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Exploring the dynamics of ownership in community-oriented design projects

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ABSTRACT

This paper contributes an exploration of *ownership* as a dynamic process in community-oriented projects. We use case study accounts of two design projects to consider participation in contexts where social structure is relevant to design outcomes. In studying these dynamics, we consider four aspects: what motivates ownership; how ownership transitions; structures to support ownership; and facilitating efficacy among participants. Specifically, we study the contribution of a Danish research team to the production of a media façade for a Swedish municipality and how British researchers engaged community groups in making internet radio podcasts to share insight. We examine the complexity of the social process involved and trace patterns of change, before concluding with pragmatic and ethical reasons for technology design to pay attention to ownership issues.

Author Keywords

Ownership, transitions, responsibility, identity, motivation, control, media facades, community internet radio, podcasts

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION

This paper brings the issue of community engagement in design to the fore by looking at how technology designers work with community-based partners, going beyond simple definitions of participation to regard such production as *social structure meeting shared process*. Understanding motivation is key to co-operation, especially when working with groups that adhere through interest rather than formal organization [15]. So we ask how to inspire motivation and encourage plural ‘ownership’ of our projects.

Hirsch [12] suggests technology practitioners and scholars alike rarely reflect on what is intended when the word ‘community’ is used, despite making decisions based on beliefs about the communities they and their users inhabit. But, once the idea of ‘community’ is invoked, social and relational factors are surely paramount – for the difference between working with individuals and with the diverse tiers of society that make ‘community’ must be one of engaging with existing social structures and interwoven motivations.

Nonetheless, researchers who go into the field are criticized for arriving, investigating and leaving without care for the impact of intervention [4]. Cases of ‘research fatigue’ and resistance to participation are growing [4]. A danger with ‘extractive’ research, where experts visit a community, do their study and take away data to write up is that the study subjects feel treated as instruments of the research, not people with agendas of their own and value to their time (that is not always to be bought). Instrumental use of communities against their interests is noted in Clark [4] as a factor in research fatigue. Our discussion of the dynamics of ownership is, in part, then, a means to look at practical and ethical matters that arise in working effectively with communities to develop technology and its uses. It is also a way to consider judgment and what it means to give responsibility to others for a shared outcome. Inspired by Goodman et al’s [9] work on professional judgment in interaction design practice and Rogers’ call to show how theoretical concepts can be utilized in practice [20], we explore how ‘ownership’ can impact during designing.

Our first example concerns a university research team commissioned by architects and a Swedish municipality to collaborate to make innovative use of media technologies for public display to enhance the municipal environment, and thus community wellbeing [13]. The architects (a small business) and municipality (as servants of the electorate) operate in formal, stable structures, supporting ‘community’ in its most abstracted sense. In the second example, we turn to the grassroots and look at practices where small groups with informal and evolving structures form partnerships with researchers to look at how learning takes place in

situations where there is little reflection and much ‘making-do’. At this end of the scale, relations are not predefined and little process exists to deal with civil society *as lived*, in a tier between state and individual households. The two projects thus differ with regard to scale, focus and type of participant: in one, experienced professionals (creative, municipal, academic) collaborate harmoniously on media facades; in the other, community volunteers confront professionals in the production of internet radio programs. Both contexts foreground complex shifts of responsibility.

BACKGROUND AND RELATED WORK

The authors habitually use participatory design approaches in their work [17]. In other words, it is not enough that beneficiaries are part of the process; the process must enable them to take action and influence the design. This, in turn, implies and requires that they feel some motivation [15]. However, we can go further and ask: what if the researcher is the invited participant? What if the power lies sometimes with the community, sometimes the researcher, and the action is not principally initiated by one party? Who can be said to lead ‘participatory design’ then? We regard this issue from two directions – writing here about a brief *given* and one *taken* and the play of initiative that follows.

Ownership

We understand ‘ownership’ here as *having an agentic stake in the process and outcomes of a multi-partner project*. This kind of ownership (as opposed to legal rights of possession) describes relations where an individual or group feels a thing is ‘mine/ours’, linked to matters of meaningfulness, identity, responsibility and control, and extending to immaterial entities such as ideas, words and artistic creations. Pierce et al [18] give a summary of research into attachment and the growth of these feelings, noting the topic interests anthropologists, geographers, historians, philosophers, artists, animal and consumer behaviorists and social psychologists. Yet little attention has been paid to it in the technology design process – it is assumed to sit with whoever is responsible for commissioning and briefing.

As Pierce et al define it [18], this form of ownership a) is grounded in motivation to be efficacious in relation to one's environment; b) helps people come to define themselves, express their self-identity to others, and maintain the continuity of the self across time and, c) emerges from the need to ‘have a place’. Their research proposes three major experiences through which it emerges: controlling the ownership target, coming to know the target intimately, and investing the self into the target’, noting that people come to find themselves psychologically tied to things as a result of active participation or association with those things [18]. While we cannot consider Pierce et al [18] exhaustively here, we note that Pierce et al [19] relate these findings to work contexts and find psychological ownership of one's job to be mediated by the experience of control, studied in the contexts of technology, autonomy and decision-making.

In Development Studies, ownership is a key research topic, identified as a major determinant of whether a project will succeed and change take place locally. For instance, World Bank guidance on capacity development [21] is devoted to fostering stakeholder ownership, stating it to be ‘essential’ and noting ‘Several major cross-country studies provide evidence supporting the development community consensus that stakeholder ownership is critical to the success of development programs’ (p8). Here, ownership ‘involves the ability and willingness of beneficiaries and also other actors inside and outside government to express and facilitate demand, so as to influence achievement of the development goal’ (p7). Donais [7], regarding ‘local ownership’, draws a distinction between a strong and a weak sense: the strong version implying that ‘recipients’ (of support) drive the process, while the weak is ‘convincing or cajoling local actors to accept the wisdom and utility of what remain externally defined policy prescriptions’ (p4), namely, to do what is advised, but to do so voluntarily.

Within design research, Bratteteig and Wagner [1] look at power and decision-making in a participatory project, observing the factors mediating control, and reflecting how implemented decisions lessen the room for negotiation: ‘The power to allocate resources may rest in the project leader but it is driven by research commitments [and] the fact that some solutions have already been made material, hence irreversible. From this perspective prototyping becomes a decision-making process that closes the design space.’ Here we can note the high authority of a research question and how material considerations bring a temporal aspect – once a thing is made, it becomes a fixed aspect; now acting as a constraint and resource to inform decisions.

This manipulation of material also points to the importance of knowledge, judgment and competence [9]. We note too that allowing people autonomy to develop and use their expertise emerges as a critical component in Pierce et al's ([18], [19]) analysis of what encourages ownership.

How might such concepts, so important in Development contexts, allow us to explore our relations in designing technology with communities? Here we start this enquiry by offering an account of our work in two contrasting projects. Two studies of engagement are presented here as author narratives, stressing chronology so that we are able to consider ownership as fluid. In the following discussion, we review four dynamics that seem particularly pertinent to these projects: what motivates ownership; how ownership transitions; structures to support ownership; and what facilitates efficacy among participants. In doing so, we relate design research to Development research, in considering the value of a body of knowledge about how to create meaningful intervention in others' lives.

THE ODENPLAN PROJECT

The *Odenplan* project is an effort to realize an interactive LED media façade, integrated into a projected metro station

in Stockholm, Sweden. The project is currently in the planning stages: several suggestions for potential designs have been submitted by the research team to the architect collaborators. The partners involved at this stage are CAVI, the architectural firm 3XN, the City Architect of Stockholm and the municipality of Stockholm, representing the citizens of Stockholm, along with visitors and other potential users who influence appropriation of the metro station. It is not a direct collaboration with anticipated users. CAVI currently only collaborate directly with 3XN, who are responsible for negotiations with the municipality, who answer to the citizens as voters and as users of the metro.

We give an author account here of how this responsibility was delegated. In doing so, we go into the main junctures where decisions were made and negotiations took place as experienced by the designer-researchers at CAVI.

The initial contact with 3XN

In spring 2008, Aarhus University launched a new center to conduct research into forms of living reflecting the societal and technological development of the experience economy. The center encompassed many kinds of partnership, using a research-based, user-driven innovation, explorative case-based activity model. One of these partnerships was developed with 3XN, who was interested in working on advanced projection technologies (eg [10]). However the actual *Odenplan* project did not take off for several years.

Starting the *Odenplan* Project

The work we report on here was conducted in 2012. The break between initial contact (2008) and project start can be attributed to the long process of negotiation between 3XN and the Stockholm Municipality and City Architect as 3XN submitted a proposal and won the privilege to design the metro station of *Odenplan*. As such, when we started on the project, 3XN, Stockholm Municipality and City Architect had already agreed on both some fixed conditions and some more flexible ones and negotiations were already mature.

We kicked off our part of the project by meeting 3XN, who briefed us on the specifics of the building. They came to the meeting with an agreement with the other partners already in place. 3XN were representatives for the municipality of Stockholm who had accepted their architectural proposal and were open to considering using the building as a media façade. But the municipality had left the task of suggesting what form this could take to 3XN. Thus, 3XN came to us with permission to take ownership of the details of the building and the ensuing design. Aspects of this were then offered to us, as designers, through a verbal briefing and some design materials. We were told that the shape and materials of the building as well as the placement, budgets and such were already agreed, meaning that there was no flexibility granted us to change these factors - other partners controlled these parts of the project. Since the building was located in Sweden, there were specific legal requirements for indoor lighting and similar issues which none of us

controlled, further constraining aspects of the building. Thus, the option for us to take ownership for creating façade designs came with conditions already in place. As part of good practice, these were made clear to us at outset.

Manifesting Constraints and Opportunities

At the meeting, we were presented with a physical scale model of the *Odenplan* building, as well as examples of the materials (stone, wood, glass etc.) that the building would be made from. In this way, 3XN, on behalf of the other collaborators, transferred ownership to us in the form of written, verbal and physical accounts of the project.

3XN stated their desire to “use lighting to shape the space”. We considered this statement as a sort of flexible demand from them: it was stated as a desire, but was clearly, at least at that point, up for negotiation. This indicated to us that 3XN respected our ability to make design judgments. We did not need to demand some scope – they knew that we needed some leeway in order to use our professional competence and create the best work possible. However, we liked the idea of using LEDs (as well as integrating such technology into a building) and agreed to do this. Similarly it was left to us to determine what the exact experience and usage of the LEDs should entail, meaning that we now had ownership of the nature of the interaction, which was a key interest for us and thus a motivation to be involved.

In conclusion, the initial meeting left us with ownership of specific parts of the projected building, leaving it equally clear that other parts lay in the hands of others. Before parting, we knew that we had to design for the front of the building, using LEDs and somehow use lighting to shape the space. Thus, the façade was handed over to us to work on (to explore the design space and narrow it with design proposals), while the architects handled the building itself.

Through reflection, we can observe that, at this meeting, we and 3XN had common ownership of the façade and collaboratively drove the process forward. This highlighted the value of a good grasp of the dynamics: shared well, collaborators are able to align their efforts within a project, drawing on their individual strengths. By accepting one part of a project through agreement (eg the shape of the façade), a stakeholder in the project can have a relatively free hand to develop for this part, while still ensuring that the ideas fit the overall strategy for the rest. Before the meeting, we had indirect ownership of the project – we were recognized as partners, but had no direct influence over anything. After the meeting, we were excited to feel a stake in the work.

Meeting and Designing Locally

After agreeing on the details of our role in the project with 3XN, it was up to us as designer-researchers to take initiative to move the interactive lighting part of the project forward. We did this through a series of design workshops where we played with lighting to shape the space. These workshops were conducted without reference to partners,

apart from sporadic coordination with 3XN, underlining that, while we ran this design process, we still respected that 3XN was the source of wider authority, and we thus could benefit from aligning our work with them. During this period, we generated ideas by working with the 3D model that 3XN had given us, having transformed it ourselves for use in *Unity3D*, so that we were able to work with the model façade in our 3D cinema.

The 3D model acted as a mediating artifact, transferring ownership to us while still enabling 3XN to have some control over our ideation process. The 3D model, albeit transformed, acted as a constant reminder of the agreement we had made to develop ideas that followed the shape of the building, as well as to work using lighting to shape the space. Furthermore, as the shape of the building was itself the result of negotiation between 3XN and the other project partners, they too had indirect influence on our work in this phase. In that light, the handing over of this 3D model to us was a sign of trust which inspired our sense of ownership – others outside the project did not have our access and could not have done the same work that we did by having access to the resources of the other partners. By giving out their resources, the others recognized us as partners, respecting our knowledge and competence.

We did not generate any full-blown ideas in this phase – rather we tried out alternatives by discussing technologies we had experienced using, including sensors and camera tracking. We worked to connect our wider research interests with the parts of the project we had responsibility for. This can be seen as our way of navigating the design space set up collaboratively, and finding our own pleasure in doing the work. We wanted to create a solution with which we felt comfortable as researchers and designers. For instance, we have previously focused on emergent behavior in public space [2], so this became one of our focal areas.

By the end of these sessions, we had transformed the design space. The initial desire to use lighting had evolved into a more specific understanding, comprising four key themes we wanted to explore: Emergent Behavior; Public Space; Optical Illusions; and Persistence. While we felt ownership of this part of the project, we still considered our themes flexible, since we had not returned to 3XN for approval.

Main ideation workshop

Close to the end of the current project iteration, we had our pivotal ideation workshop, discussed in [13]. We used the 3D model provided by 3XN in our 3D cinema to sketch out different design concepts. Our four key themes could be said to inhabit the design space, intersecting our research interests and our design ideas. Based on these, we generated ten (to us, interesting) ideas that all, in one way or another, adhered to our partners' desire to use LED lighting to shape the space of the projected building. As such, we enacted our ownership of this part of the process, working in the design space we had ourselves formulated in the previous phase,

with each idea being an interpretation of possibilities in the design space. Our ten concepts acted as interpretations and translations of what we could do. Again, we still considered these ideas to be flexible in that they were interpretations of the brief to be presented to 3XN for further development, then presentation to the municipality and city architect.

Concept Videos for the Architects

As the last part of this phase, we selected three design ideas to realize as virtual video prototypes [11], showcasing the different concepts (see [13]). These concepts (fig 1) were selected for several reasons. First, we considered them to be representative of the possibilities of the Odenplan façade as a platform for social interaction in public space. Second, the technical implementation of these ideas would enable us to realize easily the rest of our ideas. And, last, but most interesting here, they were easy to communicate and had discernible qualities we knew would sit well with 3XN.

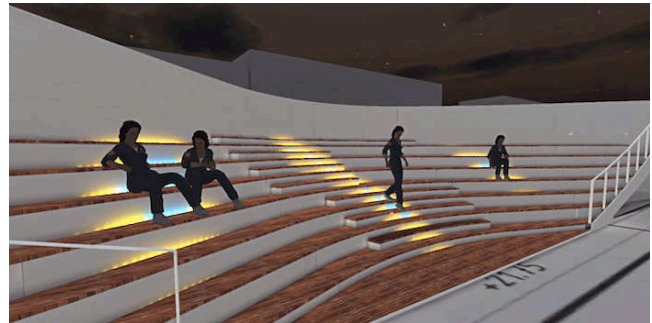


Fig 1. Video prototyping: tailoring our proposals to meet the needs of the architectural firm

We found the partners' roles reversing as we contemplated another transition. We used our control at this point, as well as respect for 3XN's knowledge and competence, to create a set of design materials that would work well when responsibility for the façade elements was transferred back to 3XN. We tailored our work with the virtual video prototypes to ensure that our views would be represented loyally onwards in the process. All of the three design concepts interested us as designers and as researchers, and thus our selection was both for pragmatic and political reasons. This meant that when the proposals were discussed by 3XN and the Stockholm municipality and city architect, we could feel confident our own research interests would still be represented, enabling us some degree of control over the proceedings of this part of the process. In the same way that giving us a constrained design space at outset enabled 3XN to ensure that our work would be valuable to them, we were able to reciprocate at the end of this phase. Again, a transfer of artifacts captured the interests of the partners and made them material. However, whereas the 3D model we received showed non-negotiable elements, the videos represented our suggestions: constrained but not final.

THE CARM PROJECT

We now turn to look at the issue of ownership from the side of those setting the brief, in a small British AHRC-funded

project, under their *Connected Communities* program. Community groups were invited to participate and one success criterion would be the extent to which ownership devolved away from the academic research team. The author account this time comes from the project initiators.

The *CARM* project asked how communities might use podcasts and community internet radio to reflect on their own and others' achievements and learn from each other. Set in the context of the UK Government's intentions to devolve social care and community affairs to the third and voluntary sectors, we sought to address how knowledge might be made and shared using new forms of media to compensate for the shift from a centralized administrative network to a less integrated, grassroots approach. Although networks and their power to connect have been observed as an outcome of the information age (eg [3]), analysis has centered on new communities of interest gathering across space and how this changes relations between individuals, or at a broad political level (eg [6]). There is less research exploring impact on communities negotiating physically-located services such as care, environment and cultural heritage, though Light et al [14] looks at how to turn social media back to the local context and Gilchrist [8] addresses networks of groups at community level and use of media. *CARM* (<http://howwemadeithappen.org>) raised questions of learning across different community-based organizations as people come together locally.

A further research goal was to explore how locals might work with community radio stations as a vehicle for sharing insights. British community radio only started formally in 2004: most stations are internet-only, run by volunteers and serve a very small catchment area. Little programming is produced ahead and then aired: shows are live talk and/or music. Some of these shows are then podcast and offered on the station's website. Participating groups partnered with a local station, who committed to play the research output in their schedule and then offer the program as a podcast. This context partly defined what was useful to produce, requiring local interest; enduring relevance and brevity.

Process

To investigate the potential of making media together, three community leaders we were acquainted with each agreed to introduce the idea of participation to a group that might be receptive. In a one-year study, they were given funds to make a program and commission any support they needed, with a simple brief: make at least one 15min program and capture the group's purpose and achievements, beyond interviews about individuals and their interests. Guidance was given on how to reach consensus about the content (including a two week 'cooling off' period) and a deadline was agreed, by which time each program would be ready for others to listen to. The first test, then, was whether any programs would be made.

For several months, three community groups in different parts of England worked on their themes, reflecting on their group and its value. All chose to recruit external support to record and edit their programs - despite the offer of media training, no group wished to make their program alone and the subsequent degree of editorial control varied. The final outputs were as follows:

- 1) A craft group of older people spoke about the different crafts they follow, how their fathers were a major influence on them in pursuing craft and the social and emotional support that the group offers them.
- 2) Two groups of museum volunteers interested in the oral history of their villages came together to share practices of testimony collection and develop a project capturing and comparing their High Streets through sound.
- 3) A newly-formed women's group talked together about the experience of being mothers and daughters, using drama methods to raise sensitive issues and discuss what cohered the group as people shared their feelings.

At deadline, there was at least one program per group. At special listening events, the groups heard their own work among that of the two other groups and, by the end of the project, they had also been heard by an advisory group of hyper-local media experts, and groups with similar pursuits outside the study.

At each event, group discussions were initiated after each piece and chance for some solo reflection, to gain feedback on making them and/or hearing them in groups. This did not resemble normal listening, but raised the possibility of new forms of listening together as groups. It also gathered responses from interested parties of three kinds: media specialists; those who had been through the process and people we might expect to find the content interesting.

Summary feedback was given each group, the programs were re-edited (if desired), broadcast on radio and stored as podcasts. Thus, the material became public, raising issues of group authorship, identity, control, voice and authority which we can only touch upon here.

This speedy introduction conceals many negotiations. Our formal outcome was insight into the potential that groups have to learn about themselves and others in the reflective practice of media-making, introducing a new structure of program and some guidance about what was found to work (see <http://howwemadeithappen.org/research-results>).

To achieve this outcome, ownership of the process went through several transitions. In all cases, the most interesting tensions arose between group leaders and media production specialists and we focus on just one of these relationships to examine wider issues of constraint and control, and how meaningfulness, identity, responsibility and efficacy related to ownership in the project, especially as regards outputs.

NEGOTIATING OWNERSHIP IN THE WOMEN'S GROUP

The women's group organizer, Sue (assumed name), was invited to join the project, having participated in a previous community co-research study. She is a drama worker with access to many suitable groups. At the launch meeting, Sue asked whether she might set up a new group for this work, explaining an unmet intention to launch a women's group. We asked her, in turn, whether she was confident she could meet the program brief and the deadline, which were non-negotiable criteria. We were able to align her existing agenda and interests with those of the project and she took over the brief and most of the decision-making.

For many weeks, the academic team had no more responsibility for shaping outcomes, although we did visit to learn how things were developing. Sue invited a number of women to join her and put out a call for others. She worked to form the group, using the radio project to focus participation, though keeping this distinct from the wider group goal to share women's issues: people could attend without being part of the broadcast.

All organizers found that, while some participants wanted to make a broadcast, others were nervous and reluctant to be recorded. In Sue's group, the discussions had potential to be highly personal and this added to people's unease. But it also helped to illustrate the journey ahead – the group would work best if people were open with each other and made each other feel comfortable. Participants were shown that the group was theirs, the topics chosen and discussed were theirs and that they had control of their comfort and, consequently, a share in that of others.

Sue's facilitation of the group and elicitation of common themes (intergenerational relations as they related to issues such as puberty, losing one's virginity, sharing space and ageing) brought and kept together a disparate group of women, a few with their daughters. Some women came and went. However, a frank and collaborative culture quickly established itself. And as the interest in the topics being discussed grew, so concern about being broadcast lessened until everyone who attended regularly felt part of both the discussions and the making of the program about them.

Sue recorded details of what was covered in the sessions as notes on a scroll of wallpaper; no audio was used until the group had been meeting for months. Meantime, the group agreed how they wanted to proceed. They unanimously felt that they wanted a woman to work with them and, equally, that they had no interest in the mechanics of making the program. But they were also clear that they wanted control of the content. After checking with the research team, Sue invited a local radio producer to make recordings and edit them into the group's program. She also consulted her chosen community radio station about any constraints, who gave her a blank canvas, ie permission to experiment.

Since the researchers had also adopted a 'hands-off' role, this left design and production to the group. Indeed, the

research was to see what value it acquired for the group, if any, and intervention would not be helpful – either to how the group viewed its role or to the analysis possible. But, when the radio producer began her work, the academic lead on the project was invited back into the process because of conflict between the producer and the group.

Whose Project is it Anyway?

Tensions arose shortly before the deadline. The extracts below come from emails between Sue and the academic team as Sue directs the radio producer to edit the material she has gathered in the way that the group has chosen.

By the time the producer is commissioned, Sue's group has made the brief theirs and wants the program to characterize how the group has formed, how it works together and how it sustains members beyond their individual experience. For instance, a mother of a child with disabilities wants to consider if parenting her daughter would be different from the work of other parents. The role of the group, not just individuals, is important for participants and research team. However, the program is being edited by someone with different sense of relations between media, media producers and the program's subjects (both human and thematic).

A first edit is sent to the group: it is a traditional piece on mothers and daughters. Sue then tries to convince the producer it should reflect the group and its functioning, attempting *'to impress upon [the producer] that the content of the group was less important than the impact of the group'* (30/9/12) but *'when I told her what I needed and wanted she said "Who's going to listen to that?"'* (29/9/12).

The producer returns to collect more audio, including a song written specially by one of the daughters attending. *'We told her we felt the piece didn't really reflect the humour of the group, the irreverence. ... And she basically just mixed the song into what she'd done before. None of the audio with the women talking about the impact is there.'* (Sue, 28/9/12) In response to Sue's frustration that she is not prevailing, we agree the lead academic will 'clarify' the research conditions to Sue, done in such a way that it could be forwarded and make the point that the producer is not meeting the brief: *'Specifically, we are looking for a piece that recounts what is particular about the group and how members orientate towards it. In your case, one of the special features is that it has only recently formed and yet people have a strong bond, work with a lively style and some poignant material has appeared. ...At present, the piece plays like a conventional [national radio women's program] piece...' etc, etc. (lead to Sue, 30/9/12)*

With her judgment overridden, the producer makes a more relevant piece. In Sue's words: *'Now this is more like it! I feel so relieved and thank you for your support in articulating what we need.'* (Sue, 3/10/12)

And the group also warms to it; Sue's report of the listening event: *'The women were so, so proud as was I and felt that*

the piece really did reflect the group. One woman described the difference between the first edit and this one as transformative.’ (Sue, 18/10/12)

The final piece was played to various audiences (as above) with a mixed response. At one end, it elicited empathic emotion in presenting women talking together about family relations and inspired others to want to do likewise. At the other, there was tight-lipped dismissal as too intimate and vulgar; it was felt not to be a subject for people to share, let alone record sharing. Interestingly, the hyper-local media experts were able to pinpoint the tensions in its production. In their reviewing, they note a lack of clarity about what happened at group meetings, while applauding the energy, fun, frankness and group spirit. They could hear that it had been recorded with a different idea in mind.

If we relate what happened here to experiences in the other two groups, we see a pattern. Radio producers, who brought familiar genres to bear, found themselves being directed away from their ideas, with more or less success, towards expression of group identity. In each, genre expectations hampered the making of an enduring group piece to share and learn from, leading to power struggles. We conclude that a new sub-genre is needed if groups are to be able to express and share their community identity, since the work is not timely (like news) or about individual or family stories (like much human interest reporting). It points to the need for technical/creative support that is sympathetic to the endeavor, given that there seemed value in attempting it.

Analysis of Ownership Tensions and Transitions

Our theme is ownership and we can see that many aspects of it meet in these tensions about editorial control. If we now look more closely at the play of ownership in the account above, we see the dynamics have significance, both in how we executed the research project, and in what we learnt from it, not least about communities and media.

Meaningfulness: In the initiation of the project, we see brief-setting where the constraints are spelled out – length of program, need to involve/reflect group, deadline, budget – but, as with the *Odenplan* project, there is also room for the local team to appropriate it. This is made clear: Sue has the discretion to choose the group (or, in this case, form it). She is given a budget to organize the program-making and bring in whoever is needed to support this, based on her judgment and the response of the group. And Sue takes this latitude and makes it fit her agenda and sense of rightness. She carries the constraints and opportunities of the project to a set of people she can see as benefiting from a chance to reflect on their lives, but simultaneously she is able to make the task meaningful for her life and work too.

Identity: Sue uses the project to build a group she already wants to establish. As a group, it will have its own identity, distinct from a series of individuals. As a new group, this nascent identity is still being determined, but reflection becomes central, both in the radio project and in the group-

making project. Running alongside questions about who owns the radio project are then questions about who owns the group. Sue knows this and defines it enough for others to join (women, drama, intimacy), but leaves space for appropriation. Members’ contributions are crucial, not only in attending and following Sue’s lead, but in shaping goals and setting a tone for the reflective work. Light et al [16] note the semi arbitrary nature of co-design, where the group determines the theme/problem and this then determines the group. We saw this process here.

Sue’s group defines itself through practices of discussion, improvisation, theme setting and recording insights on the wallpaper scroll. At this point, the research intention of making a reflective program becomes adopted locally. The group is now making a program to express itself and has invested ‘self’ into the target [18]. A *group* is looking to Sue to manage the process of *group* representation. Media are very interesting in this respect since representation and ownership are highly linked. In Pierce et al’s definition, ownership helps people define themselves, express self-identity to others, and maintain the continuity of the self across time [18]. Media record us in the act of definition and expression, allowing us more/less interpretation over it, depending on who edits the version that others see. So, once the group has adopted the program as theirs, ownership of the process and of what is expressed are tied together in Sue’s negotiations with the producer.

Ownership of the program/podcast is seen in the emails: ‘*The women were so, so proud...*’. We also see it in Sue’s response to the research team stepping in: ‘*thank you for your support in articulating what we need*’, where ‘we’ refers to her indignant group. The group has seen the value of working out what members would and wouldn’t say publicly about their lives and requires control. This is now a very different issue from the ‘participation’ politics of who runs the project in terms of idealized democratic principles relating producers to users. It has become an issue of how the project overall deals with power and representation.

Responsibility: Throughout, Sue takes responsibility. We see in her emails that she has become accountable to two parties: the research team and group, eg: ‘*When I told her what I needed and wanted*’. Holding ultimate responsibility, the research team decides to prioritize the concerns of the group about representation over keeping out of the action.

Efficacy and Control: Why has a struggle arisen? The producer introduces a contrasting set of editorial values, launching this battle for control of representation (at this point, synonymous with control of the process). We hear this in the reported comment: ‘*Who’s going to listen to that?*’. Sue is shocked, but the rudeness also shows the producer’s dismay: the group has not granted her any efficacy [18] by respecting her judgment. She assumes she has ownership of her usual territory (editorial) and misjudges the importance of the group’s suggestions in fulfilling her brief. But, despite the warning that the output

will not interest a national audience, Sue and group ignore her advice and push on with a different style. To them, she is commissioned to help make their community project: a creative instrument, not the owner of the content. Both Sue and the producer find themselves puzzled by their lack of control. Sue turns to the academic team to resolve it.

The result is an enactment of power. The research lead does not wish to assume direction, but intervenes, following Sue's invitation, to support the organizer and resolve the issue before deadline. Sue and the lead collude to maintain Sue's control, deferring to the ultimate authority of the research project, using it to confront one professional authority (the media) with another (academia). The tone of the lead's email is authoritative, implying Sue's role is also only instrumental, but this is employed to return control to her and the group. The resumption of ownership is evident in Sue's email: '*thank you for your support in articulating what we need*' Sue is again efficacious as director, as well as consummate manager and her ownership persists.

So, we have evidence that Sue and group took ownership and some idea of why it was possible: clear boundaries for non-negotiable elements; explicit openness for flexible aspects that could be appropriated as a chance for local efficacy and identification; and support to maintain it. The requested output was defined enough to be absorbed into existing structures and aligned with others' motivations, but then defined no further. Although boundaries changed a little as we learnt more on the ground, most academic intervention was to protect autonomy, not to marshal it. This is shown in how the radio producer was managed.

However, this raises another, domain-related, issue, which is that communities seeking to make media by harnessing professional expertise need to choose their sources so that they receive support rather than control. Who has editorial control on matters of representation is not trivial. The media industry is used to being the authority on broadcast, even if genres are changing with new democratizing production processes and hyper-local reporting. This case study shows how much resistance may be needed to be listened to, and, as the media specialists on our peer review panel noted, the product showed lack of sympathy between group and producer in some lack of narrative clarity, even though the group won the day on theme and balance.

DISCUSSION

It would have been possible to ask all stakeholders in both projects whether they felt 'ownership' during the process and when. We have chosen a different route here to explore, first, what we might mean by 'ownership' in technology design projects. The examples above look at the dynamics as they relate specifically to the context, showing the complexity of relations and how subtle transitions come into play – seen through the eyes of two set of participants used to academic reflection. Presenting this material is an attempt to show the evolution of ownership as it unfolds.

The two contexts deliberately start from different points in that unfolding: *CARM* researchers owned the project and commissioned community groups to create radio programs to ask what impact it might have. Whereas, in the case of *Odenplan*, it was the community (as the municipality) commissioning 3XN, who then involved researchers. In both, ownership was established and shared among several groups of people collaborating across space and time and we have documented this from a first-person perspective. But the difference in initiation is evident in the two examples and how the accounts are given. Drawing these together, we discuss our main theme through considering what motivates ownership; how ownership transitions; structures which support ownership; and what facilitates efficacy among participants.

Motivation for Ownership

In a project involving multiple partners, interests differ and it is not surprising that motivation for participating differs too, leading to more interest in taking ownership as interests are reflected and agendas acknowledged [15].

Speaking as the *commissioned*, the *Odenplan* researchers were motivated by several factors. Initial involvement was inspired by the high profile of the work – it meant exposure, which enables the research team to attract new, interesting collaborators. They were motivated by their history of collaborating with 3XN with profitable results – a state of affairs they wanted to continue. But they were only able to take ownership as academics (without a financial stake) when their need for flexibility to conduct research into both media facades and design processes was acknowledged and met. Further, they were treated as experts. 3XN saw them as helping to differentiate the firm from other architectural firms [5]. They were allowed to exercise their professional judgment for the greater good of all, aligning both sets of interests within the frame of the *Odenplan* project.

This alignment was made simpler by the socio-economic structures in which they are working, which both protect and define each party, and the lengthy duration over which trust was built (2008-12). In *CARM*, a cascade of newly-engaged stakeholders, with less formal structure, contrasts dramatically with the *Odenplan* example and shows the work of aligning in progress. Sue, organizer of the woman's group, offers a rationale for becoming involved – to set up a new group – which is not originally on the research team's agenda, but is accepted (with just a reference back to the authority of the brief), since motivation is known to be decisive in asking someone to accept responsibility for an untested and difficult activity. On agreeing she could use it to her own ends, Sue's rise in motivation was palpable. She then sought out people motivated to experiment in a sensitive, emotional space and the dynamics of the group worked to reinforce motivation for those who enjoyed it. This time there was little in the way of professional kudos as a spur, but participants' personal investment with the theme of mothers and daughters was high and there was joy

in breaking personal taboos, which the broadcast elements reinforced. Again, Sue's expertise was acknowledged and she was trusted to do her job without interference. We note, in passing, that the women's group has continued to meet in Sue's care, independent of the project and its finances.

Transitions in Ownership

As is evident, then, from the description in the section above, several transitions of ownership took place during the projects as responsibility for different parts was shared or changed hands. Only where two partners felt outright ownership of the same aspect of the work at the same time – the editorial shape of the program – was there conflict and this occurred, not because the boundaries were unclear but because one partner was surprised by them.

With *Odenplan*, these transitions can particularly be seen in the passage of designed artifacts used to support verbal communication, but also used as definitions of the design space as it evolves (see fig 1). As Bratteteig and Wagner [1] observe, prototyping narrows the options remaining and gives decision-making control to the makers. This device is deliberately exploited by both the architectural and research teams to indicate constraints (and advocate for certain options over others). These transitions in ownership carried with them a material representation of opportunities.

In *CARM*, artifacts were also used as a site of negotiation after the initial (textual) brief enabled them to come into existence. The controversial second edit is given the group, listened to, forwarded to the research team, discussed and then heavily criticized as a forerunner to a final version. None of the ensuing renegotiation between partners would have been possible without it. Had the producer followed normal professional broadcast practice and made a program without consultation, the group would have had no clue as to direction - ownership would have unilaterally shifted to the media expert. Such unilateral behavior was outlawed by the terms of the commission from Sue and, yet, even so, we see a struggle for control, emanating from the producer's failure to share responsibility for content. Whereas the shift of control from research team to Sue and from Sue to the group works smoothly (though not without everyone's accommodation), the antagonism with the producer and the flurry of email this produces makes apparent many things:

- how much work can go into making transition smooth;
- how frequent and important these transitions can be;
- how *too much* ownership at the wrong moment may be as bad as not enough.

Structures supporting Ownership

Much of the discussion so far has referred to opportunities and constraints, to non-negotiable (ie fixed) elements and, by comparison, those aspects that are not pre-defined. It has already been noted that one reason for the transition to a shared sense of ownership in both contexts was because the teams began with clear boundaries for non-negotiable elements and explicitly stated flexible aspects that could be

appropriated, giving space for localized meaning-making, identification, responsibility-taking and efficacy/control. Sue, similarly, gives her group structure and choice.

In some contexts, there may be no non-negotiable elements and all aspects of process and outcome are to be agreed, but mostly there are some fixed constraints, such as externally granted budget and someone with responsibility for it (as there were here). In fact, constraints help give definition, which speeds up people's sense of what they can contribute.

Facilitating Efficacy

Irrespective of where the brief began, all partners described here showed initiative and made contributions, based on what they felt was needed within their area of influence. This relates to feeling efficacy. In *efficacy*, we can divine two complementary aspects of involvement in a multi-partner project: personal efficacy, when an individual feels that they are controlling their environment [18] and, by extension, the power to act effectively in driving the (joint/group) agenda forward.

According to Pierce et al [18], people seek ownership to feel efficacious and that feeling control over a 'target' and investing the self in it leads to feeling ownership. We observe the role of *respect* in allowing partners to exhibit efficacy and, thus, experience the loop, implicit in [18], of feeling in control and therefore feeling more ownership, etc. If judgment is a major part of the design endeavor [9], then we can also see room/respect for judgment as part of the virtuous circle of building a good collaborative project.

We observe how stung Sue feels when the radio producer is dismissive of her group's views. Throughout other aspects of the project, everyone makes space for the contribution of other partners (regardless of whether using their judgment in a 'professional' capacity). Although the project calls for the producer to create the program using the instructions of Sue's group, an interesting clash ensues. It is the lack of negotiation, not the difference in values, that strikes us. While opinion may differ, based on different knowledge and expertise, it is the *culture* of the media that appears the villain here, where the program-maker's authority is beyond question. In this light, the producer is merely doing her job.

In both *Odenplan* and *CARM*, the commissioned party spends time managing the way that control rests with them to increase their efficacy. The CAVI researchers describe how they found a way of reaching out, through the use of politically chosen artifacts, to continue to take initiative even once the next stage in planning the building happened without their presence. In this way, their careful choice of video concepts gave them efficacy beyond direct action. In *CARM*, the community organizer managed the matter of negotiating with the producer to ensure that she and the group continued to drive the process, even though it meant a short loss of initiative while the academic lead stepped in and reminded everyone of the ultimate authority of the research question, which, as Bratteteig and Wagner [1]

point out, becomes a factor with its own agency. These acts of benign manipulation, as agency is extended beyond direct control, perhaps show most clearly how ownership has become of value to the commissioned partners. This is as true when the researcher is the invited participant and challenges our whole understanding of participatory design.

CONCLUSION

We have highlighted how ownership unfolds in a dynamic way throughout two projects that are different with regard to participation, relation to community, and context. Across a spectrum, in both a project with no direct community activity, where researchers are commissioned by civic representatives for the community good, and one that is so participatory that it might be deemed 'co-research', we have explored ownership, not as a static phenomenon, but by scrutinizing the dynamics as reflected in transitions of ownership and shifting patterns of initiative and efficacy. Similarly, rather than seeing transitions of ownership as the abstract handing over of control, we have shown how collaboration can hinge on materialization of transitions.

We began by looking at contrasting meanings of ownership in the Development literature and compared this with the relative neglect of the idea in technology design. Research into the design of technology prizes the effective production of solutions, and though this is not regularly a matter of socio-economic change (as in Development research), both research communities are typically engaged in evaluating managed change, the means to make that change and the means to evaluate it. Design with/for communities differs from more usual design contexts, since, in bringing in the wider social context, we are acknowledging that design has social impact and that we are shaping lives and milieus. As we start to work *with* and *for* communities, we move closer to Development goals and the related pragmatic and ethical concerns that emanate from embracing social processes.

Pragmatically, if we are to research these milieus, we need co-operation, not research fatigue. Ethically, if social change is on the agenda, it merits asking how best might subjects of that change make it for themselves. Knowing how to speak of, generate, nurture and share ownership, then, has its value. This paper hopes to support these goals.

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