

TOWARDS A THEORY OF PROJECT MANAGEMENT

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ABSTRACT: "In prior literature it has been generally seen that there is no explicit theory of project management" (Koskela et al, 2002a). In this article it is shown what the implicit "underlying" theory is of methods as the PM-BOK. It will be argued that this is also the case regarding a project management method, in the Dutch construction industry known as the "GOTIQ" method; and possibly regarding all methods for project management. A proposal for a new theory by Koskela et al is described and criticized on the neglect of power and politics. This critique is elaborated via the promises of process management, the concepts of power and politics and recent project management studies. Concluded is that there is more power and politics in project management than project management theory suggests. As a closure and subject for discussion it is argued that this omission can be solved in a theory that originates from Rorty's "linguistic turn", but it is also argued that maybe a theory is not needed at all.

Keywords – language, power, politics, project management, theory.

1. INTRODUCTION

Under the title "The underlying theory of project management is obsolete" Koskela and Howell state that "the present doctrine of project management suffers from serious deficiencies in its theoretical base" and "the theoretical base has been implicit" (Koskela et al, 2002a). In search for theories that are underlying the PM BOK, (Project Management Body Of Knowledge) as described in the PM BOK Guide of the Project Management Institute, they conclude that anomalies that occur in the application of these underlying project management theory are regarded as "strong enough for the claim that a paradigmatic transformation of the discipline of project management is needed".

In this article I will investigate this challenging statement on its assumptions and consequences. I do not intend to put forward a new theory, although by structuring this article a direction is chosen in which a theory should develop, but merely to make an intellectual tour along the concepts that are used in several literature on the subject, starting with the concept of theory.

2. THEORY

Answering the question of "What are the constituents of a theory?" Koskela et al define: "A theory consists primarily from concepts and causal relationships that relate these concepts".

They describe various functions of an explicit theory of project management in terms of several roles of a theory:

- provides a prediction of behavior
- basis on which tools can be built
- can, when shared, provide a common language
- pinpoints the sources for progress
- leads to learning in practice
- innovative practices can be transferred to other settings
- it is a condensed piece of knowledge

Further it is stated that “a theory of project management should be prescriptive: it should reveal how action contributes to the goals set to it”.

With the above Koskela et al conclude that it is possible to “find statements from the PM BOK Guide (-) that approximate the definition of a theory or from which a theory can be deduced” and start the search for a “underlying theory of project management” with the concept of “project”.

3. PROJECT

Their review of the PM BOK Guide reveals that “activities and tasks are the unit of analysis” while scope management –as the *raison etre* of project management- is defined through the work breakdown structure. This is also the case regarding to a method of project management that is well known in the building industry in Holland as the “GOTIQ-method”. GOTIQ is the acronym for Gains, Organization, Time, Information and Quality; the so called “aspects of control” within the method. There a project is defined as an activity between improvisation and routine (Wijnen et al, 2001). As a matter of fact the book of Wijnen et al hasn't even the word project management in its title; the title is, translated: “*Working as in projects*”; so it's also activity-based.

After comparison with the theories of production management, Koskela states that the underlying theory of project is that a project can be defined as transformation; transformation of inputs and outputs. Comparison of the idea of transformation of inputs and outputs with the description of the essence of the GOTIQ-method –phasing, controlling and deciding- leads to the same conclusion.

Based on observed anomalies and unanticipated results Koskela et al claim a “lack of flow conceptualization” in the transformation view. Because it includes time as one attribute of production the flow view focus is directed towards uncertainty of the production process and interdependencies between tasks. The main goal is that “unnecessary work is not done” as in JIT production.

Further, based on their interpretation of research by Howell and Andersson, Koskela et al claim a “lack of value generation” in the notion that the in- and output in a transformation process are given and

unproblematic, while they often are uncertain and ambiguous as they are determined by the process of interaction.

4. MANAGEMENT

“Plan, Do, Check and Correct”. Known as the Deming-circle in Quality management, this seems to be one of the variants of the description of the managerial process as a closed loop. According to the PM BOK Guide its Planning, Execution and Controlling. According to the GOTIQ-method its Plan, Steer, Execute and Reflect.

Planning

Within the PM BOK method “planning processes dominate the scene” (Koskela et al, 2002a). Although it’s not as dominant as in the PM BOK Guide, planning as first before doing is also a key issue in the GOTIQ-method. Koskela’s comparison reveals that this perspective is that of management-as-planning (Johnston & Brennan 1996), it “views a strong causal connection between the actions of management and the outcomes (-)” and assumes “that translating a plan into action is the simple process of issuing ‘orders’”.

Fondahl’s observation that “planning scheme’s continue to cover the office wall long after they are obsolete (-)” supports according to Koskela et al the theoretical argument that its impossible to maintain a complete up-to-date plan, which is his turn supports the approach of management-as-organizing “presented as the counterpart to management-as-planning”. Instead of steering on human activity, “management is focused on structuring the physical, political and cultural setting of action”. “The agent consists of interacting sub-units, i.e. they are capable of sensing, planning and acting” and “instead on central representation, it is assumed that there are several representations for different sub units.”

Execution

“On this aspect, the PM BOK Guide is puzzlingly brief-worded. The underlying theory of execution turns to be similar to the concept of job-dispatching in manufacturing. In the case of project management (-) dispatching is reduced to mere communication: written or oral authorization or notification to start work”. As such, also in the GOTIQ-method almost nothing is written about execution.

Contrary to the former claim of evidence, here Koskela et al state that observations from Fontal and Applebaum “are fully in line with the theoretical argument that in the management-as-planning approach execution must rely on informal management in order to succeed in general”. In line with that Koskela et al introduce the language/action perspective, as described by Winograd and Flores. (See for another interpretation of the Speech-act theory: Aravena, 2005). Key issue is that

instead of following orders as in the dispatching view, “work in organizations is coordinated through making and keeping commitments”.

Control

Koskela et al refer here regarding to the PM BOK only to control as performance reporting and states that it corresponds with the thermostat model, identical to the feedback control model. In the GOTIQ-method this is dominant. A precise analysis is given of how to deal with norms for control aspects as it is regarded as from the utmost interest for the control of the project. (Wijnen et al, 2001)

Based on the findings of Loid that “in studied projects meetings have formed the basis for the major part of decisions” Koskela has indeed empirical evidence to support his argument that “it is easier, speedier and more illuminating to directly consider deviations in task execution and to learn about their causes than through the performance metrics”. In addition to the thermostat model he suggests then to “introduce another theory of control, one that addresses learning and improvement” and strangely chooses the “scientific experiment” theory by Shewart&Deming from 1939, applied in mass production processes as the Toyota Production System.

5. PROJECT MANAGEMENT

As indicated above the classical project management is seen by Koskela et al as “a special type of production/operations management” and they conclude that this “project management seems to be based on three theories of management: management-as planning, the dispatching model and the thermostat model”. With action as the key word in the definition of project and as a main subject of the three theories of management, one can summarize classical (project)management as “management of action” or “the use of a closed system” (Boonstra, 2005).

But, based on so called “empirical evidence” , Koskela et al conclude deficiencies in these theories that are underlying the project management method of PM BOK and add new theories to them. Its striking that these added theories are about concepts as “uncertainty, interaction, meetings, language, informal and ambiguity” as they all are human related.

In this respect it’s interesting to compare the first and the latest, 18th, print of the book of Wijnen et al about the GOTIQ-method. It’s obvious then that in the latest print the attention for more human related aspects of project management such as leadership, dealing with stakeholders, collaboration in a team and conflict management is much more than in the first, though not yet put in the context of a coherent theory.

In a following article (Koskela et al, 2002b) Koskela and Howell try to find a confirmation of their theories in analyzing two management methods: Last Planner and Scrum. Although these methods seem to

confirm the above described underlying theories for Project and Management, they do so only as far as planning issues are concerned; the reference in the article to the theories is therefore to superficial, to be convincing.

Summarizing, my critique is firstly that it is striking that Koskela et al don't give a thorough definition of the concepts "project" and "management", but seem to start immediately seeking for theories behind or underlying instruments and try to recognize these theories, again, in new instruments or methods as Last Planner and Scrum.

Secondly, it seems to be that these concepts are not related as a result of empirical research; a theory that meets the requirements as Koskela et al have stated – "consisting primarily from concepts and causal relationships that relate these concepts" and "prescriptive"- is not provided.

Thirdly, it's striking that, contrary to Wijnen et al, there seems to be a neglect of the daily routine of project managers: dealing with power and politics. Although their approach is explicit and sophisticated, their technical approach neglects the political.

6. PROCESS MANAGEMENT, POWER AND POLITICS

The use of the concept of process management requires in the realm of this article a precise definition, to distinguish it from the usual meaning in English spoken countries. Here it is explicitly meant as "interaction management" or "collaborative management".

Process management is concerned with conducting processes within network organizations consisting of equal partners that have not yet common targets and that are only focused on making one step forward. It takes place "in complex situations, in which logic ordering/regulation and predictable output are rare" (Bekkering et al, 2004).

Examples of such a situation are the initiative phase of a project, community meetings related to a city development project or community objections against the plan for a highway through the community-area. Regarding the latest De Bruijn et al wrote a very interesting book titled "Process management, about process management and decision making" that defines process management as designing the process ("process architecture") to solve substantial and procedural dilemma's ("dilemma-sharing") and then manage this process. Both are done in net work environments, where –by definition- there is no hierarchy, no simple command and control type of decision making. (De Bruijn et al, 2004). Boonstra writes: Process managers are focused on the prevention of conflicts via regulation of the participation of parties involved. They structure therefore the decision process and offer space for negotiations on the agenda and procedures. Objective of the negotiations is to eliminate resistance and reach an agreement(Boonstra, 2005)

Also in process management as defined above there are aspects of control, but they are more focused on influencing people and working

together. Bekkering et al mention these aspects "theme, timing, tempo, access, theater, tone, toll, time spirit and coincidence" (Bekkering et al, 2004). Bekkering et al's book consists of two parts: one non empirical description of managing interactive processes and one enumeration of skills to practice interactive management, originating from various theories.

Both books are written for situations that can be described as complex, network-organized, interactive, ambiguous and uncertain; both books are written around the concepts of content, process, plane and power.

Under the title *Power and Politics in Project management* Pinto wrote: (-) political activities, not technical problems, are some of the most commonly cited causes for new project failure. It is ironic that while project management theorists have sought for years to find new and better methods to improve the discipline, power and political behavior has rarely been addressed (Pinto, 1998). Arguing that the positional or formal power of a project manager is problematic, Pinto suggests that a project manager should build his influence, or informal power, on a positive use of the phenomena that "expanding networks and building coalitions is one of the most common political behaviors seen in organizations" in- and outside the project team. Firstly, understanding the nature of power and politics becomes then a condition for influencing people; Pinto reveals on that. Secondly, the project manager has to practice ailed descriptions of negotiation skills and conflict management

All three above described books suggest that there is more power and politics into project management than the project management theory as described by Koskela et al suggests.

The books are prescriptive; with that at least they full fill one criterion asked by Koskela et al. But these prescriptions, well referred and mostly based on research as they are, are just as the project management theories that Koskela et al describe also not based on concepts with a thorough definition.

7. "POWER" AND WITTGENSTEIN

In his Phd thesis on *Power, rule and domination. A critical and empirical understanding of power in sociological theory and organizational life*, Clegg starts with the chapter: The problem of definition. Referring to the earliest work of Wittgenstein the problem of definition is first showed as trying to answer the question whether a concept is "correct" or not; that is how accurately it agrees or correspond with reality. "Wittgenstein's *Tractatus Logico-Philosophicus* is based on the crucial assumption that every proposition has a clear and definite sense, and that this sense lies in that proposition's relation to the world. Propositions refer to the world; the language they are phrased in ought to picture that world. Such a picture can be accurate or inaccurate, true or false, depending on how accurately it agrees or corresponds with reality" and "a proposition was a

representation of reality and considered meaningful when empirical(-)"(Clegg, 1975).

But Clegg continues. Interpreting Wittgenstein's later ideas about language, locating them in the key concept of "language game": "I (Wittgenstein) shall in the future again and again draw your attention to what I shall call language-games. These are ways of using signs simpler than those in which we use the signs of our highly complicated everyday language. Language games are forms of language with which a child begins to make use of words. The study of language games is the study of primitive forms of language or primitive languages" and "Wittgenstein deliberately stresses the diversity of language games (-). He confronts us with the multiplicity of language uses in order to emphasize that there are no necessary referential grounds for language. Correspondence between words and objects is merely a ground rule of such a language game, rather than a feature of all language use" (Clegg, 1969).

Hence: "Peter McHugh (1971) has interpreted Wittgenstein's later ideas about 'language as an activity', which are contained in the *Philosophical Investigations* (-) "and cites McHugh: "a finding is true (or false or ambiguous) ...only after applying to it the analytic formulation of a method by which that finding could have been understood to have been produced....an event is transformed into the truth only by the application of a canon (-) as providing the possibility of agreement." and "Wittgenstein *might* be interpreted as having implied this when he remarked that 'It is what human beings say that is true or false; and they agree in the language they use'. " (Clegg, 1969).

8. THE LINGUISTIC TURN

In his inaugural address Clegg describes "the linguistic turn"(Rorty, 1967) as a starting point of the development of his research work. "The roots of the linguistic turn lie in a stream of work in philosophy concerned with the nature of meaning and experience. The linguistic turn describes a particular philosophical understanding that proposes 'a particular relation of language to social/historical embedded 'seeings' of the world and every person's situated existence' (Deetz, 2003)". (Clegg, 2005). Referring to Clegg's statements about the correspondence between words and objects and the subjectivity of words, it is interesting that Deetz' article describes the linguistic turn as one of the historical attempts to escape the subject/object dualism and the assumption of a psychological foundation of experience, starting by Husserl (1913, 1962). "In his treatment, specific personal experiences and objects of the world are not given in a constant way but are outcomes of a presubjective, preobjective inseparable relationship between constitutive activities and the 'stuff' being constituted. Thus, the science of objects was enabled by a prior but invisible set of practices that constituted specific objects and presented them as given in nature. And, the presence of personal experiences as

psychological, required first a constituting perspective, invisible and prereflective, through which experiences were possible. A floating/social/historical/cultural/ intersubjective 'I' thus always preceded either the objects of science or the psychological 'I' of personal experience". (Deetz, 2003). Deetz continues: "Most objects and experiences come to us as a sedimentation from their formative conditions (-). They are taken as our own or in the world, and the specific conditions of their formation are forgotten. (-) These 'perspectives' or 'standpoints' are (-) institutionalized and embedded in formed experiences and language, and as such, invisibly taken on as one's own (-), while they are reproductions of experiences originally produced somewhere else by others. (-) These 'positions' or 'standpoints' are unavoidably political." (Deetz, 2003). So language no longer represents reality, but is reality itself.

9. CONSEQUENCES FOR MANAGEMENT STUDIES

In organization studies, i.e. management studies, "the problem of language as the 'mirror of nature' that preoccupied the positivist" should then, as examples of "looking through discourse", be replaced by "the investigation of the social/political processes of the construction and distribution of meanings and their disguise as natural" (Deetz, 2003).

Discourse is here defined as all the 'languagely', concerning a certain group of people, for instance in a society, branch of industry, company or team: as a network of spoken and written words.

Meaning concerns not only language, but also non-verbal communication, artifacts and images. So it broadens the perspective of the analysis, when "word" is replaced by "sign". Therefore I suggest a more "semiological" analysis than a "linguistic" one. In short I'll try to illustrate the "theory of signs" as developed by F. de Saussure. According to De Saussure (Berns, 1981) the sign is a unit with two sides: on the one side "meaning", "the mental image", "the thought" or "the concept" and on the other side the sense perception, like a sound, form, color or smell.

These two sides cannot be separated, they are as each side of a coin. One sign –and this is crucial- cannot have content or meaning in itself; it is determined by the whole of relations where it belongs to (the discourse). This proposition leads to the so called *structuralism*: elements have only content based on their mutual relations or structures. An example by De Saussure derived from chess, can elaborate on this:

"Let's take a horse; is it looked at as in it self an element of the game? Certainly not, because in his pure materiality, outside his place and rules of the game doesn't represent anything for the player and only becomes a real concrete element as it is valued as such. Let's presume that this piece is lost. Can it be replaced by another equal piece? Certainly: not only another horse but even by an image that hasn't got the slightest

resemblance with it (for instance a matchbox), will be declared identical if one values it the same" De Saussure (1916, 1972).

10. POWER AND FOUCAULT

In line with the constitution of the "value" as described above and as an example of management studies, Foucault studies the constitution of "power". Foucault is not interested in what power is, but in how it works. Therefore he analysis the concept of power as "institutionalized and embedded in formed experiences and language" (see Deetz above). Foucault does this by putting forward some statements that discuss the traditional conceptions of power.:

- "Power is not possessed but is executed
- Power is not only localized in certain persons or institutions but is everywhere where order rules, where regulations are, where people have relations. It is also localized in the discourse, as long as it is considered as true.
- Power doesn't work on the base of suppression, but based on normalization. To execute normalization a complex system of ongoing control is needed.
- Power is not legal but illegal because it excludes.
- Power is not negative and destructive, but a positive, for instance for production." (Ijsseling, 1972)

Starting from these statements Foucault investigates, based on relevant documents etc., how, mostly in a historical situation, power worked in many discourses as the demographical, the medical, the juridical; especially how this discourse becomes institutionalized and embedded in societal groups, even in buildings like the medical in a hospital ("The birth of the clinic") and the juridical in the prison ("Discipline and punish") i.e. power protects itself. An example of how power is working in language itself is the mechanism of exclusion based on entities seen as discriminating oppositions, for instance "black" versus "white" or man" versus "woman", with the connotation(s) –as shared within a group/society- as discriminating element.

These studies provide a broad and deep understanding of the constitutive elements of power, because they reveal what is generally taken for granted and has become institutionalized, more than empirical studies that only model the constitutive elements, based on "scientific facts" (Chalmers, 1999) i.e. facts derived from empirical research; a kind of understanding that, to my opinion, needs to precede managing as one of its sources.

11. "TALKING CONSTRUCTION INTO BEING"

As Foucault's works seem to be examples of studies focused on critical understanding, according to another management study it seems to be possible to look forward, to intervene and even design, but then based on the same "principles" as Foucault's. In their study "*Governmentality matters, designing an alliance culture of inter-organizational collaboration for managing projects*" Clegg et al, 2002, investigate the Sydney Harbour sewage project as it was completed before the Olympic games of 2002. The abstract starts with: "The concept of governmentality was developed by Michel Foucault to address the specificity of contemporary neo-liberal forms of governance – premised on the active consent and subjugation of subjects, rather than their oppression, domination or external control." (Governmentality is elsewhere in the study connected with "reflexive self-control"). Following the introducing abstract: "The paper reports on an example of governmentality applied to the practice of project management. (-) Complexity, uncertainty and temporality are addressed in the context of governmentality in a specific and highly innovative project management"

The project –designing and building a sewage facility in the harbour of Sydney- was started with an Alliance contract that contained a minimum of requirements. The project strategy, specifications and design had to be developed by interaction within the project team and by tuning with the project environment; so by "talking". Referring to Mintzberg, Schein and Weick among many others, dialogue as crucial in interactive processes is confirmed by Jacobs, 2005. Also Boonstra, 2005, confirms by describing the view of Marie Hosking: "Interactions are the processes wherein realities are constructed. While constructing those social realities, language has an important role".(-) "People in organizations (-) do activities, form relations, create meanings and construct social realities. Meanings are formed in language. The language is embedded in a community and is used as an interpretative framework wherein meaning is given to activities. By the use of language while communicating social realities are constructed".

The research method used by Clegg et al is originated in ethnography. Where Clegg in his Phd thesis from 1975 analyzes only lingual expressions such as the written contract, recordings of meetings and especially informal discussions, here Clegg et al use also artifacts as a rich source of data (compare the above described "semiological" extension of the language-perspective). The key themes for this analysis "became the project culture and its relationship to a set of Key Performance Indicators (KPIs) of Schedule, Budget, Occupational Health and Safety, Community, and Ecology". An extensive research –for instance over 1000 pages of transcripts were analyzed- was done.

This led to the findings that "Governmentality poses an alternative to policing, litigation and arbitration, especially in situations of multiple actors and interests, through the design of a more collective and coherent

practical consciousness within which to make sense. Literally, it seeks to make conflicting modes of rationality redundant by delivering economies in authoritative surveillance through building a collaborative commitment and transparency into the moral fiber of a project." And (-) " The governmental tools used to do this are a strong project culture, monetized key performance indicators, and a stakeholder conception of the project, to bind different organizational stakeholders together"

But "Governmentality that was constructed had limits, as the case spells out."

(-) "We conclude that governmentality projects premised on stakeholder conceptions are particularly susceptible to discrepancies between ambition and outcome. In such a context the constant injunction to improve may itself be an integral part of the governmental method. Hence, governmentality is particularly appropriate for understanding quality management issues." (Clegg et al, 2002)

The project was a success; it was completed, in time and only slightly over budget. In his inaugural address Clegg of 2005 concludes that "Both social and material reality changed in the Olympic project. Materially a major amenity and piece of infrastructure was developed, while, socially, a shared culture was built to deliver it (-) Construction had been talked into being." (Clegg, 2005)

12. CONCLUSION

The Sydney-research confirms Bekkering et al, 2004, De Bruijn et al, 2004 and Pinto, 1996 that there is a lot more power and politics into project management than project management theories suggest. The "obsolete" theories show a total neglect of power and politics in project management. Even in Koskela et al's explicit and sophisticated approach, technics still outweigh the politics.

13. DISCUSSION

I started this article, challenged by the quest for "a paradigmatic transformation of the discipline of project management". I argued that the "technical" approach of the physical reality, wherein language represents reality, seems not to be appropriate for approaching the social reality, wherein language is reality itself. Therefore social reality is a construct. This approach seems to make it possible to develop a deep understanding about what is "really" going on in project management; a understanding that makes it even possible to design (or predict) reality. Supposed this approach consolidates into a new theory of project management, maybe then the "linguistic turn" is the "paradigmatic transformation" searched for.

A project can be defined as an activity “between improvisation and routine” (Wijnen et al, 2001). This can be interpreted as: between uncertainty and certainty. Assumed that politics are opportune in a situation of uncertainty; still a lot of agreements are to be made in that situation. Koskela et al react on the obsolescence of a method, that is based on a approach suited for situations maximal on the scale of certainty. Koskela et al’s suggestion of added “theories” can be interpreted as an attempt to grasp the informal, the ambiguous, the unknown and the uncertain, but still remains a technical approach. The approach in the Sydney case appears to be suited for a situation that is highly complex and ambiguous; almost maximal on the scale of uncertainty.

In my view both approaches don’t exclude each other and both are valid for all phases of a project. The amount of which the one or the other is dominant, depends on the amount of uncertainty of the situation, i.e. grade of participation/interaction needed.

Maybe then there is no theory, as defined by Koskela, needed and is it only the approach that counts; paraphrasing Rorty: “if it works, it’s true”.

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