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THE PROBLEMS WITH PARTICIPATION

Atau Tanaka and Adam Parkinson

Introduction

Participation is a broad, attractive notion that has become increasingly expected in contemporary creative practice. Is it the manifestation of a utopian vision, or even the complete opposite? Participation emerges in different disciplines and takes on multiple meanings: from the general notion of simply taking part, to a taking part that creates positive change in participants and their social surroundings, to art practices that involve the audience and design practices where the “users” are consulted. Participation in art and design is often conceived as being democratising, and perhaps a route to raising an individual’s consciousness, catalysing social change and creating associated new social relations, resonating with the political implications of the word.

Since the 1960s, we have witnessed a growth of artistic activities in which the spectator ostensibly has more agency and effectively constitutes part of its materials. In the computer science field of human–computer interaction (HCI), through practices such as *participatory design* and *user-centred design*, we have witnessed a reversal of the otherwise top–down dynamic of design–led technology development to encourage bottom–up methods for gauging end–user desires and needs as drivers for the conception and elaboration of new technologies or services.¹

The risks and consequences of participation have been critically interrogated through art and theory. Participatory art can fail to meet its democratising ideals (when it claims to have them) and even become instrumentalised by forces acting against such ideals. Likewise, participatory design, which emerged from Scandinavian workers unions and Marxist critiques of Taylorism,² has seen its methods co–opted into the more politically neutral user–centred design, where it potentially becomes a tool for product design that has lost its ethical underpinnings and focus on democratic empowerment.³ How do we honour the utopian vision of participation and conceive of technology–based music projects where the inclusion of the spectator maintains its originally intended beneficial or boundary–breaking effect?

This chapter retraces as case studies a series of projects involving the authors and collaborators spanning the period 2008–2015, where participation was a key factor in their conception, delivery and *raison-d’être*. We will look at ways in which participation–driven approaches can work but also consider when they break down and the pitfalls they engender. By describing the projects and the legacy they left, looking at the broader issues surrounding participation and evoked in art and theory, we will problematise the concept as we have encountered it and reflect upon the projects themselves.

The underlying question throughout is whether we successfully facilitated meaningful participation or whether we risked being instrumentalised, designing projects and writing up outcomes expected by those above, be they sponsors, partners or the participants themselves. How can this work inform our understanding of the messy complexities of embodied, material reality: of different ways of knowing, different types of participant and of different ways of participating?

By situating the projects beyond personal subjectivity in contexts of creative practice, the cultural sector and academic constraints which shape them, we seek to invite broader discussion about the material underpinnings and myriad forces acting upon contemporary research. We seek to be self-critical and interrogate the necessity to fit with policy agendas. Rather than rest on the panacea of interdisciplinarity we allow ourselves to be prone to tensions between disciplines and epistemological divides, the pressures of funding and the drive to produce research “impact”. All of this forms an essential but often ignored element in present day research and its effects, and we wish to bring it into the open, with the hope that it can better inform participatory research methodologies.

Participatory methods

A key methodological device in the work presented is the workshop. Ad hoc communities are nurtured and brought together through workshop environments and the types of sociality and collective learning they facilitate. We have previously described this as “workshopping”,⁴ drawing on Christopher Small’s notion of *musicking*.⁵ Small introduces the term to point to the richness of musical experience and the many different, valid ways in which one can participate in music without being subject to an implicit value hierarchy of composing, performing, listening. By proposing the verb “to music”, he asserts that music is an activity as opposed to a thing. There are multiple ways to participate in a musical event, and the audience can be participants who contribute as opposed to passive consumers.

Drawing on Small’s process and action-based way to think about musical activity, we proposed workshopping as a similar notion that captured the various acts of participating in a way that could be reified. The concept of workshopping emerged from studying our activities that combined workshops and performance. These workshops responded to situations whereby fixed ideas such as “user”, “listener” and other supposedly passive roles were blurred through the advent of digital technologies alongside concurrent social-cultural changes. A process-based approach evolved whereby the workshop enabled different types of participation in collective musical practices. This brought fresh perspective on sharing knowledge and teaching technical topics where participants themselves, based on their prior experience, entered into a dynamic of “mutual teaching and self-organised peer-learning”. The projects described here take musicking to heart as an ethos for digital musical practice and deploy workshopping as a method to trigger creative activity using sophisticated digital music technologies with participants from a wide range of backgrounds.

The projects

We present a series of six projects which we initialised or were involved in, spanning the period 2008–2015:

1 Chiptune Marching Band

Workshops and musical performances with DIY electronics

- 2 “Turn Your iPhone into a Sensor Instrument!”
Workshops and performances turning the Apple iPhone into a musical instrument whilst teaching programming.
- 3 Social Inclusion through the Digital Economy
A project exploring multiple ways in which digital tools can extend participation to the disenfranchised.
- 4 Design Patterns for Inclusive Collaboration
Creating an accessibility tool for audio producers with visual impairments.
- 5 Form Follows Sound
Using workshops to explore embodied sonic interaction design.
- 6 BEAM@NIME and EAVI concert series
Broadening audience participation through concerts.

These projects provide a lens by which to study the deployment and impetus of “participation”. They all invoked participation in different ways, connected music with a number of disciplines and took place in different geographical areas. They were not conceived as a series, but upon reflection we can see how they addressed a consistent set of themes in different contexts.

The projects were centred in the UK and run out of British universities with funding from UK research councils (in both the sciences and the arts), cultural sector actors, and European funding bodies. While the activities were concentrated in the UK, certain activities or parts of projects also took place in continental Europe and the United States. Some projects included hosts or partners from countries such as Norway, France, Portugal and Spain. In the UK, the projects took place in the northeast of England, where culture-led regeneration was a successful socio-economic prerogative in the 1990s–2000s, and in southeast London, where the interface between a world class university and a poor surrounding neighbourhood in the throes of gentrification created a dynamic propitious to this work.

The projects for the most part included workshops as a delivery vehicle, where the workshop structure and delivery were predicated by the specific theme in question, the participants (or users) and the context. These participants ranged from youth groups to art school students, experimental music performers to visually impaired audio producers. The venues varied from DIY happenings to academic conferences, from pubs to festivals. In some cases, participation through social inclusion was an explicit driver. In others, introduction to digital technologies as catalysts to participation motivated the event, while in others, the driving force was broadening awareness of new forms of music.

DIY: Chiptune Marching Band

The Chiptune Marching Band (CTMB) was conceived by Jamie Allen and Kazuhiro Jo at Culture Lab, a cross-disciplinary research centre at Newcastle University, and sought to capture the burgeoning energy of the DIY and maker scenes to create a band of self-sufficient electronic musical instruments. The project put in place an “ecology of practice” combining educational workshops, collective instrument making and musical performance (see Figures 7.1 and 7.2). It introduced basic electronic circuit design to a broad range of users, and resulted in ad hoc



Figure 7.1 Chiptune Marching Band workshop with Kazuhiro Jo



Figure 7.2 Chiptune Marching Band participants marching with self-made instruments at the Maker Faire

“performances” in the streets. Participants were encouraged to think about self-sufficiency, off-grid energy generation, and a democratic approach to music making.⁶

CTMB workshops were held eight times in a two-year period, 2008–2010, including Newcastle upon Tyne, Helsinki, New York City and Tokyo. In each iteration, 7–20 participants worked together for three hours to each build a small sound-making circuit which was sensor driven and powered by an alternative energy source – a hand-crank. The process of making the instrument facilitated social interactions around knowledge exchange and materials and educated participants on a number of topics, from basic electronics to broader issues of energy consumption. The workshop was followed by a marching musical performance in the surrounding area, where participants played the instruments they had made.⁷

Jo and Allen use the term “ecology of practice” to describe the complex meshwork of inter-relationships within a CTMB workshop/performance, involving the learning of and exchange of skills, engagement with and awareness of materials, and creativity expressed in making and performing. As they describe, “The overall motivation for the design of CTMB is the creation of an event and environment wherein people of various walks of life converge around a set of ecologies”.⁸

People were brought together in the CTMB workshops through their collective engagement and knowledge exchange around limited resources. CTMB involved sharing knowledge between different types of participant, allowing for each to bring different elements to the process, be they hackers, musicians or makers. Within the workshops, traditional notions of musical creators and performers were blurred, making everyone a combination of creator-performer-listener, themes that will be investigated further here as we interrogate the notion of the “user”. CTMB effectively used the format of the workshop to create a social environment where people learned and gained a sense of both group and individual agency, ideas which will surface throughout the projects discussed.

The project also explored novel ways to capture participant feedback, glean insight and communicate the essence of the event. Brief semi-structured interviews recorded participant reactions on site. Postcards were distributed to participants, providing them with a channel to communicate after the event was over through a playful way to ask them “What had become of your instrument?” thereby attempting to capture the multiplicity of the event and its extension into people’s lives. Documentation focused on the creative process, exploring the participants’ experience of creativity within the collaborative workshop environment and how this might fit into their everyday life. The project was summarised by a short, stylised film portraying a typical CTMB event.

Mobile music: “Turn Your iPhone into a Sensor Instrument!”

The workshop series “Turn Your iPhone into a Sensor Instrument!” had a similar workshop-performance structure along with strong pedagogical elements. The technology presented in the workshop/performance harnessed the increasing computational power of smartphones at the time (2009) to perform real-time digital sound synthesis.

We used RjDj, an app that allowed “patches” authored in the musical programming language Pure Data to be deployed on the iPhone. We had been using Pure Data on computers for some time, for laptop performances that used off-the-shelf MIDI controllers and bespoke gestural interfaces for performer input. The growing processing power of the iPhone meant that the same Pure Data patches, such as granular synthesisers, could run on the mobile, albeit sounding grittier at half the sampling rate. Meanwhile the phone offered something the computer did not have: its tilt sensor meant that the controller was not an external interface, and one could have instant, embodied interaction with the sound. By plugging the headphone output of the iPhone directly into an amplifier, it became a self-contained instrument consisting of sensor input, signal processing/sound synthesis and audio output all in a single handheld device that had instrumental autonomy akin to that of an electric guitar. Suddenly, we could perform computer music without the computer, bringing us into an era of what we dubbed, “post-laptop music”. With one phone in each hand and in duo ensemble, we performed as *Adam & Atau, 4-Hands iPhone*, in a tip of the hat to four-hand piano duets.⁹

Alongside the performative potential of this system, it also seemed apt to use as a teaching platform to introduce interactive music programming to non-specialists. We began teaching

half-day workshops in which we introduced 12–16 participants to Pure Data and guided them through building a simple, gesture-controllable synth on their computers – a primitive version of the theremin – and downloading it to play it on an iPhone or iPod touch. This echoed the personal instrument building that took place in the earlier CTMB project.

The workshops were presented over 10 times in the period 2009–2011 in a range of settings across the UK, Europe and North America from schools to festivals, with participants ranging from children to musicians, artists, students and specialist programmers. Each workshop was followed by a public event where the workshop participants were invited to demonstrate or perform the “instrument” they made earlier. The event ended with a concert performance of Adam & Atau, *4-Hands iPhone*.¹⁰

One of the appeals of Pure Data and similar programming environments is that they are open-ended toolkits or “blank canvases” where the user can sketch, develop and modify creative ideas. However, this can also be a barrier, as the blank canvas can be daunting. Starting something when the possibilities are infinite can be difficult, as can deciding that the same something is finished, in an environment which affords constant editing and modification. The iPhone instrument provided a structure within which learning could take place, creating a goal-oriented task with a fixed end-point. Once a patch was loaded onto the phone it became locked and “instrumentalised” – that is, turned into a (relatively) fixed musical instrument. In this way, we hoped that participants didn’t feel as though they were learning to program; rather, they were building a synth, and it just happened that they would pick up some programming on the way. Seen in this light, the workshops served to “trick” participants into learning Pure Data and being introduced to the potential of musical programming. We hoped that by taking part in the workshop, the participants would see programming as a way of turning a locked-down consumer device into a creative, noisy tool that they could use to realise and explore their own musical ideas.

The approach was successful, with many participants quickly grasping the basics and overcoming elements of the notoriously steep learning curve. It has evolved into a pedagogical strategy used by one of the authors when teaching musical programming to those who might not be immediately drawn to it, or see the advantages of learning. One workshop saw 15-year-olds developing synths and even extending them beyond the workshop goals, relating to the next case study. The show-and-tell segment of the process intended to bridge the workshop and the concert. At art school renditions of the event, students happily gave demonstrations of their projects. However, we found that in general participants were unwilling to perform with the technology, which could say as much about the social relations of musical performance as anything. Just because people have developed the knowledge to be able to make music on a stage and are interested in musical interactions with their phone does not mean that they will want to perform, whether because of nervousness or other factors. Wanting to perform can be quite separate from wanting to personally explore creative interactions with something.

Social Inclusion through the Digital Economy

Social Inclusion through the Digital Economy (SiDE) was a major research “hub” from 2009–2014. Funded by the UK’s Engineering and Physical Sciences Research Council (EPSRC), it was one of three hubs funded in the UK at the time in their then-new cornerstone programme on the digital economy. It was driven at the national level by research funding bodies responding to government imperatives to broaden the economic impact of digital technologies. Given the history of post-industrial decline in northeast England by the dismantling of the mining and shipbuilding industries under the Thatcher government (1979–1990), followed by an ambitious

culture-led regeneration of the region by New Labour (1997–2010), social exclusion was an appropriate theme for a digital economy research centre based in Newcastle upon Tyne.

SiDE covered a broad range of disciplines, from transport, to the connected home, to accessibility. Within this hub, one of the authors represented the creative industries, ostensibly to conduct research on the role of digital technologies in enhancing social inclusion in creative media such as film, music and gaming. This shaped the design and delivery of a series of participatory art projects within SiDE.¹¹

The SiDE project involved working with young people on a range of projects, often with local partner organisations (see Figure 7.3). The first was a participatory design workshop to teach gaming technologies to young people 14–18 years old who were part of the Regional Youth Work Unit social benefit organisation. A workshop presentation informed the participants about the basics of how and where video games were made, with the goal of raising aspirations by showing that “games are made by someone”, and in fact that there were major game developers in northeast England (that they “don’t just come from somewhere else”). This was followed by presenting user-friendly game authoring technologies, so the participants felt empowered and able to create games.

After brainstorming, the group decided to make a game that was not necessarily artistic as such but that informed young people about education pathways. This was an unexpected divergence from the original project goals. However, in the spirit of participation, we followed the course decided by our participants. The result was the *Future Options Pack*, an interactive brochure developed by the young people to navigate their way through educational choices. The medium of an interactive game allowed them to imagine garnering the interest of people their age who risked being less engaged with education and allowing them to discuss education choices with their parents.

In another partnership, this time with the Generator Music charity, SiDE researchers developed the workshop *Remix Your Hood*. Here our partner was interested in teaching young people digital music making technologies. The techniques we had adopted in the iPhone workshops described in the previous section were adapted to this user group. These involved meeting with groups of young people and lending them iPod Touches with the RjDj app, which allowed them to sonically “remix” the city, as different programs running within the app would take



Figure 7.3 Young people participating in SiDE workshop with mobile music technologies

environmental sounds and loop and process them in different ways. Through some of these activities, SiDE attempted to utilise public spaces as areas for engagement. *Remix Your 'Hood* encouraged groups of youths to remix ambient sounds in their everyday environments.

In its publication and dissemination activities, the Creative Industries group in SiDE responded to a call from the Arts & Humanities Research Council (AHRC)'s Connected Communities programme for scoping studies on the topic of communities.¹² It is interesting to note that the original project, to mobilise the participatory potential of digital technologies, was funded by a scientific research grant. The follow-on project, to critically examine the communitarian dynamic that was emerging in an IT-driven society, was supported by humanities funding. The result was a published policy document and a public symposium and exhibition.¹³

Accessibility research: Design Patterns for Inclusive Collaboration

From 2012–2015, the authors took part in a collaborative research project between Goldsmiths, Queen Mary University and the University of Bath and funded by the EPSRC entitled Design Patterns for Inclusive Collaboration (DePIC). The aim of the project was to apply techniques of multimodal interaction with disabled communities. By engaging users through participatory methods, we sought to develop a set of design guidelines for mapping information across sensory modes (sight, audition, touch) to create more accessible interfaces.¹⁴ We worked with audio producers who have visual impairments through a series of workshops, with the goal to develop a set of accessible tools to assist them in the workplace.

We started with an initial series of ethnographic workshops to understand the barriers our users met in professional workaday situations and the solutions they used to overcome them. The workshops began with discussion sessions to learn about the existing ways in which the participants overcame their disabilities to integrate themselves into the demanding world of professional audio production. This aided us in learning our users' existing solutions as well as to hear about their needs and their frustrations. Our users were accustomed to using standard accessibility tools such as screen readers; however, there was a high level of frustration amongst them on account of the inability of these screen readers to verbalise all elements of a highly graphic digital audio workstation (DAW) user interface. This was compounded by the fact that the nature of the content being edited (audio) clashed with the mode (speech) into which visual interfaces were being translated. This phase of the research was ethnographic in the sense that it helped us, as sighted researchers with no personal experience of blindness, to better understand and imagine our users' everyday workplace realities.

We next presented potential enabling technologies in the workshop as a way to engage in group brainstorming and prototyping. We presented existing interfaces such as the Novint Falcon haptic controller, coupled with custom software that mapped the audio waveform amplitude to a haptic representation, causing resistance in the device's articulated arm. This form of cross-modal mapping was enlightening to our users, and the experience triggered lively brainstorming on the possible ideas for a dedicated audio-haptic interface. At the same time, there was healthy scepticism on the part of our users. They found it difficult to orient themselves in free space without orientation guides to navigate linear audio data. Thus, the six degrees of freedom of the Falcon was not effective in helping the user interact with a two-dimensional waveform representation.

Informed by this, the authors developed the *Haptic Wave*, a device that allows users to scrub through an audio recording using a rail-mounted motorised slider, using haptic feedback to inform them of the amplitude of the recording at any point in time. An initial lo-fi prototype

was produced in the hacker/DIY spirit by repurposing a disused flatbed scanner. This version was tested in a second round of workshop to get feedback from our users. Here the symmetrical visual representation of audio (above and below 0), which was mapped to two sliders around a fixed centre point, was deemed unnecessary and even un-ergonomic. Our users found it awkward to rotate their wrist into a position to span the two sliders. Perhaps more significantly, in one user's case, because he had never seen an audio waveform drawing, he was not even aware of the default symmetrical representation. These insights informed the design of a production version of the Haptic Wave.¹⁵ We worked with an industrial designer to develop a new single slider device.

The final prototype of the Haptic Wave was deployed as a "technology probe" in real-world studio trials in the UK and USA, where participants lived with the Haptic Wave in their studios for several weeks, kept diaries about how they used it, and answered questionnaires about their use of it.¹⁶

Embodied sonic interaction: Form Follows Sound

We applied our workshopping methods in a *sonic interaction design* (SID) context in *Form Follows Sound* (FFS), designed by Goldsmiths colleagues Alessandro Altavilla and Baptiste Caramiaux and Scott Pobiner from the Parsons School of Design (New York). The workshop was carried out at Goldsmiths (London), Parsons, IRCAM (Paris) and ZHdK Academy of Arts (Zurich).¹⁷ Here, participation was deployed to study people's embodied relation to sound in the everyday and to make participants think critically about their sonic environments and the role of sound in their daily interactions.

SID is a design practice where sound content assets and interactions are designed.¹⁸ This can inform users about the task they are doing (by auditory icons or through audification of activity), enabling refinement of their actions,¹⁹ or facilitate non-task-oriented and creative activities through the sonic augmentation of everyday objects.²⁰ FFS deployed embodied sonic interaction in a workshop setting, not so much to design sonic interactions but as a way to learn about people's visceral interactions with sound in the everyday. Then, by giving participants themselves the means to design gestural sound interactions, we were interested to see if an active process of design might help them become more attuned to sound in their daily lives and give them ways to apprehend and describe sound more sensitively.

The workshop took place in two phases, "Ideation" and "Realisation", where interactive audio technologies were introduced only in the second phase. In the ideation phase, we first asked participants to remember a notable sound from their recent everyday life. This followed the *critical incident technique*²¹ from psychology, which elicits specific memories related to particular recent moments lived by the subject. By applying the technique to aural memory, we proposed the *Sonic Incident* method. The ideation phase concluded with a storyboarding exercise where participants imagined a corporeal interaction with their sonic incident and sketched it out cartoon style on paper.

In the realisation phase, a gesture-sound authoring toolkit comprised of software in Max MSP and a small accelerometer sensor was introduced. Participants brought their storyboards to life by acting out their scenarios. These skits were presented to the group, were filmed as "video prototypes",²² and served as the basis of discussion. The exercise of rendering a sonic incident to be interactive served as a way to understand the embodied nature of the sonic experience. Here we followed Gibson's notion of environmental affordances to encourage participants to think about the possible embodied affordances of sound, or sonic affordances.²³

With Form Follows Sound, we wanted to find out whether sound evoked forms of embodied imagination and sought ways in which interactive digital audio technologies could facilitate the process. In this case, participation was important in two ways: first, as a way for personal encounters with everyday sound to be suggested by our workshop participants, and second, to provide our participants with a route into practice with these interactive technologies.

***Broadening audience participation:
BEAM@NIME and the EAVI Nights***

The projects described earlier used digital musical practice as a vehicle through which to conduct research into social inclusion and accessibility. Workshopping was a key method, where the workshop event focused and abstracted “real-world” incidents out of context. We were also interested in studying digital musical practice production and performance in its “native” context, that of the concert. In this way, we were interested in making public events objects of study and seeing if the way in which we framed new music could increase the accessibility to it and engagement with it. We were interested to extend Gaver’s notion of the *cultural probe*²⁴ to see whether public events like concerts could become sites of and objects of practice-led research, to see if we could think of “a concert as cultural probe”.

In the period 2012–2017, we staged a series of concerts known as “EAVI Nights”. We programmed a diverse range of musicians, from Leafcutter John to Trevor Wishart, Kaffe Matthews, AGE, Cathy Lane, People Like Us and David Toop, to perform in the back room of a pub near Goldsmiths. Much effort was made in order to keep the entrance fee low, and the audience was generally a relatively varied cross-section incorporating students and people who lived in the area, as well as people from music or computing; in short, it generally extended slightly beyond the usual audience for a night of experimental electronic music.

The environment of a pub, with the hum of conversation, the smell of beer and indie rock drifting in from the front bar might not make for the perfect listening environment for experimental electronic music but can be more accessible than the formal and highly codified traditions of the concert hall. The mode of listening was less prescriptive; people could drift in and out of the room rather than feeling trapped in a seat and committed to watching a whole performance. It was through recognising and creating affordances for these multiple ways of listening to and engaging with new music that we hoped to broaden participation in electronic music.

Engagement has become an increasingly central criterion for cultural sector funding bodies. Arts Council England, for example, requires an estimation of the number of “People who benefit from your activity” in their application form. They request audience numbers and feedback forms as part of the reporting post-event. Rather than oblige the concert-going audience to fill out surveys, we are currently looking at ways in which engagement can be encouraged and documented in ways that are intrinsic to the conception of the events we organise and are editing a series of video documentaries of our concerts.

In 2014, we hosted the New Interfaces for Musical Expression (NIME) conference in London.²⁵ We were interested in extending the traditional format of an academic conference and to experiment with aspects of the festival format. We collaborated with Sarah Nicolls of the Brunel Electronic and Analogue Music festival under the banner BEAM@NIME, and organised a series of high-profile concerts that were presented in established cultural venues across London. Alongside the concerts, we also presented an exhibition programme of sound artworks. We extended the peer review process of academic publication to have alongside it a curated portion of the programme. The two types of selection were not separated in the concert programmes themselves, resulting in hybrid programmes where submitted and invited works were side by

side. This facilitated an innovative mix of student and academic work sharing the stage on equal footing with high-profile pop artists such as Imogen Heap or including, in what is ostensibly an electronic music event, purely acoustic instrumentalists, such as saxophonist John Butcher, who use extended technique to push the timbral limits of their instruments.

The exhibition programme took place in a gallery setting on site at the conference and also included a commission for a public-facing installation with interactive sonic bikes by sound artist Kaffe Matthews in a local park. This prompted us to appoint a specific outreach officer who co-ordinated school visits. Through this combination of co-ordinated school visits, high-profile artist and interactive installations in public places, we were able to reach beyond the normal NIME crowd of conference attendees and engage with the general gig-going public, local residents in the London borough of Lewisham, school children and more, who did not generally have access to, interest in or awareness of computer music.

Both BEAM@NIME and the EAVI Nights were attempts on our part to broaden participation in electronic music. Increasing audiences to concerts and providing multiple access points to electronic music, whilst making those gigs as affordable and welcoming as possible, is part of that. Work is ongoing on documentation and feedback methods, to examine the potential of using the entirety of the concert as a research probe. We will explore ways in which documentation can be used creatively to capture the unique, subjective experiences of the participants, whilst still giving us materials that can be used and analysed with appropriate methodological rigour.

Discussion

We will use the projects described as case studies to frame a critical discussion of participation and the ways it can create contexts for electronic and computer music. We will do this through drawing upon critical literature and artistic practices which have invoked participation, comparing the conclusions and critiques within our own projects and experience. We hope that this critical interrogation of our own work will be informative in terms of studying the way in which concepts are mobilised, may be instrumentalised by the powers that be, and hopefully will suggest some ways in which participation can be productively used despite its associated risks.

Who is participating?

We cannot discuss participation without considering who it is that participates. This brings up questions about the subject: the spectator in art and the user in computer systems. The increasing technological dominance of contemporary society has meant that the idea of the user has been widely adopted outside of technical realms, often without second thought. A common term in HCI is that of “the end user”. The idea of the end user invokes a certain hierarchy of production and consumption, with the user firmly situated at the “end” of said chain. Certain types of participation start to problematise this idea of the end user. The users can be active subjects, might be involved in the design of things they use, they might hack and personalise what they buy, or they might be creative within an artistic project. Seen in this way, there is no single archetypal user. There may be multiple types of “user”, or stakeholders, in a given project, with each user not only “using” (taking) but contributing (giving). We may think of such stakeholders not just as users, but as *actants* (evoking actor-network theory),²⁶ or simply as “actors”.

In the SiDE project, we encountered situations where the user was not an individual but an organisation or group. Our partner organisations, such as the Regional Youth Work Unit, Generator Music and Helix Arts, gave us access to existing networks of young people. In this sense

they acted as gatekeepers. But as organisational “users”, they were also keenly interested to learn and adopt the digital media techniques and knowledge that we as researchers offered. We can think of these situations as having multiple tiered levels of user.

The CTMB and iPhone workshops blurred boundaries between workshop attendee, performer and audience. People attending one of these workshops might find themselves momentarily in the role of a teacher as they worked with someone else in the group explaining a concept, then as a hacker as they used a consumer technology in a new way, then as a performer as they marched around a city with a noise maker or did a gestural music performance with a smartphone. While they remained a user of their smartphone, they became a kind of “power user” or hacker. These devices encourage creativity through easy-to-use apps for music making, photography, and other artistic activities; however, their actual use modes of interaction are formatted and pre-determined by the software publisher. The projects we describe here used participation to open up the creative process beyond just being an end user of a ready-made app to becoming the app maker, or instrument builder. This blurring of roles in the workshop parallels the potentials for flattening of musical engagement in Small’s musicking and makes our notion of workshoping not just a method but an activity of participation that is less deterministic in structure and more open-ended in anticipated results.

The DePIC project framed workshop participants not as end users of a product, or even end users who had designed a product, but as experts in their field. The members of the highly committed group of visually impaired audio engineers we assembled as our “user group” were to an extent “hackers” (though would perhaps not identify as such), writing their own scripts to adapt accessibility tools for their DAW software or developing DIY configurations of commercial studio devices to facilitate editing according to their specific abilities. They worked out of necessity to modify and “hack” products in order to use them, as most music software is not built with visually impaired users in mind. As such, they represented a unique and interesting kind of expert user who cannot easily be captured by conventional categories. In this research, we framed ourselves and those we worked with as actors in an attempt to articulate the non-hierarchical and iterative way in which we worked together, with the design process creating a space for dialogue.

The concertgoers we have engaged with through the EAVI gigs and BEAM@NIME may be initially thought of as more conventional users, but viewed from a musicking perspective, the audience should not be thought of as mere passive end users or consumers. The unique social situation of the EAVI concerts was built only through the continual actions – and participation – of all those there, from the bar staff to the sound engineer through to the audience and performers. The concerts cannot be separated from the audience, as they were constituted in part by the audience. The audience were not mere users – they were the event. These elements can be thought of as actors in Latour’s actor-network theory, or constituting an “ecology” as Jo and Allen imagined in ChipTune Marching Band. We owe this point of view to Small, where all aspects of a musical event are important elements in the act of musicking.²⁷

Trust building, partnerships and collaboration

Participatory work is often built upon the unspoken assumption that researchers are sensitive to the needs of the subjects. Best practice in research ethics can assure due diligence in this matter through processes such as ethical approval at the institutional level and asking for informed consent from subjects. The researcher in classical anthropology and sociology is detached from the subject for the sake of rigour.²⁸ Over the course of the twentieth century, a growing self-reflexivity in subjects involving field research – from anthropology to ethnomusicology and

even art theory (as we shall see) – has revealed such detachment to be, on the whole, something of an illusion.

We have seen a rise of “situated perspectives” in human–computer interaction, particularly in experience–based third wave HCI. Williams and Irani note how involving ethnographic engagement in the design process undermines the traditional perception of the designer as a “neutral observer” and disrupts boundaries between designers, researchers and users.²⁹ This exposes the limitations and problems of discourses which maintain a “designer–user dichotomy”.³⁰ The authors look to ways in which design practices can allow users to represent themselves – and therefore more effectively participate – rather than be represented by designers. This resonates with sociologist Les Back’s assertion of the importance of researchers in contemporary sociology being sensitive to the subject’s lived experience and to “listen on their terms.”³¹ Also exploring the role of ethnography in design, Blomberg and Giacomi describe a continuum from the extremes of the “observer participant” – who strives to be the invisible “fly on the wall”, as unobtrusive as possible – to the “participant observer”, who becomes a full participant in the activities studied. Both these extreme positions have advantages and disadvantages and, to a degree, represent ideals that cannot necessarily be realised but are roles between which a researcher might move. Indeed, our role as researchers in these projects was fluid. We drew upon social science and HCI methods, but we did not maintain the distance of an outside researcher. We were ourselves practitioners not just interested in sharing our musical experience but also open to challenging unconscious assumptions we might hold. These open–ended, participatory activities were not just dissemination channels but ideally should have become two–way streets where we learned from our participants at the same time as our participants learned from us.

From the listening social scientist, to the sensitive designer, to the ethically rigorous researcher, there is a growing appreciation of the subject’s dignity and stake in research. But how can we communicate this respect to the subjects themselves in the midst of research? The interviewer’s dictaphone, a structured brainstorming activity or a signed consent form, despite all being tools of user–centric research, may still be bewildering or alienating to the subject. Given that the researcher necessarily remains “the other”, we need to find ways in which to build trust with our research participants.

Much of the participation throughout the projects described here was enabled through collaborations with organisations or groups where trust already existed with the user group in question. SiDE’s partners obviated the need for us to recruit users in areas where we were new, instead leveraging the networks and trust established over time by our partners. We were able to access potential beneficiaries in often precarious, difficult–to–access communities, something we as privileged academic researchers simply could not have done, and inspire confidence amongst them by association with our partners. This enabled us to bring to the table digital mobile music technologies within the context of existing partner activities. However, there were also tensions in these collaborations and clashes between agendas which caused stalling or prevented ideas from being realised. As we discussed, institutions can be seen as a type of user or actor, possessing a certain agency and having certain goals or responsibilities to sponsors. Any institutional collaboration creates potential for such clashes. Our funders, a national research council, had expectations on the power of digital technologies as economic drivers. Our project colleagues, a mix of artists, social scientists and computer engineers, each brought specific views towards work with communities. The charities we worked with were gatekeepers to the actual participants in question and gatekeepers for these participants to the activities and technologies we were offering. It is remarkable that, with such a large number and broad range of stakeholders, that vested interests did not create more diverging agendas.

In DePIC, one of our researchers on the team, Tony Stockman, is himself visually impaired and is a member of the community of audio engineers with visual impairments. This community of practice, while small, is highly motivated and well connected regionally and internationally.³² Tony, as a member of this community, had an existing trust relationship with the others. It took a great deal of commitment for participants to attend our workshops – one participant travelled from Wales to London on several occasions, and others traversed London repeatedly to spend long days giving us feedback in our workshops. Such commitment relied upon trust and a healthy dynamic of collaboration. The group quickly acknowledged our appreciation of their cause and enthusiastically shared with us their common understanding, forms of tacit knowledge of the types of tasks that music production involved for people of their specific abilities.³³

Although the project is over, at the time of writing the group remains in contact through, for example, a mailing list set up by one member on the occasion of our first workshop, and we are still continuing to demonstrate the Haptic Wave and looking at ways of moving into production so we can permanently put the technology into the hands of those who worked with us to develop it.

The problems with participation

We now turn to the broader context of critical writings on participation and the role of participation in artistic practices, in order to reflect upon our work. As we use the literature to examine the practice, we can also use the practice to re-examine the literature and ask whether our experiences bear out the various critiques and taxonomies of participation.

Arnstein questions the assumption that participation is inherently “good” or that all participation is equal by proposing a *ladder of citizen participation*, where partial participation in fact can represent forms of exploitation.³⁴ She proposes three stages of citizen participation, moving from non-participation to tokenism and finally citizen power. Within these stages there is an eight-rung ladder of participation, moving from manipulation to citizen control, which Arnstein uses to illustrate different levels of what might be called “participation” in society, using this model to expose potentially deceptive uses of the concept by those with political and economic power.

This begs us to ask, have we been deceptive to our users by offering partial forms of participation? With the *Future Options Pack*, a workshop ostensibly meant to be about gaming was appropriated by our participants to create an interactive tool to present education pathways. One could say these participants exercised “citizen power” by appropriating a games workshop to produce an educational resource. The participants in *Remix Your 'Hood* were led to believe that the audio processing of found sounds would somehow reflect their creativity, but ultimately, sound effects were pre-programmed. Were we as researchers guilty of promoting tokenistic creative agency? In the “Turn your iPhone into a Sensor Instrument!” workshop, “deception” took a positive twist: through the seemingly fun activity of tinkering with mobile phones and app software, our users unwittingly found themselves learning how to program Pure Data. Had the workshop been advertised as a programming tutorial, the attendance and engagement of participants would likely have been quite different.

In Arnstein’s article, an image of a poster from the Ateliers Populaires (1968) uses a play on words in the (mis)conjugation of the French verb *participer* (to participate), to say “I participate, you participate, they exploit”. Interestingly, this poster is used in Arnstein’s text, as well as, 30 years later, Chapter 3 of Bishop’s *Artificial Hells*, a text which examines the history of participatory art. This is useful for examining our own work: whilst they may not have been art projects *per se*, there are similar structures and hierarchies as different interest groups and agendas flock around the concept.

In *Participation*, an earlier collection of essays, Bishop focuses on the social possibilities of participatory art, by catalysing experiences for the participants:

the history of those artistic practices since the 1960s that appropriate social forms as a way to bring art closer to everyday life . . . they differ in striving to collapse the distinction between performer and audience, professional and amateur, production and reception. Their emphasis is on collaboration, and the collective dimension of social experience.³⁵

Throughout our projects, we sought to create sense of creating collective experience by orchestrating the social and participatory elements in different ways. We blurred not just participant/research roles in the iPhone and CTMB workshops, but the very identity and distinction between learning activity and performance. We sought to re-contextualise musical performances away from concert halls and “ivory towers” and place them in other kinds of venues, be they the pubs of the EAVI gigs or the public park, where we presented Kaffe Matthews’ Sonic Bikes piece during BEAM@NIME.

In *Artificial Hells*, Bishop critiques the nature of that participation or its actual manifestations, pointing to gaps between artistic rhetoric and practice. Through a series of case studies of participatory art in three key periods in twentieth-century European history (the rise of fascism, May ’68, the fall of the Berlin Wall), Bishop seeks to “problematise contemporary claims that participation is synonymous with collectivism, and . . . that participatory art under state socialism was often deployed as a means to create a privatised sphere of individual expression”. Ultimately, there is the suggestion that “artistic models of democracy have only a tenuous relationship to actual forms of democracy”. This might undermine some of the utopianism in, for example, the SiDE project, where too much faith may have been placed in digital technology and the mechanisms through which participation in our projects was expected by our sponsors to provide our users skills and knowledge to participate in society itself.

This brings up the delicate question: can we self-assess the “participatory” nature of our own projects? We find within Bishop a problematisation of the very way in which we might report upon participation:

Today’s participatory art is often at pains to emphasise process over a definitive image, concept or object. It tends to value what is invisible: a group dynamic, a social situation, a change of energy, a raised consciousness. As a result, it is an art dependent on first hand experience, and preferably over a long duration (days, months or even years). Very few observers are in a position to take such an overview of long-term participatory projects: students and researchers are usually reliant on accounts provided by the artist, the curator, a handful of assistants, and if they are lucky, maybe some of the participants.³⁶

These are all qualities we claim for our own projects: communities were built through social situations we facilitated (in DePIC, for instance); people became aware of their sonic surroundings (*Form Follows Sound*), or people’s attitude towards musical programming was changed (*Turn Your iPhone into a Sensor Instrument!*). Are these accounts credible when reported here? Could even an outside observer be trusted, and does such a person truly exist? Bishop ultimately questions even her own outsider status as, through site visits and discussion with those involved with pieces, she becomes imbricated in the process. Objectivity remains a fantasy even for the critic, and in response, we hope that we have developed enough self-criticism and an openness to criticism

to avoid making false claims about participation in our projects. Indeed, it is for questions of objectivity and rigour that social sciences, before the “sensitive turn”, maintained distance from its subject. The problem of observers who are also implicated in that which they observe is not, of course, confined to participatory art but has been tackled in anthropology, ethnomusicology and numerous other disciplines. If anything, it is symptomatic of the inherently social dimension of these practices that they create a dynamic which is at times too rich to unproblematically capture or too complex and interconnected to observe without affecting.

The problems with participation do not stop with the potential gulf between intentions and rhetoric and what happens on the ground. This gap causes participatory projects to risk glossing over real social problems and, through their rhetoric, offer false hope of reconciliation. As David Beech notes in “Include Me Out!” participation can present a fantasy vision of social reconciliation at the expense of the messy material reality in which it is embedded:

In both art and politics, participation is an image of a much longed for social reconciliation but it is not a mechanism for bringing about the required transformation.³⁷

This exposes the SiDE assumption that participation in one of our projects would lead to participation in the “digital economy”. CTMB played on this gap in a tongue-in-cheek manner – its logo is a raised fist grasping electronics components, resistors and capacitors. By teaching basic electronics and parading about town, did it really empower participants to transform the music industry or our fossil-fuel driven society?

The gaps between the rhetoric and reality of participation are clear from the outset in some of the projects. Whilst there was an attempt to empower all participants as musical performers, in reality the CTMB performances often devolved into a sociable walk. This might suggest that musical performance does not come naturally to everyone no matter how empowering the act of instrument building might be. Nonetheless, it should not be the sole measure by which the workshops are judged: even if it didn’t create a team of performers, it served to educate participants in electronics and nurture socialisation, neither of which was directly measured or quantified. Were we right to assume that workshop participants should perform or would know “how” to perform? Was there a misplaced assumption that DIY instrument building could somehow replace traditional musical training? Or, if the “performance” was more a “happening” in the tradition of Allan Kaprow, what was the nature of the social intervention?

Participatory art does not exist outside political and economic context. In the contemporary context, not only might participatory art fall short of its ideological claims, it might even be used in the service of the politics that on the surface it appears to oppose, providing something like a bandage of aesthetics over very real social rifts. According to Josephine Berry, public and participatory art might be mobilised to aestheticise problematic spaces in urban areas, where the tension between urban planning, political agendas and the actual well-being of communities might be at their greatest. She discusses London’s Olympic Park, a heavily branded public space in an area of rising rents and social inequality, pointing out that art rooted in community and participation risks being

a propaganda tool for gentrification by which housing can be withdrawn and life rendered naked and exposed to the relentless forces of the market.³⁸

Through this lens, one could ask whether our activities in the SiDE projects were convenient for the ambitious culturally driven urban regeneration of Newcastle upon Tyne. Were the young people who remixed their neighbourhoods gaining an aesthetic sense of the psychogeography

of their neighbourhood, perhaps pragmatically learning essential transferable digital skills, or were we part of a possible gentrification of that neighbourhood?³⁹

The app used in *Remix Your 'Hood* was presented to participants as being open source, connected to hacking culture and inherently subversive. However, in reality, the app ultimately presented the software developer's vision for how sounds could be remixed. The young people who wanted to sample city sounds and use them in their own compositions at home were left wanting, as the compelling sounds they heard around them were absorbed into the app's templates and used according to someone else's musical agenda. The composer was still the software developer, whose drum sequences and melodies subsumed the urban sounds. The agency of the participants was limited: they remained passive listeners, but the passiveness was dressed up by motion sensors and hidden by a rhetoric of hacking, creativity, open source technology and intervention. One could argue it engaged more with an idea of participation suggested from above than the type of engagement that the participants actually desired, potentially succumbing to the traps suggested by Berry, Bishop and Beech.

Even if participation might seem beyond redemption, an empty buzzword or, worse yet, a tool in the hands of capitalist urban planning unanchored from any ethics, there is still the potential for it to be productively used within socially engaged electronic music projects. Participatory art often aims to create circumstances which may facilitate some extension of the cognition or awareness of the participants, as Bishop describes. The *Form Follows Sound* workshops created a space where participants became more aware of their surroundings, and the *Turn Your iPhone into a Sensor Instrument!* workshops used the appeal of instrument making and hacking to trick 16-year-olds into taking a programming class.

Sometimes the projects engendered participation in ways we had not anticipated. The DePIC project used workshops to design and develop a tool, but the workshops also served to nurture a community. The first workshop allowed one participant to present his idea for the AIMS mailing list for audio engineers with visual impairments: this is now an active mailing list, and used, for instance, by software companies looking for accessibility advice or for individuals wanting to learn about certain software functions, amongst other things. Did we invoke participation in a way that transcended empty gesture or fantasies of political reconciliation? We hope that through a continual emphasis on process, maintaining different points of entry, being open to different modes of participation and maintaining a self-critical awareness, participation was present in a palpable, positive way in our work, possibly even in ways beyond that which was always captured in the reports or publications that emerged from them. We hope, for instance, that the iPhone workshops encouraged people to begin programming or exploring electronic music performance and production, that the EAVI gigs and the NIME concerts helped extend the MP3 collections and musical interests of some individuals – maybe even encouraging some of them to begin creating music – or that participants in the Chiptune Marching Band had a newfound confidence with electronics. Many of the events could serve in small ways to help build communities or relationships between practitioners.

Interdisciplinarity, differing epistemologies and tacit knowledge

Bishop notes the “breakdown of medium specific artforms” as being part of the post-1960s context out of which participatory art emerged, with its fusion of elements from theatre, performance and more, alongside conventional artistic ideas. We can draw parallels here to the context within which our own participatory projects occur, in an environment of interdisciplinarity

where practices are not confined to specific disciplines or media, as we ourselves have moved through music, design and computer science.

Like participation, interdisciplinarity is often presented as being indiscriminately desirable, but the material reality muddies any relentlessly positive view of it. Whilst within music the personal experience of an individual can be grounds for research, within the human-computer interaction community there is more of an emphasis upon user studies, quantitative analysis, or the gathering of multiple subjective reports. The movement between these disciplines is becoming increasingly fluid, and is evidenced in the New Interfaces for Musical Expression (NIME) field. Rather than simply taking the methodologies of HCI to music, we should be mindful to bring the awareness of embodied experience and of the richness of musical experiences to HCI and use this to problematise areas where we see naive positivism. This is not to undermine the methodologies of HCI but to enrich them.

The concert series that we have presented – both BEAM@NIME and the EAVI gig series – have considered the cultural event as a site of research. In seeking to articulate that research and explore what knowledge may be generated through these, we evoke Gaver’s cultural probes. This is necessarily not a direct transposition of these methods – in fact, from an HCI perspective we run the risk of distorting them. However, these qualitative research methods, as open-ended as they may seem, are specific to their original research field, in this case Third Wave HCI, which studies technology interaction in societal contexts and requires rigour in their use. As music practitioners, we are inspired by these techniques to provide a methodological basis to help us to explore very different and increasingly intangible forms of experiential knowledge that arise in live, interactive music performance and articulate them to the diverse research communities within which we operate. Having a methodological basis, however inspirational, built on Third Wave HCI helps us to explore very different and increasingly intangible forms of experiential knowledge that arise in live, interactive music performance and articulate them to the diverse research communities within which we operate. Here we hope that the methodologies from HCI enrich musical practice and aid the understanding of concert spectatorship as a conduit to sharing tacit knowledge about embodied interactive music technologies and practice.

Throughout these different disciplines we encounter the importance of tacit knowledge, forms of knowledge that people have but which they cannot always express in language.⁴⁰ Performing music necessarily involves tacit and embodied, enactive ways of knowing;⁴¹ musicians might not be able to describe how they play an instrument, but this has little bearing on their ability to play it. Likewise, listening to music can also draw on tacit knowledge, as one might know whether something sounds “right” without being able to articulate just why. Enactive knowledge is not secondary or inferior to symbolic knowledge and can be just as “exact”; musicians (and often listeners) demand high precision and accuracy in most of their tools.

Some see one of the primary functions of participatory design as drawing out and utilising the tacit knowledge of the “end users” of technology.⁴² Through creating situations in which people act, without necessarily attempting to translate that embodied knowledge into anything symbolic, such as the scenarios commonly used in design practices, tacit knowledge can be articulated and shared, drawing on the axiom from anthropology that “what people say and what people do are not the same”.⁴³

The projects we have described often used musical practices as domains in which various types of tacit knowledge are expressed. Furthermore, workshoping can successfully create spaces where people can take on different roles, often enabling them to share tacit knowledge through acts that require it and roles that draw them into demonstrating it. Participants in a

workshop move between roles of student, teacher, demonstrator, collaborator and performer. The “leader” acts not as a “sage on the stage” but a “guide on the side”, engineering a situation where different kinds of knowledge exchange – and participation – occur.⁴⁴ Participants both learn and teach through watching, communicating, helping, assisting and demonstrating. Recognising the validity of tacit knowledge and creating spaces where it can be exchanged potentially open up spaces for participation without being overly prescriptive about how that participation should occur.

Conclusion

We have presented a survey of projects that the authors were involved in, taking place across different institutions in different geographical locations. Using these projects as case studies allows us to reflect upon some of the innate challenges associated with participation. Participation might be used by funding bodies or gatekeepers as a “buzzword” without sensitivity to the different levels of actual participation or types of user that may be represented within such a term. We hope nonetheless that we have managed to effectively enable participation through focusing on process-based activities and critical self-reflexivity, recognising that through communal involvement one can be a “participant” and that there are modes of participation and ways of knowing that will always overflow what can be articulated in a conference paper or to a funding body but remain with one, informing one’s worldview and the way one approaches the next project. We hope that our critical reflections upon our own projects can offer some guidance for people working within similar funding structures or in participation-driven projects.

This is a conclusion but also an invitation, then, to value the material complexities of participation and preserve this against reductionist and quantitative tendencies that the structures we work within might produce. No one paper, project report or user study might capture the rich, experiential reality of a project, but rather than let this be cause for despair, we should let an awareness of that rich reality inform the way in which we carry out such projects and prevent us from accepting uncritically any reductionist uses of the concepts we encounter.

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