

# Living Laboratories: Making and Curating Interactive Art

## Abstract

This paper describes the development of laboratory concepts in the making and curating of interactive art, in which the exhibition becomes a site for collaboration between curators, artists, and audiences. It describes Beta\_space, an experimental public venue that seeks to realise the concept of the exhibition as living laboratory through the participatory qualities of interactive computer-based art. The paper places this initiative within an emerging phenomenon of hybrid production and exhibition spaces. It argues that the evolution of such concepts has been hampered by the continued distinctions, within traditional cultural institutions, among art, science and technology, object and experience, creation and consumption.

## Keywords

Interactive art, curatorial practice, audience research, practice-based research, Beta\_space.

## Introduction

Alfred H Barr, founding director of the Museum of Modern Art, New York, famously declared that his revolutionary museum would be “a laboratory; in its experiments, the public is invited to participate.” Since the 1930s, this concept of the exhibition as a site for collaboration among curators, artists, and audiences has struggled to come into existence despite an overwhelming move in contemporary art and culture towards experience and inter-relations rather than curatorial authority and material objects. [4, 16] The audience’s experience has remained largely the concern of the marketing rather than the curatorial departments of galleries and museums.

In November 2004, the Creativity and Cognition Studios (CCS) and the Powerhouse Museum, Sydney, launched an initiative that seeks to realise the concept of the exhibition as living laboratory in a very particular way, through the participatory qualities of interactive computer-based art. Beta\_space is an experimental exhibition area within the Powerhouse that extends the interactive-art research studios of CCS into the public context. Beta\_space shows interactive artworks at different stages, from early prototype to end product. It is the principal site of CCS research into how audiences experience interactive art.

Beta\_space grew out of a long series of studies of digital art making, [6] in which evaluation of interaction played an increasingly important part. It also drew on a set of collaborations between artists and scientists in which engagement with the audience, including exposition of works in progress, was a key aspect of the process. [12] These projects showed that the situated evaluation of emerging works was vital for many practitioners. [5] Thus, Beta\_space is a practical solution to two areas of need: the needs of artists to engage audiences, in context, in their practice, and the needs of the museum to provide current and dynamic content to their audiences in the rapidly changing field of information technology.

This paper explores the idea of the exhibition as a public laboratory for interactive art practice and places Beta\_space within this context. The paper falls into three sections. It begins by describing the underlying rationale for why interactive art practice must engage audiences, and why this must be done in real-world settings. Section two situates the research aims of Beta\_space within the landscape of enquiry into interactivity and audiences. The final section explores the concept of the art exhibition as living laboratory within the broader context of the evolution of cultural institutions and curatorial practices.



Figure 1: Beta\_space in the Powerhouse Museum, Sydney

## Interactive Art and Audiences

The experience of art is always active, and in a fundamental sense interactive, consisting of the interplay of environment, perception, and the generation of meaning in the mind of the audience. However, with the advent of computer-based interactivity, a new kind of art experience has come into being. In computer-based interactive artwork, the activity is not only psychological, but also constituted through exchanges that occur materially between a person and an artefact. Audience and machine are working in dialogue to produce a unique artwork for each audience encounter.

As such, interactive artworks are at once both object- and experience-based. In the early 1970s, Ernest Edmonds and Stroud Cornock articulated a new concept of the relationship among artist, artefact, and audience in response to the advent of computer-based interactivity in art. They described a dynamic art situation, which they refer to as “the matrix.” [2] All the elements of the matrix (the artist, the audience, and the artefact), which Cornock and Edmonds refer to as the “art system,” are actively involved in the occurrence of the artwork. Meaning occurs through the process of exchange, and interactivity itself is the very medium of the work.

For researchers seeking to better understand interactive art, it is necessary to study the complete “matrix” and the exchanges that occur within it. Studying the art system in isolation from its audience can only lead to a partial understanding at best and misleading results at worst.

To begin to understand interactive art, we must begin to question how interactivity as a medium produces meaning. Some of the most important work in this area has been done in the field of human-computer interaction. For example, Lucy Suchman, in her influential book *Plans and Situated Actions*, [18] locates the source of meaning in situated action itself. In so doing, she emphasizes a notion of interactivity in which action is central and goals are emergent. Human actors “achieve” meaning in their encounters with interactive artefacts through action. This achievement is rooted in the contingent resources of the context, which are brought into being by the situated action that requires them. As a result, “the significance of artifacts and actions ... has an essential relationship to their particular, concrete circumstances.” Studying the audience experience of interactive art in context is, therefore, of primary importance to understanding interactivity as a medium.

## **The Landscape of Audience Research**

### ***The audience and the museum***

Beta\_space aims to provide practice-based researchers in interactive art with a space in which to engage with audiences. In doing so, it builds on, and extends, a general evolution in the concept of the museum from a repository of both objects and authority to a site of questioning and experience. Karsten Schubert gives an account of this shift in the museum concept from the French Revolution to the present day, claiming that “the history of the museum ... could be viewed as a gradual shift of the visitor from the periphery to the centre of museal practice.” [15]

However, he goes on to suggest that the growing inclusion of the audience owes most not to democratized ideas of pedagogy and aesthetics but rather to the museum’s inescapable submission to the imperatives of the market. The catastrophic decline of public funding in the 1980s for cultural institutions forced an increased consideration of visitor attendance and satisfaction to justify public investment and court sponsorship, and bring in much-needed revenue. Schubert’s analysis would explain why most understanding of and communication with audiences is still the province of the marketing and education departments, rather than the curatorial departments of museums. While a general trend toward an open, dialogic, and collaborative curatorial practice is emerging, Barr’s vision of the “laboratory” in which the audience participates will remain unrealized as long as audiences remain “clients” rather than partners, and as long as curatorial research focuses primarily on objects and artists rather than audience experience.

### ***Empirical audience research and interactivity***

Existing approaches to studying the relationship of audiences to interactivity can be grouped in two categories. The first comes from a traditional museological approach and focuses on education and interpretation. The second comes from the field of human-computer interaction and offers a new perspective on understanding of interactivity.

### ***Education and interpretation***

The majority of existing work on the impact of information technology in museums and galleries focuses on their educational and interpretive use rather than their existence as artworks or cultural objects in their own right.

Beryl Graham points out that there is very little evaluation of interactive artwork, but that there are a number of adjacent fields, such as evaluation of interactive educational technologies in classrooms, evaluation of museum exhibits in general, and some work on evaluation of interactive museum exhibits, that provide data and methodologies to build on. [8]

Such studies are mainly based on observation, questionnaires, and interviews, and they involve questions such as length of use, satisfaction of use, efficacy of interface, patterns of movement, and behaviour and social interaction.

### ***Human-computer interaction (HCI)***

There is a growing body of work that draws together HCI and art. Edmonds et al [8] have conducted extensive studies of digital art practice, developing new HCI methods for the purpose. Hook et al [10] have used the co-discovery method as a means to gather verbal data describing the audience experience by recording conversations between research participants in laboratory situations.

Research by vom Lehn et al [20] uses an ethnomethodological approach to understanding how audiences encounter interactive exhibits in real-world settings. Through video-based observations of visitors to galleries and museums, vom Lehn et al show how the audience experience of interactive artwork is socially determined. From a human-centred design approach, Robertson et al [14] have used extensive field observations of audience behaviour in museums and galleries to develop design tools for creation of interactive exhibits.

### ***Practice-based research in Beta\_space***

The Beta\_space initiative draws together these areas of research, bridging the gaps between formative evaluation, observational research in real world settings, and more in-depth verbal data-gathering in laboratory conditions.

Beta\_space is a “living laboratory” in two respects. Firstly, it provides a long-term context for collecting data on the audience experience. Secondly, it provides a dedicated base for iterative creative development. Beta\_space offers practice-based researchers an opportunity to collaborate with audiences in development of new artworks, allowing artists and curators to work with interactivity as a medium, refining and developing it through the lived experience of the audience.

In-depth discussions of the research process, case studies and results from the Beta\_space initiative have been published elsewhere [2, 3]. This paper goes on to explore the idea of the initiative as an experimental exhibition area, and the implications of this.

## **BETA\_SPACE IN CONTEXT**

### ***The challenge of interactive media to curatorial practice***

The challenge for artists and curators producing and exhibiting interactive artworks is to find a way to allow the physical centre of the

museum to evolve alongside the demands and opportunities opened up by this new form. Most discussion about the impact of computer-based new media on both museums and galleries has focused on education, marketing, and archiving, while the potential impact on curatorial practice has not become part of mainstream research and discussion. Lev Manovich has attributed the contemporary art establishment's lack of engagement with new technology to the division between "Turing land" (inhabited by the computer arts) and "Duchamp land" (inhabited by post-modern conceptual art) [13]. Both Edward Shanken [17] and Gloria Sutton [19] have produced subtle and informed historical critiques of this separation, however the fact remains that the traditional museological world has not yet seized the challenge thrown down by the increasing integration of interactive technologies in contemporary art practice.

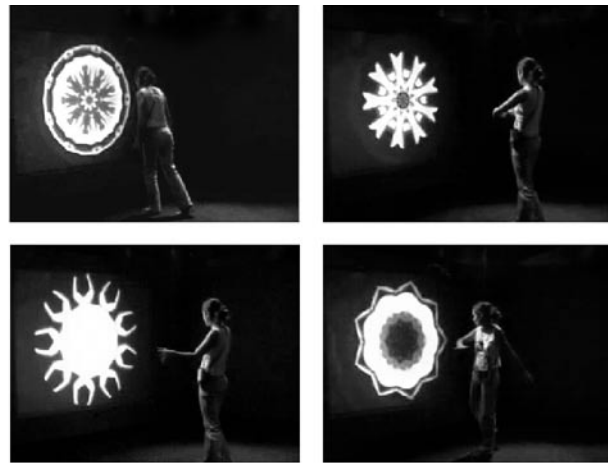


Figure 2: *Iamoscope (Fels and Mase) in Beta\_space [3]*

A growing body of specialist practitioners and institutions is vibrantly engaged in debating the transformations of curatorial practice and establishing a body of "best-practice" knowledge. A great deal of this work is taking place within the email lists and online communities that make up a large proportion of the professional exchange within the world of new-technology art. These responsive communities are attempting to combat a current lack of published references, as Beryl Graham, founder of the CRUMB discussion list and resource, has written: "The problem with curating new media art is that the fascinating range of challenges is matched only by the dearth of data and material available to help curators." [9]. Recently, significant conferences such as "Curating, Immateriality, Systems" (Tate Modern, London, 2005) and "Refresh" (The Banff Centre, 2005) have drawn together practitioners in the area and raised the growing importance of these issues.

### A return to "Wonder chambers"

One of the major restrictions on the evolution of the cultural institution is the entrenched division in museological practice between art and science and technology.

In "Museums on the Digital Frontier," [11] Friedrich Kittler describes the phenomenon of the Wonder Chamber, a model of transversal cultural collection and display that existed before the emergence of the modern museum institution as we know it:

... the objects assembled in wonder chambers at the dawn of the modern age were not only artworks ... These were accompanied by marvels of science, technology, and nature: fossils, physical tools, zoological freaks, and so forth. But then a historical caesura led to the modern museum – an institution barring any item that was not totally absorbed into its aesthetic ..."

Since then, Kittler claims, collections of art and collections of science have existed "according to the schema or schism of two cultures", and despite the encroachment of digital technology as both a means of production and reproduction of art: "[t]he rift between art and technology, as inflicted by the classical museum, remains untouched by modern forms of presentation ... the age of wonder chambers has not returned".

Experiencing interactive art means engaging with both art and technology and science. Ross Gibson has argued that its significance as a contemporary artform is in providing a lived experience of the complexity of modern existence in much the same way as the 18th-century novel allowed people to live through the changing complexities of that time [7]. Interactive art is a culturally provocative form that problematises the divisions of the "two cultures" and calls for a new kind of hybrid exhibition space.

In the past three decades, hybrid spaces have emerged around integrated art practice and new technology research, a phenomenon described by Michael Century [1] as the "Studio Laboratory." A crucial characteristic shared by the most influential of these centres is the combination of production with public exhibition and, in some cases, permanent collections of interactive artwork. It is in such cases, where the public meets the transdisciplinary creation of the artwork, where production and presentation are drawn together, that Barr's vision of the museum as public laboratory can be realised.

Building on this hybrid phenomenon, Beta\_space attempts to overcome the two-culture divide by placing interactive art in a science-and-technology context. In general, the science/technology side of the schism has tended to be more open to "infiltration" by art, with some high-profile institutions such as the Exploratorium in San Francisco and the London Science Museum exhibiting art as an increasingly integral part of their display strategy. Interactive art in this context will tend to be received in a very different spirit than in a fine art gallery. However, if art were to become increasingly part of the display of the museum perhaps an art historical context could exist within an overall emphasis on human enquiry and ingenuity.

### CONCLUSION

Beta\_space breaks down the boundaries between art, science, and technology and production and presentation through an iterative approach to creating and displaying interactive art. Purposefully including the audience in this process from the start changes the relationship of the artist and curator to the audience, and the relationship of the audience to the artwork, creating a culture of participation and contribution rather than consumption. This shift to audience engagement in making and curating is vital for cultural institutions to remain relevant to aesthetic experience.

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Theoretical, curatorial and practice-based artistic studies are seen as responding critically and engaging with the current issues and interests in the field of contemporary art and beyond. The applications to Master's Programme in Visual Culture, Curating and Contemporary Art (VICCA) will be evaluated based on the following criteria. Phase I. Artistic and/or design practice. A living lab, or living laboratory, is a research concept, which may be defined as a user-centered, iterative, open-innovation ecosystem, often operating in a territorial context (e.g. city, agglomeration, region or campus), integrating concurrent research and innovation processes within a public-private-people partnership. The term "living lab" has emerged in parallel from the ambient intelligence (Aml) research communities context and from the discussion on experience and application research (EAR) Template:Nofootnotes Interactive art is a form of installation-based art that involves the spectator in some way. Some installations achieve this by letting the observer walk in, on, and around them. Works frequently feature computers and sensors to respond to motion, heat, meteorological changes or other types of input their makers programme them to respond to. Most examples of virtual Internet art and electronic art are highly interactive. Sometimes visitors are able to navigate through a hypertext Living Libations is a luxurious line of organic and pure renegade beauty products! Explore and educate yourself on natural health and wellness. Choosing a selection results in a full page refresh. Press the space key then arrow keys to make a selection. Opens in a new window. Opens external website. Opens external website in a new window. —. Did you know you can earn points for signing up, making purchases and more? Learn more. —.