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Project temporalities: how frogs can become stakeholders

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Abstract

Purpose – The purpose of this paper is to explore how animals can become stakeholders in interaction with project management technologies and what happens with project temporalities when new and surprising stakeholders become part of a project and a recognized matter of concern to be taken into account.

Design/methodology/approach – The paper is based on a qualitative case study of a project in the building industry. The authors use actor-network theory (ANT) to analyze the emergence of animal stakeholders, stakes and temporalities.

Findings – The study shows how project temporalities can multiply in interaction with project management technologies and how conventional linear conceptions of project time may be contested with the emergence of new non-human stakeholders and temporalities.

Research limitations/implications – The study draws on ANT to show how animals can become stakeholders during the project. Other approaches to animal stakeholders may provide other valuable insights.

Practical implications – Rather than taking the linear time conception for granted, the management challenge and practical implication is to re-conceptualize time by taking heterogeneous temporalities into account. This may require investments in new project management technologies.

Originality/value – This paper adds to the literatures on project temporalities and stakeholder theory by connecting them to the question of non-human stakeholders and to project management technologies.

Keywords Stakeholders, Animals, Project management, Construction industry, Actor-network theory, Stakeholder theory, Stakes, Nature, Project temporalities

Paper type Research paper

Introduction

One Sunday afternoon in October 2004 work at a construction site near the city was brought to a halt by the local police. When the police arrived, construction workers were working at the site. Two representatives from the society for nature conservation (SNC) had observed this activity and alarmed the police, claiming that the workers were in the midst of destroying the habitat of a protected species, the moor frog. This episode can be seen as the culmination of an ongoing conflict between, on the one hand, the developer responsible for the building project and, on the other hand, local SNC activists and several local politicians. The conflict had been going on for more than a year when this incident took place.

This episode comprises part of the case story unfolded in this article, which is based on an empirical study of a building project. A key figure in the affair was a tiny creature, a moor frog, or to be more precise, several hundreds of them. This frog species played a leading role in what turned out to be an enduring controversy during the building project.

The controversy suggests that stakes were high and that there was a clash of interests. Different concerns about economy, ecology, extinction, survival and time were articulated and became entangled in the project. Our analysis, which is based on this controversy, examines how the stakeholders and stakes emerged, took form, clashed and changed during the project. Rather than seeing interests and stakeholders as given in advance, we argue that they were formed during the project. This article focuses on the shifting and complex relations between stakeholders and argues that the moor frogs emerged as stakeholders that contributed to multiplying the temporalities at play in the case studied. While the case and local setting are specific and unique, we contend that the ecological, economic, legal and moral controversies they spawn are applicable in a more general sense, especially for larger construction, building and urban development projects.

As has been well established, time is a fundamental aspect of projects and project management. First, the project is, by definition, a temporary organization, which makes it different from the more permanent orientation and organization of the project host and firm (Christensen and Kreiner, 1991). Second, and by implication, the project is finite and typically constrained by contracts, budgets and deadlines that define when the time "is up" and the project is finished (Söderlund, 2002). Third, a linear perception of time prevails, not only as "theory-in-use" among project managers, but also as an institutionalized (and taken-for-granted) conception of time (Lundin and Söderholm, 1995). Professional international project management associations conceptualize project time as consisting of successive stages and phases. The linear temporality of projects is often contrasted with the cyclical time conception of the firm (Bakker, 2010; Ibert, 2004). The linear time conception is reflected in the language of project management, where the frequent and institutionalized use of terms such as "milestones" and "deadlines" signal this particular understanding of project temporality (Ibert, 2004, p. 1530).

This article contributes to the ongoing research on project temporalities (Lundin and Söderholm, 1995; Bakker, 2010; Rämö, 2002; Kenis *et al.*, 2009; Packendorff, 1995). Although dominant in mainstream project management literature, manuals and guidelines, a number of studies challenge the view of project time as linear and discuss different kinds of project temporalities. We aim to add to this literature by exploring how different project temporalities may be connected to human and non-human stakeholders and stakes in a project. Based on a case study of a building project, we show how different temporalities, such as cyclical and linear time, emerged as new stakeholders and new stakes came into being during the project. Perhaps the most surprising emerging stakeholders were the moor frogs which came to challenge both the finite temporariness of the project and the linear sequential time implied by standard project management technologies.

In our analysis we draw on actor-network theory (ANT). A defining feature of ANT is the analytical emphasis on the role of devices and technologies (Latour, 2002). The approach has also been used to examine building projects and topics such as; innovation (Harty, 2005), design practices (Yaneva, 2005; Whyte *et al.*, 2007; Våland, 2010), surprises (Yaneva, 2008), visions and goals (Harty, 2008; Tryggestad *et al.*, 2010), project management roles (Georg and Tryggestad, 2009), and business performance (Kjellberg, 2010).

In the context of the present study we draw particularly on the concepts heterogeneous temporalities (Latour, 2002, 2005), matter of concern (Latour, 2004, 2005), and interessement (Callon, 1986; Latour, 1987; Akrich *et al.*, 2002). Taking an open, empirically sensitive and "symmetrical" approach, where both human and non-human actors are taken into account, we follow the processes whereby stakeholders and stakes were shaped and temporalities multiplied and folded (Latour, 2002, 2005).

The remainder of the article is organized as follows. First, we attempt to bring together two different strands of literature by connecting research on project temporality with research on non-human stakeholders. Next we describe our methodology and research context before providing the narrative and case analysis. The final section discusses our findings and the theoretical and practical implications for our understanding of multiple temporalities and non-human stakes in a project setting. This is followed by a brief conclusion.

Project temporalities, technologies and non-human stakes and stakeholders

The literature describes time as taking on a variety of different forms (Lundin and Söderholm, 1995; Burrell, 1992; Czarniawska and Joerges, 1996; Pedersen, 2009). Linear time is supplemented – and contradicted – by circular, cyclical and spiral time; chronological and mechanical time (chronos) by lived time (kairos); and local time by global time. Bluedorn (2002) points out that time conceptions differ both across and within societies and organizations. To illustrate this, he uses First World War and the German planning approach to the war campaign (and project) as an example. He argues that the Germans traditionally preferred a monochronic approach and planned their campaign according to a strict sequencing of tasks, adhering to one task (battle front) at a time, while sticking to the plan. Surprisingly, however, the German plan turned polychronic during the war and they engaged in two tasks (battlefronts) simultaneously, while retaining only one element of the traditional monochronic approach, i.e. sticking to the plan.

While Bluedorn (2002) is primarily concerned with "human times", Hatch (2002) draws attention to nature's way of "doing" cyclical time and discusses an alternative to the conventional linear time conception in organization theory. She refers to the British artist David Hockney, arguing that new and unexpected conceptions of time can emerge through material-visual practices. Hatch's account of one of Hockney's artistic projects suggests the possibility that action and interaction with technologies and devices can generate unexpected project outcomes, including alternative and more dynamic notions of time.

Latour (2002, 2005) also conceptualizes time in a way that puts focus on the connections between technology and action. He introduces the notions of "heterogeneous temporalities" and "folding" to capture these relations and illustrates his point with the example of a hammer:

> The hammer that I find on my workbench is not contemporary to my action today: it keeps folded heterogeneous temporalities, one of which has the antiquity of the planet, because of the mineral from which it has been moulded, while another has that of the age of the oak which provided the handle, while still another has the age of the 10 years since it came out of the German factory which produced it for the market. When I grab the handle, I insert my gesture in a "garland of time" [...], which allows me to insert myself in a variety of temporalities or time differentials (Latour, 2002, p. 249).

When in action, the heterogeneous temporalities of the hammer can unfold in unexpected ways: "With it in hand, the possibilities are endless, providing whoever holds it with schemes of action that do not precede the moment it is grasped" (Latour, 2002, p. 250). An open empirical question is whether or not the project only involves one conception of, and stake in, time, such as delivering to set dates and abiding by contracts. There is also a related question concerning who or what can participate in defining time, since it seems possible that even technologies and devices can somehow participate in (re)defining time and somehow multiply the temporalities for a project.

Combined, the above contributions encourage revisiting the institutionalized taken-for-grated conception of a linear homogeneous project time and asking how multiple temporalities might be at play in a project. Different project temporalities occur based on controversies that make the project a set of concerns. As indicated in the introduction to this paper, one concern was the moor frog's presence on the building site. The concern in question turned the moor frog into a potential stakeholder that disturbed and multiplied project temporalities. This proposition assumes, however, that the moor frog can be seen as a stakeholder. Whether non-human actors can be considered stakeholders is an ongoing debate in stakeholder theory.

Non-human stakeholders according to stakeholder theory

Management of the stakeholder environment is often seen as an important challenge in project management (Newcombe, 2003; Maylor, 2010). Newcombe (2003) draws attention to unexpected stakeholder dynamics over time, and the challenges involved in taking them into account. In its general form, stakeholder theory "see[s] the firm [as] holding the central position" (Fassin, 2009, p. 128) and claims that there are other stakes and interests besides those posited by economics shareholder value theory (Freeman *et al.*, 2004; Donaldson and Preston, 1995; Jensen and Sandström, 2011). The claim is positive – there are more stakes to which interests are attached – and also a moral claim – more stakes ought to be taken into consideration. An ongoing debate in stakeholder theory literature addresses the question of non-human stakeholders specifically. This discussion revolves around the question of whether the natural environment is to be included as a potential stakeholder (Starik, 1995; Phillips and Reichart, 2000; Driscoll and Starik, 2004; Norton, 2007).

Two opposing positions have developed in this debate. On the one hand, some researchers argue that the natural environment, such as animals, trees or the climate, should be viewed as legitimate stakeholders who are to be taken into account (Starik, 1995; Driscoll and Starik, 2004; Norton, 2007; Haigh and Griffiths, 2009). These scholars argue for a broad and inclusive definition of the stakeholder concept and often draw on Freeman's (1984) "affect or is affected by" criterion to make this claim. For example, Starik (1995, p. 215) argues that:

[…] the natural environment, its systems, and living and non-living components can be considered stakeholders by all organizations, since all organizations significantly affect or are significantly affected by these entities.

This position criticizes other stakeholder theory models for being overly anthropocentric. As an alternative to this alleged anthropocentrism, traditional stakeholder theory criteria are reinterpreted and supplemented by new criteria, such as proximity,

to support an eco-sustainability perspective in which the natural environment qualifies as a "primordial stakeholder" (Driscoll and Starik, 2004).

In contrast to this proposition, others argue for a more exclusive, narrow stakeholder definition and maintain that "the natural environment is not and cannot be a stakeholder [...]" (Phillips and Reichart, 2000, p. 185) even though it is recognized that non-humans "may merit moral considerations of other sorts [...]" (Phillips and Reichart, 2000, p. 196). It is argued that a broad definition, like the one proposed by Starik (1995), has the implication that the stakeholder concept becomes meaningless because it becomes almost impossible to say who does *not* qualify as a stakeholder. Hence, "[...] only humans can be organizational stakeholders [...] because only humans are capable of generating the necessary obligations for generating stakeholder status" (Phillips and Reichart, 2000, p. 191).

While opposite in this sense, the two positions approach the question of non-human stakeholders as a question that can be decided in an a priori theoretical or moral discussion. This a priori assumes that there is a finite set of stakeholders that exist before the analysis commences. This is a structural explanation; a static explanation where all stakeholders whether defined by the broad or narrow definition of stakeholder can be pointed out in advance. However, the challenge is that it may not be possible to identify stakeholders a priori. It is when stakeholders make themselves known as part of the empirical processes that they develop the project. This more dynamic account of stakeholder assumes that stakes are only relevant when they are inserted into a process where they influence the courses of action. This empirically sensitive proposition is that stakes are interesting when they influence the unfolding of a project. Therefore, generally, stakeholder theory is less useful when considering questions about stakes in and over time for stakeholders in the firm's temporary project. An account based on ANT is more powerful because it takes into account actual actors in the unfolding of the project setting.

ANT and animal stakeholders
Inspired by the "symmetric approach" of ANT, we do not operate with an a priori distinction between nature and technology on the one hand and social and organizational reality on the other (Callon, 1986; Latour, 1993, 2004; Czarniawska, 2009; Reijonen and Tryggestad, 2012). Therefore, the question of whether or not the natural environment can be a stakeholder is not interesting as an a priori separation between domains. The question of the identity of the stakeholder is more interesting when it assumes agency and forces human and non-humans to act in a different way. The character of the stakes to which interest is attached by the stakeholder is the "outcome" rather than the input of contingent processes (Callon and Law, 1982, p. 622). Only an empirical analysis can establish how the stakes and the stakeholders emerge and gain properties when in action, i.e. when they are involved in episodes of transformation and activity. Stakes are the material concerns to which interests are added. Stakes imply interests but do not determine their character. An employee's job may be a stake, but this does not indicate whether the employee's interest is, for example, in receiving a reduction in pay to keep the job or in pursuing continuing education to improve the chances of promotion. In ANT stakes are the material aspects of games that attach interest. This implies that the concepts of stake and interest differ in character from that which is assumed in the stakeholder theory outlined above. In ANT,

stakes and interests are not pre-given properties belonging to different actors. Instead, they are formed through relations and can change; even given stakes can be attached to new interests through the game. Interests lie between actors and their goals (Latour, 1987, p. 108), but as interests are flexible and formable, strategies for enrolling others by changing their interests become possible (Latour, 1987; Whittle *et al.*, 2010). The notion of "interessement devices" (Callon, 1986) is used to capture techniques enabling this process. Interessement implies the creation of a new link between entities. In Callon's (1986) much-cited scallops case, material devices, such as towlines, were used to create a new link between researchers, fishermen and scallops. Interests that were previously separated became linked and shaped through the towline and the project, and in turn created new stakes and concerns about their mutual dependencies and common future.

In line with ANT, our proposition is that actors, stakes and interests are relational effects rather than given properties of a particular actor or group of stakeholders. This expands the scope of analysis by considering both humans and non-humans as potential actors to be taken into account. According to Latour (2005), this somewhat contra-intuitive proposition is a defining characteristic of ANT. Examples of non-human actors included in ANT-inspired analyses are manifold. Latour (1988) includes actors such as microbes, and in a famous, much-cited article, Callon (1986) considers scallops as actors. Other animals, such as elephants (Thompson, 2002), fish (Holm and Nielsen, 2007), baboons (Callon and Latour, 1981), sheep (Despret, 2005; Law and Mol, 2008), whales (Blok, 2011), water voles (Hinchliffe *et al.*, 2005) and otters (Sage *et al.*, 2011), have also played important roles in ANT-inspired analyses.

In line with the contributions above, we ask how animals and in our case the moor frogs may become both actors and stakeholders in a project. This potential becoming is considered an open empirical question, since we cannot decide a priori whether the frogs are actors. Latour emphasizes that anything can be an actor, but not everything is an actor. Explaining this distinction, he says:

> Without accounts, with trials, without differences, without transformation in some state of affairs, there is no meaningful argument to be made about a given agency [...] An invisible agency that makes no difference, produces no transformation, leaves no trace, and enters no account is not an agency (Latour, 2005, p. 53).

It is in this empirical and pragmatic sense that an animal may become and be an actor. Hence, an animal may become an actor if it makes visible a difference to the construction project, for example, by affecting the time schedule, the budget, the design specifications, or more generally, other actors' interests and goals.

For an animal to become an actor requires it to connect with humans, other non-humans and devices, because an actor never acts alone. In their reflections on Cumbrian sheep as a potential actor, Law and Mol (2008, p. 58) emphasize that:

> [...] an actor does not act alone. It acts in relation to other actors, linked up with them. This means that it is also always being acted-upon. Acting and being enacted go together.

Our analysis follows this line of thinking and, hence, implies that the frog can be considered as an entity entangled in a larger assemblage consisting of both humans and non-humans (Latour, 2005; Hernes, 2010). It is within this network of entities that the frog may emerge as an actor to be taken into account.

According to ANT terminology, the moor frog is a potential actor who acts, emerges and changes in relation to a particular context and as a part of particular hybrid assemblages. At the same time, animals can be considered a matter of concern (Latour, 2005) that became a focal point in a set of controversies and stakes involving different conceptions of time and a number of other actors, such as the developers, the environmentalists and politicians. The concept "matter of concern" refers broadly to what people care about (Latour, 2004) and it supports ANT's overall rejection of the "modern constitution", where the mutually excluding dichotomies nature/society and fact/value are foundational and reflect supposedly distinct ontological domains (Latour, 1993, 2004). Within the modernist constitution, nature is equivalent to a domain of matters of fact that can be observed and represented in an uncontestable manner. In contrast to this, ANT argues than non-humans may be matters of concern that are highly controversial. As suggested above, such controversies can involve time and stakeholder status for animals, but also places. According to Latour (2002) technological action can involve a triple folding of times, agency and places. In our context, we consider a stake as an instance of a matter of concern rather than as a matter of fact and show how animals emerged on the construction site as a matter of concern and caused the development of new concerns and stakes in relation to project time, place and progress. We consider the ways in which animals and project management technologies (e.g. time schedules) shaped stakes, stakeholders and temporalities during the building project.

Methodology

The empirical material informing this paper is based on an ethnographically inspired explorative case study of a project owned and developed by DEF (a pseudonym), a Scandinavian property development firm. The fieldwork was conducted in 2006. The subsequent analysis is part of a broader study designed to explore relations between the firm and the project.

During an initial interview with a DEF project manager, we became aware of the frog story and the controversy it had spawned when we inquired about whether the interviewee could tell us about any unexpected challenges he had experienced as a DEF project manager. The significance of the frogs came as a surprise to us, as it had to the developers, as it was specifically mentioned not only as an unexpected event, but also as an exceedingly challenging and costly encounter for the project managers. We found the story interesting and as our ethnographic field work progressed, the moor frog issue reappeared in several ways. It became clear to us that the relationship between the moor frogs, on the one hand, and the firm and project management, on the other, changed considerably during the project.

Our data collection was organized around the practical managerial dilemmas inherent to most complex and dynamic construction projects and the frogs represented one of the dilemmas in conducting this research. We used multiple qualitative methods by combining observations, interviews and documents in an attempt to establish rich and varied empirical material. The process involved three main steps. First, the second author and a colleague conducted nine semi-structured interviews both at firm level (with the CEO, various managers and DEF employees) and at project level (with DEF project managers, employees and managers from different subcontractors). Lasting from 30 minutes to $1\frac{1}{2}$ hours, all of the interviews were tape recorded and transcribed

in full. This interview material was supplemented by numerous informal conversions during our field work at the construction site. The interviews were not particularly aimed at the "moor frog issue", but were part of our larger research project.

Second, taking an open, ethnographic approach, the second author and a colleague conducted a week's field study at the project construction site where the moor frogs were present. The DEF project manager was shadowed for five consecutive workdays from early morning to late afternoon (Gheradi and Nicolini, 2002). This provided the opportunity to participate as observers in a number of different activities, e.g. formal and informal meetings, site inspections, lunch break chats, etc. Told that this was a quite typical week for the project manager, we kept a diary for field notes and wrote down observations but also summaries of informal conversations we had with the project manager and others. During our field work, we were shown the frogs' habitat and even observed one frog in addition to some of the many devices, such as low fences around the waterholes that had been constructed to protect the frogs from the construction work.

Third, we used written material such as newspaper articles, consultant reports, documents produced by local authorities, marketing material, project plans, annual reports and photographs, as a substantial and important part of our data. Based on the written material, we reconstructed a timeline and identified key events and protagonists in the controversy. For reasons of confidentiality, we do not refer directly to these documents as this would reveal the identity of the developer firm.

The empirical material and the case study will be presented in a narrative form (Czarniawska, 1998), because this style makes it possible to unfold the actions that took place. Furthermore, narratives are, by definition, representations where temporalities are brought in focus. In that way, a narrative presentation of our case analysis supports an important theoretical point of our paper: temporalities matter. Our case story departs from the temporal perspective of DEF but becomes more heterogeneous with the frog controversy that emerged during the building project.

The case story

The case study is about a building project owned and managed by a developer firm we call DEF. "Project chronology" provides a chronological overview of the project events related to the frog controversy.

Project chronology:

- *2001.* DEF buys a new piece of land together with 100,000 m^2 of existing buildings. Their plan is to renovate the existing buildings and to develop and build around 80,000 m^2 of new residential buildings.
- *January 2003.* At a town hall meeting, the mayor (of the municipality where the site is located) presents and welcomes DEF's ambitious building plans. DEF's CEO is present at the meeting.
- *February 2004.* At a citizens meeting in the municipality a heated debate develops concerning the frogs' existence and number. DEF sends a fax to the local authorities with an appeal to be allowed to bring down the waterholes at the construction site.
- *March 2004.* The local authorities grant exemptions to DEF, allowing DEF to bring down the waterholes on the condition that DEF establishes an alternative water element where frogs and other animals can live.

- Protesting against the municipality's acceptance of DEF's plans, local environmentalists file a complaint to the Environmental Board of Appeal.
- *October 24 (a Sunday), 2004.* Local environmentalists call the police to report that DEF is in the midst of destroying a protected area. The police arrive at the site and bring DEF's activities to a halt.
- *November 2004.* The Environmental Board of Appeal agrees with the appellants, stating that the municipality did not adhere to the administrative procedures.
- *January 2005.* The local authorities accept a new, revised district plan for the area.
- *March 2005.* DEF has hired their own frog experts and fences, corridors and counting technologies are put in place. The frog research continues during spring and summer and includes regular on site observations and frog counts from March 18 to June 20. In total the "frog catch" resulted in 269 adults and 17 juvenile moor frogs in the vicinity of the two waterholes.
- *October 2006.* The social researchers conduct their field study on site.

When the field study was conducted in 2006, DEF had less than 100 employees, but in terms of revenue and profitability it was a big actor. DEF's business is property development. The company buys land and creates ideas for new building projects to be built and sold. When an idea is accepted as lucrative, DEF initiates a new project based on this idea and is then engaged in the whole process from design to project and construction management, to marketing and sales.

DEF is not a building contractor in the typical sense as all construction activities are sourced out to external firms in the building phase. Still, project management is an essential task in DEF. They have a project manager attached to every project but this person's role is to supervise and control the overall project and "manage the management" of hired contractors. In this sense, DEF is comparable to a highly professional client. Its core business is property development and sales and its heavy involvement in the project management of building projects is an important mediator between these two business activities.

The narration of a case story must always begin *in medias res* (Latour, 2005). With this in mind, our narrative begins in December 2000 when DEF decided to develop a new piece of land as part of a large and ambitious development project. Our narrative is structured in five related episodes that reveal the emerging "frog controversy" and the concerns and stakes at play.

Episode one: is nature inside or outside the project?
When DEF bought the land, they were unaware of the presence of two waterholes on the prospective construction site. Nor did they know that the construction site was a habitat for frogs. In an interview, a DEF project manager explains:

> There were two waterholes [on the site], but it was some rush or grass like stuff [...] In fact, you couldn't see them if you didn't know they were there. And actually we didn't know. But then some people with very green mindsets thought they should be preserved. And we were told that the waterholes existed, and, well, then we could see that this was true.

The quote indicates that DEF was caught unawares by the nature of the natural environment at the construction site. At first sight the waterholes had been invisible

to them, hidden by rush, but now they emerged as something that had to be taken into account by the project managers. The waterholes became part of the project because "people with very green mindsets" acted as a spokesperson (Latour, 1987), claiming that the waterholes had to be preserved.

The waterholes were a surprise, not only to DEF, but apparently also to the local authorities that had approved DEF's building plans. Whenever DEF initiates a new project, it has to be part of the district plan, which is why DEF communicates with the local authorities to get any unresolved matters settled as quickly as possible. Potential restrictions, such as environmental considerations, are part of the district plan. In the case of the building project, the process initially appeared to be relatively easy. Ostensibly, the mayor and the majority of the city council were happy to welcome DEF and were looking forward to a project that would make their suburban municipality grow considerably in terms of inhabitants and tax income and would presumably attract business. But, local environmentalists and local politicians began to protest and their protests were mainly based on appeals concerning the natural environment. Pointing out the existence of the two waterholes was a first step. Equipped with maps, the environmentalist showed where the waterholes were and, if additional proof was needed, field trips to the site left little doubt as passing through the rush that concealed the waterholes was a simple matter. After the initial uncertainty, it seemed clear to everybody that waterholes were present at the construction site.

New questions subsequently arouse. First, when is a waterhole big enough to be protected by environmental legislation? Second, how old were the waterholes and were they truly natural or were they "artificial"? And what difference would it make if it turned out that the waterholes were artificial, constructed quite recently by people? The first question was easier to settle than the second one. According to national legislation, lakes with a size of 100 m^2 are protected. The two waterholes in question were larger than this. The second question was more controversial. DEF argued that the lakes were artificially designed and of quite recent origin. However, it turned out that even an artificially designed waterhole was protected by law if it had become wild life habitat. This appeared to be the case in the project, although this was, as the next section shows, also a point of dispute initially.

What stakes were at play at this point? And how were they connected to project temporalities? According DEF interviewees, the stakes of the firm are always high because of the potential revenue streams from a new project. DEF operates in a highly competitive market and they know that projects are risky because unexpected events may jeopardize the proposed budget, quality and time of the project. In an interview, the CEO of DEF explained:

> You know, we're really fast. That's one of our parameters. We've always been 3-6 months faster than our competitors. That's an advantage because when you're first on the market, you get the clients first. [. . .] So the speed of the project is very important. [. . .] That's why we hardly ever buy a piece of land where we have to struggle with the plans for 5, 6 and 7 years. Normally, we will buy something that is easy to approach – with a district plan process that is almost settled. We want to finish the project in the same market because the market fluctuates. So the speed of a project is a very important parameter for us.

Here, project time is conceptualized as linear and temporary; it is finite and has clear beginning and end. Moreover, knowing when a project will end and when it commences is important for DEF, as they want to exit the same market as they enter.

Furthermore, the above quote shows that time is also conceptualized in terms of speed. The CEO emphasizes that speed and being fast are central to the firm's business model and allegedly being the fastest gives DEF a competitive advantage. In that sense, project time and firm time are connected by the focus on speed.

The appearance of the waterholes challenged DEF's project temporality in various ways. First, it threatened the speed of the process. Second, it showed the construction site as a space where temporalities were heterogeneous and folded, in Latour's sense of the term. Third, the temporality of the waterholes became an issue of controversy as discussing whether or not the waterholes were of recent origin was seen as relevant.

Episode two: how can this new obstacle, the frogs, be removed from the project?
As mentioned above, it turned out that according to legislation, the important question was not the age of the waterholes, but whether they functioned as a wildlife habitat. In the fall of 2003, SCN, an environmental group, claimed that the construction site waterholes were habitat for wild frogs and SCN brought particular attention to presence of the moor frog, classified as an endangered species and protected by an EU-directive. The moor frog was the stake. On a field trip to the site, accompanied by an amphibian expert, the environmentalists had found and photographed several exemplars of the moor frog close by. They claimed that about 500 frogs of this species inhabited the two waterholes.

As DEF had not been aware of the presence of the waterholes, the presence of moor frogs was also unexpected. Having acknowledged the waterholes, DEF still doubted that they were wildlife habitat. The initial reactions and actions from DEF reflect that at this point nature was hardly considered a stakeholder by DEF. Rather, the potential frogs were seen as an obstacle to the project as the controversies they spawned threatened to delay and change the project.

At this point, DEF decided to take action. On a Friday, in the Winter of 2004, they sent a fax to the local authorities asking for an exemption to destroy the waterhole. DEF denied the stakes and interests the environmentalist claimed were at play in project – ecological sustainability and the frogs' survival. The frogs were not allowed the status of stakeholder. Instead, the waterholes were an obstacle that a tractor could flatten out just like any hill or ditch could be leveled. Just a couple of days after the fax had been sent, the local authorities had processed DEF's application and approved the dispensation on the grounds that the waterhole did not constitute a viable place for the reproduction of frogs.

At this point, it was widely agreed that waterholes existed on the construction site, but there were two widely divergent claims concerning the relationship between the waterholes and the frogs. SNC claimed that the waterholes played a vital role in securing the survivability of around 500 protected moor frogs. By contrast, local authorities only considered the (unspecified) waterhole and claimed that it did not play an important role the frogs' reproduction (unspecified as well). However, the decision of the local authorities to approve the construction project led SNC to file a complaint with the Environmental Board of Appeal, a complaint that would have delaying effect on parts of the building process.

In DEF's view this was critical and it was at this point in the process that DEF apparently tried to solve the problem of delays by simply eliminating the object of controversy. At least this was the impression conveyed by the SNC, whose local

spokesperson was quoted in the newspaper the day after the police incident mentioned in the introduction of this paper. The environmentalist claimed that DEF was trying to foreclose the case by eliminating the frogs' natural conditions for survival, so they would be free to build wherever they like. The environmentalist attempted to speak and act on behalf of the frogs and their habitat, presenting DEF as a ruthless, profit-driven company that was attempting to eliminate the frogs by destroying their habitat. However, this version of the story was contested by the local authorities and DEF's CEO. Two days after the incident, another newspaper wrote that the local authorities had visited the site and concluded that DEF's activities that Sunday did not affect the condition of the two waterholes and that, the digging did not forestall the processing of the complaint to the Environmental Board of Appeal. In the same newspaper, DEF's CEO was described as a nature lover, hunter and even former member of the NSC. Not only did DEF get this support, they also began taking a new approach in which nature was taken into account by the project management. The company began making it clear that they too cared about nature, including frogs.

Episode three: could the frogs be moved?
DEF did not pursue a path of litigation. Instead, they revised response and invited negotiations with both SNC and the local community. The frogs were still seen as an obstacle, but a less brutal solution was proposed to overcome it. DEF now considered relocating the 500 local moor frogs to a similar, nearby lake that would fulfill the perceived needs of the frogs and secure their survival. Nature's stake was survival, even if dislocated. It was a stake in time – not in place. This proposition did little, however, to satisfy the environmentalists, who articulated the stakes of the frogs differently than DEF. There was a contestation of power to articulate stakes and to define stakeholdership. DEF was concerned with survivability but in a different place; environmentalist with nature more broadly, including the existence of the waterholes and not only the frogs.

DEF's solution was also a challenge to the authorities whose stake was procedure. A DEF project manager explained the lengthiness of the process as follows:

> But then there are rules that make it possible to keep on filing complaints with the Environmental Board of Appeal and this has a delaying effect on the construction process. It was clear to us that this process could go on for years before it would be decided if we could obtain approval to move these frogs or not.

Administrative procedures became a matter of concern as they might translate into a time-consuming process, because the SNC could, in principle, keep filing complaints. The threat of this happening turned out to be a decisive factor, because even if DEF received permission to relocate the frogs, the complaint process would delay construction, jeopardize the firm's focus on time, eventually undermine the construction budget (cost) and delay revenues from the project). DEF might get the permission but at the cost of a serious and extraordinarily expensive delay. Thus, administrative procedures helped reformulate the stake of the frog and the frog's identity as a stakeholder changed.

Episode four: how can the frogs be included and taken care of?
At this point, the frogs' needs and wants became a matter of concern to DEF. The stake now involved time and place. This new approach to nature's stake is reflected in the following interview statement by a DEF project manager:

So, we ended up turning things around, saying "Ok", instead of fighting, they [the frogs] should be allowed to live there. But we must build anyway, so we need to know something about how this kind of frog would like to live. Then we followed suit and recruited the country's leading moor frog experts as our advisors.

At first, the frogs had been an obstacle or stranger (to be destroyed or relocated), but gradually they were accepted as part of the project and became something to be taken care of and with a recognized stake in survival at this particular site. Consequently, instead of fighting the frogs, DEF suggested that they could co-exist with construction site building activities. This new approach required considerable investment. DEF hired their own amphibian experts to support the new terms and objectives that were emerging as part of the project. Suddenly science was not only on the environmentalists' side. Different biologists presented two very different options. The environmentalists had enrolled a biologist to stop construction and to preserve the frogs' natural habitat undisturbed, while the DEF experts helped negotiate a new settlement between the construction business and nature. At this point, the frogs had several spokesmen claiming to take their needs into consideration.

DEF's new approach was an active endeavor because DEF, by becoming more accommodating, would speed up construction. This involved processes and investment in devices that had never before been applied by the company. The following quote by a DEF manager illustrates some of the many initiatives that were introduced:

Together with the advisors we started to sort out [. . .] "when we start here, and the frogs are living there in the wild growing rush [. . .] and at this time of the year [. . .] and how does that fit with [. . .]?" There is a particular time schedule for handling the frogs. When it is their breeding season, they want to use the waterhole. Then a frog fence will be erected to keep them on the trail. There is a frog fence where they exit the waterhole so they don't escape. Then there will be a bucket dug into a hole in the ground and the frogs will fall into it. Then every morning before sunrise, the frog expert arrives to count if all the frogs are there.

There are several management considerations worth noticing in this quote. First, as has been made clear, time is a crucial aspect of DEF's activities, but it turns out that managing the frogs means that a different temporality must now be taken into consideration. DEF's project time is linearly structured, but frog live in cycles, which is why special time schedules had to be constructed for them and aligning the two different schedules was a challenge. Second, a number of material devices, e.g. fences and buckets, were established to control and direct the behavior of the frogs. The following explanation from a DEF manager illustrates a third consideration:

There are corridors where they [the frogs] can wander, and in the event that they can't wander there, we have built a tunnel under the road. There are a lot of challenges.

Fences and corridors were established to prevent the frogs from getting killed. Buckets served as collectors and made it possible to register the frogs on the construction site. This granted the frogs a more durable, manageable existence (Callon, 1986) while simultaneously making their existence visible and countable. The setup enabled the biologists to record and translate the frogs and their movements into textual-numerical representations (Latour, 1987), which, in turn, made it possible for both the frog expert and the project management to speak with more knowledge and authority about how to manage the co-dependent relation between the building project and the frogs. The use of such technologies can be seen as "interessement devices"

(Callon, 1986; Sage *et al.*, 2011). Buckets and other material-visual technologies helped to constitute the moor frogs' existence and existential stake in a particular way. Thus, the survival of the moor frog at the site became integrated as a recognized matter of concern in the project, whereas in the beginning, it seemed that elimination from the construction site had been the objective.

Episode five: becoming friends with the frogs
With the help of the amphibian expert and various technologies, the construction process could proceed without killing the frogs and without destroying their habitat. Aligning the existence of the frogs on the site with the realization of the construction project ended up being possible. As developers, DEF's core activity is developing property with the purpose of sale. This means that marketing is an integrated activity in the real-estate projects they initiate. And it is in relation to this that the frog becomes more than just a condition and a concern.

Upon arrival on our first day of field work at the construction site, we noticed big posters at the entrance. This was real-estate material aimed at potential buyers who visited the site. One of the apartments that had been built when the project first commenced functioned as a real, 1:1 model of what a customer might buy. Potential buyers visited the site while the buildings were being constructed and, in fact, the majority of the apartments were sold before they were constructed. Some of the posters showed visualizations of the buildings and apartment interiors. Others focused on the nature surrounding the buildings. A brochure showed two children playing at a waterhole trying to catch something with their fishing net. Here, the waterholes as wildlife habitat had become more than just an obstacle and concern. The natural environment adds identity and value to the building project. What was previously a hindrance to the progress of the project and a possible detriment to the company's reputation was apparently about to be transformed into a valuable project asset and a creator of goodwill for the development firm.

Discussion

This article has explored how different project temporalities are connected to stakeholders and stakes, and how animals and nature may eventually become stakeholders with stakes in time and place. Frogs, waterholes and the management of the firm and project are not stabile entities with stable stakes. Our approach to the emergence of stakes and stakeholders differs from the demarcation debate within the stakeholder theory literature (Starik, 1995; Phillips and Reichart, 2000; Driscoll and Starik, 2004). Instead of providing an abstract theoretical or moral discussion of this issue, we have shown empirically how the frog emerged as a matter of concern and was granted status as a stakeholder to be taken into account in the firm's project.

As the moor frogs emerged as a surprising stakeholder and matter of concern for management, the project temporalities were challenged and multiplied. First, the linearity incorporated in the project's time schedules was challenged. A cyclical temporality was brought into play as the project had to take the life and breeding cycle of the frogs into consideration. The linear time schedule was supplemented by a cyclical time schedule that had direct impact on the timing of the specific building activities.

Second, the focus on speed, integral to the firm's business model, was challenged in various ways. The environmentalists' protests and complaints had consequences for

the pace of the building process, because they activated administrative, political and legislative processes that had a delaying effect on the project. At one point, when DEF tried to speed up things, they were brought to a halt by the police. Later in the process, DEF went out of their way to put devices in place that would align two apparently very different matters of concern: the survival of the frogs at the site and the speed of the project. Buckets, counting procedures and frog fences were all devices that were put in place to support project linearity and speed. To uphold the progression of the project, a detour had to be taken. In ANT terminology, the moor frogs had to be interested and enrolled in the project to keep up the pace. In that way, DEF managed to reestablish a project temporality that adhered to the criteria of linearity and speed, central aspects of their business model and a project management tool. However, this required extensive work and a number of investments in new project management technologies and devices.

Third, it became clear how time in this project was folded and this challenged the finite and bounded temporality of the project. As Latour (2005, p. 201) puts it, "Time is always folded. So the idea of any synchronic interaction where all the ingredients will have the same age and the same pace is meaningless [. . .]". For instance, the age of the waterholes was disputed, but it was clear that their origin preceded the project. While the building project was limited in time, the stakes of the frogs, as a species, were defined as permanent survival in that particular habitat. The project management had to take things into account that exceeded the finite project time both into the past and into the future. In this sense, our study supports criticism of "the lonely project" suggested by Engwall (2003) and Kreiner (1995).

The temporal boundaries of the project were not the only boundaries that changed during the project. The boundaries of the stakeholder environment changed and turned more open and flexible. The boundary defining what was inside and what was outside the project changed as the natural environment eventually was granted a stake in the project. In the beginning, nature was at best scenery and an empty background that allowed DEF to construct many square meters of buildings to be sold. With the discovery of the waterholes and the moor frogs, this gradually changed. First, nature was seen as interference, an obstacle and something that jeopardized the project and particularly the speedy progression of the project. This changed, however, when the frogs were taken into account and a more ecologically sustainable setup was put in place. The frogs were recognized as having stakes, such as a stake in survival, which again included their feeding, breeding and wandering needs on the construction site.

Were the frogs actors? From a common-sense perspective, the question may seem odd, but in the ANT sense of the term, the frogs certainly were as they played a part in the shaping both the project's ambitions and goals (time, cost, design) and execution. They made it a different project. However, the project management also acted on the frogs and it can be argued that the frogs became something new. They changed from being wild life, hidden to most people and their numbers unknown, to being a specific, counted and countable population of an endangered species. The wild frogs became domesticated frogs.

Conclusion and implications for further research

The boundaries of the project were open and flexible in several ways. Our work complements research on the temporary (project) organization by showing that different temporalities can be connected in a commercial project. But we have also

shown that forging connections require a great deal of effort and investment since limited and linear time makes it difficult to connect to unexpected project stakeholders. Unforeseen stakeholders are the ones not already taken into account in the initial project planning and linear time scheduling, but instead excluded and decoupled from the project. We have shown how such decoupling can raise the stakes and fuel controversies. In our case, it concerned animals and their habitat and temporality. In terms of future research, we believe that research on the temporary (project) organization can be enriched by studies of project temporalities that link the temporary organization to different entities and temporalities. As noted by Engwall (2003), no project is an island, and we also consider this to be true for project temporalities as well. Project research has developed a particular sensitivity concerning the matter of time and is particularly well positioned to address this issue in future research.

On a more general note, our case and analysis have shown the possibility of a "comeback" (Hatch, 2002) for nature's cyclical time in organizational practice, the temporal fragility of organizational accomplishment and that substantial investments are required in the form of scientific expertise and new project management technologies and interessement devices (Callon, 1986) for a comeback for nature to occur.

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