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Performative management research through design methods

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Summary

In an age of climate emergency and social divide, we investigate how the use of design methods in management research, and more specifically market studies, can drive positive real-world change. Viewing markets as dynamic socio-material assemblages that are always in the making, implies that market-studies researchers are engaged in their transformation whether intentionally or not. In this paper, we focus on how design methods help market-studies researchers *actively* engage in market interventions and transformation activities, and how this activism shapes our understanding of the future. We draw on a pragmatist perspective on design inquiry, outlining different elements and devices of co-design methodology, and provide an example of its use in market studies. We conclude that, in a research environment that demands real-world impact, design methods may come to challenge traditional research practices due to their ability to transform and create new worlds.

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Introduction

The world is changing and the government funding that supports much of management research, is increasingly accompanied by demands for researchers to demonstrate the real-world, positive impact of their research (MacIntosh et al., 2021). In this age of the Anthropocene and Climate Emergency, social movements of scholars, such as the Responsible Research in Business and Management network (Co-founders of RRBm, 2017; revised 2020), are making similar calls to arms – claiming that business and management researchers have a *responsibility* to do research that has a demonstrable positive impact on society, environment and economy. One discipline that has been widely recognised for its transformative approach to research is *design*. What can design offer management scholars involved in trans or interdisciplinary projects emphasising real-world societal impact and change?

This paper focuses attention on what may happen in the encounter between the disciplines of design and management. We are interested in interdisciplinary research projects emphasising real-world societal impact and change, and not just academic impact and contributions. Whereas the case for design inquiry could be made across a range of management topics, in this paper we specifically explore its encounter with market studies, investigating how it may act as a performative research methodology for bringing theoretical knowledge and actions to bear on innovative action in complex projects where markets are made and shaped.

Performativity of market studies and the case for (co-)design methods

Market studies is based on the idea that markets are organised, made and shaped by multiple and distributed market actors (Callon, 1998b). Its genesis sits in notions of market design (Callon and Roth, 2021; Roth, 2018). From economic-sociologist, anthropologist and political science perspectives, market design assumes that an important part of the market-making process is the establishment of rules and strategies so that players can engage with the institutions and actors that constitute markets (Callon and Roth, 2021; Fernandes et al., 2019; Mason et al., 2017; Mele et al., 2015; Nenonen et al., 2019; Ruiz et al., 2020). Scholars have for example, investigated how various socio-material arrangements are put together to constitute, rearrange or fix markets (e.g. Ossandón and Ureta, 2019; Roscoe and Chillas, 2014). These studies are valuable in their own right, and make use of widely recognised ethnographic approaches such as interviews, observations, documentary analysis and netnography. Yet, most fail to address the demands for publicly funded research to deliver real-world impact. This has led to the exploration of methods that perform positive, real-world change through the activities of the research project (Beech et al., 2022; MacIntosh et al., 2017). We understand this approach as *the performativity of methods*, and see it as an increasingly important in the area of business and market studies, where researchers are expected to generate real-world impact through their research.

Performativity is a process that assumes that models, theories, and ‘utterances’ (Austin, 1970) change the world and are themselves changed, through their use (Callon, 2010; MacKenzie, 2008). These are referred to as illocutionary effects. Further, models, theories and utterances only bring about change when conditions are felicitous for them to do so. These are known as perlocutionary effects (Butler, 2010). The process of *talking-across* the real-world practical situation and the idealised abstract model, in order to work out how to perform the model and put it into practice, are known as translocutionary effects (Palo et al., 2020). Thus, it takes illocution, perlocution and translocution to put a model or theory into action and constitute it

performative. These observations have important implications for the methods used to inquire into market making and managing processes.

Callon's (Çalışkan and Callon, 2009; 1998b; Callon, 2010) work on performativity, conceptualises the performativity of economics, noting that "*economics, in the broad sense of the term, performs, shapes and formats the economy, rather than observing how it functions*" (Callon, 1998b, p. 2). Others have given attention to their discipline's performative qualities, including accounting (Miller, 2008), finance (MacKenzie et al., 2007) and marketing (Cochoy, 1998; Kjellberg and Helgesson, 2006; Mason and Spring, 2011). We adopt an expansive view, taking market studies in its broadest sense, to include theories, ideas, people, skills, techniques, that are assembled in a way that begin to perform the market through the performance of a research project. Thus, we see methods of inquiry as being part of this theoretical assemblage, and design methods in particular as having particular agency to bring about real-world change.

The importance of the performativity of our methods, together with the challenges that market studies scholars face when studying the fragmented and distributed nature of market making work (Callon and Roth, 2021), have led some scholars to turn to design methods. The reason cited, is that design, and more specifically co-design, is a collaborative process of inquiry (Whitham et al., 2019b) that can bring about collectively conceptualised market change (Chakrabarti and Mason, 2014). We use the term co-design because we want to emphasise the enrolment and mobilisation of multiple and distributed actors in the generation of co-produced outputs (Binder et al., 2015). Co-design is particularly pertinent in settings where technical innovations that are still *in the making* (Callon, 2021) bring together, through carefully choreographed encounters, actors with very different forms of expertise and (e)valuation practices. These encounters generate spaces where the innovation and the market are in the making at the same time and, most importantly, in relation with each other (Mason et al., 2017; Mason et al., 2019). We argue that when market studies scholars adopt co-design methods as part of their research process, their utterances, their translocutionary *talking across* of ideas with others, brings about real-world change, and so begins to make a market (Mason and Araujo, 2021; Palo et al., 2020). In other words, the co-design methodology engenders a performative process of marketization.

Co-design as a process of inquiry

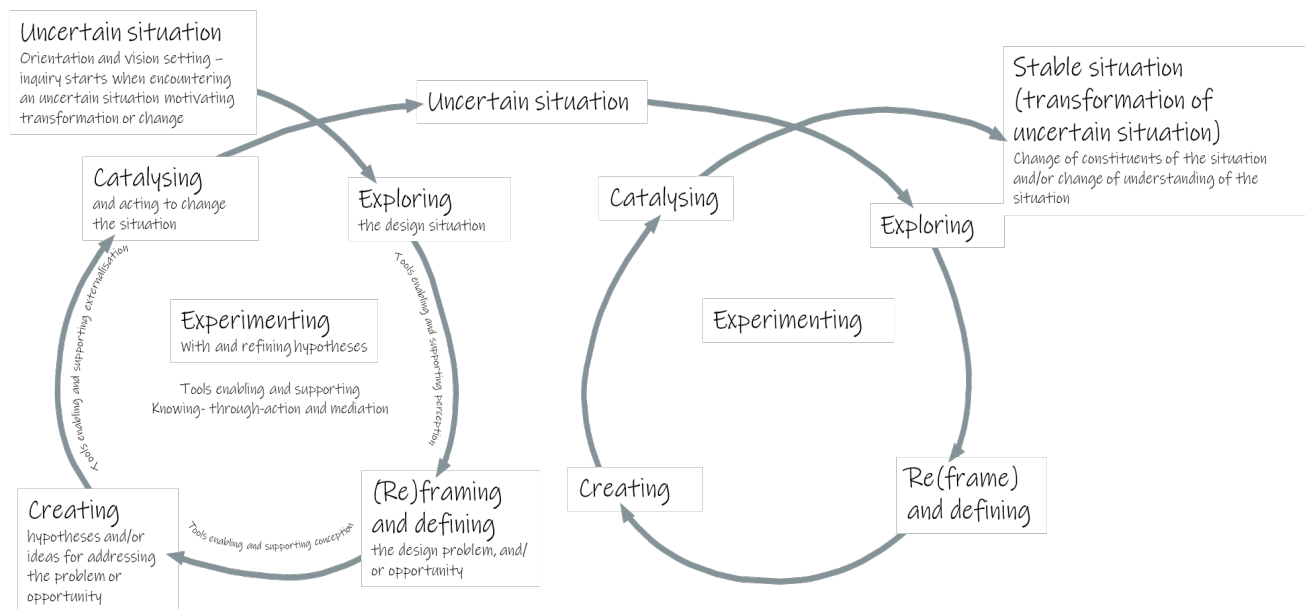
Co-design is a purposeful, structured, collaborative, exploratory and generative process that progresses problem-solutions through experimentation, and trial and error (Dalsgaard, 2017; Nthubu et al., 2022). Co-design has been recognised for helping multiple actors collectively work out how to respond to unknown and uncertain circumstances (Dalsgaard, 2017; Steen, 2013; Whitham et al., 2019b), and for its potential to shape interventions in uncertain markets (Heskett, 2017). It is particularly useful in settings where the socio-technical assemblages of emerging innovations are uncertain (Binder et al., 2015).

The aim of the co-design process is to enable collective action and to move a group from an uncertain situation to a more stable one where the constituents and/or understandings of it have changed. In a co-design situation multiple values, experiences and forms of expertise are brought to bear on both the framing of the problem and the collaborative design of its solution (Pérez et al., 2019). Co-design scaffolds (Light and Akama, 2012) or infrastructures (Agid, 2016) a process where the researcher works *with* and *for* the group, using 'models of care' to ensure everyone included in the co-design process is respected, valued and looked after (Costanza-Chock, 2020; Oertzen et al., 2022). Researchers are encouraged to question and

negotiate their role and contribution in relation to others, and help to provide a safe space where everyone can contribute. This is important in projects aimed at responsible research, contributing towards theoretical *and* real-world societal change. We argue that this positions the researcher as an activist, speaking, for example, to the RRBM agenda (Co-founders of RRBM, 2017; revised 2020) rather than an observer.

Drawing on Dalsgaard (2017), we propose an iterative co-design process (Figure 1) that brings together a pragmatist view of design (cf. Dewey, 1938; Dixon and French, 2020; Melles, 2008; Rylander Eklund et al., 2022) and the popularised business-design model used by the UK Design Council (Design Council, 2021). This is a co-design process consistent with what has previously been adopted in management studies, where it is heralded as important for business managers and organisations involved in innovating products, services, experiences or markets. However, to our knowledge, it is rarely used by business scholars as part of their methodological cannon.

Figure 1: Experimenting through co-design methodological practices



Original image inspired by Dalsgaard (2017) and Design Council (2021)

The co-design methodology organises an assemblage of methods, practices and tools in relation to each other: invoking a continuous *experimentation* process of engaging with the *uncertain situation* at hand, through *exploring* and *(re)frame*ing it as a particular problem, *creating* solutions and *catalysing* action to imagine and progress that solution. In what follows, we describe *uncertain situations* and *experimenting* – the core elements underpinning the *exploring*, *(re)frame*ing, *creating* and *catalysing* – and explore methodological implications for business and specifically market scholars.

Uncertain situations

Co-design inquiry starts with a group confronted with an uncertain situation, usually framed as a wicked problem or opportunity. Wicked problems are complex, uncertain and ambiguous, are part of broader social systems that are at best partially understood, and have no single ‘right’

solution (Rittel et al., 1984). The decision to use co-design to inquire into an uncertain situation is a conscious one, with the questions of intent (why do we engage?), and vision (where do we want to end up?), influencing the inquiry, and interacting with the co-production of emergent technology and market knowledge (Winograd, 1996). Co-design methods use abductive reasoning to explore what could possibly be true within an uncertain situation (Cross, 2006; Pierce, 1994), co-producing valuations that go beyond economic concerns to social concerns and value: what matters, to whom and why. Thus, solutions are “*judged in terms of the benefit [they] bring to life in all its dimensions*” (Heskett, 2017, pp.179-180).

For a business and market studies scholars, an uncertain situation might be market failure or an opportunity to create a new market for an emerging technology that has no value-in-use yet. The uncertain situation might be framed by a specific practitioner or policy problem, a funding call (or ‘call for papers’) or a theoretical puzzle, where current explanations, conceptualisations and theories do not explain what is happening in that market. Different from traditional market studies methods, the researcher becomes part of the transformation project team, taking on a specific role in the inquiry. Self-reflexivity becomes crucial, as the researcher must question their beliefs, values, actions and relationships with others. Critical reflexivity about the project’s practices, policies, social structures, and knowledge bases becomes part of the process and the data available to the researcher (c.f. Cunliffe, 2016). In co-design inquiry, self- and critically reflexive practices are actioned and examined through experimentation. This is discussed next.

Experimenting

Experimentation is at the heart of co-design inquiry: with reflection and action interwoven as hypotheses (Schon, 1983), and put into practice using an emergent, interactive, embodied trial and error approach (Dewey, 1938). Experimentation practices support co-designers to use tools without anticipating outcomes. Co-designers visualise, simulate, prototype and test to create and unfold understanding through experience, conversation and dialogue (Winograd, 1996). Tools may include 2D devices such as sketching, mind-maps, personas, and 3D models such as mock-ups, and prototypes. Co-designers can also organise mini-labs, studios, or role play, creating different kinds of experimentation experiences. These tools and their artefacts help “*coordinate actions, exchange and synthesise insights and perspectives, and establish stable shared points of reference*” (Dalsgaard, 2017, p.29). In other words, experimentation activities are collaborative; they make concepts and ideas understandable and open them to contestations and feedback from other parties, with different valuation regimes and practices.

For business and market studies scholars, experiments offer opportunities for co-creation and collective inquiry. As market-studies scholars become part of the project, the marketization process becomes a lived, collective and embodied experience. Experimentation takes place through negotiations with an evolving assemblage of actors and artefacts. Negotiations that may surface individual and collective assumptions, giving the researchers opportunities for reflexivity through questioning what might be taken for granted and examining the impact of assumptions (c.f. Cunliffe, 2016). In our process model (Figure 1), experimenting is understood as being performed through all the methodological practice bundles: *exploring, reframing, creating and catalysing*, and is thus positioned in the centre of the model.

Next, we describe each of these practice-methods-tools bundles that perform codesign as an iterative, experimental, structured and somewhat messy, collective inquiry process. Our discussion is summarised in Table 1. We make no assumptions about ordering or sequencing of these bundles, as our experience suggests that groups can jump across them as they reiterate.

Exploring

When exploring, co-designers *re-search* an uncertain situation to develop deep understanding for “*the assemblage of subject and surroundings, including people, socio-cultural constructs, physio-spatial surroundings, and artefacts*” (Dalsgaard, 2017, p.24). Experiencing (rather than describing) the situation is central. Exploring aims to reveal: *why* activities take place - uncovering emotional and physical needs; *how* group members and stakeholders are understanding and thinking about the world; and *what* is meaningful and valuable to them. By putting empathy at the centre of an embodied experience (Rylander Eklund et al., 2022), co-designers can develop a visceral understanding of the uncertain situation, and use this to identify potential ways of acting in that situation, to frame and solve the problem as it is understood.

The methods and tools of exploration include: active participation in meetings, workshops and conversations, empathy interviews, ethnographic techniques including shadowing, observing and participative observation, reflexive journals and role play. Mind-maps and visualisation techniques also help the co-design group make associations between their different understandings and help to facilitate group interactions and dialogue. These tools can be used to uncover the ‘inside out’ perspective, building awareness that practices, behaviour, objects, and artefacts embody values that differ across the group because of group members’ attachments to different sociomaterial worlds (cf. Heskett, 2017).

For business and market studies scholars, exploration activities draw on both empirical and theoretical worlds. Empirically, whereas in-depth empathy interviews and observations are part of many management scholars’ traditional toolkits, physical and emotional participation in the project provide an embodied experience of the situation that might be less familiar. Theoretically, exploration encourages an interdisciplinary approach; theory may help to provide deeper understandings of the various participants’ worlds, revealing their theories-in-use, their assumptions and ways of valuing action.

The data generated through exploration-focused experimentation reveal the plurality of perspectives that are brought together to construct the design and research situation. Data reveal perceptions of the research problem or opportunity through the lived experience of the researcher, members of the group, and the groups engagement with external actors. This provides insight into early valuation practices and processes (who cares about what and why) and the socio-material assemblages that support the early stages of marketization.

Table 1: Co-design inquiry - research practices, tools and outcomes for market studies

Methodological Practices: Co-design methodological practices that researchers perform when experimenting in an uncertain situation .	Methods and Tools: Illustrative methods and tools in use for these practices.	Data Type: Illustrative types of marketization data produced when the co-designer/ researcher is part of a lived, collective and embodied experience.
Exploring Exploration-focused experimentation that support perception of the situation through building relationships, trust and common understandings.	▪ Ethnography ▪ Empathy interviews ▪ Participant observation ▪ Shadowing/observations ▪ Reflexive journal ▪ Mind-maps ▪ Workshops ▪ Meetings and conversations to explore problems and opportunities <i>with</i> stakeholders	▪ Identify market actors and roles ▪ Interactions ▪ Meanings of actors' experiences ▪ Valuation practices (who cares about what and why) ▪ Socio-material assemblages
(Re)framing Reframing-focused experimentation that support conception of problems/ opportunities through making inferences and logical leaps to develop insight.	▪ Structured templates to support insight articulation ▪ Visualising extant and alternative frames ▪ Provocations to question the framing of the design problem including the use of symbols, metaphors, contradictions, opposites, and actions	▪ Unfolding understanding of actors ▪ Mapping future actions in relation to new understandings ▪ Emergent technological development trajectories ▪ Marketized object's development and conceptualization in relation to an imagined and emergent potential market ▪ Moments of (e)valuation
Creating Creation-focused experimentation that support mediation through imagining how to address a problem or opportunity and making ideas tangible.	▪ Idea generating using brainstorming techniques ▪ Making ideas and solutions tangible through sketching, building models, mock-ups, and prototypes, ▪ Creating experiences ▪ Storytelling ▪ Personas	▪ Artefacts embodying the knowing generated by experimentation. ▪ Possible futures ▪ Moments of contestation, interaction ▪ Moments of (e)valuation
Catalysing Catalysing experimentation to support mediation and externalisation through engagement with external stakeholders and transforming the situation and/ or the stakeholder(s) understanding.	▪ Bringing the external stakeholders into the inquiry using sketches, models, mock-ups, prototypes, ▪ Experiences as testing tools enabling co-designers to engage with stakeholders, as well as listen to, and act on, feedback.	▪ What and whom could/should /is mobilised and why ▪ Unfolding of the market ▪ Performance of market conceptualisations ▪ Market theories-in-use

(Re)framing

Co-designers frame and reframe problems, opportunities and ideas throughout the process, working with proposals rather than logical propositions (March, 1984). While framing can be understood as drawing the boundaries around what matters and what does not (Çalışkan and Callon, 2010; Callon, 1998a), (re)framing demands that the group critically reflects and rethinks those boundaries (Dalsgaard, 2017), changing them by taking unfolding understandings into account (Callon, 2009b). (Re)framing involves (a) identifying patterns and making connections in the materials and understandings gathered through exploration, and (b) breaking patterns, i.e. making inferences through logical-leaps and thinking of alternatives (Heskett, 2017; Martin, 2009). This is an interventionist approach that develops and stages artefacts and environments with the purpose of challenging and altering perceptions and assumptions (Dalsgaard, 2014).

The methods and tools of (re)framing include: structured templates, and the use of symbols, metaphors, contradictions, opposites, and action to support articulation efforts. Visualising frames can enable interaction with stakeholders and support the collective (re)imagining of what might be possible. They support conception and conceptualisation, assisting the researcher to identify, compare, manipulate, or challenge problems, ideas and potential solutions.

For business and market studies scholars, (re)framing methods and tools take the form of visualisations enabling sharing of empirical and theoretical understandings of the project, *with* the project group. The group, including the market studies researcher, engage in joint experimentation as they collectively make sense of the data, their understanding, and the next innovative steps of the project (Mason et al., 2019). A wide range of hypotheses and problems are generated and explored.

The data generated by (re)framing represent the unfolding of understanding and the mapping out of future actions in relation to those new understandings. Data reveal something of the technological or marketized object's development and conceptualization in relation to an imagined and emergent market. These problematizations provide useful insights into the marketization process. (Re)framing reveals the becoming of the market, frame by frame: which actors (human and non-human) and activities are in or out.

Creating

Creative practices support generative and imaginative thinking and action that is “*embodied and externalised through the act of creating*” (Dalsgaard, 2017, p.24). Cognition (Liedtka, 2015; Martin, 2009) and the embodiment of knowing and understanding (Rylander Eklund et al., 2022) drive ‘aesthetic disruption’ (Vink et al., 2017; Wetter-Edman et al., 2019). Creating supports groups experimenting with their unfolding understanding by putting their knowledge into action - *knowing-in-action* – which performs new *knowing-through-action*. For example, a co-design workshop with stakeholders generates comments and contributions that then generate new ideas, conceptualisations and solutions about what technologies might do, how they might be used, and their value-in-use (Ballantyne and Varey, 2006).

The methods and tools of creativity include: constraints, metaphors and opposites, and brainstorming. Other tools include making ideas tangible through sketching, building models, creating experiences and storytelling. Tangible creations enable and support mediation between actors and artefacts, establishing shared points of references, supporting joint inquiry and coordinated action (Dalsgaard, 2017). There are a number of digital and physical tools and

platforms that can facilitate visualisation, communication, and joint generation of ideas or explanations, including digital whiteboards and post-its, photographs, sketches, mind-maps, journey maps, personas, and story-telling techniques (Figure 2). These methods and tools have a distinctly sociomaterial nature, and materialise the knowledge being produced and used by the group through co-design practices; through the iterative experimentation of knowing-doing. These methods and tools mean that creating intersects with other practices and are intrinsically linked with catalysing and mobilising the actions of others that become engaged with the project.

Figure 2: Example of a co-design time-line visualisation tool



Source: (Whitham et al., 2019a)

For business and market-studies scholars, *creating* emphasises the importance of places that allow (market) actors to perform generative thinking and experimentation, and to produce visual articulations using their new concepts, ideas, and explanations.

The data generated by creating practices often manifest as artful artefacts and the embodied knowing of the group's experimentations. In this sense, creating methods incorporate and entangle knowledge that the researcher brings into the room, with knowledge that the same researcher takes out of the room, revealing new understandings of possible futures, connecting what is with what might be, could be or even should not be.

Catalysing

Catalysing extends the focus of the project team to mobilising collective action; highlighting the importance of mediation and externalisation. Mediation requires the coordination between actors and artefacts in a design situation. Externalisation requires that imagined and created ideas and solutions are materialised, allowing them to be manipulated, evaluated and developed in detail, “[bringing] the world into the process and enter into reflective conversations to explore potential futures” (Dalsgaard, 2017, p.28).

The methods and tools of catalysing are often the outputs of creating. Sketches, models, mock-ups, prototypes, experiences are used in catalysing action beyond the project group. These objects are used to engage, test, contest and explore stakeholders' reactions to ideas, concepts and the materialised technologies. As provocations, they enable co-designers and researchers to gather and act on feedback for a broader range of stakeholders. This understanding of

catalysing practices as part of co-design inquiry has strong parallels with the theory of distributed cognition, developed by Hutchins (1995). Hutchins (1995) claim is that cognitive processes occur beyond the individual and are distributed across people and technologies. As such, catalysing practices enable and support actions and activities that change and transform the situation and the stakeholder(s) and co-designers' understanding of what is going on, and what needs to happen next - they help the group take their next innovative step through an iterative process of collaboration, action and reflection (cf. interactive cognition, Dalsgaard, 2017).

For business and market studies scholars, catalysing iteratively supports testing their own research conceptualisations and findings. Catalysing includes presenting and discussing findings and ideas through for example, conferences, workshops, trade shows, funding applications, and enables researchers to move between the abstract and the concrete, with other co-design participants, and with wider groups of interested stakeholders using iterative feedback loops that both capture and progress learning.

Data generated by catalysing practices reveal what and who can be mobilised, why and with what potential effects. It captures the unfolding of the market as well as how earlier conceptualisations are performed. Catalysing practices enable market studies scholars to collect data on the mobilisation of a collective interested through the performance of theory-in-use experiments.

Illustrative case: XR Tumour Evolution Project

Drawing on a transdisciplinary project that has developed the XR Tumour Evolution Model (XRTEM) (Davis et al., 2022), this section provides illustrative examples of how a market studies scholar used the co-design process as a vehicle for data collection, analysis and theorising. The model synchronises 10 HoloLenses to create a collaborative hybrid workspace enabling exploration of how and why cancer spreads in the human body (see Figures 3 and 4).

Figure 3: An aerial view of the XR Tumour Evolution Model



Credit and copyright: XR Tumour Evolution project team.

Figure 4: Researchers from different disciplines discussing specific tumours.



Credit and copyright: XR Tumour Evolution project team.

When Windahl joined the project to study its marketization process, she decided to use a co-design methodology - giving her tools and a process to actively engage with the project team. Facilitating this decision was the open and experimental co-design characteristics of the project itself. With digital-design architects at its core, the XRTE project had followed a co-design approach since its start and Windahl was welcomed into the team. Windahl's understanding of her role and contributions grew and changed over time.

"It was not until I heard the following in a meeting, Charlotta, this would be more in line with your interest', that I realised what was happening: I was actively involved in influencing the research outputs of this transdisciplinary research project – I was not just studying it. Even though I had never seen it as possible to be a detached observer, this time, I had become part of the team. I was not 'just' coming in for a round or two of interviews and observations. I had brought my discipline to the project. Business studies were now intertwined with medical, architectural, and software development studies. This had implications, not just for my own understanding of the market's emergence around these new technologies as a research output, but for the project's outputs as well as for my research methodology."

Engaging with uncertainty and experimentation as a market-studies scholar

The XRTE project has potential to contribute to understanding of the early and somewhat neglected parts of marketization processes; as Callon (2016, p.18) observes, "*Empirical research on the innovation process confirms the greater realism of the market-agencement conception and leads to a new view of marketization and its implications.*" From Windahl's perspective, it was clear that there was data on interesting new technology, multi-disciplinary innovation, and marketization to collect and make sense of. However, this interest was different from those of other members of the team, and time had to be invested in articulating and representing those interests to them – creating moments of uncertainty for the team as they

sought to imagine their next steps incorporating these new views. The co-design processes supported the unfolding of roles and responsibilities. Windahls's role in the project was negotiated through mappings, discussions, and experimentation with contributions. Underlying assumptions and ways of inter-acting with the other team members unfolded. As such, understandings emerged and changed throughout the co-design process. Gradually, a sense of direction and responsibilities were co-developed. The inter-actions produced new knowledge of the expertise and capability boundaries of the participants, their motivations to act and interact in order to move their inquiry forward. For example, the plurality of values was represented in the data. While for Windahl, this was a marketization inquiry, for some it was an architectural and digitalisation inquiry, for others, art, and for others it was a clinical inquiry about tumour evolution. As the project progressed, the team generated a collective intent to seek further funding beyond the initial project horizons – developing the notion of marketization as a common goal.

Exploring as a market-studies scholar

It was when the team spent a weekend filming and visualising the tumour evolution model that Windahl realised that she had started living the project: physically interacting with the technology, carrying and transporting equipment for the filming, and using the Hololens, exploring its potentiality with others.

“.... eventually, enacting was instructing and guiding others, outside the project team, in using the hybrid space.”

As part of becoming an active team member, Windahl had to work with literature beyond marketing and management disciplines; this was critical in generating understanding of the new technology and its potential uses. The Architecture, Engineering, and Medicine literatures introduced new language and concepts, facilitating dialogue between team members. Windahl visualised her understanding of the literature on miro-boards, building a dialogue and trust with the team.

Through these experiences, the plenum of values and embodied knowledge of multiple actors are gradually understood (cf. Geiger et al., 2014; Stark, 2000), including how their needs and concerns were being negotiated and prioritised. For example, the importance of the physical structure a priority when its assembly and disassembly needed adaption so that it could be videoed properly. Wearing the Hololens for six hours while enacting conversations linked to how tumours spread in the body over time provided an embodied experience of the use of the hybrid space as well as the technology itself.

(Re)framing as a market-studies scholar

Through (re)framing activities, problematizations and opportunity areas are tested and contested. (Re)framing supports understanding of how ‘moments of contestations’ are part of an unfolding marketization process. Windahl framed marketizations challenges, that had been absent from the original project, by coding interviews and literature using market-studies theories. Callon's (2021) notion of passiva(c)tion guided the formulation of questions about how to create the conditions for the XRTEM to be evaluated and potentially requalified, and emphasised the importance of organising events that could enable external actors to experience facilitated encounters with the new technologies.

Our experiences suggest that while market-studies researchers may be used to taking time to (re)frame research problems throughout the research process, they may be less used to taking

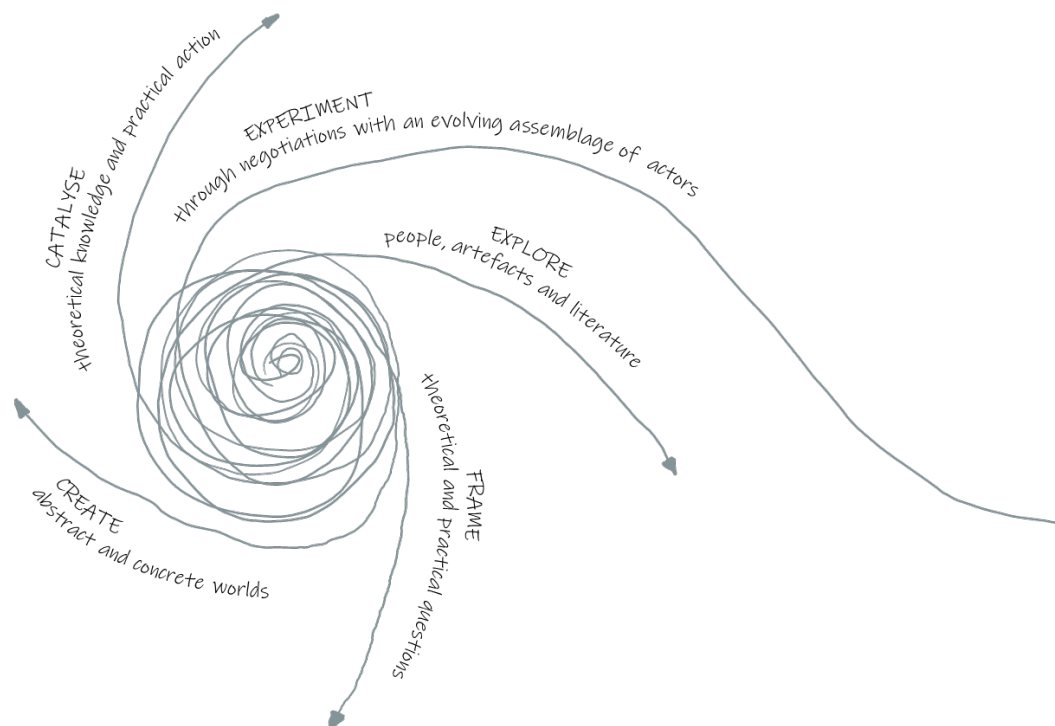
action to intentionally alter the way the market forms. The co-design process encourages actioning, and generates moments of (re)framing through sense-making, with ‘theory-in-use’ taking a performative turn, where from one moment to the next it first describes, changes and then is changed by the actions of the project team as a whole, and the market studies researcher specifically.

Creating and Catalysing as a market-studies scholar

At the time of writing, the project team was in the process of creating and catalysing future trajectories. These activities supported and intertwined with Windahl’s. Windahl performed market conceptualisation work, using for example, PowerPoint and Miro Boards to share and discuss findings. Theoretical perspectives and practical possibilities were explored with a broader group of market-studies scholars, and with medical, genome and architecture experts involved in the project. As Windahl mobilised her theoretical and practical knowledge, generated through her work on the project, the co-design process translated theory into practice, and transformed theory through practice.

Adjacent to theorising, the team exhibited the extended reality model at a conference. While external stakeholders had been involved in the early development phases, the team was now engaging in catalysing activities with a fully functioning and exhibitable hybrid room facilitating encounters with external actors. As such, the team was ‘testing’ the market: letting many more stakeholders ‘play’ with and ‘test’ the technologies and provide feedback. Multiple moments of contestation (Mason et al., 2019) via visitors’ questions opened new ways of seeing and understanding. For Windahl, in addition to having an embodied experience of ‘manning the stand’ and travelling with technology, this event provided opportunities to capture feedback about various valuation processes, and to engage in discussions with the team about what types of activities and what actors could and should be mobilised.

Figure 5: The entangled nature of a market-studies scholar’s co-design practices



The project illustrates the entanglement of co-design practices (Figure 5). For a market-studies scholar, participation contribute to and generate understanding from data, revealing how and why future market scenarios are formed and perceived. Catalysing and creating practices generate data explaining why and how the external world engages and contributes to emerging market (e)valuations.

Conclusion

In this paper, we explore how co-design gives business and market-studies scholars research methods, practices and tools to critically examine, engage with and contribute to the creation, development and transformation of markets. We describe the co-design process, the practices and tools at hand, and the forms of valuable data produced through the use of these research methods. This paper contributes to extant understanding of the methods by showing, through illustrative examples, *how* co-design goes beyond research that is focused on explaining, understanding, applying, and evaluating the marketization process (cf. Miller and Salkind, 2002). Rather, we show how co-design methodologies, when organised into an iterative reflexive process, can perform the emergence of a new market (cf. Mason and Palo, 2019). Our claim is that using co-design inquiry positions market-studies researchers as activists – actively working to make the market – and has important implications for how we understand the performative nature of methods.

We claim that co-design methods perform market experiments *in vitro* and *in vivo* (Callon, 2009a; Callon and Roth, 2021). The co-design process infrastructures dialogic spaces of contestation from which performative utterances (Austin, 1970), with illocutionary effects, are provoked (Butler, 2010). That is, they bring about new realities.

When Windahl attended an exhibition to test the new technology-service bundle, we saw the actions of Windahl, as a researcher, constructing an assemblage of sociomaterial artefacts in search of the desired perlocutionary effects. As Butler (2010, p.147-148) explains:

“A politician may claim that ‘a new day has arrived’ but that new day only has a chance of arriving if people take up the utterance and endeavour to make that happen. The utterance alone does not bring about the day, and yet it can set into motion a set of actions that can, under certain felicitous circumstances, bring the day around.”

Our claim is that a market-studies researcher using co-design methods, is working to put in motion a set of conditions and actions that can, because of those, and other felicitous conditions, bring about a market. The point here is that the success of a perlocutionary performative is dependent on external conditions ‘that does not immediately or necessarily yield to the efficacy of sovereign authority’ (Butler, 2010, p.151). It takes more than a single actor to make a market. This makes co-design – design with and for those it aims to benefit, at the heart of the impactful management and market research agenda.

In business and market-studies research settings, where co-design methodologies are being invoked, the notion of perlocutionary effects seems particularly pertinent. Co-design seeks to meaningfully orchestrate at least some of the events necessary to produce the felicitous conditions needed for market-making. Palo et al. (2020) describe the process of translating a model into practice by using it as an inquiring and organising tool to produce translocutionary effects – with actors talking across their different worlds of experience and understanding to

bring about new ways of understanding and performing the market for their emergent technology or market offering. While translocutionary speech acts have been recognised as,

“a compendium of imagining, discussing, proposing, negotiating and contracting that transforms the myth into a model of an imaginary-real world. Through translocutionary acts, actors calculate, organise the socio-material networks of the market, and manage the considerable uncertainty inherent in its operation.” (p.53)

We go further. We argue that co-design methods present opportunities for researchers to create theoretically informed markets. We argue that this offers unique opportunities to design moralities into markets, making markets that are more accessible, inclusive and important for society (Callon, 2009a). We argue that co-design methods offer valuable pathways to impact, such as those demanded by research agencies and governments seeking to generate positive social change through their investments in research and development in universities and other development agencies.

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References

- Agid, S. "... it's your project, but it's not necessarily your work..." infrastructuring, situatedness, and designing relational practice. *Proceedings of the 14th Participatory Design Conference: Full papers-Volume 1*. 81-90.
- Austin, J. L. (1970) Performative utterances. In: *Philosophical Papers*. London: Oxford University Press.
- Ballantyne, D. & Varey, R. J. (2006) Creating value-in-use through marketing interaction: the exchange logic of relating, communicating and knowing. *Marketing theory*, 6(3), 335-348.
- Beech, N., Mason, K. J., Macintosh, R. & Beech, D. (2022) Learning from each other: why and how business schools need to create a 'Paradox Box' for academic-policy impact. *Academy of Management Learning & Education*, 21(3), 487-502.
- Binder, T., Brandt, E., Ehn, P. & Halse, J. (2015) Democratic design experiments: between parliament and laboratory. *CoDesign*, 11(3-4), 152-165.
- Butler, J. (2010) Performative agency. *Journal of Cultural Economy*, 3(2), 147-161.
- Çalışkan, K. & Callon, M. (2009) Economization, part 1: shifting attention from the economy towards processes of economization. *Economy and Society*, 38(3), 369-398.
- Çalışkan, K. & Callon, M. (2010) Economization, part 2: a research programme for the study of markets. *Economy and Society*, 39(1), 1-32.
- Callon, M. (1998a) An essay on framing and overflowing: economic externalities revisited by sociology. In: Callon, M. (ed.) *The Laws of Markets*. Oxford: Blackwell Publishing.
- Callon, M. (1998b) *The Laws of Markets*. Oxford: Blackwell Publishing.

- Callon, M. (2009a) Civilizing markets: Carbon trading between in vitro and in vivo experiments. *Accounting, Organizations and Society*, 34(3), 535-548.
- Callon, M. (2009b) Elaborating the notion of performativity. *Le libellio d'AEGIS*, 5(1), 18-29.
- Callon, M. (2010) Performativity, misfires and politics. *Journal of Cultural Economy*, 3(2), 163-169.
- Callon, M. (2016) Revisiting marketization: from interface-markets to market-agencements. *Consumption Markets & Culture*, 19(1), 17-37.
- Callon, M. (2021) *Markets in the Making: Rethinking Competition, Goods and Innovation*. New York: Zone Books near futures.
- Callon, M. & Roth, A. E. (2021) The design and performance of markets: A discussion. *Academy of Marketing Science Review*, 11(3), 219-239.
- Chakrabarti, R. & Mason, K. (2014) Designing better markets for people at the bottom of the pyramid: bottom-up market design. In: Geiger, S., Harrison, D., Kjellberg, H. & Mallard, A. (eds.) *Concerned Markets: Economic Ordering for Multiple Values*. Cheltenham, UK; Massachusetts, USA: Edward Elgar Publishing Inc.
- Co-Founders of RRBM (2017; revised 2020) A Vision of Responsible Research in Business and Management: Striving for Useful and Credible Knowledge. 8 April 2020. 17. Available at: https://rrbm.network/wp-content/uploads/2020/04/Position-Paper_revised_8April2020.pdf [Accessed 14 December 2022].
- Cochoy, F. (1998) Another discipline for the market economy: marketing as a performative knowledge and know-how for capitalism. *The Sociological Review*, 46(S1), 194-221.
- Costanza-Chock, S. (2020) *Design Justice: Community-Led Practices to Build the Worlds We Need*. Cambridge: The MIT Press.
- Cross, N. (2006) Design as a discipline. In: *Designerly Ways of Knowing*, London: Springer, 95-103.
- Cunliffe, A. L. (2016) "On becoming a critically reflexive practitioner" redux: What does it mean to be reflexive? *Journal of Management Education*, 40(6), 740-746.
- Davis, M., Hurley, D., Lawrence, B., Liu, Y., Print, C., Rieger, U., Robb, T., Windahl, C. & Woodhouse, B. (2022) XR Tumor Evolution Project: A Hybrid Architectural Space for Cancer Research. In: Akbarzadeh, M. et al. (Eds.) *Hybrids & Haecceities: Projects Catalog of the 42nd Annual Conference for the Association for Computer Aided Design in Architecture*. Philadelphia, Pennsylvania: University of Pennsylvania, Weitzman School of Design, 64-69.
- Dalsgaard, P. (2014) Pragmatism and design thinking. *International Journal of design*, 8(1), 143-155.
- Dalsgaard, P. (2017) Instruments of inquiry: Understanding the nature and role of tools in design. *International Journal of Design*, 11(1), 21-33.
- Design Council (2021), Beyond Net Zero: a Systemic Design Approach, report, 59pp, available at: <https://www.designcouncil.org.uk/our-work/skills-learning/tools-frameworks/beyond-net-zero-a-systemic-design-approach/> [accessed 14 October 2022].
- Dewey, J. (1938) *Logic: The Theory of Inquiry*. New York: Holt
- Dixon, B. & French, T. (2020) Processing the method: Linking Deweyan logic and design-in-research. *Design Studies*, 70, 100962.
- Fernandes, J., Mason, K. & Chakrabarti, R. (2019) Managing to make market agencements: The temporally bound elements of stigma in favelas. *Journal of Business Research*, 95, 128-142.
- Geiger, S., Harrison, D., Kjellberg, H. & Mallard, A. (2014) *Concerned Markets: Economic Ordering for Multiple Values* Northampton, USA; Cheltenham, UK.: Edward Elgar Publishing.

- Heskett, J. (2017) *Design and the Creation of Value*. Chennai, London/UK: Bloomsbury Publishing.
- Hutchins, E. (1995) *Cognition in the Wild*. Cambridge, MA.: MIT Press.
- Kjellberg, H. & Helgesson, C.-F. (2006) Multiple versions of markets: Multiplicity and performativity in market practice. *Industrial Marketing Management*, 35(7), 839-855.
- Liedtka, J. (2015) Perspective: Linking design thinking with innovation outcomes through cognitive bias reduction. *Journal of Product Innovation Management*, 32(6), 925-938.
- Light, A. & Akama, Y. (2012) The human touch: participatory practice and the role of facilitation in designing with communities. *Proceedings of the 12th Participatory Design Conference: Research Papers-Volume I*. New York: ACM Proceedings, 61-70.
- Macintosh, R., Beech, N., Bartunek, J., Mason, K., Cooke, B. & Denyer, D. (2017) Impact and management research: Exploring relationships between temporality, dialogue, reflexivity and praxis. *British Journal of Management*, 28(1), 3-13.
- Macintosh, R., Mason, K., Beech, N. & Bartunek, J. M. (2021) *Delivering Impact in Management Research: When Does it Really Happen?* London: Routledge.
- Mackenzie, D. (2008) *An Engine, Not a Camera: How Financial Models Shape Markets*. Cambridge, Massachusetts and London, England: MIT Press.
- Mackenzie, D. A., Muniesa, F. & Siu, L. (2007) *Do Economists Make Markets?: On the Performativity of Economics*. Princeton, NJ: Princeton University Press.
- March, L. (1984) The logic of design. In: Cross, N. (ed.) *Developments in Design Methodology*. Chichester, UK: John Wiley & Sons.
- Martin, R. L. (2009) *The Design of Business: Why Design Thinking is the Next Competitive Advantage*. Boston, Mass.: Harvard Business Press.
- Mason, K. & Araujo, L. (2021) Implementing marketization in public healthcare systems: Performing reform in the English National Health Service. *British Journal of Management*, 32(2), 473-493.
- Mason, K., Friesl, M. & Ford, C. (2017) Managing to make markets: Marketization and the conceptualization work of strategic nets in the life science sector. *Industrial Marketing Management*, 67, 52-69.
- Mason, K., Friesl, M. & Ford, C. (2019) Markets under the microscope: Making scientific discoveries caluable through choreographed contestations. *Journal of Management Studies*, 56(5), 966-999.
- Mason, K. & Palo, T. (2019). *Holding RRI in place in a 5G Rural Economy Grand Challenge Project: The consumption and production of multiple forms of distributed knowledge*. Unpublished paper presented at the Enlightening the Future: 35th EGOS Colloquium,. Edinburgh, UK, July 4-6th 2019.
- Mason, K. & Spring, M. (2011) The sites and practices of business models. *Industrial Marketing Management*, 40(6), 1032-1041.
- Mele, C., Pels, J. & Storbacka, K. (2015) A holistic market conceptualization. *Journal of the Academy of Marketing Science*, 43(1), 100-114.
- Melles, G. (2008) An enlarged pragmatist inquiry paradigm for methodological pluralism in academic design research. *Artifact: Journal of Design Practice*, 2(1), 3-13.
- Miller, D. C. & Salkind, N. J. (2002) *Handbook of Research Design and Social Measurement*. Thousand Oaks, CA: Sage Publications.
- Miller, P. (2008) Calculating economic life. *Journal of Cultural Economy*, 1(1), 51-64.
- Nononen, S., Storbacka, K. & Windahl, C. (2019) Capabilities for market-shaping: Triggering and facilitating increased value creation. *Journal of the Academy of Marketing Science*, 47(4), 617-639.

- Nthubu, B., Perez, D., Richards, D. & Cruickshank, L. (2022) Navigating complexity through co-design: Visualising, understanding and activating entrepreneurial ecosystems. *The Design Journal*, 25(5), 730-751.
- Oertzen, A.-S., Vink, J., Odekerken-Schröder, G., Mager, B. & Azevedo, S. (2022) Navigating the tensions of integrating lived experience in participatory healthcare design. *The Design Journal*, 25(6), 1-22.
- Ossandón, J. & Ureta, S. (2019) Problematizing markets: market failures and the government of collective concerns. *Economy and Society*, 48(2), 175-196.
- Palo, T., Mason, K. & Roscoe, P. (2020) Performing a myth to make a market: The construction of the 'magical world' of Santa. *Organization Studies*, 41(1), 53-75.
- Pérez, D., Hands, D., McKeever, E. & Whitham, R. (2019) Design within social entrepreneurship. A Framework to reveal the use of design in interdisciplinary spaces. *The Design Journal*, 22(sup1), 229-241.
- Pierce, C. S. (1994) *Collected papers of Charles Sanders Peirce (1839-1914)*. Electronic ed. Cambridge, MA: Belknap Press of Harvard University.
- Rittel, H., Webber, M. M. & Cross, N. (1984) *Planning problems are wicked problems*. In: Cross, N. (Ed.). *Developments in Design Methodology*. Chichester, UK: John Wiley & Sons, 135-144.
- Roscoe, P. & Chillas, S. (2014) The state of affairs: critical performativity and the online dating industry. *Organization*, 21(6), 797-820.
- Roth, A. E. (2018) Marketplaces, markets, and market design. *American Economic Review*, 108(7), 1609-58.
- Ruiz, C. a. D., Baker, J. J., Mason, K. & Tierney, K. (2020) Market-scanning and market-shaping: why are firms blindsided by market-shaping acts? *Journal of Business & Industrial Marketing*. 35(9), 1389-1401.
- Rylander Eklund, A., Navarro Aguiar, U. & Amacker, A. (2022) Design thinking as sensemaking: Developing a pragmatist theory of practice to (re) introduce sensibility. *Journal of Product Innovation Management*, 39(1), 24-43.
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York, NY: Basic Books.
- Stark, D. (2000) For a sociology of worth. Keynote address for the Meetings of the European Association of Evolutionary Political Economy. Berlin, Germany, November 2nd -4th.
- Steen, M. (2013) Co-design as a process of joint inquiry and imagination. *Design Issues*, 29(2), 16-28.
- Vink, J., Wetter-Edman, K. & Aguirre, M. (2017) Designing for aesthetic disruption: altering mental models in social systems through designerly practices. *The Design Journal*, Vol. 20 No. 1, S2168-S2177.
- Wetter-Edman, K., Vink, J. & Blomkvist, J. (2018) Staging aesthetic disruption through design methods for service innovation. *Design Studies*, 55, 5-26.
- Whitham, R., Mason, K. Perez, D and Ford C. (2019a) *Open Valuation: Making visible hidden value in entrepreneurial and innovation practice*. Lancaster, UK: Lancaster University. Available at: <https://www.lancaster.ac.uk/open-valuation/>.
- Whitham, R., Pérez, D., Mason, K. & Ford, C. (2019b) Realising the value of open innovation in policy making: Equipping entrepreneurs for valuation work. *The Design Journal*, 22(sup1), 189-201.
- Windahl, C., Karpen, I. O. & Wright, M. R. (2020) Strategic design: orchestrating and leveraging market-shaping capabilities. *Journal of Business & Industrial Marketing*, 35(9), 1413-1424.
- Winograd, T. (1996) *Bringing Design to Software*. New York: ACM Press.