SKETCHES OF AN INTERDISCIPLINARY PRACTICE

Kim Newall & CHARLES WALKER

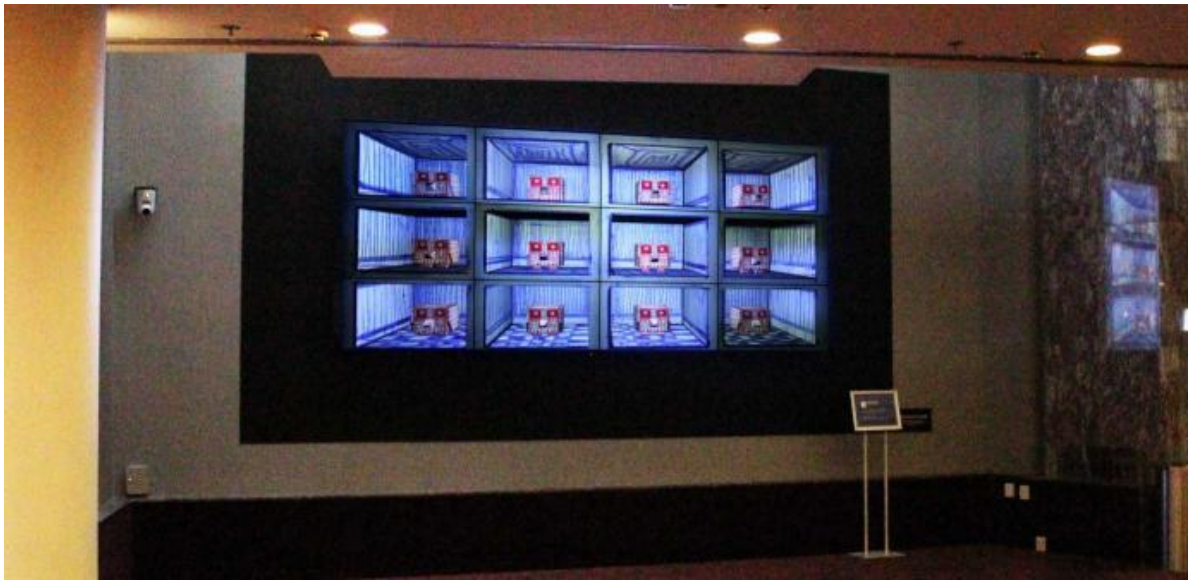

Fig 1. Kim Newall, "Roosting" (2011), interactive public installation, The Edge theatre, Auckland.

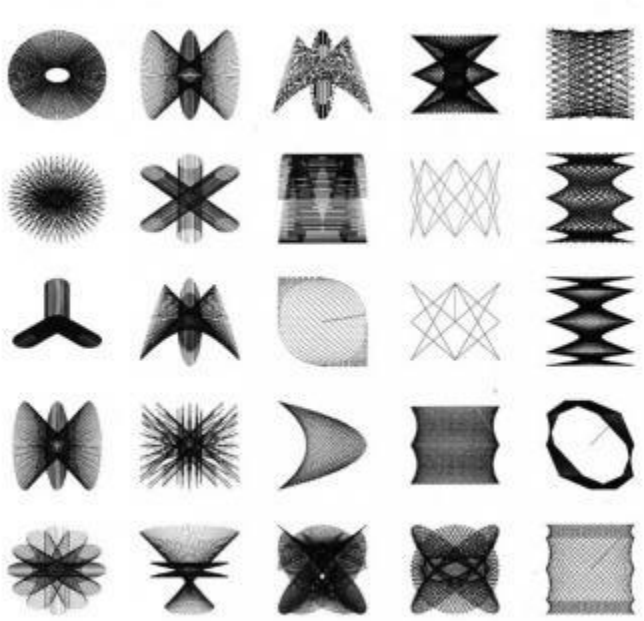

Fig 2. Kim Newall, "Circle Hacking", (1989).

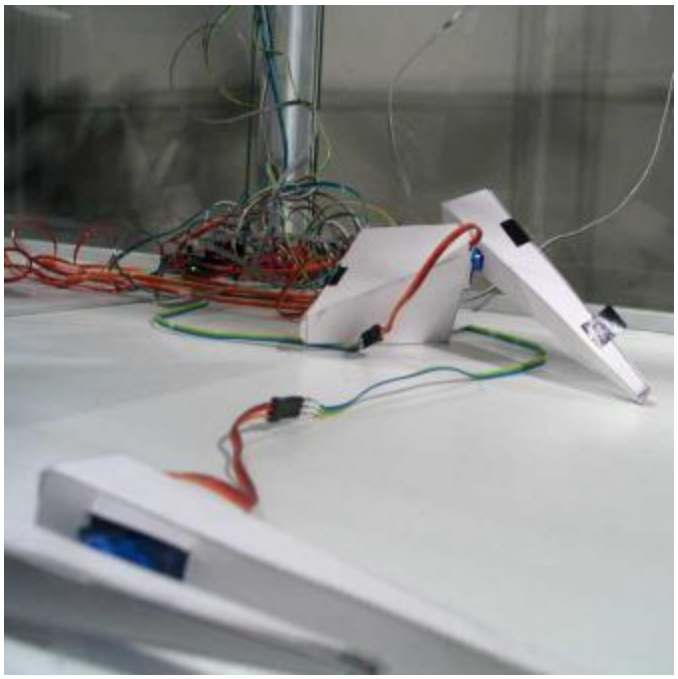

Fig 3. Kim Newall, "Evolutionary Experiments" (2010), interactive public installation, MIC gallery, Auckland.

Introduction

This paper by Kim Newall and Charles Walker presents part of a larger, practice-led research project to develop a new understanding of sketching as a methodology for creative practice in the post-digital age. It will be presented through a reflective critique of the researchers' own hybrid, interactive, public performance-based practice.

The presentation will explore the concept and nature of sketching as a methodology utilizing a variety of media and operating across normative disciplinary boundaries. The research involves defining notions of the sketch as it relates to historical and contemporary practices; speculative design, documentation and critique of methods for sketching in differing media, material formats and contexts, and; the critical conception, development, application, execution and performance of sketching in the context of the researcher's own creative practice. The work draws on recent research in mathematics, physical computing and cognitive science to suggest that sketching shares with these disciplines properties that can externalize cognitive processes or reveal categories of thinking. [1] [2] Through linking sound and video-based work, hacking, physical modeling and archival material with traditional drawing techniques, the presentation itself takes the form of a real-time, improvised sketch. The accumulation of such sketches (archived in "sketchbooks"), in turn, informs further conversations between differing modes of knowledge and expression.

Defining Sketching

Definitions and descriptions of sketching have remained relatively constant throughout history and have emphasized its "speedy, exploratory, spontaneous, abbreviated, unfinished, indeterminate, fiery, contingent and/or disordered qualities often characterized by loss of control or openness to the unexpected." Frederik Stjernfelt notes that elements within modern art have can also be seen to have focused on certain features of the sketch, "to isolate them, cultivate them and see them as just as essential – or even more so – than the finished work of art." [4] In design disciplines, sketching is commonly seen as an interim activity; making images to assist in the creation of something more real.

The sketch has also been widely understood as an interim stage in the design process in different disciplines. In design-based or visuo-spatial processes, such as architecture and product design, sketching is frequently defined as "the making of images used to assist … in the design of something else." [5] It is important to note here that, in such domains, the terms 'drawing' and 'sketching' can overlap in meaning and sometimes can be interchangeable. For example, Eames, suggests that "the thinking space that you move to during the working process is drawing." [6]

Yet, while Eames suggests that "drawing provides an essential means of prodding and probing, doing and undoing, glimpsing and maybe seeing and experiencing reality and virtuality", he also makes a distinction between the "high and low focus thinking" that drawing facilitates. [7] High focus relates to logical and analytical thinking. However, Eames low-focus thinking is characterized by "loss of control, creative fancy and the ability to be receptive to the unexpected or fantastic" – a description that suggests an activity that others would recognize as sketching.

Current reading has also highlighted how some of key concepts and practices of sketching have recently been adopted by or transferred to different media.

Deanna Petheridge, for example, notes that while sketches are often characterized by medium: "a musical, literary, a clay, or an oil paint", other disciplines such as mathematics, philosophy and science have also appropriated the idea of the sketch. [8] In recent years sketching has also been of particular interest to cognitive psychology, in as much as mental states and sketching "share certain properties which are imprecise, ambiguous fluid, amorphous, indeterminate etc and can reveal the thought process or externalize the cognitive" thus linking looking and thinking. [9]

Others have also used the duality of internality (i.e. mental) or externality (i.e. physical) in studies of creative practices or processes. [10] Eames similarly sees the sketch as a way of externalizing the thinking process "... putting down an idea before it floats away – or materializing an idea." [11] Bilda, Gero, & Purcell have suggested that, for the expert artist, 'externalizing' the idea may not be necessary and that the process happens internally. [12] Scientific studies on sketching (for example [13]) have compared differences between the EEG brain signals of trained and non-trained artists. Anderson & Helstrup have studied the effectiveness of mental imagery with and without drawing support (perceptual assistance) in the visual synthesis. [14]

For Simon Downs, such activity is a "two way process" that "oscillates between seeing, thinking, remembering and imagining, controlling and being controlled as the image emerges." [15] This suggests that process and product may continuously and simultaneously shift in the course of making

Defining Creative Practice

A creative practice is defined by continual evolution and change. There are many ways that an established practice can be contextualized. Reflecting upon the practice reveals that there is a method that has been employed from the start and that this method can be defined as sketching.

In Newall's practice both real and traditional media defined as analog and digital media (including computers) have developed together. The process of digital has informed the process of the analog media. While originally seen as separate; over the years they are emerging into a new hybrid space. Sketching has played a pivotal role in the emergence of this space.

The traditional analog media employed include paper, card, pen paint, watercolour, tape The digital media used include, computers, programming, microcontrollers, projection, video and electronics. Both these media domains however are constantly being augmented for different sketches to include music videos, video games, public interactive installations, VJing, live audio/visual shows, theatre shows, art gallery installations, and street art. Some of the above are formal finished works; others are works in progress that are always changing and are not seen as a piece of work. Often without a title they might happen spontaneously, in casual acts such as street art stickers.

Fundementals

Some fundamental methods were established in the early period of the practice that still drive the current work. In the 1980s, with the advent of the microcomputer the availability of the computer at home for the non-professional provided the opportunity for anyone to to experiment with computers and programming - in effect, to become a 'programmer'.

The low storage capabilities of Newall's first computers forced him to develop programming skills by working around limitation. Using what was available, with limited but evolving skills and knowledge, exploring the possibilities and gaining more knowledge and skills. In this process, Newall developed the capability we here call sketching, in which the sketch is a product or artifact in itself.

From following simple examples the practice developed to produce very simple programs that made simple drawings on green and black screens. When the computer was turned off the drawings were no longer there. They could only be reproduced from memory and in this process they did not always come out the same. These sketches were a set of commands or instructions that were executed in a liner fashion however having a visual, graphic outcome was very important. The simplicity and naivety of these 'sketches' became a defining characteristic of his practice and the basis of a new 'non-expert' expertise.

In the 1990s the Graphic User Interface (GUI) allowed computers to be used more efficiently by non-programmers. Examples of this commercial software include Adobe PhotoShop and Alias/Wavefront Maya. In recent years open source software, such as "Processing" and "Openframeworks" have again made programming accessible for creative and hobbyist enthusiasts, and has enabled programs to be sketchable.

A similar understanding of process has informed the design of a method of sketching to be explored with computer code. One result was *Processing*, a software program developed to encourage artists and designers to use computer programming as a means to create work (processing.org). The creators

of *Processing,* Ben Fry and Casey Reas, named the files that are created by the program, *sketches*, a clear signal that enabled artists and designers to relate to programming through techniques they were familiar with. The idea being that the computer program can be treated like a sketch; as something that is malleable and that can be pushed and pulled like clay, or drawn and erased like pencil. This notion that code can be put down as if by impulse, as a 'what if I do this?' kind of operation, suggests that the program does not need to be 'designed' top down, then 'executed' to perform a specific action or set of actions. Rather, programming can be used with a bottom-up approach, as tool for exploring or discovering, analogous to what happens in traditional forms of sketching.

Processing is a designed platform upon which the sketch may be made, performed or take place. It hides details that the sketcher does not need to know about. Technical requirements are minimal, so the non-technical user does not get stalled by having to deal with technology. The intention is to approximate the more familiar or 'natural' relationship of paper and pencil.

A similar concept - based on *Processing* and aimed at artists and designers rather than technical people - informs the *Arduino* platform - an open-source electronics prototyping system based on a few basic, flexible, easy-to-use components, including the microcontroller that can be programmed from an *Arduino* program language.

The tools that have been developed over the years that have allowed the non-expert access to technology, have enabled Newall to use these tools for sketching. Fostering an ability to try things out with fluidity and intuition without being hindered by the complexity of technology.

Circle Hacking

Circle hacking is another example of digital sketching. It began by using an example in a computer manual on how to draw a circle in the middle of the screen. By changing the numbers in the equations to see what would result without knowing what was happening mathematically. The images were 'Spirograph' like drawings. The process of iteratively changing small bits of the code enabled the discovery of different, but related patterns.

This was the start of exploring what would happen if things were changed without a preset plan or idea. That hacking is one of the central ideas that has also lead into or applied to the traditional media. This was a fundamental way of thinking by beginning to change things to explore the possibilities with the media that was being used.

Graham describes his method "I tended to just spew out code that was hopelessly broken, and gradually beat it into shape" then he concludes "If I had only looked over at the other makers, the painters or the architects, I would have realized that there was a name for what I was doing: sketching." [14]

Hacking can be applied to any type of code or data with include different types of media and disciplines, Wark define hacking neatly in the following quote:

"Whatever code we hack, be it programming language, poetic language, math or music, curves or colourings, we create the possibility of new things entering the world. Not always great things, or even good things, but new things." [15]

This is one of the ways of summing up the creative practice described in this paper. Hacking is a process of bringing the intangible and the abstract into the real world as Wark explains

"To hack is to release the virtual into the actual, to express the difference of the real." [16]

The process of hacking that was discovered in the hacking circles has been applied into the sketching with analog media. Changing/altering to find out what will happen. Hacking as a form of sketching applied to different media both analog and digital is key to Newall's creative practice.

Sketch Books

The following section and visual presentation summarises Newall's practice to the present time, highlighting some of the key concepts. A collection of sketches that included different media were developed in the early years, and now form the basis of current creative practice. A strong archival practice of maintaining sketchbooks also developed using traditional media or analog media such as pencil, ballpoint pen, watercolour, etc., on paper. The sketchbooks evolved using digital printouts as starting points for further sketches and the digital and analog began to merge in new ways.

In the mid-nineties, Newall explored real-time 3D computer graphics that he began to label as 'Sketches' or 'Drawings'. The idea of 'performing' came out of the act of manipulating these drawings; hours were spent exploring possibilities, often accompanied by responding to music in real time. A handful of videotapes were produced that he came to think of as an equivalent/alternative to sketchbooks of drawings. VJing was introduced to his practice at this time; this provided a way to perform live in front of any audience and could include projecting the mix of these videotapes in parallel,

The creative practice thus seeks to develop a conversation between different modes of artistic expression. He has come to realize that an original language is emerging from his search for further possibilities for interaction, mixing analog and digital together across virtual and real media, extending the "what if" question.

Animations and/from drawings, manipulated, come together as performance in the form of VJing; in turn, suggesting the performance itself as a form of sketch. Indeed, in the field of performance, the term 'sketch' and related ideas about 'improvisation' could be used to refer to a quality of sketching in terms of exploring the possible in real time.

Recent Work

The exploration of this relationship and a type of mixed reality that is 'in-formation' - always 'in process' and neither real nor virtual - has continued up to the present time. Examples include the interactive public projection work "Urban Life" (2009), the works for "Vending Machine" at Splore Festival (2010) where digital designs were sketched and materialized into real attachments for the human body and "Evolutionary Experiments" at MIC Gallery, Auckland (2010) where creatures developed from "Sketching" with software, hardware and cardboard, created and occupied a new space that would not have been possible in either digital or analog form.

The interactive work *"Roosting"* (2011) consisted of 12 birds on 12 TV screens in a 3x4 grid that reacted to movement in front of them. So how can sketching relate to the work? The answer is that the users

sketch with the work, not in the literal sense but in an abstract way. Some users would mimic the bird's booth with sound and movement on screen to see how the birds would react. This is exploration of what the work does, causing the user to improvise or sketch with the characters on screen. This opens up possibilities of how user interaction can be seen as sketching for future works

Conclusion

Many things are possible. There does not always need to be an outcome. The sketch enables technologies both analog and digital to merge. The sketch is not limited or restrained as a method. It is adaptable; it can operate at different levels and in different ways. Sketching can be done in any media with any technologies with many different outcomes. Sketching is an exploration of the possible, and can become a record of impossible. A sketch can exist in a moment of time and become an artefact. There is a time and place for the work to be what it needs to be: Sketch.

References and Notes:

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