

Public Engagement Events and the Management of External Stakeholders: Artifacts as Boundary Objects or Tools of Discipline and Control?

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Abstract

Public engagement is founded on idealistic principles of democratic decision making and public stewardship. Yet, the logistical realities of managing these processes are fraught with difficulties. In this article, we explore the ways in which material artifacts are used in formal public engagement proceedings on urban development projects in Hong Kong. The findings show that material artifacts used—in addition to serving as boundary objects that facilitate communication across knowledge boundaries—form part of a network that directs, controls, and manages the information flow among participants. These artifacts thus play an active role in managing the divergent interests of external stakeholders on projects.

Keywords

public engagement, stakeholder management, materiality, urban development projects, power networks

Introduction

Economic and social infrastructure form the backbone of modern societies, and most countries in the developed world currently face the need to develop new infrastructure, as well as maintain, upgrade, and modernize existing infrastructure (Flyvbjerg et al., 2009). Increasingly, the need for new infrastructure is being met through large (at times mega) projects and programs. These projects and programs are characteristically bigger in size, longer in duration, more complex, subjected to more legal and regulatory issues, more prone to scope creep, under greater public and media scrutiny, and have more significant social impacts than their smaller counterparts (Altshuler & Luberoff, 2003; Söderlund et al., 2017). Empirical studies show that large projects and programs commonly fail to provide the expected benefits and meet the objectives for which they were initiated (Altshuler & Luberoff, 2003; Priemus, 2010). They also tend to evoke controversy and resistance in society (van den Ende & van Marrewijk, 2019), as in many cases the project value is not universally shared by the public (Vuorinen & Martinsuo, 2019).

Coupled with the increase in large infrastructure projects is a growing recognition of the need to engage the public in their front-end shaping (e.g., Aaltonen et al., 2015; Winch, 2017). The public, however, is an extremely heterogeneous group that is not contractually or immediately economically bound to the project, and engaging with this wide range of project

stakeholders poses numerous challenges to the project team (Williams et al., 2015). The point of departure for this article is that public engagement is the main formally established means for engaging the public in the front-end project shaping. Public engagement events provide channels of communication through which a diverse range of external stakeholders can come together, in real time, to express their views on a project to others, with the hope that they can influence the project's mission and scope to align with their views.

The premise of public engagement is for the project owners to meet with the public and others who will be affected by the project in a systematic way (Rowe & Frewer, 2005) in order to build consensus among participants (Innes & Booher, 2004). Conducting public engagement is presumed to add value to projects, the rationale of which falls broadly within either a normative or a substantive perspective. A *normative rationale* argues that involving the public in the government's

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decision-making processes is a democratic ideal to strive for, and that public deliberation is an essential component for effective governance in developed democracies (cf. Brannan et al., 2006). A *substantive rationale* argues that garnering feedback from the public, so that the project properly represents public interests, legitimizes planning activities (Legacy, 2012). In other words, conducting public engagement is perceived to enhance the project's legitimacy as well as its outcome.

Despite the ideological aspirations, the practice of engagement is fraught with difficulties. As the range of stakeholders given a voice broadens, public engagement and, specifically, the physical events that are held under its auspice become a space in which stakeholders vie for their interests to be included. Within this space, stakeholders' resistance to the project mission is meaningfully and socially constructed (cf. Courpasson et al., 2017). In navigating this space, the project team must find ways in which participants' feedback could be captured and enacted upon in a seemingly fair and equitable manner while ensuring to align the feedback with the project mission.

There is an emerging body of work on the ramifications of engaging with the public on large infrastructure projects and how engagement processes can be managed (e.g., Yu et al., 2015). However, research has primarily focused on variations of stakeholder management, that is, how stakeholder management goals can be aligned with project goals (e.g., Di Maddaloni & Davis, 2017; Park et al., 2017; Turner & Zolin, 2012). There is little in this line of research that allows for explanations or predictions of what happens at the micro-levels of public engagement, in other words, at events organized by project sponsors with the explicit purpose of soliciting feedback from the public, most commonly known as *public engagement events* (cf. Rowe & Frewer, 2005). In particular, the contents, logistics, and physical setups of these events seldom feature in the literature and, hence, are rarely theorized about.

Considering the increasing importance of public engagement, and it becoming an integral part of project delivery on public projects, there is an impetus to better understand the physical and structural framework that makes up the sociotechnical system that directs and controls communication among participants. The aim of the article, therefore, is to explore this sociotechnical system and examine how the material artifacts used in public engagement events affect communication between participants and project owners. In so doing, we seek to contribute to the small but growing literature set in project management that questions the application of fixed assumptions for motives and behavior of stakeholders and instead argues for the development of a better understanding of the circumstances that affect and drive this behavior (e.g., Aaltonen, 2011; Eskerod & Larsen, 2018).

We adopt a constructionist approach (Berger & Luckmann, 1966) to mobilize some of the concepts used in science and technology studies (STS). Various studies have used STS to conceptualize how stakeholders act to incorporate their viewpoint during democratic decision-making processes (e.g., Latour, 2004; Chilvers & Longhurst, 2016, Voß & Amelung,

2016). However, despite increasingly frequent mentions in the project management literature (e.g., Styre, 2017; Tryggstad et al., 2010; Winch, 2017), STS has yet to be applied to understanding the sociotechnical network within which stakeholders in urban development projects negotiate divergent interests. We are inspired by managerial studies that conceptualize artifacts as *boundary objects* (Star & Griesemer, 1989), as well as studies that aim to enhance our understanding of the role of artifacts within construction projects (e.g., Bresnen & Harty, 2010; van der Hoorn & Whitty, 2015). Our focus, however, moves beyond the artifacts as singular objects toward viewing these artifacts as physical manifestations of power within a wider sociotechnical network (cf. Callon, 1986; Latour, 1986).

The article begins with a review of public engagement and describes how, in the project management literature, it is commonly understood through the lens of stakeholder management theory. We then go on to link public engagement with notions of power and, more specifically, the importance of artifacts in facilitating and impeding human interaction. The concept of blackboxing (Callon, 1986; Callon & Latour, 1981) is introduced to advance the argument that interactions among participants within a public engagement setting must consider the interactions individuals have with material artifacts. It is shown how artifacts have more than a strictly technical function and play an active, rather than passive, role in communication. Subsequently, the research methodology is introduced describing our ethnographic approach, which acknowledges that the data collected are context driven and culturally bound. The article then goes on to describe the public engagement process in Hong Kong as part of a bigger cultural phenomenon, before presenting vignettes from participant observations conducted by the first author at public engagement events for large urban development projects. The vignettes are critically analyzed to explore the material artifacts as part of power networks, which participants navigate around in their attempts to exert their influence on a project. Conclusions are drawn showing that the ways in which material artifacts are handled and manipulated in public engagement processes affect how stakeholders with divergent interests are incorporated into project decision-making processes; and how this, in turn, feeds into a broader understanding of the management of projects as argued for in the third wave of project management (cf. Morris et al., 2011).

Background and Context

Public Engagement as a Democratic Ideal

Public engagement serves a political function by categorizing and prioritizing public values through open negotiation (cf. Veeneman et al., 2009). Within planning theory, Arnstein's (1969) seminal work on citizen participation remains a cornerstone of the public engagement movement. Arnstein's "ladder of citizen participation" posits that engagement and participation with the public should aim to lead to a redistribution of power, and that different levels of participation progressively

allow for this transfer of power to take place. Scholars have consistently contested at what levels participation needs to take place and to what end (e.g., Carpentier, 2016), but they generally recognize the underlying needs to delegate power and control to public stakeholders to empower those who would otherwise be voiceless. In the project management literature, on the other hand, the value of conducting public engagement is closely tied to the ability to pacify stakeholders and nullify dissenting voices to the project (Close & Loosemore, 2014). The management of public engagement processes from this perspective focuses on the ability to control and direct discussion to ensure that project goals can be achieved. Combining the democratic ideals of public engagement with the more practical considerations of project management inevitably causes tension, which will be explored in more detail in the following section.

Managing Public Engagement Processes on Projects

Public engagement is facilitated through a series of mechanisms set in place with the specific purpose of allowing communications among a wide range of participants. These mechanisms for engagement take many forms, such as lay membership on science committees (e.g., Irwin et al., 2013) and citizens' juries and consensus conferences (e.g., Rowe & Frewer, 2004); they target a range of issues, such as large infrastructure projects and the implementation of science, political, and social policies. How the mechanisms are deployed is often evaluated in terms of attributes such as *fairness*, *competence*, and *effectiveness* (Rowe & Frewer, 2004). The range of topics for engagement within the broader area of urban development ranges from high-level discussions of planning policies for a general metropolitan area through to the design, development, or conservation efforts of a specific site. The format of engagement is tailored to this context accordingly and differs significantly from that of, for example, a science committee or social welfare policy. Differences include the scope of information available to the public, how and over what time frame the public is engaged, and what the public may hope to influence. Of particular importance here is that urban development projects are inherently a "problem in information" (Winch, 2015), where the degree of certainty increases as the project progresses. Aligning the public engagement with the project life cycle is, therefore, problematic, and public engagement events become a series of, more or less, one-off project milestone events. In this sense, public engagement has a narrower meaning when applied within the context of urban development projects than in its general definition.

Within the project management literature, public engagement is subsumed under the broader umbrella of stakeholder management. It is frequently argued that stakeholder management directly influences the success or failure of a project (e.g., Turner & Zolin, 2012; Yu et al., 2015) and public engagement is often justified by how it may affect project outcomes (Cuppen et al., 2016). The

public is here viewed as external or *secondary* stakeholders to the project (Di Maddaloni & Davis, 2018; Winch, 2017). These external stakeholders come and go throughout a project's life cycle, exerting their influence over the project at various stages. Managing the wide range of stakeholders throughout different project stages, therefore, poses numerous challenges and various models and frameworks have been developed in response.

Traditional stakeholder management approaches have their foundation in resource-based theory and typically judge stakeholders based on their actual and potential influence on a project and allocate resources to manage them accordingly (Mok et al., 2015). For example, in Mitchell et al.'s (1997) stakeholder salience model, stakeholders are ranked by their ability to influence the project (power), the legitimacy of their claims (legitimacy), and their ability to demand attention from project owners in order for their concerns to be addressed in a timely manner (urgency). These approaches have found much traction and have led to tangible improvements in practice as they provide an analytical framework to classify stakeholder groups, allowing managers a chance to anticipate problems for the project while there is still opportunity for maneuvering (Jepsen & Eskerod, 2009). Yet, focusing on how the actors may potentially impact on project outcomes means that this kind of stakeholder classification is blind to the maneuvers of stakeholders as they lay claims onto a project and the contexts in which this takes place (Eskerod, Huemann et al., 2015). Hence, these approaches fail to incorporate the multiple and overlapping processes of stakeholder engagement necessary to respond to drifting project environments and stakeholder needs (Eskerod & Vaagaasar, 2014).

Additionally, many studies take the issue of potential influence on the project a step further and employ a risk management approach to public engagement, taking the stance that external stakeholders are one of the most unpredictable, and most political, stakeholder groups and that they pose a threat of destabilizing projects. The public's tendency to obstruct development projects is, here, often the point of departure for discussing engagement efforts, and various forms of stakeholder analysis are offered as a solution to the problems that the public poses (e.g., Cuppen et al., 2016; Yu et al., 2015). Unsurprisingly, therefore, public engagement efforts are often rationalized as a deterrent against public protest and, hence, as helping to mitigate bad press and political upheaval directed at the project (e.g., Close & Loosemore, 2014; Cuppen et al., 2016).

Both the traditional and risk management approaches to stakeholder management fail to address the fundamental clash between the goals of public engagement and the goals of the project. The goals of public engagement include sharing the privilege of decision making with the general public (cf. Delgado et al., 2011), whereas the goals of the project are to meet pre-established outcomes as set by the client or project owner (Turner & Zolin, 2012). This clash in goals is, indeed, taken as the foundation for studies that apply a risk management approach. Yet, in the course of emphasizing the participants' abilities to negatively affect a project, the collaborative aspects of engaging with the public (see Innes & Booher, 2004), essential for allowing decision making to

be shared, are downplayed. In other words, while stakeholder management and risk management approaches acknowledge the wide-ranging interests that external stakeholders may have, they tend to focus on the way stakeholder relationships affect project outcomes. This is to say, they focus on dyadic relationships between individual stakeholder groups and the project (Eskerod & Vaagaasar, 2014). Less attention is paid to the process of engagement, how stakeholder networks develop and evolve, and how this is shaped by the physical settings wherein public engagement takes place.

Power Distribution in Public Engagement

From the review in the previous section, it becomes apparent that public engagement is closely intertwined with notions of *power*. Be it the distribution of organizational resources to manage specific stakeholders according to their ability to wield power on a project (as per Mitchell et al., 1997), or the redistribution of power to the public, such that the power and responsibility for decision making becomes more broadly shared (as per Arnstein, 1969). From a stakeholder management perspective power is commonly seen as something that is possessed and can be used to bring about desired outcomes (Aaltonen et al., 2008). Conceptualized in this way, power is something that is possessed by an agent, which through the process of public engagement is redistributed to other agents. These other agents then use this newly gained power to help achieve their individual goals. Such a view, we posit, is limited in its usefulness. Instead we draw upon the postmodern view of power as presented by Foucault and then further developed in the STS discourse by Latour and others. Foucault saw power as constitutive of social relations. He contested the notion of power as something that can be possessed and then doled out (“sovereign power”) and instead viewed power as something that is enacted upon through systems of discipline, surveillance, and constraint. In application to management studies, the Foucauldian view of power conceptualizes power as a network of relations and discourses that captures both the advantaged and disadvantaged (Hardy & Leiba-O’Sullivan, 1998).

The mechanisms for conducting public engagement are purposefully designed and can thus be described as a power network conceived by the project sponsors. This power network contains a combination of tangible and intangible elements, which together, when in use, form a sociotechnical system. It is within this sociotechnical system that stakeholders come together with the hope of affecting change to the project. However, despite the influence that these tangible elements have to affect stakeholders, the importance of *materiality* is often overlooked and has remained relatively under-theorized in the construction and project management literature (cf. Bresnen & Harty, 2010; Styre, 2017). From an STS perspective, power may be enacted on people as well as be reified into materials, rituals, and modes of formalized technical knowledge. This is known as the *translation* model of power (Callon & Latour, 1981; Latour, 1986), and explains the process where intangible elements are turned into tangible ones; for example, a design idea being translated into an architectural

plan. The study of translation thus puts emphasis on the process as an illustration of power play rather than the outcomes.

Applying STS to Public Engagement

The STS approach has been applied to studying the circumstances in which public engagement processes are constructed and performed, as well as its effects and outcomes (Chilvers & Longhurst, 2016). However, while we engage with STS concepts, our article is decoupled from the general STS debate around the appropriateness and delimitation of public engagement. Our emphasis instead pertains to the ways material artifacts are used to facilitate communication in public engagement processes on urban development projects and three areas of focus are put forward. The first area of focus concerns how artifacts can take on the role of boundary objects. The second concerns the role that materials have in reinforcing power networks. The third concerns how material artifacts can become strongly associated with certain practices and embedded into a system. Each of these points is explored further as follows:

1. Artifacts as Boundary Objects

Boundary objects are objects that intersect multiple social worlds, thus allowing agents to create meaning along the margins of their overlapping worlds (Star & Griesemer, 1989). The boundary object construct provides a useful springboard for exploring how the interests of individual stakeholders might, or might not, be negotiated. Within management scholarship, the focus has mainly been on the characteristics of artifacts that allow them to cross knowledge boundaries. For example, it has been used to explain the use of artifacts, including engineering drawings (Carlile, 2002), project tools (Sapsed & Salter, 2004), and timelines (Yakura, 2002) to span knowledge boundaries. While we take inspiration from these studies, our focus moves beyond the artifacts as singular objects toward viewing them as part of a much wider sociotechnical system.

2. Artifacts as Reinforcement in a Wider Power Network

Power is a social construct and is highly contingent on the context within which it is located (Foucault, 1977, 1978). Just as in a game of chess, each entity (human or non-human) in a power network holds a specific meaning, yet its meaning would be incomprehensible to an outsider unless it is explained as part of the system that includes the rules of the game and the functions of the other chess pieces (Haugaard, 2002). Thus, power relationships cannot be viewed separately from their surrounding social network, and no single relationship makes sense until it is explained as part of the system in which it is embedded. Rather than focusing on the coercive nature of power, the Foucauldian view examines how power affects different people within the network. All actors have their own wants and needs and will mobilize resources, or engage in the management of meaning, to achieve their desired outcome (Hardy & Leiba-O’Sullivan, 1998). An agent can negotiate within the power

network by drawing on materials as well as engaging other agents. For example, a soldier may gain the respect of others through direct interactions, as well as by earning honors, ranks, or medals that can be displayed on the uniform (Callon & Latour, 1981). These artifacts reinforce the power that an agent has gained and become *reservoirs* of power that the agent can draw on when negotiating with other agents to achieve their desired outcome.

3. Artifacts as Black Boxes

An artifact can act as a placeholder for a specific practice, such that the associations between the artifact and the rules of practice no longer need to be considered. For example, once a speed bump is installed, the local police can turn their attention elsewhere (cf. Latour, 1991). Similarly, once an architectural plan is published and approved by the certified architect, the architectural plan speaks on behalf of the architect, and the project team can subsequently refer to the plan rather than the architect. When these associations become taken for granted they, alongside the materials they are associated with, are put into *black boxes* (Callon, 1986; Callon & Latour, 1981). Our everyday social interactions are inundated with materials that act as black boxes; yet, because they are taken for granted, their function as such remains largely unnoticed. It is only by observing agents interacting with each other through material artifacts that the underpinning power network can be made visible; and it is only by focusing on processes and actions that the black box can be opened.

Research Methodology

This article draws upon a 34-month ethnographic study of public engagement in Hong Kong, which made use of a variety of ethnographic techniques. Our ethnographical approach to studying public engagement follows the concept of *ethnographic place* as put forward by Pink (2009). This approach allows us to conceptualize public engagement not as a single event or as project specific, but as a *place* tied to a specific sociotemporal cultural landscape. Drawing from place-making theory, inquiries into ethnographic place concerns how people meet and what they do when they meet, including the spatial and visceral qualities that the experience provides. Used as an analytic framework, the ethnographic place is seen as a coming together and *entanglement* of different elements, which include persons, artifacts, trajectories, senses, and dialogs. As such, the way a place is defined must consider both its spatial and temporal qualities and it should describe the processes that lead to outcomes rather than concentrating merely on the outcomes themselves (Massey, 2005). The ethnographic place is, therefore, experiential, open, and constantly in the process of becoming. A researcher is emplaced into this world and is tasked with conveying a representation of this ethnographic landscape to the reader by describing experiences as an emplaced person. This careful and selective construction of worldviews to represent a phenomenon lends itself to an understanding of organizational processes, not as a conglomerate of objects that can be

labeled and measured, but as entanglements of overlapping social worlds that the researcher can strive to understand and derive meaning from (Hernes, 2008).

Multisited Ethnography

The social construction of an ethnographic place deviates from the project-centric approach commonly applied in traditional ethnographic studies in project management. It adopts a sociopolitical view that takes into consideration the wider system within which public engagement is embedded and conveys these *lived-in* experiences as part of a cultural scene. To construct our ethnographic place, we follow a *multisite* strategy, which not only “investigates and ethnographically constructs the lifeworlds of variously situated subjects, [but] also ethnographically constructs aspects of the system itself through the associations and connections it suggests among sites” (Marcus, 1998, p. 80). A multisited approach treats the objects of study as emergent and argues that actions taken by individuals may be assembled into a structural network of relations deemed pertinent to the type of scenes witnessed, rather than by the specificity of the issues discussed. This requires the ethnographer to enter the field with a higher level of prior theorizing compared to a traditional ethnographic approach (Pink & Morgan, 2013), which is reflected in our research design.

Research Design

Data collection took place between June 2013 and April 2016. In the early stages upon entering the field (cf. Gobo, 2008), the first author sought to establish a contextual understanding of how public engagement is conducted in Hong Kong and how the execution of public engagement activities fits within the overall framework for engaging with the public. This was achieved by attending a variety of public engagement events that were held at the time. Through contacts made while attending these public engagement events, semi-structured contextual interviews with representatives of project sponsors were set up. In total, 13 contextual interviews were conducted, ranging from 30 minutes to 1.5 hours each in duration. The main purpose of conducting these interviews was to understand what managers wish to achieve by engaging with the public and how the public engagement events contributed to this goal. The interviews targeted professionals who self-identified as having extensive experience in either strategizing, organizing, or facilitating public engagement events. In total, the interviewees represented seven government authorities and governmental development corporations, including the Hong Kong Housing Authority, Hong Kong Airport Authority, Urban Renewal Authority, Planning Department, and West Kowloon Cultural District Authority; and three consulting firms and research centers that consult on government projects. All these interactions together allowed the first author to gain background knowledge on public engagement from multiple perspectives, with a focus toward the management of engagement exercises. The insights gained informed the research team’s approach and prompted a high level of theorization at the commencement of

participatory observations (cf. Pink & Morgan, 2013). They also served as a foundation for the creation of an ethnographic place for in-depth study.

Subsequently, in adherence to a multisited approach (cf. Marcus, 1998), the first author participated in 17 formal public engagement events connected to 13 large urban development projects, including large-scale housing projects (e.g., *Housing sites in Yuen Long South*, with the project mission of providing 27,700 new flats), urban renewal masterplan projects (e.g., *Tung Chung New Town Extension*, with the project mission of increasing the population of Tung Chung by 140,000), and civil infrastructure projects (e.g., the *HK Airport third runway project*, estimated to cost HKD141.5 billion (US\$18.1 billion)). All but two of the events were in the formats of community workshops and public forums, both of which are common and well-established formats for engaging with the public. What all the events had in common was that the only requirement for entry was prior registration. These observations were supplemented by a desktop review of the published government reports and consultancy reports for each of the projects observed, and seven ethnographic interviews with three key personnel from a consultancy firm responsible for running some of the events.

The multisited approach allows for comparison across the participatory observations of community workshops and public forums for different projects to uncover structural patterns in what is observed. Hence, together, the data collected through observations and interviews helped to identify patterns that dictate how engagement is conducted for urban development projects in Hong Kong, regardless of the espoused goals of the engagement exercise or, indeed, the scope of the project. The data collection, analysis, and interpretation stages were conducted in parallel, with the purpose of allowing insights gained while in the field to be incorporated into the ongoing data-collection process. Events were treated as ecosystems in their own right (cf. Wolcott, 1994) and assessed independently before being related back to the larger dataset. Analysis took the form of establishing patterns in examining the field notes (as per Wolcott, 1994) and testing against the researcher's preliminary model in an iterative process (as per O'Reilly, 2005). This was achieved through making notes on the observations, reflecting on these notes, forming certain assumptions, and re-entering the field to test out these assumptions. Numerous discussions were held between the authors as to how the observations were to be interpreted.

Public Engagement in Hong Kong

The statutory requirements in Hong Kong allow for public input into public projects, but do not allow for the two-way dialog commonly associated with public engagement. Since the implementation of the *Town Planning (Amendment) Ordinance 2004*, the only requirement is for new plans or amendments to old plans to be submitted to the Town Planning Board (TPB) for review, and final approval is given by the Chief-Executive-in-Council (Planning Department, 2018). The government is

not required to explain or communicate the plan with the public other than to make it available for comments or objections over a two-month period after submission to the TPB for review.

Nonetheless, since the turn of the century, the Hong Kong Government departments have become increasingly proactive in how they approach the public with project plans, partly due to public pressure demanding a deeper level of engagement in public policy issues (Lee et al., 2013; Ng, 2018). Consequently, various forms of non-statutory public engagement have been organized by the government to communicate project information to the public and to collect their feedback. The choice to conduct public engagement is, however, entirely voluntary, and the government has a track record of avoiding engagement with the public on more contentious projects (Cheung, 2011). It has even been argued that public engagement exercises are used as a "tool of hegemony" by the Hong Kong Government to control aspects of planning policy (Tang et al., 2012), which has led to an antagonistic stance between the government and the public.

Because there are no legislative requirements around how public engagement should be conducted, the proceedings carry a high degree of flexibility in terms of who to engage, the time frame for consultation, and the format to employ for engagement. However, reviewing recent public engagement processes shows that the protocol for this type of public engagement is set to two or three general stages. At the end of each stage, a consultation report is generated by the project owner and published online.

Each stage usually includes a combination of several types of public engagement activities: (1) *roving exhibitions*, which typically consist of panels showing the design proposal displayed in an area of high pedestrian traffic flow, such as the foyer of a local indoor shopping center or the concourse of an MTR (Mass Transit Railway) Station; (2) *focus groups* and *community workshops*, which are commonly conducted when project plans have begun to take shape and the project team wishes to gain participant feedback and input on specific project details; and (3) *public forums*, which serve as capstone events for the project team to formally gather public feedback. These are highly publicized events, prone to attracting media attention, typically held in a large venue that accommodates diverse groups of participants, with attendance only limited by the capacity of the venue itself. In short, the roving exhibitions are almost exclusively one-way communication, whereas both the workshop and public forum formats facilitate two-way communication by providing opportunities for representatives from the community to both voice their views and be exposed to the views of other participants, including the project owners.

Findings: Vignettes Showcasing a Network of Material Artifacts in Use

Based on our analysis of the observed events, we present three vignettes describing how participants handle material artifacts

and in doing so knowingly express, or unknowingly betray, their self-interests. The three vignettes are chosen because, in many ways, they exemplify how the researcher experienced the role of a network of artifacts in use when attending these events. Vignettes provide an abstract description of a scene (Dewalt & Dewalt, 2002) showcasing the lived-in experience of the researcher by presenting the story in such a way as to emphasize a sense of immediacy. However, since they belong to a larger ethnographic dataset, the vignettes are interspersed with reflections of how a particular aspect of the proceedings compares with other events observed to provide rich descriptions. They also cross reference insights gleaned through interviews and document analyses of specific projects. In keeping with the ethnographic tradition, the vignettes are presented from the point of view of the first author.

The Ballot System

It is rarely possible, or practical, to give everyone attending a public forum event the opportunity to speak. Instead, a system is put in place that randomly allocates the right to speak to those who express a wish to do so. The flow, order, and structure for the public to speak are regulated by a ballot system, which in turn is regulated by the act of drawing out ballots. As the most visible component of the ballot system, the ballot box from which ballots are drawn often becomes the focus of attention. The following vignette depicts a scene from the Stage 2 public forum for an urban regeneration project with the mission of providing approximately 60,000 new flats and in excess of 600,000 square meters of commercial and industrial floor area:

As the event host is often at pains to explain, the ballot system for admitting different views to the forum has been deemed as the fairest way to ensure an equal representation of views in light of the time limitations. These rules for public engagement seem to be fairly well established and undergo little change between events. I have witnessed these rules being bent to varying degrees: people speaking out of turn or exceeding the time limit; people asking their companions (mostly a spouse or friend) to speak for them because they had a cold/sore throat, or simply because they claim that their companion is a better speaker; and people interrupting the proceedings. During this particular event, the discussion became increasingly heated as the event progressed. Speakers voiced their concern that the completed development will not match the images shown in the video, and that the numbers published in the socioeconomic study were incorrect. When discussion about these technical details could not be progressed, hostility began to be directed toward the format of the forum, the mental capacity of the event host, and the legitimacy of the ballot box. When a number of speakers representing the same interest group were picked in a row, a couple of men from local villages shouted, pointing at the box, that the ballot was unfair because the box was somehow rigged, even though it was made of see-through plastic and completely transparent. [Public forum, September 2013]

There is a juxtaposition between the lofty idealism associated with public engagement and the mundane realism of a ballot box. The attention that is paid to the box, its physical dimensions, its transparent nature, and the way the hosts ceremoniously draw ballots from it, are significant to the successful running of an event. The ballot system is a mutually agreed on set of rules to ensure the procedure is conducted fairly, but it also acts as the means of controlling the order, direction, and content of communication flows through the selection and relegation of potential speakers to a randomized time slot. It follows that, the interface between the participant and the event is regulated by the ballot system, and the ballot system is in turn regulated by the action of drawing ballots from a box. To the casual observer, an attack on the validity of a transparent ballot box would seem to bypass rational argument. Indeed, none of the participants at any of the events observed based their argument on whether or not there should be a ballot system. The point of contention was around how to conduct the ballot, which relates to the rules of practice surrounding the event. This points to the acceptance of a pre-existing power network that encompasses a ballot system that has already been taken for granted; it has been *black-boxed*.

The Microphone System

The public forum provides a means for the public to voice their interests, and the microphone might well be conceptualized as the physical manifestation of this voice. Being in control of the microphone equipment therefore means that the organizers have the discretion of allowing an audience member to speak or not. Consider the following public forum attended by around 200 participants, which was the full capacity of the room.

The proposed project, with an estimated value of HKD200 million (US\$25.6 million), is part of a larger program aimed at improving accessibility and mobility in a historic district on Hong Kong Island. The participants who attended this event were distinctively split into two demographics: young to middle-aged expatriate residents who spoke little to no Cantonese and elderly local residents who spoke little to no English. The elderly local residents were generally in favor of development as they could see the benefits of upgrading the existing aging pedestrian and traffic networks, whereas the expats distrusted development and worried that it would destroy the character of the neighborhood:

The event organizers provided real-time translation of the proceedings through interpretative headsets for those who did not speak Cantonese. Additionally, after each of the expats made their speech, the event host gave a brief overview of their main points for the benefit of the members of the audience who did not understand English. This procedure soon became contentious when a young Chinese-looking man wearing a white polo shirt interrupted the host to say, in Cantonese, that he was mistranslating the last speaker's comment, and that the host left out the point about putting in an alternative route through

the hospital complex. The host responded by saying that his intent has not been to translate word-for-word but to convey the main points, that the event was being recorded by technicians who understand English, and all comments will go into the official records. The young man requested, and was given, a microphone and he used it to make his case. He knows it is not his turn, he said, but he feels that his group of expats is being misrepresented. As he spoke, his speech became increasingly emotional and irate, until several members of the audience, myself included, felt obliged to correct him: "No, the host did talk about the hospital," I muttered in Cantonese (other discordant voices emanating from the audience at large were also making the same point), "but he called it 'Tung Wah,'" since Tung Wah Hospital is commonly referred to locally simply as 'Tung Wah.' After a while, maybe two minutes, his microphone was switched off; and without an amplified voice, he had no choice but to sit down, looking disgruntled. [Public forum, April 2015]

Just as the ballot box is key for the enactment of a ballot system, the microphone is essential for directing voices and allowing speakers to be heard. The fact that this particular event involved translating between two languages added another obstacle for participants to voice their interests. In this vignette, the young man sought to speak out of turn and attempted to take over the role of the event host to translate between languages. However, he failed to align his own interests with those of the other participants. When the microphone was switched off, it bluntly terminated the young man's ability to voice his interests and participate in the negotiating process. It is such a blunt act, in fact, that it is usually not employed unless a participant resolutely refuses to yield the floor. Supposedly conscious of the power of the microphone in allowing individuals to speak up, before the extreme act of shutting off the microphone, the event host will politely provide speakers fair warning by informing them their time is up. After such a disruption, the host will also often remind participants that they may submit any further comments they have as a written submission.

The Technical Documents

In the following observation, residents living adjacent to a proposed development area for a program targeting the construction of 50,000+ new flats and more than 900,000 square meters of commercial floor area, came together in a community workshop to discuss the design proposal in a task-oriented workshop set up by the planning consultant team. The community workshop was held in a large secondary school gymnasium and was attended by approximately 180 people. Participants were randomly assigned into groups of 10 to 12 per table and asked to discuss specific questions as set up by the consultant team. An A3-size public engagement digest was distributed to all participants containing information on the proposed development, including a summary of findings from a government-led socioeconomic study and three proposed design schematics:

In community workshops, the material prepared by the project team is available on the table within everyone's reach and participants are encouraged to handle and interact with them, such as large color photographs of the existing site. When scribing feedback onto the A1 feedback sheets, the workshop facilitators always make sure that feedback is recorded in large and legible handwriting. At the end of the workshop, when representatives from each table gather to the front of the room, they refer to the feedback sheets as they make their presentation on behalf of their table. For this workshop, the design schemes were presented as standard zoning plans, accompanied by architectural site cross-sections and some artist renditions. During the group presentation at the end of the workshop, one group's representative said defiantly to the event organizers: "We cannot understand the blobs and the squiggles of this so-called zoning plan. It doesn't show the height or the real impact, so why don't you come back with a 3D perspective and then we can have an honest discussion!" [Community workshop, June 2013]

This vignette exposes the difficulties of communicating across knowledge boundaries. The speaker rejects the validity of the zoning plan and instead proposes the use of 3D perspective drawings. The point of contestation is the physical representation of a series of technical details that include building height, density, and visual impact. These types of information may be represented in a factually correct manner in either form. However, here the zoning plans have as boundary objects failed to transfer knowledge across the pragmatic/political boundaries between actors (cf. Carlile, 2002, 2004). It is clear that different meanings are assigned to the zoning plan by participants and that some participants are more comfortable dealing with higher levels of detail, as they see these as more fixed. Hence, when technical documents produced by the project team are challenged, it is the meaning participants have assigned to the documents that becomes the point of contestation. Acknowledging the role of vested interests embedded in the production of technical documents helps to make sense of why some modes of representation may be accepted and others rejected. When a piece of technical knowledge is presented as a plan or a proposed design drawing, its meaning may still be open to co-production through negotiations and contestations with participants who engage with the material. But once the piece of technical knowledge is accepted as a product, as in the case of a detailed design, or published report or statistic, its role within the power network shifts into a more stabilized state.

Discussion

The vignettes depict antagonistic environments where stakeholders meet to express their interests for a project. Based on the STS approach, which places the research focus on the process rather than the outcome of stakeholder relationships, they serve to showcase how material artifacts are used in different ways to direct the nature and flow of communication. Although the observed public engagement events are not controlled by legislation, they follow

predictable procedures that point to established channels of communication that the participants abide to. These channels of communication are facilitated by physical items with which participants interact. The vignettes demonstrate how external stakeholders express their interests during public engagement activities, and how material artifacts are used to direct and control the flow of communication.

The physical arrangement of the room, the ritualistic casting and drawing of ballots, and the controlled distribution of amplified sound all contribute to automatize power, creating a system of power composed of *rules of engagement* that participants must follow. The general acceptance of the public forum format by the masses, therefore, is indicative of the acceptance of an established power network surrounding such events. By the same token, the material artifacts used in public engagement help to establish a system to which power could be delegated. This system of power is dictated by cultural practices sanctioned by social norms and various modes of formalized technical knowledge (Clegg, 1998), and the rules of engagement are directly linked to the direction and management of organizational resources (Clegg, 1989). The material artifacts can thus be conceptualized as an organizational resource that are simultaneously used as an instrument of authority and a conduit for exercising power.

Following this logic, how material artifacts were handled at the public engagement events observed is a result of prior black-boxing. Each time participants follow the role assigned to them they proceed to contribute toward reinforcing a power network that is already in existence; and each time they challenge their roles they seek to destabilize this network. The more frequently a participant follows the established rules and uses the material artifacts in ways intended by the event organizers, the more these rules and artifacts become established channels for communication; and the more difficult it will be for other participants to diverge from their designed use. Over time, the general expectation for each participant's role develops into rules of engagement, until most participants will adhere to them, most of the time. In this way, the rules of engagement translate the processes for public engagement into what is known as the *public engagement event*, whether it is in the form of a public forum or a community workshop. Hence, the rules of engagement contribute to the *dynamic-yet-patterned* character (Irwin et al., 2013) that may be witnessed at multiple public engagement events, incorporating variations in project scope, location, and membership. Ultimately, they influence how project sponsors and various external stakeholder groups interact and the nature and degree of communication that take place.

The Role of the Material Artifact

Just as the rules of engagement in public engagement events may be contested, so too may their material representations. Consider the ballot system and the system for amplified sound in the vignettes. The artifacts, in this case the ballot box and the microphone, represent power reified into its most concrete

form, yet they are merely physical embodiments of rules of engagement. Because the public participants' opportunities to speak are intimately tied to the casting of a ballot or the use of a microphone, they must negotiate the rules for the use of the ballot system and microphone system when vying for their interests to be included for consideration. In other words, the rules of engagement for public engagement processes are reified into various material forms, which become a means of control and discipline, and are decoupled from the intent of the person operating or handling the material.

It follows that, for attendees to effectively participate in public engagement events, they must interact with the material artifacts associated with these events in pre-determined ways. The material artifacts, in turn, not only help the logistical running of the event, they also act to stabilize a sociotechnical network that includes all participants, in other words, members of the public as well as the project team. For example, it is the ballot system that determines who can speak and in what order, but it is the ballot box that both facilitates and symbolizes the ballot system by giving it a physical form. In this way, material artifacts, in this case the ballot box, are instrumental in establishing the level of engagement that can take place by controlling the flow of information between participants.

The Power of the Black Box

The vignettes illustrate how the physicality of the event, combined with cultural and social norms, influences the way participants interact with each other. Additionally, they reveal a composition of symbols and materials that constitute the events. Over time, the parts of the power network that have been stabilized are black-boxed (Callon & Latour, 1981) and are reified into material forms, such as the case of the ballot system, the microphone system, and the zoning plan. The vignettes show that external stakeholders tend to focus mostly on the tangible outcomes of engagement. This is evidenced by a constant reference to the published public engagement report, official statistical information and governmental reports, and finalized plans and drawings. This is perhaps not surprising since public engagement events are held to tight schedules within a project's overall delivery plan. The ability for the public to influence key decisions relating to the front-end project shaping is, therefore, tightly constrained and confined in time. In their quest to ensure that their views are recorded and accounted for in these final official documents, public participants debate the format and outcome of the ballot system, clamor over the use of the microphone, and question the treatment of public feedback. Things that lack an obvious link to tangible outcomes, such as the physical setup of the room and the overall format of the events, are placed under much less scrutiny.

One explanation for why the format and structures of the event are seldom considered is because they have already been taken for granted. It could be argued that these aspects have become a stabilized part of the power network and have thus been black-boxed. Because of their taken-for-granted,

black-boxed status it is easy to overlook these aspects of the power network, yet examining these oft ignored black boxes serves toward improving our understanding of the dynamic power networks at play when managing external stakeholders. The vignettes demonstrate that power is automatized through materials and physical settings; for example, through the layout of the room and through the ballot system. The process of identifying, collating, and ultimately managing a diverse set of interests is, therefore, dictated by pre-existing power networks relating to the public engagement event. For example, the attendees are confined by the physical arrangements of events and are essentially mute unless they are granted the opportunity to speak by having their names drawn by a ballot and/or given the use of a microphone.

When participants at a public engagement event express their interests they do so by engaging not only with those present around the room, but also with the technical system set up to facilitate discussion. With events orchestrated in such a way that communications travel through pre-established channels, the managers are able to achieve their own goals more easily than other participants, by traveling through the established channels and utilizing the reservoirs of power embedded in the artifacts. Hence, if the aim really is to facilitate effective communication between parties, then managers need to identify artifacts that function as reservoirs of power and correctly decipher the significance given to these artifacts by the stakeholders involved.

Conclusions

As infrastructure projects become larger and more complex they have greater impact on the wider community and meet greater resistance along the project life cycle, making public engagement increasingly important. Within the project management literature public engagement typically falls under the umbrella of stakeholder management. Research focus in this area has traditionally focused on managing stakeholders' influence on the project, and public engagement has been treated as a means to this end. However, the original aim of public engagement is not to rationally manage the public. Rather, it is to ensure that the interests of a broad range of participants are incorporated into the project, so that the project becomes broadly owned (Legacy, 2012). In this article, we have therefore tried to move away from the project-focused perspective in the stakeholder management literature to instead focus on examining the way information is communicated and interests are negotiated at public engagement events.

The kind of public engagement events that we have studied play out in socially contested settings. They are contested because the projects in question will impact on the surrounding communities, and these events typically entail multiple external stakeholder groups of people coming together, voicing their opinions, and vying for their interests to be considered. In so doing, stakeholders have to adhere to the format of the event. Artifacts form the basis for the established channels

of communication at the event and are, therefore, critical in dictating the direction and outcomes of the engagement efforts. However, as the vignettes show, when material artifacts within public engagement processes become embroiled in a socially contested setting, they too become the focus of social contention. Hence, during the event stakeholders manipulate the meaning of various artifacts at their disposal to persuade those in the room that their personal interests are worthy of consideration within the remit of the project. They do so within a power network that is formed by relating person to person, person to artifact, and person to place. As such, despite attempts to make public engagement events fair and equitable, the rules, artifacts, and processes that are put in place inadvertently marginalize some stakeholders and strengthen others. Ultimately, some stakeholder groups will get a voice and others will not.

The third wave of project management acknowledges projects as organizational entities where activities take place as a result of political actions reflecting power struggles (Morris et al., 2011). As projects are influenced by historical and cultural events, project management research needs to extend its temporal scope to understand how projects relate to long-term political and cultural institutions as well as to external turbulence in the environment (Engwall, 2003). We have shown that when multiple participants travel through the established channels of communication in their quest to impose their interests on the project, they are also mobilizing the parts of the power network that have already been embedded into the system and are black-boxed. They do so through mobilizing the power that has been delegated onto material artifacts. By analyzing the physicality of these events, we have demonstrated that understanding the taken-for-granted aspects of the setup is critical for explaining its underlying power network and, by extension, for understanding how interests are negotiated through interactions with material artifacts. If managers wish to include all voices in the engagement process (or conversely actively quieten some voices), they need to better understand how power networks are established. They also need to better understand under what circumstances black boxes are created and, perhaps more importantly, how they might be opened through the conscious efforts of the participants. This challenges static stakeholder management models that offer little explanation of how stakeholder influence is conditioned by context and negotiated at micro levels.

All research projects have limitations and this one is no exception. The limitations mainly relate to gaining access to data. We were restricted to public engagement meetings that were open to the public, and the lengthy public engagement process on large-scale urban planning and civil infrastructure projects meant that it was not possible to track the entire public engagement process on any individual single project. Our response to these restrictions was to construct an ethnographic place (cf. Pink, 2009) and to conduct short-term ethnographies (Pink & Morgan, 2013) that allow for interpretation of data using a multisited strategy (Marcus, 1998).

While recent studies have done much to put focus on the importance of stakeholder engagement in the early phases of public projects (e.g., Winch, 2017) and on the outcomes of public engagement (e.g., Cuppen et al., 2016), our study has focused on how public engagement events are set up and how their organization dictates the kind of input external stakeholders might have. Our contribution to the literature is fourfold. First, we have empirically demonstrated how the use of material artifacts can actively direct and hinder information flow between participants at public engagement events. In describing how participants are influenced by the physicality and materiality of these settings, we provide examples of how sociotechnical systems can actively affect the information that can be exchanged at events. From a stakeholder risk management perspective such knowledge might seem appealing. However, although these systems are explained to the public as the way to facilitate a fair and equitable interaction, the vignettes show that they also carry with them unintended consequences. The artifacts both facilitate and impede communication, depending on the meaning attributed to the artifacts by the agent handling them at the time. Indeed, the meanings behind the artifacts used in public engagement settings are socially negotiated and defined as and when the proceedings take place. This challenges current theorization around stakeholder management, which relies on models and frameworks that consider how relationships may change through a project's tenure (cf. Eskerod & Larsen, 2018; Missonier & Loufrani-Fedida, 2014), but cannot account for sudden and unpredictable changes in stakeholder roles resulting from their interaction with the surrounding sociotechnical system.

Second, we contribute to the literature on public engagement by showing how agents navigate a sociotechnical network during public engagement processes. The rules of engagement directly impact on the ways in which public engagement processes can substantively add value to a project. During each event, these rules act as established norms for social interactions. As the vignettes illustrate, each agent must tailor their actions and behavior to navigate the existing rules of engagement of the situations into which they enter. Although these rules have been set up as a way to facilitate public engagement events, they also dictate the social interactions that can take place and, by extension, the level of engagement that can occur. Although these rules are set up in advance, they are often open to interpretation, and not all interpretations are equal. Not only do managers—agents that are well placed within a power network—have more permissible actions, they also have greater flexibility to interpret the rules under which these actions are taken.

Third, we add to the small but growing literature that applies STS to project management studies. Doing so highlights the importance of an awareness of context. Our STS approach helps in explaining project management processes, in this case public engagement, by examining the structures of public engagement events in Hong Kong. We have sought to present a rich account of public engagement processes, by way of ethnographic *thick descriptions* (Geertz, 1973), which

contribute to our understanding of how power networks within managerial settings are enacted through social interaction. Rather than advising managers on how to maintain order in a seemingly disorderly world, our findings show that managers need to strategically position themselves within an emergent social order (see also van Marrewijk et al., 2016), which, in this case, is enacted through the negotiation of material artifacts.

Fourth, we add to the small but growing literature (e.g., Eskerod & Larsen, 2018) that argues that stakeholder management should be more holistically framed to counter the reductionist approach prevalent in the project management literature. Our study contributes to this discussion by showing how the system set up for communication can influence, or even dictate, the behavior of external stakeholders within certain predefined settings; in our case, a public engagement event. We argue that viewing public engagement in this way signifies a widening of the category that we traditionally give to stakeholders and a change in the way we define project management as a means to achieve project goals. This means to increasingly consider projects as sums of multiple dialogs rather than as formal and linear processes. A strict delineation for categorizing between managerial functions may be replaced by a conceptualization that shows the functions to be multifarious and overlapping. These functions are connected in an endless and continuous series of associations that are formed when one agent (such as the manager) attempts to persuade another agent into their way of thinking. To manage the divergent interests of stakeholders, it follows that project managers must learn to negotiate between dynamic social functions rather than strictly adhere to traditional managerial goals.

Finally, in this article we have shown that the way public engagement events are organized and executed affect the degree to which external stakeholders can make their voices heard and possibly impact on the project. What we have not attempted to do is to link these findings with actual project outcomes. This is in line with the STS focus on the processes that lead to outcomes rather than on the outcomes themselves. Moving forward, the main research challenges lay in exploring how public engagement events can be managed in order to facilitate effective communication that contributes to a broader consensus on *project value*, and in determining possible correlations between public engagement event outcomes and project outcome variables, such as *project success* and *project efficiency*. Given the long duration of these types of projects, the latter challenge can only be feasible through longitudinal studies spanning many years, making it a daunting yet important endeavor.

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