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From Digital Interface to Material Artifact

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In this short paper I will explore instances where the graphical user interface (GUI) has been referenced in the creation of three-dimensional physical artifacts. The selected works originate from a group of international artists who have repositioned the use of the computer GUI within the realm of creative practice. In addition, I will also step through an example of my own work, which references the GUI in the form of a mixed-reality installation. The works examined allow us to problematise our engagement with the digital in a technologised society, and raise questions around the experience of the GUI in terms of a personal and broader communal context.

Collective behaviours or intelligence often revolve around an object, tool or virtualising agent, which act as a catalyst to events and actions (Levy 1998). In this respect the shared object of the computer GUI can be seen to engender codes of behavior that control our navigation, communication and comprehension in the computer environment. The notion of object as both a material and virtual form, or a combination of both, sets up a theoretical framework in which we can consider the GUI in relation to mixed-reality constructs; where the idea of the artifact refers to both the tangible physicality of material objects and the virtual processes of digitally constructed environments. Both notions of artifact, physical and virtual, accrue value by our interactions with them, and necessitate a temporal, physical or cerebral engagement. As we consider the following artworks we should keep in mind the virtual, physical heritage of these artifacts which signal the potential for a fluid, conceptual and material interplay between spaces. Through these works the media specificity of the screen based interface is broken by dramatic changes in scale, location and context — desktop icons are disenfranchised from the usual participatory activities of the functional computer interface and the viewer is asked to reassess the meaning of the emancipated computer visuals.

Ron Burnett uses of the term 'image ecologies' in relation to the transformative potentials of digital media, a term that foregrounds the notion of multiple readings based on our intertwined individual communal and societal relationships (2004). Burnett recommends that images should be considered in the temporal, spatial context in which they are viewed. However, the located potential for multiple interpretations, through associated contexts weakens any original metaphoric meaning, and is particularly pertinent to examples wherein hybrid manifestations of the GUI cross over between computer and material formats. Burnett builds on the ideas of Bruno Latour who also supports the interpretative reading of images; raising questions around multiple encodings that can be built around any given image or symbol (2002). The transformative potential of the hybrid GUI shifts the reading of digital images 'as purveyors of meaning to images as contingent spheres of influence'; interactive, and dependent on temporal and environmental or contextual affects (Burnett 2004: 59).

Artists working with three-dimensional form

A simple representation of the GUI in a material form can be seen in the work of Ola Pehrson, *Winfile.exe* (1997). *Winfile.exe* is a sculptural interpretation of a desktop file icon made of painted wood, 25 x 30 x 35cm in size. The piece looks like it should have been the original reference for the screen based file icon, and is an interesting example of a spatial representation of a digital metaphor (Pehrson 1999). In a further twist on the filing cabinet metaphor, the physical work can also be used as a real cabinet to hold computer information storage devices such as CD-ROMs.

Another artist to extract the desktop metaphor back into the physical world is the Croatian, Darko Fritz. Concerned with the notions of place and identity (rather than Pehrson's digital spaces), Fritz plays with the sanitised meaning of the computer home icon in a series of works entitle the *Migrant Navigator* (2002). Remaking the image through a number of media outcomes, including billboards on the road to the Croatian border, and literally growing the home icon in a specially made

flowerbed, *The Future of Nostalgia* (2002). Fritz's work re-establishes a political reading and social context to the word and icon for 'home', purposefully confusing our computer-mediated experiences with physically impact-full interpretations of the symbol.

Jan Robert Leegte is an artist who exploits the differences in scale between computer screen and gallery environment. Extracting the scrollbar navigation device from the graphic user interface, Leegte projects these clean, rectilinear forms onto shaped-to-fit aluminum bars that create simple interlocking sculptures, and individual modular pieces, *scrollbar* (2002). The isolation and abstraction of the scrollbar navigation devices, removed from the virtual, and scaled up to a human size, float gracefully in the gallery space to reveal the modernist aesthetics of early graphical user interface design. The scrollbars become dysfunctional art objects as they are made to frame finite areas of physical space — an ironic state for a visual device that was designed to allow us to navigate through infinite virtual space.

Figure 1: *save_as* (2007), Ian Gwilt, augmented sculpture: acrylic, mobile video, AR software

The GUI as augmented reality installation

An example of my own practice: *save_as* (2007) uses an augmented GUI object and mobile telephone technologies to enable user interaction between a physical artefact and digital information (see Figure 1).

In the gallery space an upturned model of a partially open folder, a sculptural representation of typical folder icon that you would normally encounter on a computer desktop interface is seen suspended from the wall. *Save_as* uses mobile video facilities to place digital content in direct relation to the material artifact. The sculptural folder is overlaid with virtual texts that randomly link common software command texts such as 'save', 'cut', 'paste' and 'delete', with pronouns including 'him', 'her', 'them', etc. to create word combinations like "save me', 'cut him' and 'delete her'. These word combinations personalise and question our relationship with these everyday technologies and activities. The combined space of the interactive installation references the metaphor of the Desktop GUI as an agent of exchange between the real and virtual, where notions of reciprocity between audience members and computer systems are framed though an orientation around the computer interface both as an onscreen activity and concertised thorough the physical elements of the installations. The project is a collaboration in the use of ARToolkit developed by the HitlabNZ and the work serves as a model to demonstrate how a combination of AR digital content and physical objects can be used to engender cross media experiences and facilitate extended narratives and layered readings in a cultural or artist scenario. The installation also plays with the interplay and permeation of digital systems and visual metaphors of the GUI into physical environments and cultures, where the transformation from computer icon to material artifact sets up the potential for the works to be accepted as precious, rarefied artworks that command value and prestige (Rackham 2005).

In summary, the works outlined above demonstrate the possibilities of referencing the computer interface through a diversity of media types and media combinations, in a creative context. These artworks foreground to varying degrees, issues around shifting social cultural readings and spatial temporal contexts of the computer interface.

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