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Perspectives on Optimism within the Context of Project Management: A Call for Multilevel Research

Author: Birgit Weyer

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CONCEPTUAL PAPER

Perspectives on Optimism within the Context of Project Management: A Call for Multilevel Research

Birgit Weyer

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Editors:
Gert Bruche
Christoph Dörrenbächer
Friedrich Nagel
Sven Ripsas

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Biographic note:

Prof. Dr. Birgit Weyer serves as Director of the Master of Arts Program in Process- and Project Management at the Berlin School of Economics and Law, Faculty of Company Linked Programs. She is also Professor for Human Resources and Organizational Leadership at the Berlin School of Economics and Law, Alt-Friedrichsfelde 60, 10345 Berlin, Germany.
Email: birgit.weyer@hwr-berlin.de

Prof. Dr. Birgit Weyer ist Studiengangsleiterin des Dualen Masterstudiengang Prozess- und Projektmanagement sowie Professorin für Allgemeine Betriebswirtschaftslehre Personal- und Unternehmensführung an der Hochschule für Wirtschaft und Recht Berlin, Fachbereich 2 Duales Studium Wirtschaft Recht, Alt-Friedrichsfelde 60, 10345 Berlin.
Email: birgit.weyer@hwr-berlin.de

Abstract:

While projects today are widely used in order to affect change, they have a remarkably high rate of failure as measured by delivery on time and budget, all too frequently failing to deliver expected benefits. Dominant project management theory explains this shortcoming in part with optimism bias and proposes several cures including the elimination the effects of optimism. However, alternative project management metaphors, such as project as temporary organization have emerged. Seen through this lens, many positive effects of optimism relating to goal selection and perseverance are highlighted. Thus, a genuine paradox emerges in research and practice. On the one hand optimism bias is recommended for eradication and on the other hand optimism is found to hold important benefits. I outline the different perspectives and show gaps in the literature and research to-date. I further suggest that future research on optimism in the context of project management be multilevel and multidisciplinary research. In particular social cognitive theory appears to be useful in order to explore both positive and negative effects of dispositional optimism on the failure of projects as temporary organizations.

Zusammenfassung:

In der heutigen Zeit werden Projekte häufig dazu genutzt um Veränderung herbeizuführen. Nichtsdestotrotz liefern sie den versprochenen Nutzen häufig nicht, bzw. nicht zum geplanten Termin oder im vereinbarten Zeitplan. Die vorherrschende Theorie zum Thema Projektmanagement führt dies auf überbordenden Optimismus zurück und empfiehlt verschiedenen Lösungen bis hin zur Eliminierung von Optimismus. Jedoch haben sich alternative Sichtweisen auf das Thema Projektmanagement entwickelt. Eine davon betrachtet Projekte als eine temporäre Organisation. Wenn diese Sichtweise eingenommen wird, so ergeben sich einige positive Aspekte des Optimismus welche die Auswahl von Zielen und Durchhaltevermögen betreffen. Einerseits soll Optimismus also ausgelöscht werden und andererseits ergeben sich durch ihn positive Effekte. In dieser Arbeit werden die unterschiedlichen Sichtweisen sowie Lücken in der Literatur aus heutiger Sicht aufgezeigt. Weiter wird angeregt, dass zukünftige Forschung zum Thema Optimismus im Projektmanagement multidisziplinär sein sollte. Im Speziellen erscheint die social cognitive theory nutzbringend um positive und negative Effekte von Optimismus als Veranlagung im Zusammenhang mit Misserfolg im Projektmanagement zu ergründen.

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1. Introduction

For many companies, the way to do business and to deliver services is through projects and a project driven organization (Pinto, 2007; Shenhar, 2001). Thus, projects are widely used in order to effect change and to translate high level strategic initiatives into day-to-day activities (Kreiner, 1992; Pelligrinelli, 1997). However, it is well documented that projects tend to have a fairly low level of success as measured by delivery on time, on budget, and according to customer specifications (Hayden Jr., 2004).

For example, in connection with 'Toll Collect', the German Government lost approximately €6.5 billion in toll revenues for heavy trucks on motorways. Delays were caused by overly optimistic projections concerning the software needed to run the system (Flyvbjerg/Garbuio/Lovallo, 2009). Optimism bias has been reported not only in large infrastructure projects but, also in relation to any size of project, as small and repetitive as individual students work or filing the annual income tax report (Buehler/Griffin/Ross, 1994). To-date, optimism bias has been attributed to three distinct factors. These are a) technical reasons resulting in errors, b) strategic misrepresentation resulting in deception of stakeholders and c) psychological reasons resulting in delusion of the decision maker (Lovallo/Kahneman, 2003).

To eliminate intentional or unintentional planning mistakes leading to time and cost overrun, current project management theories prescribe the eradication of any bias leading to overly optimistic forecasts. In an effort to hamper optimism bias, normative project management theory and practice introduce further tools and processes to eradicate the causes of optimism bias. As such, through the lens of current normative project management, projects are seen as a whole system or organization, which can and should be manipulated with an aim to deliver results.

However, as early as 1992 the classical conception of organization and projects as a "technically rational machine" was challenged (Kreiner, 1992). Instead, in order to solve unique, isolated, and unstructured tasks, the project metaphor of a temporary organization was introduced to complement the metaphor of project as a tool. Assuming the perspective of the postmodern metaphor of project as a temporary organization clearly shifts the attention and focus of gaining project management knowledge from a heavily process driven to a people and behavior driven field. Therefore, the study of individual bias and the resulting behavior is necessary to enlighten our understanding of project management and in particular the role of optimism in the context of project management.

While popular motivational bestsellers have long started to tout the benefits of individuals' positive thinking and a resulting optimistic outlook, until recently there was little empirical evidence to suggest a positive correlation between business success and a positive psychological disposition. However, increasingly research and theory building propose optimism to be leading to positive organizational behavior, such as overcoming challenge in the project management environment (Dolfi/Andrews, 2007).

In summary, project management and the underlying theoretical, conceptual, and practical knowledge have received growing attention. This focus is owed to the fact that projects are one of the most common ways in which organizations create change (Shenhar, 2001). In dominant conventional project

management theory current literature suggests to eradicate optimism because it is proposed to lead to optimism bias and therefore faulty project planning. However, seen through the lens of temporary organization theory, optimism is a positive state like trait, which should be developed in order to secure business success. This contradiction in the literature leads to a paradox in project management, which is not easily solved (Kahneman/Lovallo, 1993).

This theoretical paper first highlights the importance of projects as a means to create and deliver unique products or services. Following, the high failure rate of projects is cited as an intentional or unintentional planning fallacy for which possible explanations are described. Then, two metaphors to project management, the metaphor of project as a tool and task to be accomplished and, the metaphor of project as a temporary organization are introduced. Alternatively, the lenses of normative project management and temporary organization theory are applied. While normative project management theory suggests optimism to be eradicated, temporary organization theory views projects as a dynamic formation of expectations requiring optimism for a number of reasons described in this paper. Thus, the paradox of optimism in the context of project management is developed throughout the paper. Finally, this paper also outlines opportunities for future research necessary in order to solve the paradox of optimism in the context of project management. The argument for multidisciplinary, multilevel research and, in particular, the application of social cognitive theory is developed and brought to the reader's attention.

2. The Importance of Project Management

The rise of project management as a theoretical field can be traced back to before World War II when industrialism promoted low pricing based on economies of scale through standardization of products. Around 1910 one of the first tools, the Gantt-Chart, introducing normative techniques and methods used in project planning and control was developed by Henry L. Gantt, a follower of Frederick W. Taylor. Today, the dominant metaphor of project management is the general systems theory. Through its lens, projects are seen as a whole system made up from its parts and the arising connections as well as interdependencies.

Today, many organizations in all sectors of industry, as well as government agencies accomplish a great deal of value-added work through projects. What defines a project has been described in a great number of ways. The world's largest organisation on project management, the Project Management Institute (PMI) has brought forward the following definition in their Project Management Body of Knowledge (PMBoK): "a temporary endeavour undertaken to create a unique product or service" (Project Management Institute, 2000, p.4). Other definitions are more comprehensive and include other determining factors, such as the definition of projects as a non-repetitive activity, which has a start and an end.

Based on the general systems theory metaphor, projects are divided into three distinct phases. These are a) development, b) implementation, and c) termination of project. Accordingly, traditional project

management theories have developed which are concerned with planning, controlling, and evaluation respectively (Packendorff, 1995). Project management standards are introduced and promoted by organizations such as PMI or APM. These standards leave the impression to be sure to lead to project success and in this respect Williams (2005) argues:

> "Project management as set out in this work is presented as a set of procedures that are self-evidently correct: Following these procedures will produce effectively managed projects, project failure is indicative of inadequate attention to the project management procedures"

The belief related to the conventional metaphor of project as a tool or a task to be accomplished has been identified with flaws. For example, Andersen (2006a) writes about normative project management theory "The more serious weakness may be the belief in total rationality and the assumption that the project task is clearly defined and unambiguous." (p.17). Therefore, over the past twenty years, this approach based on rationality has come under considerable amount of attack (Winch/Kreiner, 2009). The same authors have identified three different critical schools of thought on the topic of project management. These are a) the Scandinavian School, b) the Emergent School, and c) the Soft-Systems School of project management.

Of these three critical approaches, two introduce the metaphor of project as a temporary system or organization. The Scandinavian School of project management focuses on projects as temporary organizations, which may be considered part of an organization. The larger organizational context will influence action throughout distinctive project life-cycles oriented toward project delivery. While the Emergent School of project management is proposed to share influences with the Scandinavian School, it highlights the emergence of project processes (Winch/Kreiner, 2009).

Based on Clegg, Pitsis, Rur-Polley, and Marosszeky (2002) "the management of projects as a mode of organization…is highly complex and uncertain." (p.317). The temporal nature of projects requires constant adjustments of expectations relating to what the future will look like. "In a world organized by projects, managing means a permanently shifting future perfect, as more feedback revises the here and now, shifting the projections each time." (p.332). As such, projects have moved from modernism to postmodernism as organizations are no longer perceived as a technically rational machine but as temporarily established organizations (Kreiner, 1992).

Taken together, predominant project theories and the resulting research of project as a tool have added up to a sophisticated body of knowledge. In particular with respect to planning and implementation there is an impressive host of techniques and methods for project planning and control. Seen through the lens of temporary organization the development phase of the project is dominated by the dynamic formation of expectations rather than the completion of a static project plan. In the following implementation phase expectations are translated into action rather than focusing on the project management function controlling the project. Throughout the life cycle of a given project, individuals form expectations and the following enactment leads to continuous learning. Viewing a project as a temporary organization focuses the attention of stakeholders during the termination phase of a project on preserv-

ing learning points for the individual and the organization instead of merely evaluation the success of the project in terms of budget, time and benefits (Packendorff, 1995).

While normative project management theory is based on engineering science and applied mathematics as a tool to be used during the planning, control, and evaluation phase of the project, the more postmodern view of project management theory is based in part on sociology and psychology (Andersen, 2006) in order to explain courses of action. Thus, the role of the individual within the temporary organization and particular that of the project manager is of interest.

3. Why Do Projects Fail?

Despite the assumed self-evident correctness of traditional project management approaches, which are available to the project manager, projects continue to fail. In their 2009 bi-annual report, the Boston based consulting firm 'The Standish Group' reports a significant increase in failed projects. Measured by cancellation prior to completion or delivered but never used, the failure rate in 2008 is 24%, an increase of 5% versus 19% reported for 2006. An analysis of challenged projects, defined as late, over budget, and/or with less than the required features and functions, uncovered 44%, a slight decrease from 46% in 2006. In total, the percentage of project success decreased from 35% in 2006 to 32% in 2008. Alarmingly, the rates reported for 2008 show the "highest failure rate in over a decade". In addition, there has been a significant increase in cost overruns from 47% in 2006 to 54% in 2008. Similarly, time overruns have increased from 72% in 2006 to 79% in 2008.

Previously, Flyvbjerg, Holm, & Buhl (2005) have reported specifics on the size of cost escalation and benefits shortfalls for transportation infrastructure projects over a 70-year period. Overall, on a worldwide basis, only 1 in 10 projects were delivered on budget as defined by estimated cost. For example, the average cost overrun for rail projects was 44.7%, for bridges and tunnels, it was reported to be 33.8% and for roads 20.4% when measured in constant prices. Similarly, traffic demand forecasts estimating the benefit of the planned infrastructure projects proved to be seriously flawed. For example, 9 out of 10 rail projects have overestimated traffic. Approximately half of all road traffic forecasts were wrong by more than 20%.

Across the globe, investment spending on large infrastructure projects is projected to be at an all time high of approximately €2.2 trillion per year for the next 10 years. In light of these major investments good project management as shown in the planning and execution of projects is particularly important. However, as outlined earlier, the track record of project failure is significant and therefore constitutes a considerable management problem. When projects run over in cost or fall short of the benefits expected, it leads to inefficient allocation of resources, further delays and even higher cost. At times, cost overruns and benefit shortfalls of projects are destabilizing policy, and the execution of the projects in question. As projects around the globe are gaining in size and cost involved, the management problem is getting bigger (Flyvbjerg et al., 2009).

Most significant finding of this meta-analysis is the apparent lack of improvement as it relates to Project Managers' ability to estimate cost and benefit of projects. Inaccuracy of cost estimates did not improve over the period of 70-years, which was analyzed. Similarly, traffic forecasts did not improve over the 30-year period recorded. Thus, Flyvbjerg and colleagues (2005) suggest improvements of planning tools and techniques, as well as acquired project management skills have not been translated into action.

While these data (Standish Group International, 2009) are quite startling, it is important to note that it is based on an overly simplistic representation of data. Therefore, it is important to also review more thoroughly researched and balanced evidence. In their seminal work, Lovallo and Kahneman (2003) suggest that project failure is a direct result of faulty decision-making, a fallacy in planning. Based on Flyvbjerg (2006a) possible reasons for wrong decisions and thus project failure discussed in the academic literature, are the following:

a) Technical explanations
b) Political-economic explanations
c) Psychological explanations

In the following each of the explanations for the planning fallacy will be discussed in detail.

3.1 Technical Explanations

First, considered the most common explanation for inaccurate forecasts, technical explanations relate to planning tools and wrong data with which they are being fed. In addition, technical explanations allude to a lack of experience, which causes project planning to be off target. While technical causes are always a possibility, they are no major stumbling block when considering that project management has become more prevalent in the way companies do business today. Increasingly more accurate planning tools may have been developed and experience in forecasting may add to the reduction in errors. However, as reported earlier, a meta-analysis of project forecasts analyzing infrastructure projects of the past 70 years has not yielded a significant reduction in cost overrun. Yet, in particular during the past 20 years project management and the tools employed to conduct project management have undergone significant development and professionalization. Furthermore, statistical testing uncovered that misleading forecasts could not be explained through technical shortcomings or unintentional error and other issues related to estimating events in the future (Flyvbjerg, 2005). Therefore, technical explanations do not lend a satisfactory explanation for the persistence of project failure as it relates to flaws in project planning (Flyvbjerg, 2006b; Lovallo/Kahneman, 2003).

3.2 Political-economic Explanations

Second, deliberate cooking of budgets and project forecasts, which make up the political-economic explanations for project failure, are considered an important explanation for errors in project planning. Strategic misrepresentation of the benefits and cost associated with the execution of a project occurs when an individual or an entire organization, respectively stakeholder is apt to either protect their particular interest or hide potential failure. This explanation for mistakes in project planning has an intrinsically high value considering the amount of competition many companies face in today's business world (Flyvbjerg, 2003). Project Managers who misrepresent cost or potential benefit of a project are assumed to do so intentionally and fully cognizant of their deceptive behaviour.

In the context of project management political-economic explanations are also described as strategic misrepresentation. The term has been coined in order to describe an inaccuracy in planning which leads to the planning fallacy. Different from the optimism bias strategic misrepresentation implies an intentional overestimation of project benefits or underestimation of cost related to the project. This deception of stakeholders happens when Project Managers and executives try to secure resources or to gain approval in favor of pursuing the particular project (Flyvbjerg, 2006c).

The reasons for individuals to use strategic misrepresentation have been identified as political and organizational in nature (Flyvbjerg, 2005). Project managers and other decision makers are proposed to be competing for the allocation of funds or for the approval of their project. For example, when several companies bid for a contract cost estimates may deliberately be kept low in order to secure the contract.

When a misrepresentation of cost and benefit is made for political reasons this may be defined as a lie (Flyvbjerg, 2005). It is making a statement with the clear intention of deceiving the audience or other individuals (Bok, 1979; Cliffe/Ramsey/Bartlett, 2000). In the realm of politics deception has a long history and is well described. Within politics lies are perceived to be justified in order to achieve certain outcomes believed to be positive. Acts, which are normally considered immoral, such as lying are sanctioned, if they lead to the common good and therefore pay-off (Ramsay & Cliffe, 2003). Therefore, Flyvbjerg (2006c) is suggesting: "Where there is political pressure there is misrepresentation and lying…" (p.9).

While it is difficult to undertake empirical research, which explores intentional deception there are two published studies (UK Department for Transport, 2004; Wachs/Stenberg, 1982) where subjects agreed to speak about "cooking" of project forecasts. Along these lines, Flyvbjerg (2006c) presents a salient formula explaining the reasons for strategic misrepresentation in the context of project management: Underestimated cost plus overestimated benefits lead to project approval. Thus, strategic misrepresentation, or intentional optimism bias seems inevitable.

3.3 Psychological Explanations

Finally, a third explanation drawn upon psychological findings in explaining these mistakes is part of the 'planning fallacy' (Kahneman/Tversky, 1979). In particular, a psychological phenomenon labeled as optimism bias is held accountable (Kahneman/Tversky, 1979; Kahneman/Lovallo, 2003; Kahneman/Lovallo, 1993). In those instances when individuals fall prey to the planning fallacy, they are unable to make rational decisions based on balancing potential profit or loss while including consideration of likelihood. Instead, a type of delusion causes them to be optimistic to a degree, which is unfounded. Project managers who are subject to the planning fallacy are unaware of the potential to make mistakes. They feel that possible benefits far outweigh risks involved in the project or the project plan. Thus, errors in the way the mind processes information lead to a cognitive bias and subsequently may result in project failure Similarly, Durand (2003) summarizes "…individual's intrinsic limitations may cause individuals and hence the organizations they work for to commit forecast errors…" (p.821).

A landmark study by Weinstein (Weinstein, 1980) reports on a group level, 258 college students tended to display an unrealistic optimism related to social comparisons. In the context of this study, Weinstein researched the extent of optimistic bias in relation to a range of 42 positive and negative events as well as the conditions under which these biases occur. Subjects were asked to judge the likelihood with which the events were to occur to them, versus their classmates. For the purpose of this study, events cited were to be identified as clearly negative respectively positive. For example, 'liking the postgraduate job' was classified as a positive event and 'attempting suicide' was classified as a negative event. In addition, events had to be appropriate for all subjects. For example 'breaking a leg while riding a horse' would be reworded into 'breaking a leg' because not all subjects ride a horse but all subjects may break a leg during one occasion or another. As a result of this study Weinstein found the degree of desirability, perceived probability, personal experience, perceived controllability, and stereotype salience related to the event to influence the degree of optimism bias displayed by the subjects.

A second study reported in the same paper aimed at exploring reasons for the occurrence of optimism bias as documented in the first study cited above. Previous observations had led to the hypothesis that comparative optimism exists due to the perceived lack of information others have when judging the likelihood of an event occurring. Thus, the design of the second study aimed at informing individuals about the factors others consider when estimating their chances. As a result of this information unrealistic optimism for positive events decreased at a significant level. However, when considering negative events the hypothesis that people tend to hold an inaccurate image of others was confirmed. In conclusion, Weinstein (1980) found that individuals "believe that negative events are less likely to happen to them than to others, and they believe that positive events are more likely to happen to them than to others" (p. 807).

Later studies suggest, there are also mediating factors which will lead to an uncalled for pessimism. For example, when a danger is immediate rather than hypothetical, individuals tend to perceive themselves as more vulnerable to a negative life event. Also, if everyday life orders can be attributed to the

eminent negative life event they are considered a proof of its occurrence (Dolinski/Gromski, 1987). In a different study, Dewberry, Ing, James, Nixon and Richardson (1990) found that the degree of anxiety an individual perceives toward the occurrence of an event might affect the degree of unrealistic optimism or unrealistic pessimism in relation to it.
Most recently, Menon, Kyung, and Agrawal (2009) have identified the following conditions for optimism bias and respectively pessimism bias in social comparison. When individuals perceive a high level of control over the outcome they are more likely to display unrealistic optimism and vice versa. Perceived similarity between the individual against one compares will attenuate the bias when the task is perceived highly controllable respectively perceived as not very controllable. Any change, which occurs due to the increasing perception of an individual being similar to one self leads to change in perception of one's own control rather than the change in perception of control the other individual can exert. Finally, in certain situations, individuals are willing to work hard to obtain a positive outcome by providing a favourable work environment and support (Scheier/Carver/Bridges, 1994b).

Thus, within the context of project management project managers who perceive to have a great deal of control as it relates to the available project management tools and therefore project success may fall prey to optimism bias in the form of overconfidence (Kahneman/Tversky, 1979). Similarly, project managers who perceive themselves as hard workers may also overestimate the contribution of their attitude toward delivering project success. However, there is a gap in the literature to examine this hypothesis.

Empirical studies show that optimism bias may also be caused by holding on to initial forecasts or plans. For example, individuals were asked to estimate the percentage of African countries in the United Nations. With the subjects observing, a wheel of fortune was spun and thus a quantity was determined as reference point. Now, individuals were asked to indicate whether the percentage of member states was lower or higher than the number determined through the wheel of fortune. While this reference number was determined completely randomly, it had a statistically significant effect on the subjects' estimations. Individuals were found to adjust their numbers away from the reference point, however not sufficiently enough. For example, individuals whose reference point determined through the wheel of fortune was 10 estimated 25%, those whose number was 65, estimated that the United Nations are made up by 45% African countries (Flyvbjerg et al., 2009).

Within the context of project management, initial plans may serve as an anchor for project planners and project managers. While during project execution the need for adjustment of project plans in terms of project cost or time to completion may become apparent, the initial plan is considered to be a realistic estimate. Thus, the initial plan continues to serve as the basis for later adjustments. Yet, when viewed in hindsight, most frequently, these adjustments have shown to be insufficient (Flyvbjerg et al., 2009).

In summary, when psychological reasons are cited for optimism bias, it is proposed to be a cognitive predisposition of individual project managers leading to errors in judgment (Flyvbjerg, 2006b). However, a number of questions remain open and require theoretical as well as empirical evidence. For ex-

ample, in the context of project management, it is unclear what the psychological mechanisms are which lead to the formation of likelihood judgment. Psychological mechanisms might be potentially reducing or enhancing optimism (Krizan/Windschitl, 2007). To-date, these mechanisms are not researched. In addition to the various calls for research as outlined above, it is unclear whether optimism actually leads to optimism bias, or how much optimism is beneficial for project success.

4. Cures for the Unintentional Planning Fallacy

Flyvbjerg (2006a) suggests that both explanations for the planning fallacy, unintentional delusions of success and strategic misrepresentation have merit. In practice it is often difficult to discern between intentional deception and unintentional delusion (Flyvbjerg et al., 2009). However, the explanatory power of intentional deception appears to be stronger as the political and organizational pressures in an organization increase. In the absence of the need for strategic misrepresentation unintentional self-deception, also called delusion, tends to be more convincing to explain the persistence of the planning fallacy.

In order to eliminate the unintentional causes of the planning fallacy Lovallo and Kahneman (2003) propose the following: "…optimism can, and should, be tempered" (p.61). Therefore, the authors have introduced a new forecasting method called 'reference class forecasting'. With the help of this method project planners are to take on an outside view of the project rather viewing the project from an inside view. Instead of taking into consideration only the project at hand, a reference class of previously completed, similar projects is formed. It is against this reference class of projects, the actual costs and benefits incurred against which the project plan for the current project is to be compared.

Based on Flyvbjerg, Garbuio, and Lovallo (2009) elimination of intentional causes of optimism bias leading to deception of stakeholders may be achieved through promoting accountability of those presenting numbers to decision makers and through transparency of information. More specifically, the authors suggest a) shared financial responsibility for agents proposing and approving projects covering cost overruns and benefit shortfalls, b) incentives in the form of rewards and higher criticisms should be provided for those individuals who provide project forecasts. In addition, c) strict forecast audits should be implemented in order to enforce transparency of information.

Empirical studies have confirmed that taking on an outside view helps to increase the objectivity and reliability of forecasts. For example, when asked to rate their own future academic performance on average students projected to perform better than 84% of their classmates. Another group of students were also asked about their own entrance scores and the entrance scores of their classmates, thus taking on an outside view. This change in perspective resulted in a lowered group average expected performance by 20% (Lovallo/Kahneman, 2003).

In the context of project management Flyvbjerg and Cowi (UK Department for Transport, 2004) are describing the first documented instance of reference class forecasting for large transportation infra-

structure projects. Based on recommendations of HM Treasury the before named researchers were asked to identify empirically based numbers to account for optimism bias in relation to specific transportation projects. Second, the researchers were asked to consult with the aim to produce realistic capital expenditure plans using reference class forecasting. Practical implementation of reference class forecasting was applied first when the business case for the Edinburgh Tram Line 2 was developed. An initial estimation of GBP 320 million was calculated to be optimistic and the Scottish Parliament was given a more realistic planning figure.

To eliminate intentional deception in the context of project management appropriate incentives and budgets are proposed to be a cure for intentional deception of stakeholders. In the realm of public investments, two best practices have shown success. First of all, an element of financial responsibility for institutions, which initiate investments, is proposed. This is in order to cover underestimation of cost and overestimation of benefits from a project. Second, it is proposed that risk allocation is balanced between the public and private investors. Through the investment of private risk capital private lenders and shareholders are forced to base decisions on their own plans. The likelihood of critical review and monitoring uncovering strategic misrepresentation is therefore higher (Flyvbjerg et al., 2009).

As outlined, seen through the lens of normative project management cures for the planning fallacy might be different, depending on whether the cause for the planning fallacy is an unintentional optimism bias, or the perceived need for intentional strategic misrepresentation due to political-economical reasons. In any case, both measures aim to omit unwarranted optimism in project management.

When projects are viewed as temporal in nature a different perspective on optimism in the context of project management emerges. As outlined earlier, the metaphor of temporary organization highlights the role of the individual, the expectations an individual forms and reforms as well as resulting actions (Packendorff, 1995). The metaphor of project as temporary organization is in stark contrast to the metaphor of project as a tool or machine, which promotes a rationalistic approach leading to an attempt to eradicate optimism. However, optimism has been identified to hold a myriad of positive effects for individuals and the organizations they are associated with (Brown/Marshall, 2002; Scheier/Carver, 1993; Schonberger, 1981).

Most recently, the concept of Positive Organizational Behavior and more specifically, Psychological Capital has been introduced (Luthans/Youssef, 2007). This concept is of a higher order and entails the components of hope, self-efficacy, resilience, and optimism, the later being defined as “making a positive attribution about succeeding now and in the future” (p.3). Unlike other personality factors psychological capital is proposed to be state like rather than trait like. Therefore, it has been found to be open to development. More importantly, alas for the sake of developing this paper, psychological capital and its four components have been empirically researched to have a positive impact on a number of business success factors, such as sales performance (Adidam/Srivastava, 2001; Schulman, 1999), generation of energy and commitment in employees (Peterson/Waldman/Balthazard/Thatcher, 2008), or company turnarounds (Scott, 1999).

5. What is the Role of Dispositional Optimism?

As a psychological phenomenon, optimism has been explained in a number of ways. From an anthropological perspective Tiger (1979) has explained it as “a mood or attitude associated with an expectation about the social or material future – one which the evaluator regards as socially desirable, to his [or her] advantage, or for his [or her] pleasure”. The major implication of this definition suggests that optimism cannot be evaluated objectively. What is considered optimistic depends on what the individual perceives to be desirable.

More recently, in a seminal work on theory, research, and practice of Optimism and Pessimism Chang (2001) cites two major explanations. These define optimism as a) generalized outcome expectancies or, b) attributions for positive and negative events. The former conceptualization of optimism theory is provided by Scheier and Carver (1985) and is widely accepted. Based on it, optimism is regarded to be an individual disposition leading to generalized positive outcome expectancies. People who are optimistic generally belief good things will happen to them rather than bad.

In order to measure the degree of generalized optimism and the related positive outcome expectancies an individual holds, Scheier and Carver (1985), (1994a) have developed and empirically tested the Life Orientation Test and later the briefer version of the revised LOT-R (Scheier/Carver/Bridges, 1994a). In contrast, the Attributional Style Questionnaire devised by Peterson, Semmer, von Baeyer, Abramson, Metalsky und Seligman (1982) is composed of 6 positive and 6 negative event items assesses internality, stability, and globality of attributions. According to this optimism theory individuals who believe that good things happen to them due to factors related to them individually, that these things happen all the time and in all situations hold an optimistic explanatory style.

A pessimistic explanatory style is held by those individuals that believe bad things happen based on some factors related to them individually, that these negative things happen all the time and in different situations. Interestingly, while it is most often assumed that optimism and pessimism are mutually exclusive some research indicates that these concepts may exist independent of each other meaning that the presence of optimism does not necessarily indicate the absence of pessimism. That is, some individuals may expect both many good things and many bad things to happen to them (Peterson, 2000a).

Based on concerns of low reliability of the ASQ scale an Expanded Attributional Style Questionnaire has been introduced in 1988 (Peterson/Villanova). Compared to the earlier mentioned expectancy-based measure as provided by the LOT, the attribution measure as undertaken by the ASQ provides a less direct assessment of optimism (Chang, 2001). Therefore, when determining optimism through an attribution measure, such as the ASQ individual pattern of attributions are used to infer expressions of optimism and pessimism.

The conceptualization of optimism as described through optimism theory by Carver and Scheier (1989) has its roots in the expectancy-value model of motivation. It proposes individual behavior to be

influenced by the pursuit of appropriate goals and the level of expectation toward achieving these goals. However, not all goals are perceived to be of identical value. Those goals, which appear desirable, hold a greater value than those goals, which appear less desirable. Similarly, there are so called anti-goals, which influence an individual's motivation. A goal, which is very undesirable, holds a great value for the individual to ensure this anti-goal is avoided. Unless there is a goal, which holds a certain degree of value, there is no reason for an individual to act. At the same time, unless an individual is confident that a goal can be achieved or an anti-goal avoided goal-directed action is also not likely.

Of course, goals and anti-goals, as well as the related expectancies may vary considerable in their range. They may be as broad as the expectancy to have a good life or as specific as performing well at a given task. Therefore, based on Carver and Scheier (1991; 2002) different measures of expectancy are necessary. In particular, when individuals never before experienced a particular situation or when the situation is uncertain and changing over time "generalized expectations may be particularly useful in predicting behavior and emotional reactions" (Carver/Scheier, 2002).

In general, optimists tend to be individuals who have a great confidence in their ability to choose appropriate goals and to achieve these goals through tenacious work (O'Connor/Cassidy, 2007). When it comes to adversity, optimists feel they can handle these situations successfully. This perception of self-efficacy has an immediate effect on impeding action. The psychological mechanism proposed by Carver and Scheier (2002) is a mental simulation leading to a feeling of confidence and optimism based on earlier expectancies and behaviors. These "chronic" optimistic expectancies from memory lead to conclusions, which influence immediate expectancies and behaviors in a virtual upward spiral (Carver/Scheier, 2002).

In an empirical study, Sharot, Riccard, Raio and Phelps (2007) examined how the brain of healthy individuals creates images of positive events, which are expected to occur in the future. In order to examine the neurobiological basis of optimism the researchers employed functional magnetic resonance imaging while subjects were asked to think about positive or negative personal life events from the past or in the future. Results from a subjective self-report indicate, that future positive events were rated more positive than past positive events and closer in temporal proximity then future negative events and all past events. Using the LOT-R instrument for measuring the degree of an individual's optimism, the higher the degree of optimism the more likely an individual was to expect good things in the future. Findings from the brain imaging suggest that certain parts of the brain, such as the amygdale which is responsible for emotion of cognitive processes including memory and decision making, appear to be more sensitive to thoughts of positive stimuli when subjects focused on obtaining goals and to negative stimuli when subjects focused on avoiding failure. (Sharot et al., 2007)

In addition, individuals who were found to use optimistic explanations for negative events in their life showed increased job productivity and task performance (Brown/Marshall, 2002). At close observation, this positive relationship only holds true up to a certain point. While performance on many different tasks increases with the degree of an individual's optimism, at a certain point, a further increase in

optimism no longer generates an increase in performance. In the contrary, a reduction of performance may be observed.

However, overall “The positive impact of optimism on physical and psychological health and the attendant characteristics of perseverance, achievement, and motivation resulting in academic, athletic, political, and occupational success, is well documented.” (Luthans/Church, 2002). Pessimism on the other hand has been described to “…foreshadow[s] depression, passivity, failure, social estrangement, morbidity and mortality.” (Peterson, 2000a). Empirical research has also found that pessimistic individuals tend to plan for worst case scenarios and, in a state of self-fulfilling prophecy invite Murphy’s Law to fulfil these negative expectations (Robison, 2007).

Yet, studies have also indicated that there are instances of unfounded optimism resulting in drawbacks and costs (Peterson, 2000a). In the literature, this unfounded or unrealistic optimism is frequently titled unrealistic optimism, optimism bias, or delusion. Based on (Taylor/Brown, 1988; Taylor, 1989) delusions are not responsive to reality, while optimism in form of a positive bias or an illusion is.

Further results from the earlier cited neuro-scientific study (Sharot et al., 2007) indicate a difference in signal strength from the brain related to the imagination of negative versus positive future and past events. The thought of negative future events showed less brain activity than the thought of positive future life events and the thought of all past events, regardless whether positive or negative. Based on these results, the researchers suggest that, “…optimism bias may be related to a reduction in negative future thought.” (Sharot et al., 2007). However, the study design did not include an examination of the correlation between an individual’s degree of dispositional optimism and their degree of optimism bias.

As a result of a literature review Taylor and Brown (1988) propose that only individuals who are psychologically not well, i.e. anxious or depressed, are not biased toward assuming a positive future. In fact, the authors suggest that human evolution is driven in part by optimism thus declaring it inherent in the psychological make up of humans and defining characteristic of individuals.

Within the context of project management, most recently Dolfi and Andrews (2007) found a positive effect of optimism for project managers when it comes to coping with a negative work environment. The researchers statistically analyzed the correlation of 858 project managers’ dispositional optimism and their perceived work environment characteristics. This correlation showed that only 7% of individuals who were identified as ‘optimists’ perceived their work environment in a negative way. In contrast, 60% of individuals identified as ‘pessimists’ described their work environment as negative. Based on the findings optimism appears to be an important attribute for a project manager because “negativity in a work environment is an accurate predictor of task failure” (Seligman/Sanna, 2006).

Dolfi and Andrews (2007) highlight a second key finding of their study. Mean scores for optimism varied significantly depending on the years of tenure a project manager has. Individuals with 16 or more years of experience scored 4.4 while those with 6 to 15 years of experience scored 4.3 and those professionals with 1 through 5 years of experience scored 4.0 points on average. This finding supports

the earlier reported finding that optimism is not a static trait but may be learned, even in the context of an unfavorable workplace or work situation. In the absence of empirical data to this hypothesis, Dolfi and Andrews (2007) call for "…further exploration of optimism and its impact in the project management workplace."

In a separate and unrelated conceptual paper Winch and Kreiner (2009) suggest that projects are realized because individuals believe in these projects and their feasibility. The authors describe this as an individual or collective ability of future perfect thinking, that is an ability to imagine what will have to be done in order for a project to be completed and based on this accomplishment to determine what has to be done in the present (Winch/Kreiner, 2009). Similarly, Seligman (1991) calls for a flexible or complex optimism when, the future can be changed by positive thinking but not otherwise. To-date, there is a gap in the literature as it relates to the possible influence of dispositional optimism and its effects on an individual's ability for future perfect thinking (Winch/Kreiner, 2009)

6. The Paradox of Optimism in the Context of Project Management

Project failure is a serious, yet growing management problem. Based on current project management theory, it is caused by faulty planning and insufficient adjustment of forecasts during the project execution phase. Reasons for failure are frequently seen in faulty planning which leads to a flawed decision-making. This phenomenon has been labeled the 'planning fallacy' (Lovallo/Kahneman, 2003). Within the context of normative project management theory, faulty planning is explained through three separate causes. According to Flyvbjerg (2006a), first, there are technical inadequacies rendering planning tools insufficient. Second, psychological reasons, which cause a flawed decision-making, have been argued. Third, organizational pressures, which cause deliberate strategic misrepresentation of cost or potential benefits, are blamed.

However, technical explanations fail to satisfactorily explain the persistence of the forecasting fallacy. In comparison, psychological reasons have received much attention and have been explained as optimism bias, a cognitive predisposition to judge future events in a more positive light than past experience suggests. Political explanations suggest that individuals intentionally rather than unintentionally overestimate the benefits and/or demand and underestimate project cost, thus introducing optimism bias in order to secure resources or win a contract. The power of political explanations is proposed to vary depending on the presence of political and organizational pressures. A clear disentanglement of the two phenomena has not been reported in the literature to-date. Yet, already two distinctly different cures have been proposed with the intention to eliminate unrealistic optimism in project management. On the one hand, the method of reference class forecasting is offered to curb unintentional bias. On the other hand, incentives in order to avoid intentional deception of stakeholders resulting in intentional optimism bias are proposed.

As an alternative metaphor to the normative project management metaphor of project as a tool, temporary organization theory places the focus on expectations. The expectations an individual holds

toward the future in general may be more or less optimistic. Based on empirical and theoretical findings dispositional optimism has been shown to hold beneficial effects such as choosing appropriate goals (Scheier et al., 1989) and enhanced persistence at difficult tasks (Peterson, 2000b).

Overall, there appear to be important positive effects of dispositional optimism on the performance of individuals within organizations. However, while temporary organization theory may draw upon a number of theories relating to the effects of expectancies on task performance, there is a marked lack in the literature as it relates to the effects of dispositional optimism in the context of project management. For example, some of the research questions, which are left unanswered, evolve around the relation between optimism and expectation for project success or failure or the relation between optimism and optimism bias. Yet another unanswered key question is how innate optimism relates to the performance of projects in general.

To-date cognitive and motivational processes leading to formation and working of specific expectancies, which result in optimism or optimism bias, are not fully researched. For example, it is not clear whether, considering a single case, individuals with a high degree of dispositional optimism tend to make more optimistic predictions than individuals with a high degree of dispositional pessimism (Krizan/Windschitl, 2007). Thus, current literature does not provide for empirical evidence to suggest that a project manager high in dispositional optimism is more likely to fall prey to optimism bias and the planning fallacy as compared to a project manager who is rated lower in dispositional optimism or vice versa. There is also a marked lack in the body of knowledge as it pertains to dispositional optimism and an individual's tendency toward intentional optimism bias.

Similarly, current literature identifying optimism as an important trait for project managers has only recently evolved. As of yet, there is only limited knowledge as it pertains to the role of optimism in relation to optimism bias. For example, there is a lack of theoretical and/or empirical evidence connecting dispositional optimism in project management with either project success or project failure. In order to solve the apparent paradox of optimism in project management further research is necessary. However, current normative project management theory is relying on tools in order to eradicate optimism neglecting to research possible positive effects of dispositional optimism. In contrast, temporary organization theory calls for research on expectations, resulting actions, and learning, which takes places throughout the course of the project's life cycles.

When joining the two perspectives of optimism in the context of project management, normative project management theory and temporary organization theory, no solution for the paradox described by Kahneman (1993) appears within the body of theoretical and/or empirical knowledge. There is a clear business need to resolve the paradox as described in both theory and practice, given the earlier described importance of organizing by projects.

7. Multilevel Research to Explore Multilevel Phenomena

Packendorff (1995) proposes that there is not one correct perspective to take on when researching project management. However, I argue that any perspective on project management should provide a more balanced and comprehensive picture of dispositional optimism and its effects on project success. As stated by Andersen, (2006b) “There is no reason to believe that the members of the temporary organization will behave in a strictly rational manner. We should expect limited rationality, as is the case in most organizations.”. However, without further research, we should also not expect that “…optimism is unavoidable and often leads to ‘over-optimism’, an inflated belief in one’s chances of success.” (Korhonen/Mano/Stenfors/Wallenius, 2008).

Projects are complex undertakings (Packendorff, 1995). Based on Hitt, Beamish, Jackson, & Mathieu (2007) most problems in other areas of management are complex and dynamic and therefore involve multilevel phenomena. (Hitt et al., 2007) That is, problems are neither to be located at the micro level, such as the individual, nor at the macro level, such as the organization only. Instead, management problems arise within a specific context in which behavior occurs and in which this behavior has consequences. As shown in Figure 1, within the context of project management, optimism and its effects on the performance of the project is such a multilevel phenomenon.

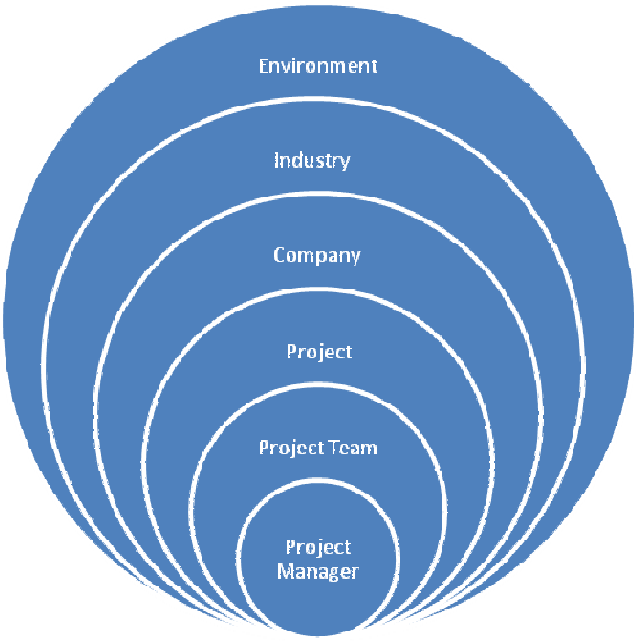

Figure 1: Optimism as multilevel phenomenon in project management
(Source: adapted from Hitt/Beamish/Jackson/Mathieu, 2007)

In order to understand complex management problems it is necessary to undertake management research at several levels of analysis at the same time. However, as has been outlined earlier, to date the perspectives on optimism in the context of project management have predominantly concerned single levels of analysis, such as the project or the individual project manager.

As observed by Foss (2009) to-date some management research, such as organizational behavior holds a long tradition of examining the individual while other research, such as strategic management, hardly takes the human factor into account. On the one hand, looking at optimism through the lens of project as a tool it is assumed that the prescribed processes and procedures, such as reference class forecasting, will lead to the project's success. While the human factor is recognized predominant project management theory seeks to eliminate it as much as possible by the impressive amount of tools, which are introduced through the various guiding bodies of project management, such as the Project Management Institute or Association of Project Management. Similarly as in strategic management, behavioral assumptions are only made in so far, as they support particular arguments (Foss, 2009), such as the psychological explanations for the planning fallacy (Lovallo/Kahneman, 2003).

Therefore, in order to solve the paradox of optimism in the context of project management research must be applied which addresses several levels of analysis. The lenses I suggest applying to the phenomenon must be both at a micro level of the individual and at a macro level of the project, organization or, perhaps, whole industries. For example, multilevel research may be employed in order to explore how dispositional optimism of the individual project manager influences the performance of the project and thus ultimately a corporation.

8. The Application of Social Cognitive Theory

The effects of personal dispositions, such as optimism may be explored through managerial and organizational cognition research. In particular, social cognitive theory as developed by Bandura (1986) lends itself to analyze organizational functioning. Based on its causal structure, behavior, environmental and personal factors interact and influence each other bi-directionally. As such social cognitive theory differs from many other models trying to explain human psychosocial functioning. Most frequently models were based on the assumption of one-sided determinism. That means behavior is either shaped by influences of the environment or by internal dispositions.

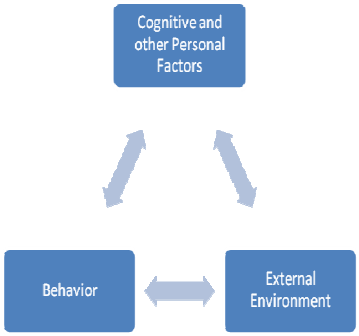

Figure 2: Interactional causal structure of the relations between personal factors, external environment and behavior (Source: Wood/Bandura, 1989)

Normative project management theory appears to have adapted such a perspective of one-sided determinism by suggesting that the planning fallacy may either be explained through political-economical factors or through psychological factors.

Social cognitive theory has been applied in a recent study in order to empirically examine entrepreneurs' optimism and new venture performance. Based on social cognitive theory the effects of individual dispositions are influenced by other behavioral and environmental factors. For example, the above mentioned study by Hmieleski and Baron (2009), related individual optimism and previous experience in starting a new venture with dynamism in the environment and the resulting success in starting the new venture. With the help of social cognitive theory a multi-level perspective of individual disposition on complex organizational processes, such as project management may be taken.

In order to better understand the paradox of optimism in the context of project management it may be useful to relate individual dispositional optimism with political-economical pressures in the environment to the management of a project throughout its life cycle and the resulting performance as measured against budget, time, and deliverables. Results of this multilevel project management research would enhance the understanding of how a project manager's personal disposition effects strategic decisions taken throughout the life cycle of the project and how political-economical pressures may moderate these effects.

Whilst current normative project management theory and temporary organization theory suggest that optimism influences decision-making behavior, the social cognitive lens provides a broadened perspective. This widened perspective includes the notion that cognitive and other personal factors, such as individual dispositions and their effects on organizational performance are moderated by environmental factors and therefore are part of a complex, reciprocal interchange.

In addition, assuming a multilevel approach to the research of optimism in the context of project management reflects the notion that "optimism is both motivated and motivating" (Peterson, 2000b;). That is to say that optimism relates to events in the future about which the individual holds strong feelings and has a strong emotional component associated to it (Carver/Scheier, 2002). Multilevel research applying social cognitive theory might provide an opportunity to better understand how the individual disposition effects project performance in both positive and negative ways.

9. Why a Multidisciplinary Approach?

Based on Foss (2009) and Hitt et al., (2007) much of the lack of a multilevel approach to management research is owned to the fact that scholars fail to cross real or imagined disciplinary boundaries. As outlined earlier, most often, these disciplinary boundaries also demarcate whether research is conducted at an individual micro or an organizational or industry macro level. Despite the maturing field of management collaboration on multidisciplinary topics is rare.

The apparent lack of theoretical and empirical research exploring the effects of individual dispositions, such as optimism, on the performance of a temporary organization, such as projects, seems to support this observation. While psychological explanations have been used by scholars of project management to explain phenomena in project management theory, there seems to have been little cooperation between behavioral psychologists and project management researchers to explain the effects of individual disposition on individual behavior, its effects on project teams, mediating factors from within the environment, and the performance of the organization.

Hitt et al., (2007) stated “As the field of management continues to grow, it becomes increasingly important to consider and integrate the developments that are occurring outside of the specialty areas and in adjacent disciplines”. However, because of the myriad of information available even within one’s own area of interest, it is difficult to keep up with what is the current body of knowledge in multiple disciplines. Based on the developments in the field of organizing by projects, I suggest, this observation also holds true for the literature on project management. Therefore, in order to move the field of organizing by projects into the future, I propose that it is important that scholars from different disciplines collaborate on topics with shared interest, such as optimism in the context of project management, by researching multiple levels of a phenomenon.

10. Conclusion

In closing, I conclude that different perspectives on optimism in the context of project management unveil a genuine paradox. Seen through the lens of the dominant project management metaphor of project as a tool, optimism should be tempered with or eliminated. Viewed through the lens of an alternative project metaphor of project as a temporary organization, optimism is an individual disposition, which holds important advantages. Both perspectives lack satisfactory answers for real life problems and questions relating to project failure and in particular the role of individual dispositional optimism. I suggest that multilevel research, informed by social cognitive theory and conducted by a multidisciplinary team of researchers may help to solve the paradox.

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