GIVING VOICE TO EQUITABLE COLLABORATION IN PARTICIPATORY DESIGN RESEARCH

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Abstract

An AHRC funded research project titled Experimenting with the Co-experience Environment (June 2005 – June 2006) culminated in a physical environment designed in resonance with a small group of participants. The participants emerged from different disciplines coming together as a group to share their expertise and contribute their knowledge to design. They engaged in storytelling, individual and co-thinking, creating and co-creating, sharing ideas that did not require justification, proposed designs even though most were not designers ...and played. The research questioned how a physical environment designed specifically for co-experiencing might contribute to new knowledge in design?

Through play and by working in action together the participants demonstrated the potential of a physical co-experience environment to function as a scaffold for inter-disciplinary design thinking, saying, doing and making (Ivey & Sanders 2006)[1]. Ultimately the research questioned how this outcome might influence our approach to engaging participants in design research and experimentation?

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[1] This paper deals with one aspect of the Co-experience Project. Ivey & Sanders (2006) *Designing a Physical Environment for Co-experience and Assessing Participant Use* to be published in Wonderground 2006, the Design Research Society International Conference Proceedings fully explains the project, includes illustrations from the probe returns and pictures of the co-experience environment. The co-experience environment can also be viewed at www.creativekit.co.uk

Introduction

Since participatory design methodology began to take shape in the 1980s[2] the prevalent view of experience as something individual has expanded to include the experience of collective creativity – defined as co-design by Sanders (2002) and co-experience by Battarbee (2003). Throughout the 1980s, understanding of the value of user life experience to designing gained momentum and by the '1990s the search was on for new tools and methods of generative, as opposed to evaluative, inquiry' (Sanders 1999:1, 2). Methods and tools that acted as scaffolding[3] built within and around the design process to support the user as a participant in generating design vision.

In preparing the AHRC grant application in 2004, a literature search revealed that research based on co-designing or co-experience took place in physical spaces that did not appear to be specifically designed for collective creativity. Kristensen (2004:7) also referred to the limited address of the physical context of creativity. Consequently the Experimenting with the Co-experience Environment research project was launched in 2005 and aimed to create an experience prototype - a physical environment designed specifically for co-experience (Ivey 2005) that was concerned with the physical/spatial and social aspects of experience (Buchenau & Fulton 2000).

The research questioned how the design of a physical co-experience environment might contribute to new knowledge in design and was conducted using action research methodology. The three conditions (Swann 2002:55) required by this research strategy are that the subject matter be situated in a social practice subject to change, the project proceed through a spiral of cycles of planning, acting, observing and reflecting in a systematic and documented study, and that it be a participatory activity of equitable collaboration.

According to Swann, in employing action research methodology, there is often a shortfall in addressing the third condition. Participant involvement is conventionally imbedded in the research as data, analysis or findings and participant contribution is anonymously acknowledged. However, the co-experience environment research strategy was configured intentionally for a small group of participants with shared expertise to allow the research to evolve as an activity of equitable collaboration.

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[2] The historical starting point for the dialogue on user participation began in Scandinavia some thirty years previous, and aimed to increase the value of industrial production by engaging workers in system development. This resulted in the Collective Resources Approach (Norway, Sweden and Denmark) in the 1970s.

[3] " Scaffolds are communicational spaces that support and serve people's creativity, enhancing the conviviality of their lives. In the future, designers will be the creators of scaffolds upon which everyday people can express their creativity." Sanders 2003: 37

Co-experience Project: Selecting Participants and Designing

Pre-knowledge, gender and age were the three main criteria for selecting participants. It was crucial that all participants shared expertise in a particular area to establish a common base for the group who emerged from diverse sectors - accounting and finance, applied computing, architecture, design, fine art, law, and town and regional planning. Ultimately the group was comprised of three female and three male participants and spanned two of Peter Levine's age classifications (Schmitt 1999:228), the Us (34-52) and I Generations (24-33) with all group members sharing expertise in the field of environmental sustainability.

A simple probe[4] pack was designed for the initial phase of the research, using the criteria established by the Luotain Project (2002) as a guide[5]. The guiding principles for the design of the co-experience environment were the four phases of creative thinking with their convergent and divergent characteristics (Schmitt 1999:146). According to Csiksezentmihalyi (Schmitt 1999:147) the convergent phases require familiar, comfortable surroundings with the divergent phases better suited to novel, beautiful surroundings. Without revealing the guiding principles or the participant cohort, the probe package was sent to each participant to establish individual perspectives on their thinking/working environments. Where did the participants think/work and what characteristics of their environments were evident in their probe returns? Essentially a record of individual experience, the probe returns – a combination of image and text - were analysed for similarity and difference and collated to construct an overview.

The findings revealed a high degree of similarity, identifying six main themes in the participant's private thinking environments. Perhaps unsurprisingly for a participant group with expertise in environmental sustainability, nature was a determining factor in their thinking environments. Characterised (in descending order) as nature, activity/motion, visual characteristics, social interaction, time/privacy, and sound present or absent in their surroundings, these characteristics were interpreted and proved elemental in developing the design concept for the co-experience environment – a design concept[6] that was guided by an empathic connection to the participants, co-thinking with them through their probe returns.

On the 6 December 2005 six[7] participants met together for the first time as a group and used the co-experience environment for a three-hour period. Following a short briefing and individual exploration of the space, they were called together to play a

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[4] The probe approach (Gaver et al 1999) is a method for engaging in a visual based distance- dialogue with users to provide insight for design creativity.

[5] The Luotain project guidelines recommend probing twenty to thirty individuals. The Co-experience Project contacted forty-two people with expertise in sustainability and sent probes to eight people.

[6] The design decisions for the co-experience environment were rooted in the participant probe returns though it is not possible within the scope of this paper to be explicit with regard to each design decision. For more detail please see Ivey & Sanders (2006) *Designing a Physical Environment for Co-experience and Assessing Participant Use* to be published in Wonderground 2006, the Design Research Society International Conference Proceedings for more detail. The paper communicates the methods used to create the co-experience environment, prompt co-experience and assess participant use of the co-experience environment. The paper will also be available from www.creativekit.co.uk and www.maketools.com

[7] Three of the eight participants planned for the experiment declined forty-eight hours before the experiment began. The experiment could progress without difficulty with six participants but not five. Yue Li, project assistant for the design of the co-experience environment met the criteria for participant selection. She agreed to act as the sixth participant, remaining highly professional throughout. The integrity of the experiment was maintained.

bespoke game designed to accommodate an element of play (Ivey 2001) as well as to create common understanding and structure activity (Brandt & Messeter 2005). The game was essentially a dice and a set of cards. The participants took turns throwing the dice, which randomly prompted them to select a series of instructional cards, take another turn or tell a story.

Using different cards at different times the participants selected the places in which they wished to work, ending with a walk-about debriefing, a social buffet and a take-away card that asked the participant to 'make something that was a reflection of their co-experience' and to feedback at a later date. Here the participants take another turn at storytelling[8], this time in relation to their involvement in the co- experience environment research.

Elizabeth Kirk: Contribution and Curiosity

I chose to participate in the co-experience project for two reasons - a desire to contribute something to the broader research community and curiosity. What could I, a lawyer with the drawing skills of a tipsy spider, contribute to a design project? I assumed that we'd meet and talk about ideas for design, but the probe pack disabused me of that notion and left me none the wiser as to what I could contribute. If anything I was a little intimidated. We seemed to be encouraged to draw or make things and use these things to illustrate or compliment a diary. Yet I had only words to contribute, or at most the pictures I could paint with them.

Worse was to come – we had to complete our probes within a set week which turned out to be one of my busiest weeks of the year, so I didn't even have time to paint pictures with words. I felt as though I was skimping on my contribution and that the designer would have nothing to work with from my probe, so I tried to cheer it up with some simple drawings using the coloured pens we had been given and hoped that what I submitted would be of use.

But I made a discovery of my own while keeping my diary - it made me think about how I used time. I had always been careful to manage time and use it effectively, squeezing as much as I could out of each day, but my diary showed me that squeezing was a bit of an issue for me. I needed space to think – physical space and space in time.

I had gained something but not what I had expected. I thought I would learn about design, instead I submitted a paltry probe with poor pictures and not much else. This was going a bit against the grain – a lawyer never asks a question if they don't know the answer and every research project is carefully set up to ensure that the findings are manageable. I hadn't quite met the standards of a good lawyer.

It was with some trepidation then that I went to the co-experience experiment. And yet again I found I was being asked to do something different – play a game that appeared unrelated to the task at hand. Lawyers are used to playing games, but not of this sort. We were telling tales unrelated to work. Again lawyers are used to telling

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8 All writers received a briefing paper in June 2006 which included the aims and objectives for the paper, the EAD conference website, a draft abstract, timetable, writing plan, writing prompt and a walkthrough video of the co-experience space as an aide memoir.

tales, but we were asked to reveal something of ourselves, something a lawyer never does. Nor do lawyers talk about issues unrelated to the case at hand, which is what the co-experience environment asked of us - at least at first.

Then came "the real work" we were sent off to find a space to work in to design something[9]. I sprinted off, absolutely sure that everyone would want to work in the same space as I did and I wanted to have a spot for me. When I got there no one else had joined me in the new space[10]. All the other spaces looked like extracts from rooms, this was an extract from outside and utterly beautiful. It was easy to relax and get down to thinking, easy to find some inspiration on the walls when thoughts were thin and, most of all, it had the most fantastic wiggle space. I could wiggle and shuffle and change position to my hearts content while I worked. Why was no one else here? Well who cares? I enjoyed working there.

We came back and had to share our ideas. Can you imagine a lawyer being asked to share his/her intellectual property before all contracts are in place? But I did - beguiled by the space, the play and the wiggle room into sharing and enjoying the fun of the conversations.

Part three of our participation in the experiment involved discussing our individual ideas with a colleague and coming up with a project that combined some elements of each idea. Again, in the surroundings and the ambience this was easy as was sharing these joined up ideas with the broader group. And now, at last, everyone came through to the new space and used the furniture in their own way. It was refreshing and relaxing and an enjoyable place in which to interact.

We debriefed and enjoyed some hospitality and then departed. I returned to the co-experience space as many times as I could that week. It was a good place to think and work. It made me think again about the need for space in my life, open space, quiet space and simply breathing space in which to think without deadlines, teaching prep or phone calls. As it happened I was also in the housing market and the co-experience space made me reassess what I wanted in a living space (to great effect I might add – I love my house!) I reconsidered organisation of my work and the need to create space in time for thinking. I even reconsidered how I travel to work. Now I cycle as often as possible: a more sustainable mode of transport than driving.

Lastly we had the 'take home make it' task to complete. Now I was in the swing of the co-experience project I saw this as an opportunity to have fun while getting ideas across. Others who looked at what I had made suggested I had not taken the process seriously, but I had - a serious point can be made in a humorous way. Now that is something that is lacking in legal research on environmental issues. And that is something to pursue. If I take anything away from this to my own research it is to

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[9] At the end of game play the participants held six game cards to be used throughout to prompt co-experience activity. The game cards contained pieces of information that the participants were to use, either individually or in pairs, to explore design opportunities in their field of environmental sustainability. These cards were designed to align activity with phase model guidelines 'for how a creative process may consist of different phases….preparation, incubation, illumination and elaboration or evaluation' (Kristensen 2004: 8).

[10] Elizabeth was the only participant who chose to work in the 'novel, beautiful' space during this divergent thinking phase and consequently the only participant to support Csiksezentmihalyi's (Schmitt 1999:147) hypothesis at that point in the co-experience activity.

remember to have fun in doing it, and remember that writing can be entertaining as well as informative.

So I started this process curious, I thought it would be good to give something to the wider community and I ended up reflecting on how I think and work and on what it takes to make both living and working sustainable for communities and for me personally.

Ian W Ricketts: Refreshing View

I am an engineer by training and a computer scientist by trade. I collaborate in a range of research projects with colleagues from a variety of specialties but almost all are scientists. They include anaesthetists, biologists, dentists, general medical practitioners, nurses, pathologists, physicists, psychologists, statisticians and surgeons. So not only do we share a common language but we also share a similar approach to research. When I am not at work I enjoy a little excitement in my life. I sail and race a single-handed dinghy that has more sail area than is sensible and consequently I swim quite a lot. I also own a sports/tourer motorcycle, which has taken me to the Alps for the last two summers.

Recently life at work had been dull and so an invitation to collaborate with a group of folk including non-scientists, under the leadership of a designer based in a School of Art & Design, promised to be an adventure that I could not refuse.

The motivation was not solely one of a search for excitement. I was also looking to refresh my view of research. I have spent the last twenty years leading research projects and I thought it would be stimulating to engage in a role in which my research expertise was not immediately relevant but in which I might be able to contribute as a team member. I hoped it would give me new insights, which I could bring back to my other research activities.

I am based in a school of computing and my teaching roles include teaching first year undergraduates about software development using the JAVA programming language, introducing third year students to Human-Computer Interaction and fourth year students to Industrial Team Project Management. I also contribute to a joint degree in Interactive Media Design with colleagues in the School of Design but my involvement does not require me to extend beyond computing. Via the Co-experience project I hoped to explore aspects of design, which as yet I had not explored, and which I hoped would offer further opportunities for collaborative research.

An almost inevitable consequence of growing older in academia is that life becomes busier and it gets increasingly difficult to set aside time to explore new opportunities. Engaging in the Co-experience project required me to make time available to explore and hopefully develop an outline research proposal. Lastly I thought it would be fun (and so it was).

Prior to meeting with my fellow collaborators I was asked to contribute an insight into how/where/when I developed my research ideas. To assist in gathering these insights a 'probe' was provided in the form of a disposable camera to capture images of those

environments that I found to be most productive and a range of items to help document the research opportunities as they happened e.g. colour pens, sticky paper, small notebook, etc. The accompanying advice was to use the probe materials if they helped but not to be constrained by them. I am completely unfamiliar with the use of this approach to capture events. I spent some time trying to use of probes and after some false starts I finally resorted to a much more familiar tool of drawing a Mind Map of my 'Research Opportunities'. I understand that my response to the probe, together with those from other contributors, informed the design of the space in which we subsequently met and collaborated.

So the day came when we met as a group in an environment constructed purposely to assist us in our collaboration. Following introductions, and an exploration of the range of workspaces, we participated in a game to build relationships based on sharing personal stories prompted by the random turn of a card. This 'ice-breaker' was both entertaining and effective. After a relatively short time I felt at ease with my fellow collaborators and having exchanged some of our experiences I gained useful insights into their interests and motivations. Each collaborator then suggested a research area, which we discussed in small groups and then refined, based on the feedback provided in those discussions. Subsequently potential opportunities for pairing of proposals were identified and the two collaborators discussed what opportunities there were for implementing the planned research.

The research idea we developed collaboratively has not yet emerged as a funded project but the benefit of using this style of collaboration to generate ideas has re-surfaced. I recently attended a UK research council event at which twenty-five people (out of 120 applicants) were brought together for one week to explore and assemble competing research proposals for a fund of £1.5M. The event was termed a 'sandpit'. The group I contributed to was awarded a grant of £0.5M. I believe that group's success was in part due to what I gained from Experimenting with the Co-experience Environment and I expect there is more to come from my relatively small investment.

Lorna Stevenson: Creative Accountability

A posting on Hermes, our University's weekly distribution of messages to staff and students triggered my interest and involvement. I'd recently had some fairly invasive medical treatment and was very open to trying new experiences and trying to think about aspects of my life in new ways.

Elements of the wording of the invitation intrigued me – social interaction, sustainability, and cultural probe package. On receiving the probe and hearing what was required of me, I felt excited – excited by what I might learn about myself, excited by the possibilities of 'being creative' (the discipline of accounting is not positively known for its creative members), excited by the prospect of working with new people on a new project, and excited by the idea of working with non-accountants on 'real' academic research.

However, I also felt a little daunted by the contents of the probe – the creative materials such as coloured card, colouring pens and camera are not a part of my daily work materials. Nonetheless, the project's edict to 'have fun and to make it fun' gave me enormous comfort; and so too did my belief that I understood intellectually what

was required of me. Thus I would ensure that my contribution met the brief, as I understood it, even if it wasn't what was expected.

The analogy of the probe as being like an instrument sent in by scientists to collect data from distant planets was also a good way of the researchers conveying their expectations.

I deliberately thought about what I was doing that week, and attempted to note when I was thinking and which aspects of my environment were impacting on my thought processes. It is a challenge to attempt to convey an impression of what thoughts one is having and why – possibly more so if one is not familiar with the one conveying, their habits, daily routines and way of being.

I am particularly interested in accountability – as a teaching topic, in terms of my own conduct, and as an area of research. It seems to me that the study and practice of accounting is inextricably bound with ideas of accountability, and through this, with sustainability. Thus, with hindsight, I believe that accountability was a major element in how I interpreted and delivered on the brief.

In this context then, several elements of using the probe are worth highlighting.

- The extent to which, through using it, I became aware of how my environment influenced my thoughts – this was new for me. I did know that I find it difficult to think if I perceive an environment as noisy, however I was not much aware of any significant aspects beyond this.
- The challenge involved in trying to convey my perceptions of which aspects of my environment affected my thinking in an unambiguous (relatively) way.

On the day we interacted with the created environments it was very interesting to see the analyses of the probes, the findings that had been derived from them, and especially the spaces designed from the process. I enjoyed thinking about which (if any) aspects of my probe return were manifest in the spaces.

I didn't really know what to expect from the day, beyond being asked to interact in the created spaces and to respond on that basis. I was certainly unnerved by some of the 'game' requests, e.g. tell a story, but in retrospect I recognise that the game was a clever way for us as a disparate group to necessarily a) get to know a little about one another and b) have a focus for engaging with the spaces created.

I was pleased and surprised when I realised that a friend and colleague was also involved in the project as I looked forward to seeing their contributions and unpicking them in terms of how I understood the person. We two agreed to hold our next work meeting in the co-experience space and that too provided insight into both my colleague and into the space itself.

Our initial task on the day was to think for half an hour alone on an allotted task. I made a beeline for the bed space[11], expecting to have to fight off others who would

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[11] Prior to the co-experience activity we felt that perhaps the bed was too intimate a space for anyone to choose. It was so satisfying to see Lorna making such a determined bid for the space especially as it had been inspired mostly by her probe return.

want it. I loved the comfort it afforded and the ability it offered me to sit in a way other than normal i.e. with raised legs.

In conclusion, I am more aware of the qualities of space I like to work and think in and I pay more attention to space when I am now thinking and working. The experience was wholly enjoyable, fun, involved learning and meeting new people, and resulted in my seeing in a new way. This for me is a true test of whether learning has occurred.

Mark O'Connor: Architectural Perspective

Some time after taking part in the initial Co-Experience Environment experiment the participants were asked to reflect on the subject and experience from the point of view of their own discipline. On doing this, it occurred to me that the extent to which architects rely on co-experience is quite remarkable as building projects are typically of such a large and complex nature that they rely on the co-operation, communication and co-ordination of many individuals and groups.

The complexity of communication and interaction on even the small building projects can be daunting. Over time methods have been developed to help smooth the communication of complex ideas and instructions. These include drawings and models as well as a language based on commonly understood ideas that were based in a shared understanding of tradition materials, techniques as well as geometric norms.

In recent decades however, rapid developments in computing technologies have reshaped many aspects of the design and construction process. Entirely new forms of construction have become possible often before a shared body of language has developed to facilitate emergent construction forms. Therefore any process that might have implication for the co-experiential communication and co-operation of the disparate members of a design and construction team is of interest. While computing fills many of the gaps in communication, I am specifically interested in ways in which complex constructed form can be used in their own right to help develop communication and co-operation.

As young children, we use game play to learn and practice important skills such as interaction with others. Games will have associated behavioural structures of varying complexity that are often supported by objects with symbolic meaning. Consider the tug of war when a simple rope carries enough descriptive suggestion to position and arrange two groups of people and channel their combined efforts in oppositional contest.

By a fortunate co-incidence, while considering these issues, the second year architectural design students with who I am working were asked to participate in a design and construction project. This provided a chance to witnesses a co-experiential process leading to a constructed output. Students were asked to design and build demountable structures for holding outdoor performances around the University precinct in the West End of Dundee. Following a short outline design project, the student body selected three designs to construct. The year was divided into three groups of approximately twenty, each given the task of constructing one of the

performance spaces, bringing it to site, assembling it and holding a short performance within the structure.

In the initial stages of design development group dynamics and organisation were a particular issue. With twenty students in each group and a timeframe of three weeks to carry out the work, there was not much time for group norms or patterns of working to develop[12]. The issue of overall leadership also remained vague although the individual responsible for the initial design formed a natural point of reference. Unwieldy to the point of dysfunction the larger group was quickly broken down into more manageable sub units by the division of labour.

During the subsequent weeks of development, it was highly noticeable the extent to which the student used props to aid in the communication. The common ground around drawings, marks on the floor and the developing components and assemblies seemed to provide clues to the sub-groups interaction that appeared to contribute significantly to the development of close working relationships. The impact of the developing object was most evident during the period towards the end of the manufacturing phase when the group had to reform in greater numbers to undertake a trial partial erection of the structure followed the next day by the final assembly on site.

Comparison of the group's behaviour at this stage with their irresolute earlier interaction showed a different dynamic as the artefact with which they worked offered behavioural and positional prompts that supported group behaviour. Of the many interesting aspects of the Co-Experience Environment, one was suggestive of a similar role for objects in influencing group cohesion and behaviour. In the final stage of the session when the whole Co-experience project group assembled, the sitting area was defined using seats stripped of explicit meaning while affording the possibility of use in a number of configurations. The chairs were placed in a random configuration again with no suggested pattern of use. Implied and acted upon, the group's initial task was to use these objects, in a consensual process, to establish a shared place for discussion reflective of an agreed identity. While it is not possible in a paper of this size to explore the issue in depth, there would seem to be further ground for exploring the issue of the object or building as behavioural modifier in the design and construction process.

Yen – Chiang Chang: Thinking and Working

The basic theme of my PhD research is the concept of sustainable development. The university campus is my usual thinking\working place – I think as I move about the campus and frequently work in one of the university libraries. After receiving the probe package I encountered an advertisement "great design need not cost the earth." posted on a wall near the university precinct. This triggered me to think of whether the campus was designed to meet the needs of the present, without compromising the needs of generations to come. Using the camera and a notebook from the probe pack I began to record my observations regarding the over use of paper on campus - universities are said to be one of the biggest paper consumers. Water, was another issue worth addressing, as was the absence of a recycling facility on campus. These

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[12] Wetherell, M. (1996) Identities Groups and Social Issues, London, Sage Publications

observations led to some recommendations for improved paper and water use. For example, embedding a spray mechanism in all campus taps might improve performance regarding water usage sustainability.

Co-experience Environment and Activity

The experiment was to be carried out at Dundee Contemporary Arts and I did not realise that the location of the area designated for the experiment was a flexible open space used for research in the Visual Research Centre. I thought that the co-experience experiment would be part of an exhibition so I arrived early and this gave me extra time to understand the location.

After a brief introduction and a period of exploration we were called together to play the bespoke game that was a good exercise for 'ice breaking', since all of the participants were from various backgrounds. A better way of learning about others is by listening to others' stories - I had the opportunity to tell three stories in relation to my personal experiences, even though I would have preferred to sing![13]

At the second stage of the experiment, we were sent away individually to think and design. My idea was for a poster that would be understood by 9-14 year old children and could be placed in a public place such as a telephone box. Keeping in mind that children may be more attracted by pictures rather than words, I drew three pictures to more easily pass the sustainability message to children. It is recognised that where a person works might have an influence on his/her views and therefore, each participate was free to choose their own work location within the co-experience environment. I selected to work at a coffee table because I am used to working with a cup of coffee at my side.

For the next stage, I worked with an architect, Mr. Mark O'Connor. We firstly spent some time discussing our individual missions, identifying the similarity and concluded with Mr. O'Connor making a pictorial representation of the two missions. This experience emphasised the importance of drawing consensus when working as a team and suggested that teamwork is more interesting and stimulating than working alone.

At the end of the experiment, three groups were asked to sit down and express the outcomes of their work. This was more of an 'information gathering exercise', from the participant's view point. This experience demonstrated how difficult it is to achieve a consensus within a group, in particular, where various backgrounds, interests and viewpoints exist. In the end, the experiment was thought to be 'interesting' and 'inspiring'. For myself, it was refreshing to be involved in this project as it provided the opportunity to be involved in something quite different from my taxing legal research.

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[13] The game is essentially a dice and a series of instructional cards. The dice is thrown and instructs the player to pick a particular card or to 'tell a story'. An early prototype of the dice included an instruction to 'sing a song' but prototype testing revealed that players were mostly uncomfortable with this and it was eliminated from the co-experience game. In the debriefing sessions we spoke openly with the participants about the different design iterations for the co-experience experiment

Take-Away Make it Card

As I understood, one of the central focuses of this experiment was how different environments affect people's thinking. The fundamental assumption was built upon different people from various backgrounds with variable thinking approaches. What if there had been a group of people from a similar background or interest? Would the outcome have been different? With this question in mind, my response to the 'take-away make it card' was a power point presentation where I used the analogy of differing tactical and strategic approaches used by competing badminton teams as a way of addressing my questions. My findings seem to suggest that, even if an individual member of a group came from a similar background and held a common interest, they would still hold an individual view. To this end, the outcome refers back to the research question that co-experiencing can contribute new knowledge in design.

Conclusion

The Role of the Environment in Experience

It was new for most of the participants to think about and to be explicit about how the physical environment influences their thinking. They began to cogitate, using visual and linguistic modes to express the role of their environment in their thinking. Lorna explained that "I am more aware of the qualities of space I like to work and think in and I pay more attention to space when I am now thinking and working". Mark, the architect, was quite explicit about how the physical environment or artefact influences thinking and designing. As a designer and design educator he possesses a familiarity that predestines him to respond in a particular way. The non-designers demonstrated a noticeable tendency to experience the experience. The unfamiliarity of the co-experience environment experiment appeared to 're-move' the participants to reflect on their life experience and make a discovery.

One might argue that their experience was heightened because they were confronted with the unfamiliar. Different people, places, things and processes prompt different kinds of discourse and the format of engagement depends on our experience. Presented with something familiar, we tend to respond with familiarity – a discourse of informed use. However, when we are presented with something with which we are not so familiar (as long as it is not too scary), we respond with curiosity - a discourse of discovery. For the participants this lead to the creation of new experiences.

The role then for the physical environment in experience is to be designed in a way that 're-moves' participants from their everyday experience and offers them the opportunity for a discourse of discovery.

Experience Takes Place in Space and in Time

The focus of the co-experience environment was to explore the physical/spatial and social aspects of experience. And that it did. But it also became clear through the experiment that the temporal aspect of experience is equally important although perhaps more difficult to control. Experience is situated in a larger contextual frame of space and time – experience becomes <u>an</u> experience and people do not perceive space and time as being separate. A physical environment can stage a timed

experience, but this experience steeped over time becomes <u>an</u> experience (Forlizzi 2002) and unfolds in meaningfulness. The integrity of time and space is revealed in Elizabeth's statements; "I needed space to think – physical space and space in time". "I reconsidered organisation of my work and the need to create space in time for thinking".

The participants in the co-experience experiment told stories at different times – stories about their past, stories about their design vision and ultimately in this paper, stories about their whole experience to date. In essence the co-experience environment timed people together in a 're-moving' experience and over time they have connected their experience of the co-experience environment into their daily lives (e.g., Elizabeth and her new house, Ian and the UK research council event). They came with an idea that they would do something different or learn from this experience. This idea was confirmed; their experience was the foreground.

What Have We Learned About Scaffolding?

Scaffolds for experiencing must consider both space and time. They work best if they are connected directly to the past, current and future lives of people and include a level of unfamiliarity that does not inhibit. It is essential that if familiar environments are used as design scaffolds that they do not conflict with participants' received ideas of place and space. In the re-design of existing physical environments for co-experiencing, the researcher needs to build a bridge for the participants to allow them to quickly comprehend changes in the context of use.

Designing for co-experience environments may have to consider the different approaches that participants use for reading environments and guide the participant to use the full range of their sensorial reading ability. A coherent environmental narrative - similar to product narrative - should be imbedded in the design of the co-experience environment so that participants can fully understand the experience environment.

The participants' experiencing of the co-experience environment went far back and beyond what happened to them in the three hours they spent in the environment. In reflecting on their experience, they told a story about the entire experience as it happened over time, starting with their response to the initial invitation to join the adventure, then moving to the probe package and onwards.

The scaffold for the co-experience environment consisted of many steps over time including:

- an invitation to enter the experience
- completing the probes, which invited curiosity and provoked reflection
- once they came to the environment, they were curious to see what had become of their returned probes.
- the bespoke game was at first uncomfortable, but the participants quickly recognized it as being essential for getting to know one another through storytelling

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- they interacted through design activities in the co-experience environment, both alone and together

- some of them returned to the environment over the next week

- they completed their take-away 'make it' task and met again two months later to share outcomes

- they reflected on the experience as a whole and continued their participation as co-authors of this paper.

What Have We Learned About Participatory Activity of Equitable Collaboration?

We have learned that:

- non-designers enjoyed the process and they could quickly apply their new experiences to their daily lives

- traditional researchers are open to new paradigms of research (e.g. they learned that having fun in doing research is a positive thing)

- probe assignments and seemingly unrelated game playing is provocative. These activities made the non-designer participants feel "unnerved... intimidated" but also "intrigued and curious". It was surprising how different this way of thinking was for them.

- we need to be aware that people respond to open-endedness in many different ways. We, in turn, need to be open to letting them interpret our instructions in such a way that they are able to respond (e.g. Ian's Mind Map)

- we learned that immersing non-designers in the design process through the co-experience environment was successful. It caused them to think about thinking, to open up their thinking and to be more deliberate about where/how they use their time and space. It also revealed to them new ways to approach research.

We know that for design research to attend to the complexity of real world scenarios it needs to work with interdisciplinary teams of people. Through this research we explored different approaches to scaffolding the interdisciplinary design experience, experimenting with methods that can be used to bring together people who might wish to collaborate. It suggests a process for introducing what it is that design research does to a wider research community and offers an approach to establishing a dialogue of understanding within a context of professional esteem.

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