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optical_surfaces:

The emergence of surface disturbance and embodied affect in Architecture

INTRODUCTION

In 1996, Elenberg Fraser, an Architectural practice in Melbourne, designed a humble backyard shed in Carlton. The *Dazzle Shed*, as it was nicknamed. It consciously drew upon the camouflage pattern techniques of WWII that bore its namesake. The *Dazzle Shed* seemed to offer something more than just image-based folly such as the *Pamela Anderson House* by Cassandra Fahey (2000). There was something intangible and aloof, something not recognisable or formally definable about the project. What made the *Dazzle Shed* so interesting had to do with the way in which its surfaces were applied with a figurative pattern, and not photographic pictures. They embodied the spectator in a way that the image material effect exemplified in the *Pamela Anderson House* did not.

More recently in 2006, M3 Architects completed a new facility for the *Brisbane Girls Grammar School*. Perched on the edge of a freeway, the building presents a façade to the freeway that appears to vibrate as motorists speed close by. Like the *Dazzle Shed*, something else seemed to be at work within the surface treatment of the façade's external skin. Here the façade was not imbued with a picture, rather an image that conceptually informed its technical resolution. An apparent flat optical image, akin to the op-art follies of the 1960's was applied to the heavily fenestrated external skin of the building's façade.

There is clearly something uniquely different about how these surface treatments had been conceptualised and implemented from traditional approaches to the compositional ordering of a building's outer surface. The apparent movement of the image witnessed was in some way related to the physical movement of the beholder and not that of the façade itself. Its effect required the beholder to view 'on the fly', as it were. In the *Dazzle Shed* too the beholder seemed to be required to engage in some choreographed movement. This paper therefore speculates that these architectural projects represent an important transition in the treatment of surface in Architecture; embodying an understanding of the affective capacity of the image to transform the

disembodied occularcentric traditions of surface composition in Architecture, to an *embodied* multi-sensory experience. In order to explore the implications of this change in surface effect and affect, it is necessary to seek out other historical and conceptual examples in other fields beyond Architecture that may aid in understanding what possible lessons might be learnt from this change in approach to surface composition.

DIS-EMBODIMENT

Jonathan Crary's seminal text *Techniques of the Observer* (1992) is useful here as a discursive guide. Crary chronicles the birth of spectatorship and the conception of Modernity through a restructuring of the conventional historiography of vision. At the crux of Crary's argument is an attempt to draw out and redefine the relationship between a sociological and technological account of history, relative to how the changing scientific knowledge of sight and vision, from the sixteenth to nineteenth-centuries, fundamentally changed the way in which observers came to understand their own visual apparatus and physiognomy. Crary proposes a history of visuality that is not linear in its evolution, constructed by a series of 'scopic regimes': each regime simultaneously attempting to achieve its own hegemony.¹

Although the knowledge associated with sight and perception had been undergoing gradual change since the Renaissance, the conception of scientific rationalism, and the clear differentiation of sight in non-theological terms, afforded a shifting strata of knowledge that would directly effect the development of what Crary defines as 'optical devices,' acting to transform the 'rules, codes, regulations, and practices' of the observing subject.² Crary's 'optical-devices' are a social construct, framed through the agency of technological innovation but not beholden solely to its effect. As the scientific knowledge concerning vision evolves, according to Crary, its effect upon the way in which viewers engage and understand the world changes along with it. The scientific observer, Petran Kockelkoren believes, 'employs a broader sensory

¹ Petran Kockelkoren, *Technology: Art, Fairground and Theatre* (Rotterdam: NAI Publishers, 2003), 59. See also Jay, "Scopic Regimes of Modernity."

² Jonathan Crarey, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge, Massachusetts: OCTOBER books - MIT Press, 1990), 6.

register in his perceptions than the Renaissance observer who was limited to a
visuality that simply registered what he saw.’³

HOW MIGHT WE COME TO UNDERSTAND EMBODIMENT?

These optic devices fundamentally transformed the way viewers witnessed and engaged with pictures and images. Although perspective-based pictorialism had an undeniable effect upon the way in which we represent space in architectural drawing and computer aided design software today, as Crary has observed, the effects yielded by perspective upon an observer are fundamentally different than those experienced when viewing images presented by image artefacts and optical devices of the nineteenth-century. According to Crary, one such image artefact, the *camera obscura*, ‘defines the position of an interiorised observer to an exterior world.’⁴ The *camera obscura*’s reduction of the viewer to a passive observer, no longer engaged in the bodily perception of images, maintains the traditions of monocularism that Perspective perpetuated. However, it demarcates an important juncture in history; between a passive dis-embodied observation *of* the world, or an active embodied perception *in* the world. The *camera obscura* is a dis-embodiment device that presents pictures to the observer, and therefore very different from many of the other image-artefacts of the nineteenth-century; such as the Stereoscope, Phenakistiscope, and Zoetrope. These devices structured the basis of perception in the physiognomy of the beholder.⁵

The Stereoscope was a device that presented two separate images of the same scene to an observer, recorded from slightly different viewpoints. In this way the two differing viewpoints mimicked the anatomy of binocular human vision. These two images were in turn mounted in an apparatus that mediated the observers gaze so that only the left eye could view the left image, and the similarly for the right eye. Importantly, the Stereoscope highlights a new form of vision that was not evident prior to the nineteenth-century; vision that was mediated through *autonomy*. Through this mediation, as Sir John Herschel has observed, the Stereoscope catalysed ‘a step out

³ Kockelkoren, *Technology: Art, Fairground and Theatre*, 47.

⁴ Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century*, 34.

⁵ Kockelkoren, *Technology: Art, Fairground and Theatre*, 47.

and beyond nature.’⁶ The images presented by the Stereoscope were not capable of being experienced through non-mediated perception. That is to say, the device was instrumental in allowing the image in coming into being. De la Rhue’s *Stereography of the Moon* (1858) presented a stereographic image that was created by two photographs of the moon, recorded from the same location, several months apart. De la Rhue’s example is critical here as it presents an image of the world that could not be perceived as an everyday human experience in the natural world. The image-artefacts of the nineteenth-century were thus products of an autonomous technological mediation through which visual perception was engaged as a primary locus in bringing the virtual space of the image into being; visually accessible for perhaps the first time to human perception.

THE SURFACE DISTURBANCE OF OBJECTS

We have now built a grounds-of-knowledge concerning the way in which viewers have been culturally programmed within Western society to engage with pictures and images through a very brief précis of a history of Visuality, and charted a transition in the nineteenth-century when the prevailing traditions of occularcentricism began to wain. In returning to the *Dazzle Shed*, the camouflage patterning used to adorn its surface was conceptually informed by techniques of surface disruption in Art, but applied here with the intent of surface disruption that was born out of a different kind of visual history concerned with visual subterfuge.

Camouflage painters in the First and Second World Wars understood the potential visual effects that could be achieved through the distortion of pictures projected onto three-dimensional objects such as ships. Early camouflage techniques, such as ‘blending’ camouflage, relied upon a blending of the object with its background so that the object was not discernable from its background. This was generally achieved through a chameleon-like collage of the background’s colour and pattern applied onto the object being camouflaged. However, this blending technique was not effective on large objects such as ships at sea, primarily due to the technique’s inability to disrupt

⁶ Ibid. Kockelkoren is here citing Sir John Herschel in T. Hanks and R. J. Silverman, *Instruments and the Imagination* (Princeton, 1995).

the *gestalt* perception of the object upon the un-disruptive horizon.⁷ Alternative camouflage options were proposed such as ships being ‘nickel-plated or completely covered in mirrors ... (or) that they be disguised to look like whales or icebergs ... (or) disguised as an island, complete with a lighthouse and pine trees,’ were ultimately dismissed as inappropriate and ineffective.⁸ In World War I Thomas Edison’s proposal that a ship be camouflaged as an island, rendering the ship ‘so unseaworthy that it got carried away before the vessel got out of New York Harbour.’⁹ Such camouflage strategies centred upon indexicality and verisimilitude in order to achieve their effect. These techniques attempted to disguise ships as a form of found object, to be draped in theatrical costumes and adorned with all manner of props and chameleonic veils so as to offer the illusion of being something else entirely. The challenge of disrupting, or at the least, delaying a viewer’s perception of a ship, and its associated movement and speed, required another more figurative and conceptual way of disrupting an object’s visual relationship to the field upon which they sat.

The camouflage patterning technique however was conceptualised as if looking at several different objects, each one with their own *gestalt*, and each with their own apparent direction of address and overall geometric character. Thus the patterning transcribed the geometric form of each of the objects onto the surface of the ship, which in turn provides the ship with a multiple of possible geometric forms and *gestalt* readings depending on which viewpoint the pattern is viewed from, however none of which can be perceptually unified into one recognisable object. This technique not only assists in undermining the viewer’s ability to discern the objective form of the ship, but more importantly for the ship’s captain in World War I & II, it made it very difficult to discern the speed and direction of the ship. It therefore prevented potential pre-emptive attacks by submarines and other war craft that sought to project the ship’s trajectory so as to intercept its path with torpedoes. Here shape was a direct corollary for movement, speed, direction, and ultimately survival. The

⁷ Roy R. Behrens, "The Art of Dazzle Camouflage," *Defence Analysis* 3, no. 3 (1987): 233.

⁸ ———, "The Role of Artists in Ship Camouflage During World War I," *Leonardo* 32, no. 1 (1999): 55.

⁹ *Ibid.*

technological advancements in Radar late in WWII brought about the rapid redundancy of dazzle painting's effectiveness as the comprehension of movement at sea no longer relied upon human vision alone. It was now aided by an image-technology that was not fooled by dazzle paintings perceptual effect, and that was indebted to the autonomous effects declared by de la Rhue's Stereograph some 80 years earlier: Radar could see what the human eye could not.

THE SURFACE DISTURBANCE OF THE INTERIOR

As we have ascertained, for the dazzle painters, the challenge was to ultimately prevent the perception of an object's true geometric character and movement through disruptive patterning. The conceptual premise of this camouflage technique parallels the 'question of the corner' in one of the major modern movements in Art of the twentieth-century, the *de Stijl* art project. The *de Stijl* pictorially based artworks and interior design projects that I will discuss provide a more succinct demonstration of what is at stake in these disruptions of surface pattern and form in Architecture, and the potential choreographic effects that they might provide to surface composition that seeks to catalyse an embodied experience in its beholders.

The *de Stijl* project ('The Style' in Dutch) was a non-figurative, abstract art enterprise organised and promoted by the Dutch painter, writer, and designer Theo van Doesburg, joined later from 1917-1932 by collaborators Piet Mondrian, Vilmos Huszár, and Bart van der Leek.¹⁰ Collectively, the group sought to abolish the formalism of the Cubist manifesto and attended to achieve a pure and universal harmony in their work. This was achieved through the abstraction of planar geometries with a reduced primary color palette, distributed across flat two-dimensional surfaces. In the *de Stijl*, as was evident in the *trompe l'œil* effects of baroque pictorialism,¹¹ the projections of planes upon flat surfaces attempted to

¹⁰ Paul Overy, *De Stijl* (London: Thames & Hudson, 1991), 2-7.

¹¹ Interestingly, in the baroque this technique of spatial subterfuge was used with a very different intent, but with similar conceptual techniques. In the baroque, perspective was manipulated as a compositional technique through which to offer the illusion of spatial depth when there was actually no real spatial depth within the flat surface of the wall or canvas upon which it was imbued. In the *de Stijl* however, we see the opposite. Here surface pattern and the suspension of the singular perspectival viewpoint offered by the pictorial work, is replaced with a perceptual indeterminacy in which real spatial depth is set out to be proactively destroyed and reduced to a flat plane of two-dimensional ubiquity. NEED TO THINK ABOUT THIS A LITTLE MORE?

unfold and flatten the authenticity of the three-dimensions, of real three-dimensional interior spaces into a flat surface.¹²

The *de Stijl* artists used a unique drawing amalgam that consciously manipulated conventional representational techniques in architecture in order to unfold elevations from the plan along the respective ground axes'. This technique unified the suite of separate orthographic drawings (plan and elevations), that were traditionally used to represent an interior, into one multi-planar drawing that incorporated all of the spatial and formal characteristics of the interior space being represented. This new unified drawing surface thus became a site through which to operatively choreograph visual effects, and ultimately compositional harmony, within the resulting interior space.

The overarching goal of the *de Stijl* project, to seek pictorial unity and harmony within their work, was made more complex and challenging when the artwork was installed within the real three-dimensional spaces of the Interior. In particular, the unification of real and pictorial space together created an interesting conceptual paradox. The baroque artists understood the manipulative power of perspective and viewpoint, and were able to effectively control the location from which a viewer would look at their pictorial artwork. The *de Stijl* artist however, was interested in the fluid dynamism of Neoplastic space that was experienced in, and through, time. As Piet Mondrian observed; 'Neoplasticism does away with ... the perspective vision of the past ... [t]he new vision ... does not proceed from one fixed point of view: it takes viewpoint *everywhere* and is *nowhere limited*.'¹³ However, this conceptual ideal was not necessarily complimentary with the *de Stijl*'s search for harmony and unity. 'van Doesburg', according to Nancy Troy, 'understood architecture as 'a multiplicity of planes' that relate to one another through space and time in essentially a conceptual rather than a material manner.'¹⁴ The space of the interior – after all – was essentially defined by the planar geometries that enveloped it. The challenge therefore concerned

¹² Hugh & Fleming Honour, John, *A World History of Art*, 5th ed. (London: Laurence King, 1999), 826.

¹³ Hans L. C. Jaffe, ed., *De Stijl* (London: Thames & Hudson, 1970).

¹⁴ Nancy J. Troy, *The De Stijl Environment* (Cambridge, Mass.: MIT Press, 1983), 62.

the spatial complexity that resulted at the intersection of horizontal and vertical planar elements in the corners of the interior.

In returning to Elenberg Fraser's *Dazzle Shed*, it is now clear that the figurative treatment applied upon its surfaces, was an attempt to catalyse an optical illusion that presented the object as completely flat.¹⁵ The *Dazzle Shed* project was both simultaneously a 'marvellous visual spectacle' whilst also paradoxically attempting to make itself 'invisible and discreet' in the landscape in which it was placed.¹⁶ The application of this clever optical illusion onto the three-dimensional form of the shed, offered two spatial realities. On the one hand, it reduced the perception of the spatial object to a two-dimensional plane, but it also offered the perception of the shed as a spatial chameleon. That is to say, the spatial effect was more than simple two-dimensional reductivism. It offered a multitude of spatial interpretations depending on the subject's viewing position.

The conventional perspective-based notion of a pre-existing subject position from which to receive the pictorial event was thus challenged by the cognitive indeterminacy of the shed's dazzle surface pattern. The object's spatial ambiguity was its single most powerful tool in achieving the suppression of its spatial cognition and identity. The pattern that was applied onto the shed's external skin was no longer simply representational of a space or object, but anti-representational of space, but at the same time spatial in and of itself. The spatial effect was maximised through both the spatialisation of the image and the subsequent application of the spatialised image onto a real three-dimensional object. The *Dazzle Shed* thus exemplifies an alternative appropriation of the image in Architecture as more than just applied pictorial 'material' in which space is defined. Here the picture/pattern is applied as a means of stimulating spectatorial engagement and interest in and about the work that itself defines spatial character. Even through the simplest use of geometric forms in the composition of the dazzle pattern, the spectator was choreographed in a search for perceptual truth in, and through, time.

¹⁵ Ibid.

¹⁶ Paul McGillick, "Nu:8 - Elenberg Fraser," *Monument* 30 June/July (1999): 62.

CONCLUSION

What has this newfound knowledge surrounding the *Dazzle Shed* afforded us in terms of surface composition and effect? The *Dazzle Shed* is still essentially a flat picture that is fragmented and enfolded over an unconventional volume. The interesting and important aspect to the *Brisbane Girls Grammar School* is that it transcends the limitations of the pictorial by transforming the pixels of the image into a form of *facture*. In painting, *facture* refers to the spatialised effect of the paint pigment on the canvas' surface. Each mark reflects a gestural stroke and trace of the authenticity of its authorship. In the *Brisbane Girls Grammar School* the image and its associated effect is created by the gradual incorporation of space into the very fabric of the image itself. In painting the pigment adds spatial depth to the surface of the canvas, however in the *Brisbane Girls Grammar School* depth is inverted into the very surface of the building through the systematic twisting of vertical strands of the façade relative to a choreographed routine.

At first glance, the façade's pattern appears to stimulate an optical effect that is no different then that created when viewing an op-art image of the 60's, such as Bridget Reilly's *Current* (1964), but when combined with the binocular physiognomy of the beholder, and whilst being viewed at a distance and on the move, the resulting moiré effect makes the inanimate façade appear animate. The resulting moiré effect here creates an interference pattern when the grid created by the front surface of the fenestration is combined with real three-dimensional depth and its shadows dancing on the wall behind. There is no real movement in the façade however the *durée* of viewing, combined with the necessitated movement of the beholder, effectively embodies the beholder as an active participant in the reception and cognition of the building's façade. The façade treatment in the *Brisbane Girls Grammar School* represents one specific technique of catalysing the perception of movement through the embedded optical figuration of the building's skin. However, it builds directly upon the op-art of the 1960s, but here it three-dimensionalises the effect into a dynamic, ephemeral, embodied experience. As we gaze out into the new millennium, Art provides a rich and fertile territory from which to mine techniques and tactics through which to embody wholly new affects in Architecture.

James Turrell's corner projection artworks provide further evocative precedent upon which to evolve this narrative. Within these works the perception of surface itself is further destabilised through the active manipulation of light and shadow as veils through which to prevent any unified moment of spatial comprehension. Light and shadow become the animate form that ultimately denies any clear or conscious delineation of the object's true geometric character. Through Turrell's artwork it is clear that we have just begun to scratch 'the surface' of embodied surface techniques in Architecture. We are thus perhaps at the beginning of a new and exciting era of embodying surface effects that are made possible by pervasive image technologies in combination with conceptual techniques that have been creatively appropriated from Art practice.

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