Understanding front-end project workshops with Social Practice Theory

Abstract

Stimulated by the growing interest in understanding the actuality of project managing and the need to better understand how front-end project workshops can be efficacious, we aim to turn workshops-as-practice into a meaningful object of inquiry. We operationalise Social Practice Theory by studying the intertwining of materials, skills and meaning in video-recorded micro-episodes in a front-end project workshop. Our findings illustrate how material elements provide sensitive assistance as professional skills are enacted in structuring the project-specific urban development challenge. Our theoretical, methodological and empirical approach makes the characteristic tension of practice between transformation and reproduction accessible for empirical inquiry and theorising from practice, thereby helping to develop project management knowledge that resonates with the experience of the project practitioner.

Keywords

Methodology; Theory of Research into Project Management; Projects-as-practice; Social Practice Theory; Video data; Front-end workshop

Highlights

- offers a theoretical, methodological and empirical approach to workshops-as-practice

- shows how skills, material and meaning elements intertwine in practice

- illuminates how the shared (back)ground for action evolves through front-end workshops

1. Introduction

The earliest stages of a project are characterised by uncertainty, complexity and fuzziness, such that structuring this front-end requires the active engagement of a wide variety of stakeholders to explore different options and to enhance the potential for meaningful collaboration (Moser and Wood, 2015). Workshop activities in these early stages aim to create the conditions for rich interaction among stakeholders, for debate, understanding and learning. In this way, the lack of structure in the early project stages can be an opportunity for innovation as stakeholders have a greater freedom than usual to develop and apply new ideas and to draw in new knowledge (Williams and Samset, 2010; Edkins, Geraldi, Morris and Smith, 2013; Flyvbjerg, Bruzelius and Rothengatter, 2013; Grönroos and Voima, 2013; Johnsen, 2017).

Yet, whilst holding front-end workshops in projects is a common practice (Artto, Lehtonen and Saranen, 2001; Davis, MacDonald and White, 2010; Johnsen, 2017; Smyth, Lecoeuvre and Vaesken, 2017), too often is the performance of such events still seen as an outcome, rather than as residing in the process of *becoming* (March and Sutton, 1997; Bredillet, Tywoniak and Dwivedula, 2015a; Clegg, Killen, Biesenthal and Sankaran, 2018). This neglect of the skilful performances which characterise project managing in practice, along with their constitutive elements and their constellations, precludes us from learning from practice about good practices. In order to go beyond prescriptive approaches regarding the use of specific group decision support systems, techniques and methods to run front-end project management workshops, we need to capture practice in a way that considers non-scripted contributions as they arise from the participants' knowing-in-practice when they engage with the project challenge in a workshop. Further theoretical and methodological development is needed to open the black box of a workshop and gain epistemological access to workshops-as-(bundles of)-practices so that we can begin to articulate how interactions in front-end workshops shape project managing as it unfolds.

The importance of understanding evolving project management practice in a way that is close to the experience of the practitioner (Whittington, 2006; Jarzabkowski and Spee, 2009) has been established by the 'Rethinking Project Management' movement (Cicmil, Williams, Thomas and Hodgson, 2006a; Winter, Smith, Morris and Cicmil, 2006; Svejvig and Andersen, 2015). The practices by which disparate socio-material contributions become enmeshed in meaningful management practice have thus become important objects of study (Blomquist, Hällgren, Nilsson and Söderholm, 2010; Hällgren and Söderholm, 2011; Lalonde, Bourgault and Findeli, 2012). By turning practices into the core unit of analysis, rather than seeking to explain observations by recourse to theories of utility-maximising hyper-rational and splendidly isolated individuals, practice-theory has greatly advanced our understanding of project managing as a social activity (Hargreaves, 2011). It is through engagement in project managing that people come to understand professional practice and may develop a sense of being a practitioner (Warde, 2005; Whittington, 2006).

Practice theory offers an exciting alternative not just to traditional philosophies that were based on methodological individualism but also to praxis-based thinking which maintains a view of people as well-formed individuals, potentially limiting analytical access to the logics of social processes (Schmidt, 2017), particularly with regard to aspects of socio-materiality (Shove, Pantzar and Watson, 2012). However, even though the interest in practice-based perspectives is growing in project management (Brunet, 2018; Clegg et al., 2018; Löwstedt, Räisänen and Leiringer, 2018), there is still a limited analytical repertoire to undertake practice-based research into the actuality of project managing. Methodological innovation is needed to turn project management practice(s) into an epistemic object that can enter discourse (Nicolini, 2017), such that questions concerning the practical accomplishment of projects can be explored. Our question is: How can practice-based theorising enable us to understand better how project managing is accomplished in front-end workshops?

We address this challenge as follows. First, we propose Social Practice Theory (Pantzar and Shove, 2010) as a suitable theoretical underpinning as it is particularly strong at capturing the socio-material aspects of practice (Shove et al., 2012; Vaara and Whittington, 2012). Second, we apply a praxiographic approach which operationalises the potential of understanding practice through naturalistic observation with video recordings. This approach allows us to explicate how work unfolds in workshops, considering the intertwining of materials, skills and meanings in the local enactment of workshop practice. Third, we reflect on the implications of the micro-level practice lens for understanding the logic of practice in front-end project management workshops.

1.1 Project background

Our empirical data stems from a front-end stakeholder workshop of a project that aimed to develop a smart planning approach for an urban renewal zone. One of the declared aims was to make the development as close as possible to zero carbon. However, the technological options, financial feasibility and contractual options, partnerships and the relationship between distinct domains of energy, transport, real estate and governance were not well understood, such that the stakeholder workshop was called to engage a wide variety of possible actors in the zone. The workshop employed Hierarchical Process Modelling (Marashi and Davis, 2006; Davis et al., 2010), a participatory group model building methodology. During the workshop, attendees, representing organisations such as the Local Enterprise Partnership, sustainable energy organisations, the local city council, academic institutions and engineering firms, were asked by the facilitator to split into sub-groups. They were then asked to stand around the different flipcharts in the room, aiming to maximise the variety of stakeholder backgrounds in each group, so that the different organisational viewpoints would enable a rich exchange of ideas.

2. Literature review

To understand practice in front-end workshops, a broad palette of practice-theoretical approaches is available, reaching back to Aristotle, drawing on Heidegger and Wittgenstein and including Bourdieu

and Foucault (Schatzki, Knorr-Cetina and Savigny, 2001; Nicolini, 2012b; Nicolini, Mengis and Swan, 2012; Nicolini, 2017). These approaches have in common that they recognise the situated nature of professional activity (Brown, 2012) and a commitment to developing action-guiding insight (Flyvbjerg, 2001). However, important differences exist between the praxis, practice and process perspectives.

2.1 Theoretical perspectives: Praxis, Practice and Process

Praxis research seeks to produce situated and applied phronetic knowledge, as opposed to abstract and universalistic theory (episteme) (Flyvbjerg, 2001; Kemmis, 2009; Carr and Clark, 2011; Reich and Hager, 2014). In project management, it is particularly the work by Bredillet (Bredillet, 2013; Bredillet, Tywoniak and Dwivedula, 2015b; Bredillet et al., 2015a) and Flyvbjerg (Flyvbjerg, Landman and Schram, 2012) that has contributed to the growing strength of this position. Praxis is seen as morally committed action which is oriented by traditions in the area of practice (Kemmis and Smith, 2008; Kemmis, 2009). As such, virtuous, ethical practice, value-driven deliberation and reason as embodied practical rationality are the focus of inquiry in praxis research (Nicolini, 2012b). A particularly important concept in praxis theory is phronesis, a culturally shaped and socially internalised *modus operandi* (Chia and Rasche, 2010). Phronesis refers to the propensity to act congruently with our sense of self-identity. The concern for the associated moral aspects of knowing in practice is reflected in the underpinning work by Georg Gadamer, Jürgen Habermas, Robin George Collingwood and Hannah Arendt (Warry, 1992; Dunne, 1993).

In project management research, this turn to praxis rather than practice is based on three assumptions. Firstly, it is believed that a focus on habits and routines makes practice-based theorising less suitable for understanding uncertain and complex organising phenomena. Second, it has been suggested that an absolute primacy of the social over methodological individualism decentres the subject too much and thirdly, that practice-based theorising fails to adequately support analytical and epistemic efforts (Bredillet et al., 2015b). However, each of these assumptions can be challenged. Firstly, routines are constantly changing (Howard-Grenville, Rerup,

Langley and Tsoukas, 2016) such that the dichotomous view of routine versus change may be better replaced by paying attention to the continuous tension between reproduction and transformation, i.e. the logic of practice. Second, there is no need to posit acting subjects as causes when attempting to understand meaningfulness, reflexivity and dynamics of change in social practices. Rather, relational or connected situationalism (Nicolini, 2016) is a praxeological perspective which allows for innovative action by subjects-in-relations as their subjectivation is enabled in the practical doings (Alkemeyer and Buschmann, 2017). Third, practice theory understands analytical practices, such as analysing, reflecting and theorising as public patterns of meaning and logic (Schmidt, 2017). As such, it reverses traditional epistemology by starting with the public expression of the mental in practices (Schmidt and Volbers, 2011) along with the attribution of the mental to participants or persons by interpreters (Reckwitz, 2000; Schmidt, 2017).

Practice-based theorising focuses on the '*embodied, materially mediated arrays of human activity centrally organised around shared practical understanding*' (Schatzki et al., 2001, p. 2). One particular sub-stream of practice-based theorising is strategy-as-practice (Whittington, 2006), which is of growing relevance to project management research (Brunet, 2018; Clegg et al., 2018). It is grounded in Heidegger's *Being and Time* and Wittgenstein's *Philosophical Investigations* (Schatzki, 1996) and focuses on how practical action is informed by rules and meanings that are part of social practices. Socio-materiality becomes the focus of inquiry and primacy is given to the sets of practices that govern what it makes sense to do (Schatzki, 1996). As such, practice-based theorising offers a unit of analysis that goes beyond the individual and considers agency to be distributed in an amalgam of practices. The implications for project management research are profound as *agency* is seen as distributed across material infrastructures, social rules and norms and cultural meaning-making processes that 'draw in' the individual actors, making certain behaviours more likely than others, and bringing about processes of subjectification (Reckwitz, 2015). Finally, a set of process-oriented theories can be distinguished (Hällgren and Söderholm, 2011, p. 502) which consider an

even stronger form of socio-materiality, i.e. sociomateriality (without the -) (Jones, 2013), in

understanding networks and assemblages. The differences are highlighted in Table 1.

Table 1: Overview of Process, Practice and Praxis Theories for Project Management Research

	Process	Practice	Praxis
Unit of analysis	Evolving sociomaterial systems, assemblages and infrastructures	The habitual enacting of bundles of socio-material practices	Good practice and the practitioner imbued with practical rationality, values-based deliberation competence and ethics of virtue
Project management relevance	How projects evolve	How project managing is accomplished in bundles of practices	How good practice develops as practical knowing in project practitioners
Agency	Symmetrical agency (Objects can act on humans and vice versa)	Humans have primacy over objects, but agency-structure are co-evolving; the individual's agency is always intertwined in socio-material (bundles of) practices that make certain behaviours more likely	The primacy of the human actor who is acting in a phronetic knowledge background that evolves an understanding of what constitutes 'good practice.'
Theories	Actor-Network Theory, Structuration theory, the Mangle	Practice theory, Strategy-as-practice, Social Practice Theory	Aristotle's Nicomachean Ethics, Communicative rationality
Key concepts	Actants, Assemblages, Boundary objects, Infrastructures	Materials, skills, and meanings; teleoaffective structures	Ethics of virtue, phronesis, reason, practical rationality
Theory references	Pickering (1995); Star and Bowker, (2006)	Schatzki et al.(2001); Whittington (2007); Golsorkhi, Rouleau, Seidl and Vaara (2010); Shove et al. (2012); Carlile, Nicolini, Langley and Tsoukas (2013); Nicolini, (2017)	Habermas (1985); Dunne, (1993); Flyvbjerg (2001); Gadamer (2008); Kemmis (2009)
Project management research	Hällgren and Söderholm (2011); Floricel, Bonneau, Aubry and Sergi, (2014)	Hällgren and Söderholm, (2010); Hällgren and Söderholm (2011); Brunet (2018); Clegg et al. (2018); Löwstedt et al. (2018)	Flyvbjerg et al. (2012); Bredillet (2013); Bredillet et al. (2015a)

All of these theoretical perspectives (Table 1) have the potential to provide insight into the actuality of project management. Theories of practice are particularly strong at revealing how our professional experience arises in the interconnectedness of materials, skills and meanings (Hui, Schatzki and Shove, 2016). Yet, differences exist between the units of analysis that are prioritised in the different practice theories when they are applied in empirical research. For example, while the strategy-as-practice perspective (Jarzabkowski and Spee, 2009) maintains a stronger focus on the practitioner's decisions, Social Practice Theory (Shove et al., 2012) focuses on the ongoing (re)combination of materials, skills and meanings that characterises how practices evolve and change over time. As such, Social Practice Theory appears to be particularly strong at helping us understand project management as something that is performed, and may arise when multiple participants act jointly, rather than as something that a heroic individual does. Indeed, Social Practice Theory (Shove et al., 2012) has proven useful to understand creative and unstructured practice situations, such as workshops and user-centred engineering design (Kautonen and Nieminen, 2016; Clear and Comber, 2018), as well as behaviour change (Shove, 2010) and associated aspects of sustainable transformations (Shove and Walker, 2010). As such, Social Practice Theory offers a powerful lens to reflect on the practicalities of project management in the real world to illuminate, for example, how project structure develops as practitioners participate in a fuzzy front-end workshop, and how practitioners' actions are structured by meanings, skills and materials in practice.

Social Practice Theory (Shove et al., 2012) draws attention to how skills, materials and meanings are orchestrated in practice. To understand practice empirically, consideration is given to the intertwining of materials, meaning, skills, understandings and engagements in performances (Warde, 2005; Shove et al., 2012). Social practices, with their objects, are enacted in sites of practice, which can be thought of as the overlapping area of material, skill and meaning elements in a Venn diagram (Hand and Shove, 2004; Shove et al., 2012). The performance of practice involves socially learned skills and shared cultural meanings as well as people's mutual orientation to one another

(Warde, 2014). Skills or know-how permit or lead to activities being undertaken in certain ways. They refer to embodied knowledge and encompass multiple forms of knowledgeability (Shove et al., 2012), and the term skills can be used to express the type of embodied knowledge which is needed for a person to be successful at performing a practice. The concept of meanings can refer to images, interpretations or concepts associated with activities that determine how and when they might be performed. Meanings are part of our background (Wittgenstein et al., 1969), the shared social understanding of 'right' ways to do things and they thus form a pre-reflective grounding for routinely performed actions. Background knowing is transmitted tacitly, through acculturation, apprenticeship and the ability to recognise whether a doing fits into a certain context, i.e. whether people engage in it or not (Rettie, Burchell and Riley, 2012; Shove et al., 2012). Finally, materials are physical objects which permit or facilitate certain activities to be performed in specific ways (Morris, Marzano, Dandy and O'Brien, 2012). When in use as part of a meaningful practice that is performed by skilled practitioners, materials are "*directly implicated in the conduct and reproduction of daily life*" (Shove and Pantzar, 2005, p.44).

Overall, Social Practice Theory (Southerton, Hand, Warde and Shove, 2003; Pantzar and Shove, 2010; Shove, 2010; Shove et al., 2012; Strengers and Maller, 2014; Spaargaren, Weenink and Lamers, 2016; Warde, 2017) appears to be particularly well-suited for studying how project management evolves in situated and embedded performances, which is needed to advance research on the actuality of practice (Cicmil et al., 2006a). Applying the conceptual building blocks suggested by Social Practice Theory, and considering the generative relationship between the reproduction of orchestrated practices and their transformations in practice, may advance our understanding of projects-as-practice (Shove, 2010, 2012).

In the next section, we consider how prior research on and in the practice of holding project workshops has advanced our understanding of the sayings and doings that constitute them in practice.

2.2 Understanding front-end workshops

Front-end stakeholder workshops are complex phenomena (Williams and Samset, 2010; Matinheikki and Peltokorpi, 2017; Bell, Pagano, Warwick and Sato, 2018) which often have the aim to develop a joint value proposition (Lombardo and Cabiddu, 2017). Stakeholders realise that they need to do something to change an existing situation, but often they do now know what they should do. Correspondingly the challenge is to structure the front-end situation sufficiently to be able to proceed in an organised way. To develop this shared understanding of the 'real' problem, workshops have shown their value as effective sites of practices (Bell et al., 2018).

Practice-based research on workshops has considered how practitioners enact practices in workshops, for example how they appropriate material artefacts and tools that become inextricably linked and entangled with the practice (Boxenbaum, Jones, Meyer and Svejenova, 2014; Cecez-Kecmanovic et al., 2014; Jarzabkowski, Burke and Spee, 2015; Baptista, Wilson, Galliers and Bynghall, 2017; Markauskaite and Goodyear, 2017). In the strategy-of-practice field, several studies consider how physical artefacts (Whittington, 2006), textual artefacts (Vaara, Sorsa and Pälli, 2010) or tools such as powerpoint (Kaplan, 2011) affect the strategising process. As such, from a practice-based view, workshops may appear as mundane practices or commodities (Wilson, Songer and Diekmann, 1995), consisting of several recognisable interconnected elements: bodily activities,including sometimes group model building activities, meaning making, e.g. a project design challenge and materials in use, such as flipcharts or other visualisation aids (Nickelsen, 2017).

However, workshop practice is characterised by local adaptation, changes and the possibility of failure as participants find themselves in a situation, usually face-to-face, which holds potential for rapid feedback, multiple communication channels (visual, verbal), co-reference (gaze and gestures) and spatiality of reference (work objects, such as flipchart models) (Détienne 2006; Olson & Olson 2000; Matthews 2012). As such, when participating in a project front-end workshop with a multitude of stakeholders much of the workshop interaction may feel improvisational, like being in a foreign country with a foreign language. The constitutive decoupling of workshop activity from existing

organisational routines (Hendry and Seidl, 2003; van Aaken, Koob, Rost and Seidl, 2013)

characterises workshops. This decoupling includes, for example, the temporary suspending of

reporting relationships and the informal integration of multiple stakeholders in project-related

decision processes during the workshop. As such, workshops have an out-of-the-ordinary status,

where the day-to-day organisational life, which is based on tacit relational habits (Shove et al., 2012)

that help us coordinate our interactions, is intercepted. In this sense, workshops constitute

unexplored sites of practice.

Prior project management research suggests that workshops have been used as vehicles for data

collection. Moreover, they are frequently used to achieve triangulation in case study research,

which seeks to contribute to a substantive area of project management, rather than to the

methodological aspects of studying how workshops per se unfold, possibly except for work on group

decision support systems (Table 2).

Table 2: A selection of prior research in and on workshops in project management contexts

Workshop concept	Focus area	Indicative references
Collaboration technology for group decision processes	Face-to-face and web-based group decision support systems, causal and cognitive mapping, value management methods, lessons learned models	Park et al. (2017), Luo, Shen, Fan and Xue (2011), Fan and Shen (2011), Ackermann and Alexander (2016), Duffield and Whitty, (2016)
Social learning and infrastructuring	Relationship development, safe engagement with the opportunity to make mistakes, to identify solutions to challenges, to raise key concerns and opportunities for improvement, to enhance internal coordination through tacit knowledge sharing and to open up channels for the exchange of knowledge and lessons learned	Eriksson and Kadefors, (2017), Keeys and Huemann (2017), Laine, Korhonen and Martinsuo (2016), Bark, Kragt and Robson (2016), Alioua and Simon (2017), Hartmann and Dorée (2015)
Sensemaking and strategizing	Strategizing in pluralistic contexts or sensemaking, path dependence	Keeys and Huemann (2017), Thiry, (2001), Aaltonen, Ahola and Artto, (2017)
Intrinsic knowledge generation	Debate and discuss general project management knowledge; explore complex project concepts in a community of practitioners	Williams (1999); Turner and Müller (2003); Turner (2017)

Extrinsic Knowledge generation	Elicit knowledge about change management, networks of risks, work-life strategies, internal development projects in multi-project environments, the performance of project delivery processes, building absorptive capacity in an alliance, partnering as a formalised form of collaboration in projects	Whyte, Stasis and Lindkvist (2015), Yang, Zou and Wang (2016), Lingard, Francis and Turner (2012), Elonen and Artto (2003), Mesa, Molenaar and Alarcón (2016), Love et al., (2016), Li, Cheng, Love and Irani (2001); Bresnen and Marshall (2002); Chen and Chen (2007)

Considering how workshops are researched, the above review (Table 2) suggests that the following approaches to data collection, data processing and analysis have been used:

- Data collection: *during the workshop:* non-participant observations, group interviews (open-ended questioning), (comparative) experimental studies; *after the workshop:* interviews, workshop artefacts (risk interrelationship matrix, a cause-effect map, a cognitive map), reflective accounts and reports from practice;

- Data processing and analysis: rich case narratives, inductive and explorative theorising, interpretive narrative analysis, content analysis, thematic coding, and event systems theory.

Moreover, in addition to studies that consider workshops explicitly, the methodological approaches for studying the actuality of projects may be relevant to understand how front-end workshops unfold. These appear to be based on retrospective accounts of (ethnographic) observation of practice (van Marrewijk and Smits, 2016), the analysis of interviews, self-reported evaluation questionnaires and are sometimes supported by photos as data sources (van der Hoorn and Whitty, 2017). However, to advance our ability to structure projects at the front-end, we need to gain insight into what people do as they reshape potentially conflicting views of a project and develop joint approaches to action (Mumford, Scott, Gaddis and Strange, 2002; Zerjav, 2015). Our research aims to capture the logic of practice in project front-end workshops by studying empirically how the skills, materials and meanings intertwine in practice. Specifically, insight is needed into interactions of people and artefacts, bodies and activities within the workshops space and the spatial coordination of people in workshops per se (White, 2006; MacIntosh, MacLean and Seidl, 2010). As such, we aim

to develop a micro-level perspective on the localised experience of project managing in workshops (McComas and Scherer, 1998; Ellis, Mendel and Nir, 2006; Phaal, Farrukh and Probert, 2013).

3. Methodology

We aim to gain insight into the emergent nature of front-end work in workshops which traditional methodologies have not dealt with adequately, as they tended to emphasise generic rather than specific aspects of projects (Winter et al., 2006). Having justified our choice of Social Practice Theory in the previous section, we provide insight into the methodological implications. In accordance with the practice-theoretical perspective that we are advancing, our methodology is grounded in practice theory (Figure 1).
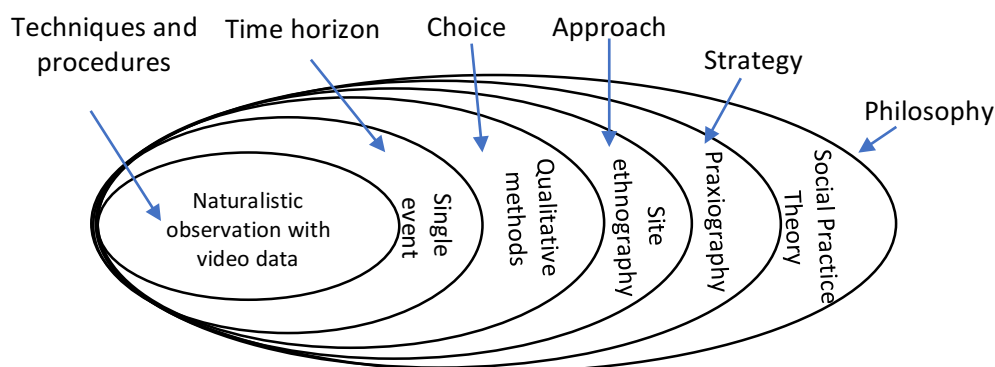

Figure 1: Overview of the research (Diagram adapted from Saunders and Thornhill, 2016)

3.1 Strategy

The aim of a praxiographic strategy is to understand enactments which exhibit, communicate and make visible publicly the elements that make joint performance possible – in their productive doings and their social and material interactions. A practice and its constitutive elements are enacted in the *doings* of competent bodies and can be understood by observing the practice as it is performed (Hirschauer, 2008). Practice theory considers all components of practices to be accessible to observation and interpretive perception on the part of participants and observers of practices (Schmidt and Volbers, 2011). Praxiography, an interpretative and qualitative approach (Miettinen, Samra-Fredericks and Yanow, 2009; Bueger, 2014; O'Keeffe, Thomson and Dainty, 2015) focuses the

researchers' attention on the enacting of practices and the variations therein to make visible how coordinated action is created, sustained and changed in the practical interaction of bodies, things and artefacts.

3.2 Approach

A site ethnography emphasises the importance of the context of the 'doings' (Moloney, Horne and Fien, 2010), because "*practices can only be studied relationally and they can only be understood as part of a nexus of connections*" (Nicolini, 2012a). It is the reproduction of practices through situated performances that become the focus of the inquiry, including the interrelations between the elements within and between practices in order to understand how 'complexes' or looser 'bundles' of practices (Shove et al., 2012) allow practitioners to act collectively (Jarzabkowski, Balogun and Seidl, 2007). A workshop ceases to be merely a place to exchange ideas and becomes, instead, an 'orchestrating concept' (Hand and Shove, 2004) where bundles of material technologies intertwine with meanings and conventions in the blend of everyday project managing.

Workshops involve multiple materials and spatial arrangements, including presentations, seating orders, handouts and flipcharts, all of which shape the bodily, material and social interactions between participants. Material aspects in the workshop may be constituted by a written brief, an outline design or other instruments and tools provided for modelling and low-fidelity prototyping, all of which constrain and enable interaction in workshops. Skills may be applied when participants are soliciting knowledge and understanding from other stakeholders when they self-facilitate their interactions and synchronise their attention to a particular problem. Finally, the meaning attributed to workshops may be related to their character as collaborative and integrative sites for project structuring, valuing diversity in knowledge and differences in interest (Southerton et al., 2003; Bell et al., 2018). However, each set of semiotic resources is, by itself, partial and incomplete (Agha, 2007; Goodwin, 2007). When enacted in sites of practice, the different semiotic resources complement each other to create a form of engagement which we recognise as the performance of a practice

(Goodwin, 2000; Streeck, Goodwin and LeBaron, 2011). However, different performances of the same practice are not always the same (Hargreaves, 2011). Different groups of people vary in their understanding of practice, the procedures they adopt and the values of engagements they hold so that it can be expected that they will exhibit different performances (Warde, 2005). Therefore, when studying interaction in workshops, episodes may (or may not) follow repeated sequential patterns, even though recognisable doings, such as lessons learned activities or the co-constructing of system models could be identified (Whittington, 2007).

3.3 Qualitative methods

3 3.1 Data Collection

A suitable approach to study interaction is naturalistic observation (Wegerif, Mercer and Dawes, 1999; Arvaja, Salovaara, Häkkinen and Järvelä, 2007; Lemke, 2007; Arvaja, 2011; Littleton and Mercer, 2013; Dittrich, 2016). Naturalistic observation can provide insight into how decision making is happening, what drives it and how it is enacted (Ormerod, 2013).

The detailed interactions between participants during the modelling activity, the responses of participants to the workshop situation, their engagement with the method and the tools provided and their interaction with other participants, were recorded on video. We collected video data to capture interactions and dialogues of the participants in a rich permanent primary record that could be shared between the researchers and to undertake theorising that is "*responsive to the phenomenon itself rather than to the characteristics of the representational systems that reconstruct it*" (Brereton, 2004, p. 89). The workshop lasted one afternoon during which video recordings were taken. Informed consent forms were administered to all participants. To keep the recordings as unobtrusive as possible, we attempted to keep the cameras stationary and to position the cameras in such a way that interactions of groups of participants with the flipchart models could be captured.

3.3.2 Data Analysis

Data analysis followed the inductive interpretative process that characterises the praxiographic strategy (Bueger, 2014). Praxiography goes beyond observation to reconstruct meaning and requires the researching practitioner to be sensitive to dynamics that may be present in participant-artefact-object(ive) constellations. As such, it involves a form of interpretation (Bueger and Gadinger, 2014). However, praxiographic research attempts to identify moments in which participants in a practice articulate implicit meanings themselves.

To explicate how participants jointly develop action, it is necessary to consider the diverse semiotic resources that are used and how they interact in a specific situation (Streeck et al., 2011). This multiplicity of interacting resources is also known as multimodality (Oliveira et al., 2014). Multimodal analysis studies how different resources, such as language, gesture, sound, and images are used to construct and communicate meaning (O'Halloran, 2004). Interaction is thus studied as an ensemble of verbal and non-verbal modes that are orchestrated through skilful selection and linking across, between and within modes, overall thus being essential organising action (Kress, 2009).

To capture relational bundles of skills, material and meaning and thereby operationalise Social Practice Theory in the study of workshop interaction, we zoom into micro-episodes (Nicolini, 2009). The identification of micro-episodes follows the technique proposed by Emerson (Emerson, 2004) for the analysis of key incidents, which are similar to moments, strategic episodes or transitional episodes, and which we refer to as micro-episodes in this research. Rich, dense, and compelling interactions, or changes in and expansions of interaction, stand out and can be recognised (Thomson, Moe, Thorne and Nielsen, 2012; Jarzabkowski et al., 2015) by researchers immersed in the data. Given that human interaction is '*complex and fluid in character*' (Hammersley, 2003, p. 1), key incidents may be identifiable for different reasons, for example, because they show rarely occurring interactions, or, conversely they may exemplify typified interactive practices (Barker, Barker-Ruchti and Pühse, 2013). In accordance with the key incidents approach (Emerson, 2004) we

identified micro-episodes through an iterative process, including immersion in the video data by viewing and re-viewing the video and re-reading the transcripts (Erickson, Green, Camilli and Elmore, 2006). We focus on the interaction among participants in the micro-episodes as they are engaged in a particular task, in order to understand how they are structuring the project

4. Findings

The micro-episodes provide insight into how participants explore how a future goal ("achieving a zero-carbon zone") could be realised. Beyond the challenge of achieving a zero-carbon zone, they were free to work on any set of processes that they considered to be relevant.

4.1 Developing a shared vision

In this episode, participants co-create a model by building agreement on a shared vision for the zone, integrating each other's suggestions (Figure 2). Participants explain their viewpoints, facing each other, actively listening and adding each other's viewpoints to the flipchart.

P1 "So you're saying that … then needs perhaps..." (Looking and gesturing at the model while developing the point)	"We want a resilient (…)" P1 responding to P2	P1 Looking to P3 for input/confirmation while P2 turns to flipchart to modify and write down the point on a post-it-note
P2 "Well, you said (….) arises if you lead your development through the green economy…" (gesture: inviting confirmation)	P2 "I don't know how that fits…" (inviting suggestions about model arrangement)	P4 pointing towards where the post-it note might fit (joint model building)

Figure 2: Co-constructing a shared vision

In this specific project challenge, the practice of developing a shared vision involves the designing of possible policy and governance arrangements such that the materials on-site, i.e. the renewable energy technology in and beyond the zone can be jointly considered to deliver a case for carbon neutrality. The episode continues with the consideration of carbon offsetting arrangements that may be acceptable to all:

- *Yes, that's why we will have to do this carbon offsetting […]*
- *… But within the community still… and then you've got the link back*
- *So, in order to do this, if we're going to do any offsetting, and we are going to have to do some… how should it be done in order for it to be resilient and flexible?*
- *Well, I can think of one good way of carbon offsetting […] the offsetting is actually on the homes of the people who are working in the area... […] do you see what I'm saying?*

In sum, this first episode is indicative of an agreement-seeking phase as the participants appear to 'get on the same page' by visualising their ideas in the shared model. By accommodating ideas and seeking dialogue, they develop a shared understanding of potentially relevant elements of a resilient zone.

Table 3: Practice elements: Co-constructing a shared vision

Meanings	We should aim to establish a shared vision
Skills	The constructive verbal interaction which seeks out and takes into consideration the views and ideas of others may be effective for developing the shared vision. Clarifying requirements and identifying limiting constraints (i.e. the geography of the zone) may help to develop a shared vision as it allows for carbon-offsetting arrangements to achieve zero carbon performance through contractual rather than purely technological means.
Materials	Jointly visualising ideas with the flipchart and sticky notes with an open positioning of bodies around the flipchart, and jointly agreeing of the positioning of the sticky note, expresses the willingness to collaborate in developing the shared vision.

The meaning, skills and material elements in practice are closely intertwined (Table 3). The participants skilfully use the material artefacts to 'walk their talk' as they engage in shared vision building in a co-operative process around the flipchart.

4.2 Developing a coalition

In the second episode, individual participants question their lack of knowledge around stakeholder investment into low carbon energy technologies. This knowledge gap is expressed as a perceived

obstacle to project success as planners would be unable to act due to a lack of clarity about available

and committed financial resources:

- *"There is an aspiration of a carbon-neutral development, which isn't bought into necessarily…"*
- *So, the question is... how exactly would you overcome that? You know the disconnect, the gulf between those participating in the development of the zone?*
- *"I think that you will have a mix of smaller and larger companies, you can't just… you have to have innovation as well, so somehow having the engagement too is important... the small companies are riskier with innovation because they can … and also the University has links."*

The participants then develop a proposal for joint action, transforming each others' suggestions into

a joint plan, rather than purely providing information and exchanging knowledge (Figure 3).

Participant 2 encourages the other participants to think beyond existing perceived limitations of the

situation, when he asks "*Well, what needs to happen for that to go ahead?*"

P1: Well, we don't know how much money we've got at the moment.	P2: Yes… so it's kind of, a lack of information in order to facilitate all that alliancing (pointing at the flipchart)	P1: ...eehh…yeah P2: Well, what needs to happen for that to go ahead? P3: Well, you could have a session with companies like ours … and asking, how do we go about it... who is missing, who is here... and then that will start the whole thing in its own way
P2: So… [….]	P2: So, stakeholders and then subsets within that… vanguards P3: … some innovation guys, the University are needed in order to… financing guys	P2: So, it's about… I guess what we haven't figured out yet… stakeholder analysis, that important group…P1: yes. (P2 starts writing)

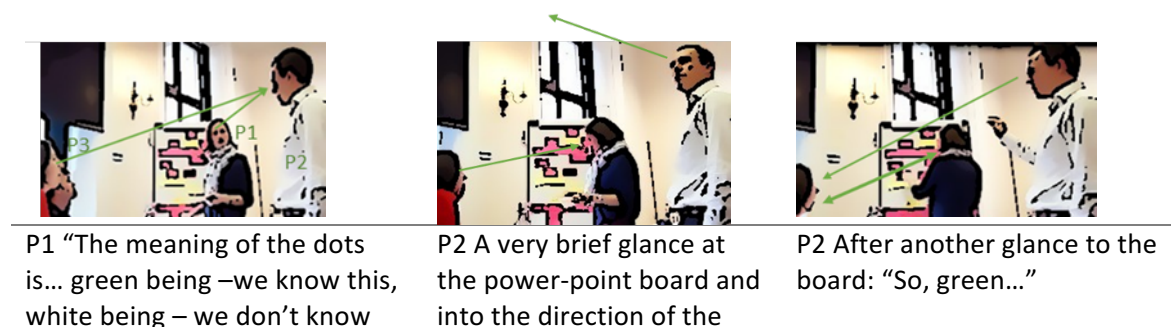*Figure 3: Transformational discourse: resolving by transforming*

To advance a possible business coalition in support of clean energy technologies in the redevelopment zone, the stakeholder engagement needs to be extended. In this case, at least the key asset owners need to consider aligning their plans for the energy technologies they install in their building stock, such that a viable business case for specific technologies, such as a district heating system, can arise. The participants recognise the importance of this process as they study their sticky notes on the flipchart. They adopt a proactive stance towards turning an obstacle to progress into a manageable problem (Table 4).

Table 4: Practice elements: resolving by transforming

Meanings	All main stakeholders must buy-into the project to achieve its aims.
Skills	Problem identification (lack of financial commitment from all major asset holders for the development of a shared network which would make the low carbon energy system commercially viable) and application of relevant approaches (stakeholder analysis and engagement planning) in a communicative process in which participants build on each other's ideas.
Materials	Open positioning of bodies around the flipchart with sticky notes to scaffold the discussion and a second blank flipchart paper, which constitutes the opportunity space to jointly produce a way forward, in this case by developing a list of priority actions.

4.3 Dealing with uncertainty: Unknown or Unknowable?

The third episode illustrates how different interpretations of the workshop methodology collide.

One way of interpreting the colour scheme (green-white-red dots) is to consider it an uncertainty-oriented judgement (known-unknown-unknowable), another is to view it as a present-oriented diagnosis (performing well- performance unknown-performing poorly), and a third perspective is to consider it from a self-efficacy point of view (done-doable-impossible to achieve). However, in this episode, participants do not manage to clarify these different possible interpretations, and with the lack of agreement on the meaning of the colours, a disputational atmosphere ensues (Figure 4).

| P1 "The meaning of the dots is… green being –we know this, white being – we don't know | P2 A very brief glance at the power-point board and into the direction of the | P2 After another glance to the board: "So, green…" |

this, and red being – we can't know this thing."	facilitator (P1 continuing to add the dots to the flipchart)

P3: "NO, I don't think… I don't think that it is not achievable." P1: "No, it's that it is not happening at the moment."	P1: "At the moment… we don't know that… it's not like red… it's just that at the moment… so under that, you might have 'Pay a consultant to do that task'" P2 sits downs; hand covers the mouth

Figure. 4. Disagreement about the meaning of the coloured dots used in the workshop

Participant 2 believes that one of the processes on the sticky notes is not achievable and suggests that it should be given a red score. However, participants 1 and 3 decide that his view is incorrect. The disagreement is not resolved, and the dominance of one perspective over the other is partly made possible by the positioning of the material artefacts in the workshop. Participant 1 has blocked off access to the flipchart with her body, and not being able to modify the model on the flipchart physically, participant 2 gives up on his attempt to influence the scoring process, sits down and holds his hand over his mouth as if to stop himself from saying any more. The other two participants consider the process to be unknown, i.e. they score it white to express the lack of knowledge and suggest that it is possible to buy in expertise by "pay[ing] a consultant to do that task" (Table 5).

Table 5: Practice elements – Meaning making through material action

Meanings	A proactive attitude is needed to approach the uncertainty which is inherent in the fuzzy front end.
Skills	Transforming uncertainty into risk that can be mitigated by buying-in expertise to conduct feasibility studies.
Materials	Manage access to the modelling surface to disable dissenting voices that suggest that uncertainty is a showstopper, i.e. that 'this cannot be done.'

While the flip-chart models built in the fuzzy front-end workshop represent a snapshot of current thinking and knowledge, they are inherently future-oriented towards project delivery and operation phases and thus imbued with uncertainty. However, a voice that says 'this cannot be done' is not permissible in this group, and indeed, this could be seen as detrimental to the very purpose of a

front-end workshop which aims to provide some structure to an otherwise fuzzy environment. Indeed, feasibility studies are a customary approach for risk reduction, such that the enforcing of the 'can do attitude' can be seen as an expression of the predominant meaning that is given to the fuzziness as something manageable in project contexts.

Overall, the micro-episodes illustrate how participants visualise their ideas using the flipcharts and sticky notes for transformative sensitive assistance in coordinating, relating and translating ideas and viewpoints (Murphy and Hennessy, 2001; Johansson and Hassel, 2010).An open positioning around the flipcharts allows for a collaborative atmosphere to ensue in episodes one and two. At the same time, the flipchart focuses the attention on a shared idea space, encouraging debate about the different ideas to transform the dispersed sticky notes into a prioritised model for joint action. The meaning given to actions, e.g. to develop a shared vision, is closely intertwined with the way in which modelling proceeds in a co-constructive manner, consulting about what to add to the flipchart and how to arrange the sticky notes. Interaction via the model with the open positioning of bodies allows a physical expression of the willingness to collaborate and the joint consideration of project-relevant processes by creating engagement. Pointing and showing gestures complement moves to retrieve and rearrange ideas while discussing approaches for action in the problem situation. Participants in the first two episodes use the flipchart, sticky notes and the bodies to create shared visualisation space for their ideas. As participants contribute sticky notes, re-arrange and prioritise them, they develop an artefact which expresses a view that can no longer be attributed to a single actor (Simpson, 2009). By making their ideas explicit, they can trace connections, prioritise and give a structure to the fuzzy front end, thereby making the possibility for successful transformational joint action more likely. The observation that this assistance does not always work as intended– as in the third micro-episode which illustrates the material exclusion of diverging views through combinations of exclusionary postures, gestures, facial expressions and verbal exchanges (Jarzabkowski et al., 2015)-is an example of the openness of practice. As such, Social Practice Theory

applied to the micro-episodes allows us to see how the constellations of materials, skills and meanings are enacted to create, modify and maintain project structure.

5. Discussion

The application of Social Practice Theory to the study of the micro-episodes helps us to reflect on the process of the *becoming* of a project. Collective, goal-directed action at the fuzzy front-end of projects becomes possible when participants effectively engage in front-end workshops (Engel and Carlsson, 2002).

5.1 Sensitive assistance and localisation of project practice

Creating common ground for action appears to be a transformative accomplishment at a micro-level when participants engage in reciprocal and generative communicative practice (Raelin, 2014). Our micro-episodes illustrate how the interactions at once reproduce shared conceptual understandings and develop new, project-specific approaches, making the generative tension between reproduction and transformation intelligible (Table 6). This tension characterises the progression from the fuzzy front end towards a more structured understanding of a project. This pulsating forward movement is also known as the logic of practice (Reckwitz, 2002; Nicolini, 2009, 2012a; Shove et al., 2012; Bueger, 2014) (Table 6).

Table 6: Workshop practices transforming fuzziness into project development actions

	Reproduction of practice	**Project-specific action**
Episode 1	Developing a jointly agreed transformative statement, highlighting where there is a need for compromise	Consult with new/future occupants/users of the zone about carbon offsetting arrangements
Episode 2	Boundary critique, stakeholder analysis, and engagement planning to achieve buy-in	Undertake business model development for an integrated low carbon energy network with the key asset holders
Episode 3	Identification of unknowns and approaches to risk mitigation	Contract research expertise for commercial and technical feasibility studies

In the workshop, the challenges for an integrated business case and initial ideas for its development are identified, and a record is created through the flipchart models. The reproduction of shared concepts, such as stakeholder analysis and engagement, enables the transformation of an unstructured project challenge into a more specified and localised understanding of the planning problem, translating the conceptual to the practicable (Tzortzopoulos, Cooper, Chan and Kagioglou, 2006; Brandt, Binder and Sanders, 2012). In the episodes, we see how different knowledges are brought to bear in a flexible manner – depending on where the debate goes in each group – to structure the project. In this context, Social Practice Theory suggests a nuanced view on the value of abstract concepts for practice, in so far as these provide a shared repertoire for thinking (episode 2) and allow more complex modelling (e.g. the carbon offsetting model in episode 1) which relies on a shared understanding of calculative practices, policies and possible governance arrangements. This relation between the conceptual knowledge, the collaborative interactions in the workshop setting and the generated project-specific actionable insight may hint at how engagement in a workshop is not just a fleeting event but leaves traces in the attendees' experience of project practice and thereby extends beyond the event itself.

5.2 Orchestrating changing performances

As the workshop progresses, project managing transforms the project's fuzziness into an outline structure which is expressed in the shared vision (episode 1), the plan to engage stakeholders (episode 2) and the recommendation to undertake more feasibility studies (episode 3). As such, the fuzzy front end workshop appears as an order-producing bundle-of-practices (Chia and Holt, 2008; Nicolini, 2009), which is actualised, stabilised and changed through the active integration (or disintegration) of the materials, skills and meanings in the workshop setting (Higginson et al., 2015). To influence how the workshop proceeds, choices can be made regarding the availability and circulation of material, skill and meaning elements, considering the tensions between social interaction and instrumental scaffolds, the acceptability of uncertainty over the desire for control

and emphasising learning over the jumping to conclusions (Svejvig and Andersen, 2015). At a micro-level of the workshop setting, the transformational character of a workshop may be enhanced by helping a plurality of stakeholders to be able to participate. One specific area for enhancing workshop interaction may be the use of participatory simulation approaches (Tako and Kotiadis, 2012; Kotiadis, 2013). However, not only the relational and situated nature of meanings, materials and skills in the workshop setting but also the position of a workshop in a configuration of other project management practices needs to be considered to identify the potential enhancements in practice (Spurling et al., 2013; Hui, 2016).

5.3 Reflection

By applying Social Practice Theory to the study of the contextually embedded and situated actions as they develop in the micro-episodes in the fuzzy front end workshop, we contribute to the body of research which studies the actuality of projects (Cicmil, Williams, Thomas and Hodgson, 2006b; Hällgren and Söderholm, 2010). Focusing on the social and collective organisation of project managing as it is expressed in the workshop interactions, Social Practice Theory provides a grounded perspective on the temporal unfolding of change from an unstructured front-end to the structuring actions for the project as the participants develop them. At the same time, it highlights the range of everyday materials, skills and meanings that practitioners draw on as they move through the fuzzy front-end workshop. As such, at the same time as revealing how things change at the micro-level, Social Practice Theory reveals how action is embedded in a repertoire of normative models that belong to professional knowledge of which a diverse range can be represented in a workshop. Our approach, therefore, challenges the primacy traditionally given to formal procedures, abstract methods and prescriptive rules that characterise universalist and ahistorical codified project management knowledge (Hodgson and Cicmil, 2007). Rather than studying conformance with prescribed processes, our work provides insight into how structure arises through unscripted interactions by focusing on the micro-level project managing in the workshop (Hodgson and Muzio,

2011). Using the video data, we were able to study the moment to moment interactions, contributing insight into the practical accomplishment of joint project structuring at the micro-level, illuminating productive exchanges that are otherwise hard to capture. In sum, drawing on Social Practice Theory, we have proposed a practical approach to study how fuzziness is shaped into a project outline by enacting meanings and skills with material artefacts in "configurations that work" (Rip and Kemp, 1998), i.e. in a fuzzy-front end workshop. As such, by offering a theory-based approach for studying the local constellations of actors and their seemingly mundane (inter)actions in the workshop setting, we contribute to the development of a richer understanding of the way project managing is accomplished in practice (Hodgson and Cicmil, 2006; Blomquist, Hällgren, Nilsson and Söderholm, 2010; Koch, Sage, Dainty and Simonsen, 2015).

5.4 Limitations and areas for further research

Considering our praxiographic interpretation of the workshop, several limitations of our approach can be identified. One of the main limitations is the tendency of any observer to interpret from within their own frames of reference. A different team of researchers considering our micro-episodes might ask: Are stakeholders developing a shared vision or are they pushing a political agenda? Are they developing a coalition or are they shifting responsibility for action? Are they dealing with uncertainty or are they painting a rosy picture? One could then, through the lens of Social Practice Theory, quite feasibly argue that front-end practice is habitually characterised by politically-motivated vision, lack of ownership before commercial engagement and risk underestimation, as illustrated by our micro-episodes. To address this challenge methodologically, it may be possible to play video episodes back to some of the participants to gain insight into the meaning that they attributed to the interactions and any learning points that they gained from the workshop. Moreover, it may be possible to identify patterns of interaction through a temporal perspective on the interaction, tracing the exchange of arguments and changes to the sticky notes and their arrangement. Also, a much more detailed multimodal analysis of the data could be

undertaken, considering the tone of voice, hand gestures, facial expressions and their relationships to the way in which the modelling process unfolds. Relatedly, it may be possible to analyse in more detail the emotional content of the verbal exchange and the sticky notes on the flipchart to enrich our understanding of how ideas become meaningful to more than one person. For example, we have not elaborated on the role of affect. Further consideration of the concept of teleoaffective structures (Knorr-Cetina, Schatzki and von Savigny, 2005), i.e. beliefs, hopes, expectations, emotions and moods would require an interpretation of motives and incentives for sharing expertise in workshops, which might be useful to understand better (inter)action dynamics.

Practice-based theorising can never be free from the observers' frames of reference, professional and political vision (Hämäläinen, 2015). As such the emphasis for trustworthiness relies on attempts by observers to explain the perceived reality and communicate their experience of it (Arnold, 2003) while making the methodology open to appropriation by others who can then articulate a counter-position so that a cumulative process of knowledge development is enabled. As such, from a methodological point of view, it is precisely this accessibility of our approach for translation through active processes of appropriation and application to unstructured situations in forms of social inquiry, that makes our research trustworthy (Reber, 2010).

Finally, several areas for further research can be identified: The first concerns the 'zooming out' and linking micro-level observations with interactions across different times, spaces and scales, including following the practitioners through other workshops over time. Alternative data collection methods (e.g. video diaries), longitudinal study designs or historical approaches to understanding trajectories of workshop practices would be desirable.

6. Conclusion

Social Practice Theory, operationalised with a site ethnography, allows us to gain insight into the efficacy of front-end project workshops by focusing our attention to elements that are involved in

skilful project managing. On the one hand, it sheds light onto the importance of reproducible practice elements, such as skills in constructive criticism, reference to shared meanings, such as the agreed understanding that shared vision building is important, and accessible instruments, such as flipcharts that can be used flexibly. On the other hand, we saw how, by engaging meanings, materials and competencies, participants interact with each other and via the modelling instruments in heterogeneous ways to develop an understanding of the project situation in a way that is meaningful to them, thereby putting themselves in new constellations. This engagement is rich in variety, both regarding content and process as the micro-episodes illustrated. In this sense, the micro-level practice view also allows us to see the transformational side of workshop practice where local adaptation, changes and the possibility of failure of interaction are always present. Social Practice Theory helps us to understand how conditions for efficacious front-end workshops are partially embedded in professional skills, as well as partially being constituted by the scaffolding provided by instruments and methods that shape interaction in a workshop setting. Overall, the proposed theoretical perspective and methodological approach to the empirical study of project managing in front-end workshops has shown potential to support theorising from practice in a way that complexifies our understanding of management practices and their elements. Practice is a form of engagement in more or less skilful performances that are always characterised by the tension between the reproduction of professional experience and by the transformational potential arising from the specific unstructured project challenge that comes with a specific set of stakeholders and the need to co-create project-specific practice elements and practices.

Competing interests statement

Conflicts of interest: none.

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