizing the narrative in all its details. Other constraints also entered the design process. For example, concern for the budget gradually emerged during the process, the principal architect noticed:

> *"Because you design it without so much thinking of the budget at all. And then you realize, okay, if you make this line a meter more to the left, and this one a meter more to the right, you actually save another, I don't know, 10.000. And it doesn't do anything. It's a square of 20.000 square meters. So it doesn't do anything to the concept, the design. People won't even notice it. And of course you're rationalizing it. You're making it more feasible."*

In this respect the concern for the limited financial resources also became significant constraint during the process. However, it never became the primary concern. The narrative and it's realization what somewhat the principal objective in the process. The principal architect expresses it in this way:

> *"So I don't think it makes sense to make a project, always thinking: "Oh, that's not affordable, we cannot do that," because then you end up with something you won't win with anyways. So why worry about that in the first place? But yes, you should always have it in the back of your head."*

In addition other concerns about the design was also mobilized during the process. For example, during the design process questions were raised whether there was enough light inside the bicycle hills to make users feel and be safe during evenings. This called for a pin-up meeting at the wall where different solutions experimented with the light and was tested visually. This could very easily have been a process where everything regarding bicycle parking would have been thrown in the air but because the story was smooth transition and thus in a way dictated the integrated parking spaces, only the sizes of the holes into the hills and the angles of them, and the electric lights inside were discussed, and the solution was found within the frames of the concept.

> *"We said that now we just forget everything else and focus on the hills, how can we make them safer and make sure you can walk through them and that there will be more light? So we came up with some rules on how the hills should be. That people passing through should always be visible from the outside by passing like so and so and extra openings would make sure of this and bring in more light and the light comes in and things like that. So we've tried to open it up more."*

The next quote from the project director underlines the importance of an early-developed narrative and thus concept, in that this guides the process and makes it smooth due to the high predictability.

> *"Well, with CAMPUS it was just a walk in the park (no pun intended). Because we came up with the concept so soon everything was just easy*

hereafter. Then we just had to produce it, put a little green here, and blah blah blah. There really wasn't more to it."

According to the project director, this was a great project because the concept was developed early in the process, making everything go smoothly both internally and externally, which again made everything easy all along because the concept, so to speak, controlled the design.

"Because the concept was strong, I didn't need to be".

"I'm proud of this project because it's a true ARC-project … our values are very well represented by the architecture, and the team work was fantastic".

6. Discussion – reflections on narrative as controls

The case studies above illustrate how for each individual project, the project's narrative influenced the design process. In the case company (ARC), the founder exercises control to make the project architects accountable for the development of a viable narrative. Furthermore, when the narrative is identified and approved by the founder, the choices of options related to the project are constrained by the narrative – choices within constraints. Both the BRIDGE and the CAMPUS case illustrate how a range of architectural options are presented, discussed, and distilled by means of the narratives.

In the case studies we get a sense that the narratives support the creative processes as controls. Adler and Chen (2011) argue that intrinsic and identified motivations must coexist, meaning that people must feel a desire both to be individually creative and collectively coordinated in order to create the best group output. In this case control supports coordination, which is necessary in order to maximize the aggregated creative output. And when Davila and Ditillo (2013) talk about inspirational controls – ideating, visualizing, and networking – it is again about supporting the creative process. Even Simons' (1995b) belief systems and interactive control systems are characterized as "inspirational forces" to support and inspire the search. All of these creativity-supportive systems have one thing in common, which is that they have a framing role, and limit the creative space rather than opening it up. Coordination in Adler and Chen's setup means compromising on individual creativity; while Davila and Ditillo speak, for example, of visualizing themes, which again limits the creative space by bringing focus into the process. This is very much in line with Elster (2000), who argues that creativity is really the output of a two-phase process, involving first creation of constraints followed by creation within constraints.

We have shown that narratives enhance the creative process by this exact framing and limiting character. In the cases of the BRIDGE and CAMPUS, the narratives and concepts were clear and strictly limited the creative space. Nevertheless, both of these projects were considered successful because they had smooth processes, which was a direct consequence of the narrowing of the creative space that the narrative produced. This indicates that the narrative developed in the concept phase had an intended framing and constraining role in the whole project, as with many other creativity controlling mechanisms. And precisely because of this

characteristic, we conclude that narratives in creative processes are actually control mechanisms.

Further, we find that narratives fit well into our understanding of what management control is, according to the definition to which we refer, namely: *all the devices or systems managers use to ensure that the behaviours and decisions of their employees are consistent with the organization's objectives and strategies.* In this case, ARC's core values are about a dialogue-based social approach to developing projects, which is well supported by working with narratives. When arguing against a narrative, it is not an argument of aesthetic value, which inexperienced architects would probably lose. Rather, it is about telling a story and visualizing it in such a way that the whole team agrees that this describes the narrative best. What is more, the narrative supports ARC's mission of context and a social dimension because, first, there is a culture of working within this framework, making everyone adhere to this mind set. And second, because management can veto bad narratives and direct people in the right direction without dictating the right way, thus making the team take ownership of the final concept. All in all, narratives seem to ensure that the employees' behaviour and decisions are consistent with the organization's objectives and strategies, because the team sets up a type of value statement for each project – the narrative – that is aligned with the organization's objectives and strategies simply by virtue of the process of forming the narrative and concept. If, that is, it is a good narrative.

In our paper, we use Elster's constraint theory to explain how narrative functions as a control. Elster argues that the ways in which a constraint affects individual's behaviour and decisions can be described in a two-step process: first, a choice of

constraints, and second, choice within constraints (p.176); this provides further insight into how the narrative functions as control mechanism. As described above, our case studies concentrate on situations of choices within constraints – in situations where the narrative had already been given. It is also clear that the narratives in the two cases seem to have a quite significant coordination effect in terms of directing actions and concentrating decision-making. In many ways, the cases seem to confirm that fewer options are better than many options - that "less is more" – and that the creative process is advanced by the directions given in the narrative – the communication values of the narrative seem to be high.

But one thing is the coordination of the architects in the project team; their motivation is quite another. Potentially, controls may crowd out creative people's motivation, and subsequently kill creativity (Amabile 1998). Apparently, the narratives seem to control the architects in ARC, but do not reduce their motivation. Why is that? In the following, we reflect further on the key characteristics of narratives as a control mechanism, and subsequently discuss their impact on motivation partly by including some of the observations from our cases, and partly by seeking explanations from one of the most dominating theories of motivation in the creativity literature, namely, cognitive evaluation theory (CET).

As we described in the theory section above, we clearly see the key components of a control mechanism in the way in which top management uses narratives in ARC: 1) top management requests a narrative from the project team; and 2) they hold the project team accountable for it. However, there are also features of the way in which these components are mobilized in the specific setting that turn narratives

into a distinct control mechanism, and subsequently support, rather than conflict with, motivation.

6.1. On the emergence of a narrative – a bottom-up process

One of these features is that it is the project team, and not top management, that formulates the narratives. Thus, the creation of the narrative is a bottom-up process. In a CET perspective, the bottom-up approach supports autonomy because the team drives the process, not management. Being responsible for the creation of the narrative that subsequently directs the design internalizes the PLOC, giving the architects a feeling of control and freedom. Solving the challenge of coming up with a narrative and concept that satisfies their own and management's critical view on architecture, supports the feeling of competence. Lastly, the close and democratic team work supports the feeling of relatedness. In other words, the concept phase where the narrative is created is supportive of intrinsic motivation and hence creativity-supporting. That the project directors speak about great teamwork and a great work environment together with a high level of creativity in the two cases, further indicate intrinsic motivation.

6.2. On being accountable to a narrative

Another feature is that it probably does makes a difference to be held accountable for a narrative rather than for following a rigid rule or number. While a narrative is still a standard according to which the manager judges the performance of the team, the performance it measures is not objective but subjective in character, and is based on discretion (Bol 2008). In this respect the benchmark – which is a qualitative statement – contains much more flexibility and adaptability and invites

oral feedback, which consequently is more supportive of intrinsic motivation and thus creativity than, e.g., pursuing a set goal like a KPI.[18] That ARC has a "collaborative culture," and that the architects "seem to like having a say" indicates that the accountability to the narrative is likely to give people a sense of belonging (relatedness) and even of identity, by arguing and discussing one visualisation as opposed to another.

7. Conclusion

This paper shows how an architectural firm uses narratives as a control mechanism in order to control creative processes. Narratives control because they coordinate and motivate the creative process, and in that respect, also enhance the creative output. This paper contributes to the understanding of creativity and control in at least three ways. First, it shows how Elster's constraint theory and notion of convention can be used to conceptualize narratives as a control mechanism in organizations, and subsequently provide insight to how creativity can be used as a two-step control process that first chooses the constraint and then chooses within the constraint. Second, it shows how a narrative can be understood as a particular type of belief system or social control, in that narrative is based on a method rooted in social conventions. Third and finally, this paper contributes to the relatively recent discussions of how control and creativity are phenomena that are not necessarily in opposition to one another, but can coexist.

[18] This is not a very controversial statement, in that most research agrees on the fact that supportive oral feedback enhances intrinsic motivation via support of all three basic needs, namely, the feelings of autonomy, competence, and relatedness. On the contrary, goal pursuing most likely undermines intrinsic motivation via external PLOC, and is hence autonomy-thwarting (Deci, Koestner, and Ryan 1999a, 1999b, Lepper, Henderlong, and Gingras 1999, Eisenberger, Pierce, and Cameron 1999, Deci, Koestner, and Ryan 2001, Cameron, Banko, and Pierce 2001, Elliot 1997, Elliot and Church 1997, Rawsthorne and Elliot 1999, Elliot and Harackiewicz 1996, Ryan, Koestner, and Deci 1991).

Management intervention in a creative environment

– motivation crowding-out or not?

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Abstract:

This paper shows that, despite apparently demotivating management control by intervention, intrinsic motivation can be sustained in creative environments. Intrinsic motivation, defined as *the self-desire to seek out new things and new challenges*, is a critical element for creativity. According to Self-Determination Theory, people must feel support for three basic needs – namely, the feelings of autonomy, competence, and relatedness – in order to be intrinsically motivated. This paper shows that despite the seeming removal of the feeling of autonomy by management intervention and surveillance, motivation crowding-out does not necessarily occur; consequently, people can remain intrinsically motivated in a creative environment. Specifically, the paper shows how architects can, in the short term, internalize management intervention via basic needs substitution and hence sustain intrinsic motivation. The paper mainly contributes to the literature on management control, motivation, and creativity by demonstrating mechanisms of how crowding-out can be avoided through a process of internalization via basic needs substitution. Whereas the internationalization processes have already been theorized in the CET/SDT literature, hardly any research provides empirical insights into how the consequences of external regulation for the three basic needs may offset one another in a management control setting.

1. Introduction

Empirical evidence presented in this paper suggests that *basic needs substitution* can offset motivation crowding-out (Frey and Jegen 2001), leaving intrinsic motivation more or less intact. It is shown how in an architecture firm's creative processes, management intervention and close surveillance – which is a type of management control – might not necessarily crowd-out motivation, though that is otherwise suggested by much research. Research on creativity, for example, suggests that close supervisor surveillance hinders creativity because intrinsic motivation is undermined (Deci, Connell, and Ryan 1989; Deci and Ryan 1985; 1987; Oldham and Cummings 1996; Zhou 2003; Rietzschel, Slijkhuis, and Van Yperen 2014; Choi, Anderson, and Veillette 2009). Basic needs, which are the needs for feelings of autonomy, competence, and relatedness, must be met for intrinsic motivation to exist (e.g. Deci and Ryan 1985). The paper shows how internalization via the substitution effect can counterbalance otherwise demotivating events. This contributes to research by suggesting empirically observed mechanisms by which this counterbalance takes place. This is particularly important in creative environments, which is the context of the present case.

Creativity, in popular terms, is a phenomenon whereby something new and somehow valuable is formed. The item created may be intangible, such as an idea, a scientific theory, a musical composition, or a joke; or it may be a physical object such as an invention, a literary work, or a painting[19]. More formalized creativity in business can be defined as the production of novel and useful ideas (e.g. Amabile Teresa 1996). Research on creativity has traditionally been the province of psychology and sociology, which most often have regarded creativity as

[19] Taken from Wikipedia, which is assumed to be the most popular definition available.

dependent on the individual's ability to perform this production. Specifically, this research shows that creativity requires domain knowledge, creative thinking skills, and intrinsic motivation in order to exist (Amabile 1998). More recently, creativity in business has been researched more in depth; in particular, the possible coexistence of creativity and control has been the subject of research with roots in management accounting and performance management. Results point to challenges within this field due to the fragility of creativity, but also to solutions, in that creativity and control are found to be possible complements under certain conditions. Adler and Chen (2011), for example, build on this literature and motivational theory to establish conditions for coexistence of creativity and control, under the assumption that (intrinsic) motivation must be intact for creativity to exist.

It is a well-established idea that intrinsic motivation is easily crowded out when external regulation is introduced to a task. This could, for example, be management control by intervention and close supervision; or in more general terms, surveillance. This undermines intrinsic motivation, according to both experiments and theory, because the person becomes aware of his or her behaviour and hence shifts focus from internal to external. Literature suggests that in order to be intrinsically motivated, three basic needs must be satisfied, which are the feeling of autonomy, the feeling of competence, and the feeling of relatedness. In particular, the feeling of autonomy is endangered when it comes to external regulation because autonomy stems from *internal* Perceived Locus of Causality (PLOC).

This paper shows that, despite apparently demotivating management control by intervention, intrinsic motivation can be sustained in creative environments. Despite the seeming removal of the feeling of autonomy by management intervention and surveillance, motivation crowding-out does not necessarily occur; consequently, people can remain intrinsically motivated in a creative environment. Specifically, the paper shows how architects can, in the short term, internalize management intervention via basic needs substitution and hence sustain intrinsic motivation. Data suggests that such internalization, via support for relatedness and competence, compensates for the direct negative autonomy effect and thus impedes the total effect, leaving the end result of the whole process a more satisfactory outcome. In particular, this can happen in architecture competition projects when established control mechanisms are unable to coordinate the team effort so as to aggregate the individual contributions into the project output. In cases when this happens, a manager intervenes by abandoning the original process plan and dictating a new direction. This particular management intervention has a direct demotivating effect on the team members by lowering the feeling of autonomy, which according to Self Determination Theory (SDT) undermines intrinsic motivation.

Nevertheless, architects acknowledge that their projects improve under such circumstances, and they even find it acceptable to work much harder for a period to achieve this. What is more, because the architects work in close collaboration with the team, they feel increasingly related and thus get a motivational boost that balances out the direct negative autonomy effect. A substitution effect is identified to illustrate how architects accept the undermining of autonomy in the short term, when relatedness with colleagues and the workplace is strong, and when enhanced competence in the form of solving the challenge better is an expected outcome.

This contributes to the literature on management control, motivation, and creativity by demonstrating mechanisms of how crowding-out can be avoided through a process of internalization via basic needs substitution. Whereas the internationalization processes have already been theorized in the CET/SDT literature (Ryan and Deci 2000a), hardly any research provides empirical insights into how the consequences of external regulation for the three basic needs may in fact offset one another in a management control setting.

The structure of this paper is as follows. Section 2 is the theory section, reviewing motivation and external regulation including crowding-out, management control, Self-Determination Theory, and creativity. Section 3 describes the method, and section 4 sets forth and analyses the data. Section 5 and 6 present a discussion and conclude the paper.

2. Theory

This paper explores the motivational effects from management intervention, which is a form of management control. The case is an architecture firm, and the context is hence a creative environment. This theory section is divided into three subsections, the first of which treats motivation and external regulation, including crowding-out. There follows a subsection on Self-Determination Theory (SDT), which deals with (among other things) types of motivation and basic needs support. Finally, a subsection on creativity rounds off the presentation of the context of this study.

2.1. Motivation and external regulation

There seem to be two conflicting streams of literature when it comes to the impact on motivation from external influences. When external factors undermine intrinsic motivation (Deci Edward 1975; Deci and Ryan 1985), which is labelled crowding-out (Frey and Jegen 2001), people shift focus away from the enjoyment of doing to the external factor. Financial rewards (Deci 1971), threats of punishment (Deci and Cascio 1972), deadlines (Amabile, DeJong, and Lepper 1976), surveillance (Lepper and Greene 1975), and evaluations (Smith 1976) are examples of early factors studied showing how external motivators can undermine intrinsic motivation. Zuckerman et al. (1978), e.g., find that people who have freedom of choice in which assignments to engage in and how to allocate their time were more intrinsically motivated than those who performed the same activities but without such choices. Many more recent studies have come to the same conclusions. The potential for crowding-out is thus an empirical fact, which has made the other stream of research focus on the conditions for *how* enhancement of intrinsic motivation can be facilitated rather than *whether* crowding-out will occur. For example, Deci (1971) showed that another external factor – verbal rewards – could enhance intrinsic motivation, implying a mixed conclusion.

Several studies point to the possible enhancing characteristics of external motivators on intrinsic motivation. Amabile (1997), e.g., argues that informational or enabling external motivators can be conducive [to creativity], particularly if initial levels of intrinsic motivation are high. Bonner et al. (2000) review financial incentives, and conclude that as task complexity (e.g. creative work) increases, the likelihood of improved performance decreases. Frey and Jegen (2001) address both crowding-out and crowding-in effects from external intervention in their Motivation Crowding Theory. They conclude that *strong empirical evidence* exists

for both, and that more research is needed in order to fully identify the underlying conditions. Kunz and Pfaff (2002) conclude, based on their review, that although hidden costs of rewards exist, empirical evidence cannot be interpreted as being contradictory to agency theory, and that the antecedents for these effects seldom prevail in business and are easily avoidable. Gagne and Deci (2005) apply Self-Determination Theory (SDT) to work motivation and discuss its relevance to organizational behaviour by showing how internalization[20] of external regulation can shift motivation from *controlled motivation* to *autonomous motivation*. Recently Kunz (2015) showed that evaluations with both objective and subjective measures better support performance when people have high autonomous motivation, as opposed to people with low autonomous motivation, where objective and precise performance measures were best.

This paper deals with management intervention by close surveillance of the creative process. This is within the definition of management control by most researchers, e.g. Merchant and Van der Stede (2012, p.5), who state that "Management control, then, includes all the devices or systems managers use to ensure that the behaviours and decisions of their employees are consistent with the organization's objectives and strategies. The systems themselves are commonly referred to as *management control systems* (MCS)." These systems include, besides those focused on measured performance, direct supervision, employee selection and retention, and codes of conduct. The latter focus on encouraging, enabling, or sometimes even forcing employees to act in the organization's best interest. It is common to include informal components, and in particular managerial behaviour, in the definition. Other examples of definitions of

[20] Internalization is defined as people taking in values, attitudes, or regulatory structures, such that the external regulation of a behavior is transformed into an internal regulation and thus no longer requires the presence of an external contingency (p.334)

management control count “mechanisms through which an organization can be managed so that it moves towards its objectives” (Ouchi 1979), belief and interactive control systems (Simons 1995), informal personal and social controls (Chenhall 2003), formal and informal mechanisms, processes, systems, and networks (Ferreira and Otley 2009), systems, rules, practices, values, and other activities management put in place in order to direct employee behaviour (Malmi and Brown 2008). Management intervention and surveillance indeed fall under management control according to all of these definitions.

2.2. Self-Determination Theory

Creative thinking skills and expertise are two out of three prerequisites for creativity, and are factors that can technically be manipulated via hiring and education. The third factor, motivation and specifically intrinsic motivation, is more fragile and less manipulative (Amabile 1998). Self-Determination Theory (SDT) is a theory of motivation that distinguishes between intrinsic and extrinsic motivation – “the self-desire to seek out new things and new challenges…” vs. “engaging in an activity in order to attain a desired outcome…” (Ryan and Deci 2000b). SDT is based on traditional empirical methods and focuses on self-motivation, personality integration, and the required conditions. Three basic needs have been identified – namely, “the needs for competence (Harter 1978; White 1963), relatedness (Baumeister and Leary 1995; Reis 1994), and autonomy (deCharms 1968; Deci Edward 1975) – that appear to be essential for facilitating optimal functioning of the natural propensities for growth and integration, as well as for constructive social development and personal well-being” (Ryan and Deci 2000b, p.68). SDT research further suggests that thwarting the same three factors will hinder or undermine self-motivation, social functioning, and personal well-being.

Cognitive Evaluation Theory (CET) presented by Deci and Ryan (1985) is a sub-theory within SDT that aims to specify the factors explaining variability in intrinsic motivation, which above all are the three psychological needs mentioned earlier: competence, autonomy, and relatedness. CET was formulated to integrate laboratory results of the effects from social-contextual events (e.g. feedback, communication, and rewards). First, it argues that when these factors are conducive to a feeling of competence, intrinsic motivation is enhanced. Second, it shows that the feeling of competence will only enhance intrinsic motivation if accompanied by a sense of autonomy, i.e., an internal Perceived Locus of Causality (PLOC). "Thus, according to CET, people must not only experience competence or efficacy, they must also experience their behaviour as self-determined for intrinsic motivation to be in evidence. This requires either immediate contextual supports for autonomy and competence or abiding inner resources (Reeve 1996) that are typically the result of prior developmental supports for perceived autonomy and competence" (Ryan and Deci 2000b, p.70). Last, CET hypothesizes that intrinsic motivation is more likely to flourish in environments characterized by a sense of security and relatedness. While many creative actions are performed in isolation, and thus are unrelated by definition, this third factor becomes relevant when tasks are performed in groups or on behalf of an organization in which colleagues and the organization matter for the type of motivation.

Another sub-theory within SDT is Organismic Integration Theory (OIT), which focuses on detailing the various forms of extrinsic motivation, ranging from actions being driven by compliance, to congruence being the "relevant regulatory process". The more internalized a task is, the more it supports intrinsic motivation. "According to SDT, these different motivations reflect differing degrees to which

the value and regulation of the requested behaviour have been internalized and integrated. Internalization refers to people's 'taking in' a value or regulation, and integration refers to the further transformation of that regulation into their own so that, subsequently, it will emanate from their sense of self" (p.71). The four types of extrinsic motivation are: (a) External Regulation, where the individual reacts to an external threat or reward. (b) Introjected Regulation, where the individual acts are based on internal feelings of ego, pride, self-esteem, or the like. (c) Identified Regulation, where the individual acts are based on personally accepting and/or valuing the task as important. (d) Integrated Regulation, where the individual is fully and personally in alignment with the task.

"Actions characterized by integrated motivation share many qualities with intrinsic motivation, although they are still considered extrinsic because they are done to attain separable outcomes rather than for their *inherent enjoyment*. In some studies, identified, integrated, and intrinsic forms of regulation have been combined to form an autonomous motivation composite" (p.73). This is when PLOC is internal. External and introjected regulation are also referred to as controlled motivation, and have external PLOC (Gagné and Deci 2005). "More specifically, SDT postulates that when people experience satisfaction of the needs for relatedness and competence with respect to a behaviour, they will tend to internalize its value and regulation, but the degree of satisfaction of the need for autonomy is what distinguishes whether identification or integration (autonomous motivation / internal PLOC), rather than just introjection (controlled motivation / external PLOC), will occur" (Gagné and Deci 2005).

2.3. Creativity

In general, “we tend to associate creativity with the arts and to think of it as the expression of highly original ideas”. In business “originality isn’t enough. To be creative, an idea must also be appropriate – useful and actionable.” (Amabile 1998). A number of researchers define creativity as the production of novel and useful ideas in any domain (Hammer 1976; Woodman, Sawyer, and Griffin 1993; Amabile et al. 1996). Creativity is the product of three components, which are creative-thinking skills, expertise, and intrinsic motivation: “an inner passion to solve the problem at hand leads to solutions far more creative than do external rewards, such as money” (Amabile 1998). On the topic of creativity and control, Wynder (2007) examined the effect of process-based control on creativity when domain-relevant knowledge is high or low, respectively. He found that control impedes creativity when domain-relevant knowledge is high, and vice versa for low domain-relevant knowledge. Wynder concludes that when knowledge is high, it is important to take special care to ensure that the right type of control is used in order to support creativity. In general, Wynder further supports previous arguments to the effect that people with high level of knowledge should be given high freedom in their creative processes in order to be creative.

Amabile (1988) finds that the most promoting factor for creativity is freedom, mentioned by 74% of their respondents, where *operational autonomy* was the most important type of freedom. The same study showed also that the second most inhibiting factor for creativity was constraints (48% of respondents) in the form of lack of freedom in deciding what to do or how to accomplish the task, or a lack of sense of control over one’s own work and ideas (p.147). Controlling or limiting supervision is expected to diminish creative performance, because the experienced control will shift attention away from the task and towards the external influence,

and thus undermine intrinsic motivation (Deci, Connell, and Ryan 1989; Deci and Ryan 1985; 1987). In a study by Oldham and Cummings (1996), it was found that supportive and non-controlling supervision produced the most creative work, as one would expect, and vice versa, i.e. controlling supervision impedes creative work. In another study, it was found that in the presence of creative coworkers, a high degree of supervisor close monitoring decreased creative performance, compared to a low degree of supervisor close monitoring (Zhou 2003). Rietzschel, Slijkhuis, and Yperen (2014) argue that close monitoring negatively affects job satisfaction, intrinsic work motivation, and innovative job performance for employees with a low need for structure, because it decreases autonomy and causes people to feel controlled. The opposite is true for people with a high need for structure. Choi, Anderson, and Veillette (2009) hypothesize that "close monitoring" should correlate negatively with creativity, but are inconclusive on the tested effect, since the variable is a combined one, and as they remark in their discussion, it can be interpreted both as engagement (positive) and controlling (negative).

Adler and Chen (2011) apply SDT and self-construal to put forth 15 propositions on the coexistence of creativity and control in large-scale collaborative creativity contexts. Based on Perceived Locus of Causality (PLOC) (Ryan and Connell 1989) and the concept of independent and interdependent self-construal (Markus and Kitayama 1991), they argue that creativity and control can coexist under certain conditions in large-scale collaborative creativity set-ups.

3. Method

From September 2013 to June 2015, I followed the architecture case company (pseudonym ARC henceforth) in depth as a single case study (Yin Robert 2009). The purpose was to explore the coexistence of creativity and control for the purpose of my PhD thesis. During the whole period of almost two years I observed in round numbers 50 management meetings, 20 office meetings, five strategy meetings, spent several weeks at the office working, participated in social gatherings, and attended the biannual study trip. During all meetings notes were taken. All interviews conducted were recorded and transcribed. Before interviewing the architects about the current case, I interviewed the founder and two directors about the firm and industry in general. I also simply observed many management meetings and office meetings before getting concrete, along with talking to architects about the projects in general and how it is working at ARC.

Before I started interviewing architects or following any projects, I observed that there was frequent buzzing in the office about some teams occasionally working late and weekends. Several things indicated when teams were under extreme time pressure. First, as mentioned, there would be talking about it in the office. Second, since the teams would work until late, they would also come in later than the other architects following normal routines. And third: during the management meetings every Monday morning, much time would be spent talking about the particular projects in distress. The project director on the project would obviously also be busier, but the creative director would often also participate in the project directly. In fact, most often the creative director (Founder) would directly initiate the distress. This would be done by direct intervention into the project process, dictating a new direction for the remainder of the project. This would often mean a whole new story and design where other times it would “just” mean major

revision. I found these interventions very interesting, and decided to investigate further into how processes were broken and what happened to motivation and creativity during these interruptions.

All architects who had been with ARC for one year or more were interviewed, in total 22 architects. The interviews lasted between 45 minutes and one and a half hours, with an average length of 70 minutes. I did semi-structured interviews with six overall themes, which were: 1) What is difficult / tough in your job? 2) What characterizes a successful project, in your opinion? 3) What motivates you? 4) What demotivates you? 5) What characterizes ARC? 6) How do you feel about the rapid growth? Before starting the interviews, I would ask them to tell about their background and how they ended up working for ARC, what their role is, conflicts in general, and so on. Rounding off the interview, I always asked them if they felt that they had had the chance to explain properly what they meant and if they had anything to add to the interview. Besides interviews, every time I talked to someone about these types of interventions, I would make sure to make notes about my conversation and use later in the analysis. And the same for meetings when these things were mentioned – noted down and used later in the analysis.

All interviews were recorded and transcribed, yielding close to 500 pages of transcriptions. Before using the transcriptions, I listened to all interviews again and took notes about the major points each architect had. The major points were put down under each of the six themes. Following this, all the major points that were touched upon by more than two architects were put into a spreadsheet, and I counted how many there were and who said what. It turned out that architects with less than three years of experience answered differently than those with more

experience. Because of this, the architects were split into two groups when data was analyzed. The major reason for this is most likely twofold, namely, the type of work they do and the experience itself. Younger architects more often work on competition projects, while the more experienced tend to work on building projects (the phase after the competition is won). The experience itself is also discussed in the analysis in the light of SDT. A summary of some of the points from the interviews is seen in table 1 under analysis. The most frequent points were identified by this approach in order to finally review all transcriptions to gather quotes and explanations of how these points played out on an individual basis. Table 1 in the next section summarizes the most motivating and demotivating factors identified by the architects interviewed. These factors – namely, the points most frequently mentioned by the architects[21] – are explained more in depth later on in the next section (Section 4), and are discussed subsequently (in Section 5).

4. Analysis

Research points to the three basic needs and intrinsic motivation as critical components for creativity. Simultaneously these are at risk from management control, making coexistence challenging, though still possible. For example, Adler and Chen (2011) use PLOC and self-construal to conclude that coexistence of creativity and control are possible under the assumption that intrinsic motivation is maintained. This study investigates an empirical case, thereby complementing previous conceptual studies with insights won by identifying a mechanism of basic needs substitution by which this plays out in a real-life creative environment. This section presents the data. The section is separated into four sub-sections, each of which describes different but related bits and pieces of the data. Section 4.1. offers

[21] The category labels used, on the other hand, are my own interpretations inspired by the architects' words.

a summary of what motivates and demotivates architects most frequently. Section 4.2. shows evidence that architects are intrinsically motivated, among other reasons because they feel support for all their basic needs. Section 4.3. gives an account of what happens when intervention takes place; and finally, in section 4.4., evidence of internalization via basic needs substitution is presented. The idea behind the structure is, first, to establish that intrinsic motivation in fact exists during regular process, and then to show how this is maintained during management interventions.

4.1. General motivation

During the interviews, the architects were asked about motivation and demotivation in general terms with no specific relation to intrinsic or extrinsic, or projects, organization, or other predefined factors. Doing great architecture in general, and having great colleagues in particular, were motivating factors for all the architects interviewed. Among those with less than three years of experience in ARC, many mentioned responsibility as a motivational driver, whereas almost no one with more than three years of experience mentioned that explicitly. On the other hand, almost all architects with more than three years in ARC said that the founder motivates them, while almost no one with less than three years' experience mentioned Founder as a motivator. As main sources of demotivation, less experienced architects said that it was demotivating when Founder intervened in the creative process (there is a tendency that less experienced architects mostly work on internal competitions where more experienced architects work on building projects in collaboration with many external stakeholders). More experienced architects were more demotivated over conflicts with external partners that should have been closed down earlier. All architects found

communication and coordination with many stakeholders difficult and demotivating when gone wrong.

Table 1. Motivating and demotivating factors

	Motivate				Demotivate		
	Great architecture	**Colleagues & the place**	**Responsibility**	**Founder**	**Comm. & Coord.**	**Founder intervene**	**Conflicts with externs**
Less experienced (<3y) N=17			N=9 (53%)			N=11 (65%)	
More experienced (>3y) N=5				N=4 (80%)			N=3 (60%)
All architects N=22	N=22 (100%)	N=22 (100%)			N=15 (68%)		

A follow up question was about how the architects perceived the place. Most pointed to the architectural values and methods but even more talked about the structures and types of people. Out of 22:

- 14 (64%) mentioned the specific method, in which not only the building is at the center of the design, but also the urban space surrounding it and the city itself, not to neglect the social dimension of the users of the building or area being designed.
- 15 (68%) pointed to their colleagues as “young, dynamic, and highly skilled”, with many also describing their colleagues as their personal friends and sources of inspiration.

- 18 out of the 22 (82%) architects being interviewed talked about the positive aspects of the flat structures and feeling trusted, and about how important open discussions were in which everyone – intern and manager alike – had a say in discussions.

The general perception at the first stage of data analysis is that architects in general feel motivated by doing exactly what they are hired to do: great architecture. Besides inherently enjoying what they are doing, they seem to feel supported in all their basic needs, which will be further explored in the following subsections.

4.2. Architects are intrinsically motivated

In this subsection, job enjoyment and support of the three basic needs are explored. Evidence indicates that architects are intrinsically motivated because they *inherently* enjoy what they are doing and feel supported in all three basic needs.

Enjoyment and competence

All architects replied the same to the question: "what motivates you?" – Making great architecture! Asking them to elaborate yielded, among others, the quotes in the box below.

> *It motivates me to see things happen. To experience that it's possible. To see it becomes amazing and good and that other people understand it. (Architect 1)*

Architecture motivates me. The main reason I chose this place were the awesome projects they do here. When I started, they had e.g. just done the [name of project], which won the [name of award] at the Biennale. (Architect 2)

My daily work [motivates me]. We always challenge our own concepts and we never stop until we have reached the best possible solution. I am proud to work here. (Architect 3)

The projects [motivate me]. To create and put things into the world. To design and feel the community around creating something relevant for people. (Architect 4)

That each project is unique [motivates me]. That it's not just a standard good we are fabricating, but that there are professional challenges to be solved, and that we do it together as a team. (Architect 5)

These are just a few of the quotes on how architecture motivates the architects and that it is about being professionally challenged and able to solve the problems. Two points are intertwined in these quotes: intrinsic motivation (by definition, because they enjoy what they are doing), and being good at what they are doing,

i.e., being able to solve the challenges put forward. From the interviews, it was not possible to pinpoint exactly why people like creating great architecture, but there is more to it than just the satisfaction of being good. A few indicate that variation is important, pointing to the *creation* of things as opposed to the mere *production* of things. On the issue of feeling competent, answers indicate that professional challenges are motivating and extremely satisfying to solve. When asked what motivates the architects, some answered by what demotivates them. This would mostly be doing repetitive work for standard solutions. Some of these quotes are collected in the box below.

It is [demotivating] when you are asked to help someone just working something out without having influence on the solution yourself and you are being pushed around a little too much. (Architect 6)

It's demotivating to do trivial things… To do the same thing again and again. And then if you have to ask too much to get it working. (Architect 7)

Boring work [is demotivating]. I wouldn't want to be an architect if I had to do too much of the same, like designing window frames or ceilings. If I got a job like that, I would quit. (Architect 8)

If ARC gets a lot of bread-and-butter projects it would be demotivating to go to work. It's something that needs to be special about ARC. I think people here have more drive because they know that we are doing something fantastic. (Architect 1)

Relatedness

That most architects point to great colleagues as a source of motivation and further, when being asked about the place, refer to it as a collection of young, dynamic, and highly skilled people, is a strong indicator that they feel a strong positive connection to the place and identify with the people and the place. Having observed them, e.g., during every day work, at social gatherings, and on the study trip, it is apparent that there are more than collegial bonds between many of the architects. Many are friends from architecture school or before, and even "just colleagues" communicate in a very informal and jovial manner. And it is not only the way they communicate and interact but also what they say about motivation, colleagues, and the place. Below are some of the quotes from the interviews, which are only a few indicators, compared to all the times I have heard people praise and talk nicely about each other.

Being surrounded by many young ambitious people who are not afraid of working hard motivates me… It's the professional climate and the good social environment. (Architect 9)

The atmosphere here is very motivating. And the architecture. The two go hand in hand but I guess that the atmosphere is the most important. If I had to choose I would always go for the atmosphere. (Architect 10)

All my colleagues motivate me. A lot of them are actually my friends or close to it. And everybody says hi to everyone always. (Architect 11)

Internal competition is usually not good. That is actually something that we do not have here. One of the unique characteristics about this place is the ability to work together in all dimensions. (Architect 12)

I think ARC is characterized by a lot of wonderful people. I can't put my finger at a single person that annoys me. That is one of the truly great qualities about this place. No one has sharp elbows and people help each other. (Architect 7)

Lots of young ambitious people… People are very open and ambitious and are always trying to get the best out of it in a collaborative manner. (Architect 13)

Autonomy

Several points from the interviews indicate that people feel empowered with the freedom to make decisions, heard in discussions, and in general trusted. Especially the less experienced architects (less than three years of experience) point to having responsibility as a motivator, and in general people point to the positive elements of a flat structure when asked about characteristics of ARC. Words like autonomy or freedom are not used explicitly, but these comments more than just indicate that people enjoy working autonomously and being trusted. The strongest indicator that people enjoy autonomy is actually not expressed in the direct words of motivating factors but more in the terms of demotivating factors when autonomy is taken away from them[22]. Below are some of the positive things people say about responsibility and flat structures; a bit further below, the demotivating aspects of lack of autonomy will be discussed in turn.

Three things; it's the good social environment, the professional attitude, and the fact that I get the responsibility I can take. (Architect 9)

I get motivated because the place is very developing for me. And having a great deal of responsibility – that in itself is motivating. (Architect 14)

I like the responsibility. That makes me feel they trust me.

[22] This could for example be understood in the frame of Hertzberg's (2003, 2008) hygiene and motivational factors, where autonomy is actually a prerequisite for motivation in that it will demotivate when taken away, but it will not make people feel motivated when it is present.

No one is telling me what to do. We talk by the wall and agree who does what and then it's up to me – more or less… (Architect 3)

I could never work a place where they micromanage – for example at [another architecture firm] they watch you closely. It's not like that here. I feel free to do things my way. (Architect 5)

Below are a few of the indicators of how architects feel demotivated when autonomy is taken away during management intervention:

When I came on to the project three weeks before deadline there was no master plan for what should be done… It was something like working three weeks 24/7… And Founder sat with me every night looking at my drawings and we talked about what was going to happen. It was really stressful and the worst I have ever experienced, I think. (Architect 6)

Sometimes he [Founder] says, "this is not how it's going to be!" If the project team thinks that it's good enough and decides that this is how it's going to be, and he doesn't think it's good enough, then he keeps questioning it… That

can put the process under a lot of pressure. (Architect 9)

In sum, architects get motivated particularly by the inherent enjoyment of doing great architecture, feeling good at it and being challenged, having good relations at the workplace, and feeling empowered and trusted. We now turn to describe how project distress is managed by close surveillance and removal of architectural freedom. This has a direct demotivating effect; but as will also be shown, it is mitigated by a substitution effect of opposing forces supported by social relations and feeling of competence. Before getting too deep into the basic needs, how a management intervention occurs will be described.

4.3. Management intervention and surveillance as management control

According to Founder a good competition process has two phases. The first phase is about developing the concept and story for the project, and the second phase is development of the actual architecture. The concept phase (phase one) includes communicating the requirements from the client (called the program), analyzing the location, surroundings, and users of the building or urban area being developed, and developing a story line and a visual representation (called a concept). When the concept is set, phase one is over and phase two, which is "production", can start. From here on the project is supposed to find a steady workflow towards the deadline. During phase two the people connected to the project each work on their own elements of the project and communicate frequently and informally. Toward the end of phase two, and hence of the whole competition project, the workload is increased again due to aggregation of individual work and thus increased coordination and adjustments to fit the individual parts to the concept. Where the middle big chunk of the project between

concept development and deadline is progressing steadily and made up by mainly individual tasks, the last two to three weeks are more about integration, coordination, and communication.

The most difficult part of a competition project is getting the concept right. The storyline is particularly hard to get right, because it has to be simple enough to communicate in a quick and understandable way, and at the same time be deep enough to express the complexity of the project. Often it is not evident from the start whether a concept is actually good enough to support the project; it is only during the production process, where people are supposed to work more or less independently, that it becomes more and more clear that the concept cannot tie the individual parts together. In such cases, the team must try to develop a new concept strong enough to take the project home, which means many lost hours and a huge spike in workload toward the end of the project. Very often it is Founder who must step in and overrule the project team, since it is much harder to see such problems from inside the project than it is from the outside. But the problem of course, seen from the outside, is that it is only possible to discover an unaligned project when the aggregation starts, which presupposes that the project is at or near the end of the second phase.

The second type of the two processes, in which the founder intervenes and the whole project suddenly goes from smooth and stable to hectic and stressed, is the single most demotivating element, according to the architects working on the competition projects. Founder intervenes basically by blocking the regular process and installing a type of “state of emergency” where other rules apply, often including long hours for weeks with close surveillance by Founder himself. Before

the actual intervention, Founder first needs to identify a problem. During the project, Founder gets visual presentations in Dropbox, called weekend booklets, every Friday during the project. A weekend booklet is a complete graphical presentation of the sketches and models completed and planned, including text, pictures, etc. Each project is also presented on a board by the wall in the office visual to everyone. The state of each project is also briefly presented on Mondays during the management meetings based on the weekend booklets and the project director's input, and problems, if any, are discussed. It is usually at these meetings that Founder expresses concern in cases where he did not find the weekend booklet satisfactory. Following such expressions of concern, Founder usually calls a meeting on the same day with the project team by the wall in order to discuss more in detail how the concept and architecture align. A meeting like this usually ends with agreement on a new meeting a few days later, where Founder needs to feel confident that the project is on track. Often the following meeting is satisfactory, because adjustments have been made accordingly; but sometimes it is not good enough, and an intervention occurs.

In the case of intervention, Founder simply asks people on the project to stay until late that evening, and with that the process of correcting the project has begun. When Founder has completed his regular day, he meets with the team again, and a longer discussion of the state of the project, including the quality of the concept, is initiated. This discussion has the objective of getting the whole team to agree that the project needs correction, which normally succeeds. After this, an entirely new concept phase begins, although the new concept is usually developed based on previous ideas and sketches, and is not developed completely from scratch. This takes place under direct surveillance by Founder, who also always has the last say in discussions. Further, when work is distributed among the architects, Founder

specifically states who does what, and checks the progress often during the course of production. Since intervention mostly takes place two to three weeks before deadline, the process is cramped by a factor of two to three, making everyone work around the clock, including Founder. But since Founder has his regular schedule during office hours, he mostly sits with the team during evenings and weekends. This can go on for the entire final two or three weeks; but sometimes it also happens much closer to deadline, in which case it might only take one week or even sometimes "just" a very hectic weekend.

Two out of three young architects interviewed point to this as being directly demotivating. And taking into account that not all young architects have even experienced this type of intervention, it is a larger fraction of the ones who have actually experienced it. When it occurs, Founder more or less dictates what needs to be done, and also starts monitoring the team by engaging actively in the process as described, which stresses and demotivates them. They feel that creative freedom has been taken away from them and replaced by micromanagement. Interestingly, at the same time they express that they know this is needed, and despite directly losing motivation due to lost freedom, they work even harder to finish the project to make it a good one. What they say during interviews is that the project always gets better when Founder intervenes, which is important to them, and that they can sustain their effort because they work closely together with their colleagues and relate to ARC during these periods. The next sub-section takes a closer look at what actually happens during these interventions, and in particular what some architects say about it.

4.4. Demotivation, basic needs substitution, and crowding-out

One architect expresses what goes on when Founder interrupts the process and dictates the direction. In one sense, it is frustrating; but in another way, the architect agrees that it is necessary. The architect understands and agrees with the external regulation, and seemingly keeps the motivation somewhat intact, even though the regulation itself is frustrating. Having high ambitions for each project is very motivating for all architects, and it appears as if this factor also helps maintain motivation on a high level even when autonomy is removed. Crowding-out is avoided because of acceptance of the high level of ambitions, which is related to competence. Consequently, increased focus on competence via the intervention makes it acceptable to decrease the level of autonomy.

> *It's frustrating in one way and everyone gets super demotivated at that moment of truth* [When Founder intervenes]. *But we all see that he's right and we know that this is not the first time it has happened, or the last. (Architect 4)*

Besides accepting that the quality of the project gets better, relations with colleagues also matter a great deal and play an important role during the intervention. The architect continues to explain that it also makes it more acceptable when the whole team works together, and that this is something that characterizes the place. Therefore, the potential crowding-out by lowering autonomy is also offset by increased emphasis on relatedness, at least for a short while. He finishes the quote by emphasizing that the high ambitions indeed are a driving force in itself. For this architect, it is clear that both the enhanced feeling

of competence and relatedness balance out the negative effect from lowered autonomy; the net effect is ambiguous, although not large.

> *Because we are in it together, it's more ok – and that's unique with ARC. (Architect 4)*

> *Because we always try to collaborate instead of compete internally. And we finish it together. And it's super stressful to have Founder breathing down your neck for two weeks but it also tells you that it's important what you are doing and that gives you a kick. So, I guess the frustration also becomes the fuel that way… (Architect 4)*

Another architect also spoke explicitly about the final stage of the project and how ambitions and relations are important in what could have been a motivational breakdown. She starts by describing the frustration of being closely surveilled and how it also seemed like a waste of time because it was unrealistic to achieve such high ambitions.

> *Founder sat with me every night and looked at my drawings, and we talked about what was going to happen… It was the worst I've ever experienced, I think. It was unrealistic in terms of what you could achieve. Too ambitious on our behalf. (Architect 6)*

But then, when being asked about the high ambitions it also appears that this is the good thing about ARC and that this in itself is a good thing. When asked why they didn't just abandon the project, she replies that it is a mindset to keep going and that this is a part of what makes ARC a good place to be. Again, the need for competence in the projects balances out the lost autonomy, internalizing Founder's interference.

> *Well, it's not our style [to abandon a project]. And it is also one of the great things about working for ARC, that we have so insanely high ambitions. I think it is only afterwards we realized that it was unrealistic and too ambitious. While it goes on you just work 24/7 and it's not something you think about. If you start thinking along those lines, it's not possible to keep up the spirit. And when Founder is even there and the whole team just gives everything they got then you don't want to be the one pulling out. (Architect 6)*

From both the previous quote and the next, it is evident that both competence and relations to colleagues and Founder have great impact in this case, offsetting the negative effect from lost autonomy, because when everybody is working hard together it doesn't matter so much.

> *That you feel like a community. I would probably not put the same enthusiasm in it if the others didn't too. But it's your friends, so you don't feel lonely even though it's four in the morning. And still it's also a pretty cool feeling when we decide to go home and just evaluate the night and it's*

some mega cool things we've done. Unfortunately, it was just not quite good enough... [because the project did not win] (Architect 6)

It is not only what the architects say about these interventions that indicates that crowding-out might not be such a big problem but also what they do. During one of my working days at ARC, an architect came in to the office rather late, around 11. A few people were standing around the coffee maker, and started just gently applauding the architect; one of them gave him a high five. The architect was coming in late because he had been working until late on a distressed project. Later in the day I talked to the guy high-fiving, and asked why they applauded and high-fived the architect coming in late. He answered that because they all know how hard it is to work with Founder on your back, they need a little cheering up. But last night, in particular, they had also come up with some awesome ideas that just looked amazing, which everyone at ARC were aware of because it was on display on the wall. They had just been talking about the project at the coffee maker, which was probably the reason for the applauding, he said. The team worked hard on the project for around two weeks in total before it was handed in, and during this period there was a lot of buzzing about it: other architects showed much interest by talking to the team and looking at the wall. And the team itself, although seeming tired at times, also seemed to enjoy the attention and admiration.

During the first management meeting after the intervention, I paid particular attention to what was being said about the project in distress. The project director said in his update that the project had run into some problems last week because the concept did not really hold water, and that the whole team had been working really hard to improve it. He also said that the project was looking very good now,

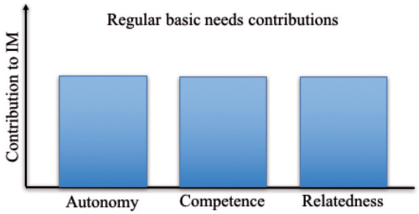
and that this was what they should have done from the start[23]. The Founder noted that the project was really bad before they decided to change it and that he blamed some of the collaborating firms as well as himself for not seeing this coming, but at the same time that the whole team was working really hard and had come up with some really amazing stuff. During a later office meeting, the project was presented to the entire office and here everyone in the whole architecture firm was impressed with the architecture and that it had been completed in only a couple of weeks from the intervention to the hand-in. By this point, it had not yet been announced whether the project had won; but that did not seem to matter during the presentation. Instead, it was obvious that the architect presenting the project was proud of the result, and both Founder and the project director praised the whole team for hard and dedicated work and for making something they really felt was amazing architecture. In the end, the project did win the competition, which was at a later stage celebrated with champagne on the day of the announcement.

5. Discussion

According to SDT, people need feelings of autonomy, competence, and relatedness in order to feel intrinsically motivated. Summarizing the analysis above, all three basic needs are supported and important to the architects interviewed, together with inherent enjoyment of the task. First, high ambitions and great architecture motivate the architects. They like to be challenged and are proud to be working at ARC where no project is second tier, which relates to the feeling of competence. And they enjoy the task of creation itself, which is the inherent enjoyment, shifting motivation from integrated to intrinsic. Second, relations to colleagues are important. Many architects are more than just good

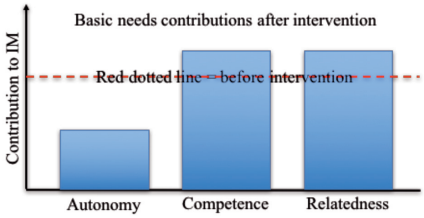
[23] During an interview the project director explained that the concept phase had been somewhat chaotic because there had been many stakeholders and that everyone was too eager to get started to actually make a solid concept. The concept had thus only been some vague ideas and not enough (retrospective) to drive the process.

colleagues at the workplace, they are actually friends, supporting the basic need for social relatedness. Last, feeling empowered and having responsibility are important to the architects and motivate them, supporting the point that the need for a feeling of autonomy supports IM. This is in alignment with SDT, indicating that architects at ARC are intrinsically motivated on a regular basis. The presence of all three basic needs is illustrated by the figure embedded in this paragraph. This representation of equal contributions to IM from each of the three basic needs is just for illustrative purposes, and to anticipate later points in the discussion.



The claim that architects are regularly intrinsically motivated because all their basic needs and inherent enjoyment are supported is hardly new. It merely supports existing experiments and theory, and hence confirms traditional wisdom. But that management can intervene, removing autonomy with a directly demotivating effect, and yet still motivate architects is somewhat controversial. According to the architects interviewed, the single most demotivating event is when Founder intervenes and takes over the process by dictating a new direction and surveilling the architects. At the same time, however, they do not seem to have actually lost their motivation. They work hard until late every evening, and the creative product gets better, as everyone agrees. The direct demotivating effect seems to be the isolated event of Founder intervening. But there are derived effects stemming from the intervention, leaving the end result somewhat motivationally intact. The positive effects are the perception that the project gets better, and that there are good social relations to support the extra effort.

First, autonomy is not completely removed, but has shifted. That architects understands the reasoning behind the intervention and agree that it is necessary means that some degree of internal PLOC remains (since the architects do not seem to do the rest of the project because of rewards or threat of punishment, nor even because of ego-involvement). Obviously, the process is not as free as under normal circumstances, and the architects feel limited by Founder's surveillance, though not enough to undermine autonomy completely. So autonomy surely plummets, but it does not vanish. Second, competence gets a boost because the project gets better. The fact that architects are proud of the project when they do well and accomplish wonders in a short time indicates that this basic need gets more support. And the agreement that it was needed and that people find pride in working at a place where creative quality is never sacrificed adds to this point. Third, the importance of great colleagues during the late evenings and nights also has positive motivational effects via the feeling of relatedness. The increased feeling of social relations enhances the feeling of relatedness and hence boosts motivation. Finally, no one ever stated that they did not like what they were doing during these periods, just that it had a demotivating direct effect. This indicates that the overall motivation might in fact be more or less intact, only with some substitution in basic needs support. The shifted levels of basic needs via the substitution effect is illustrated in the embedded figure. The red dotted line illustrates the levels of each of the basic needs before the intervention, and the blue columns illustrate the possible levels after the intervention.



The idea behind the figure is to show how IM can be sustained at the same level after the intervention as before even though the level of autonomy has decreased. This effect is a *substitution effect* because the lower level of autonomy (support) is accompanied by higher levels of competence and relatedness (support). Internalization hence happens through a mechanism of substitution among the three basic needs, leaving intrinsic motivation more or less unaffected. The net effect can be both more and less intrinsic motivation depending of the "strength" of internalization. This effect will depend on both the situation and the individual architect. The intervention directly affects two of the three basic needs, and social circumstances facilitate this. Autonomy and structure (which support competence) are directly substituted for by the intervention because Founder explicitly dictates the new direction, hence taking away freedom from the individuals; but at the same time he offers a structured process for improving the project going forward. Support of relatedness happens indirectly, through long working hours in the company of good colleagues. Support of relatedness thus depends on people working together on the project, and not in isolation – as would be the case if people worked from home.

SDT refers to internalization when "people take in values, attitudes, or regulatory structures, such that the external regulation of a behavior is transformed into an internal regulation and thus no longer requires the presence of an external contingency" (Gagné and Deci 2005). I believe that this case shows evidence of a more exact mechanism of such internalization, which I have chosen to label *basic needs substitution* or the (basic needs) *substitution effect*. The effect from one basic need being suppressed or limited is demotivating, but at the same time is offset by the two other basic needs being supported more strongly. Several factors seem to facilitate this substitution. One is the strong belief in always good quality and agreement that Founder's intervention make the project better. The key event

is when Founder meets with the team. At this point he must convince the team that the project is simply not good enough and needs to change course. Second, friendship, or at least good colleagueship, is critical. The feeling of relatedness is important during the long work hours, and could be jeopardized if people did not feel sufficiently related as a starting point. Last, the fact that Founder himself, or at least a manager, actively engages in the process might also have an important effect. It makes the architects feel that what they are doing is important, and they learn while working in a structured process. This supports competence. At the same time, the identification with the place (ARC) and with management supports the feeling of relatedness. Finally, it is likely that this type of intervention could not take place in the beginning or early stage of a project. The architects need time to try things out on their own, and only when it is evident that they cannot bring the project home in a satisfactory manner by themselves can Founder convince them to change course.

One likely reason that motivation crowding-out can be prevented in the short run by basic needs substitution is a shift in individual basic needs preferences. Architects have individual needs for fulfilment of the basic needs, which might depend on the state of the project. If the project is on track, the need for autonomy might be relatively high because the feeling of competence seems to be sufficiently fulfilled due to the satisfactory process. If, on the other hand, the project is not that satisfactory and the need for competence is thus not fulfilled, the relative need for competence support increases as a product of the relative decline in the need for autonomy support. Wynder (2007) and Rietzschel et al. (2014) have made somewhat similar points regarding *inter*-personal preferences for structure vs. autonomy, whereas this case is about contingent *intra*-personal preferences shifting. In this case, because architects believe in always making as good architecture as possible, they internalize the management intervention via

basic needs substitution. And this needs substitution leaves the architects equally motivated (or close to it), because the needs that receive more support by the changed process are also the ones that are the most important to the architects in that particular situation.

6. Conclusion

In this paper, evidence has been presented that architects in a particular architectural firm generally feel intrinsically motivated. It has further been shown how certain projects experience strict management control by management intervention. According to the architects interviewed, this is highly demotivating because management in this case takes over the process and dictates a new direction. On the terms of Self-Determination Theory, autonomy is undermined, which then does not support intrinsic motivation. But despite this seeming undermining of autonomy, architects do not in fact behave as if they are less motivated. The architects themselves point to the fact that the project improve when management intervenes, and that it is not all that bad to work hard on the project when it is in the company of great colleagues. This points to the two other basic needs besides the feeling of autonomy, which are the feelings of competence and relatedness. That the architects have high pride in making great projects every time, or at least try to, makes them accept and agree that intervention is needed. And great colleagues during the long hours enhance the feeling of relatedness, further supporting intrinsic motivation.

This paper hence shows that, despite apparently demotivating management control, intrinsic motivation can be sustained in creative environments. Despite management intervention and the seeming undermining of the feeling of

autonomy by management intervention and surveillance, motivation crowding-out does not necessarily occur; consequently, people can remain intrinsically motivated in a creative environment. Specifically, this paper shows how architects can, in the short term, internalize management intervention via basic needs substitution and hence sustain intrinsic motivation. Basic needs substitution has particularly good conditions when intra-personal preferences for the basic needs shift in alignment with the management intervention. Acceptance and agreement with the need for intervention due to low creative quality increase the relative emphasis and need for competence support, and hence lower the relative need for autonomy. Relatedness facilitates the process.

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