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<http://www.lboro.ac.uk/departments/ac/tracey/>
tracey@lboro.ac.uk

Title: The Linear Journey to Digital Drawing

Name: Michael Shaw

Contact: m.shaw2@lboro.ac.uk

Who: Sculptor & AHRC Research Fellow Loughborough University

Summary: The reflective commentary explores Michael Shaw's attempts to bridge the dimensional divide between sculpture and drawing through animation. It analyses four filmic drawings by focussing on the consequences of simulating real world drawing materials and using CAD software to animate the geometry of virtual singular forms as time passes.

The Linear Journey to Digital Drawing

For over a decade drawing has complemented my practice as a sculptor: primarily through form generation, and very occasionally to problem solve, but most importantly it functions as an activity in its own right. Since 2006, the act of making sculpture has migrated towards computer aided design and manufacture (CAD/CAM). A growing understanding of CAD software has since prompted a series of animated drawings. This reflective commentary explores how they attempt to bridge the divide between two and three dimensions.

Ordinarily the viewer only ever sees the final state of a drawing, the act of drawing is not witnessed unless the work is a performance¹; however the history of the drawing process may be recorded and revealed by the residues of rubbed-out marks depending on how the artist draws and the materials they use. Alternatively, the time based nature of animation can reveal the drawing process by recording the application of individual marks, one after another until it effectively functions as the documentation of a performance. The latter means forms can be gradually brought to fruition before the viewer's eyes. The process of creating the animated drawings subverts the atypical progression towards refined form, when a sculptor draws to generate potential forms for sculpture, whereby tentative outlines are gradually focused into concrete geometry. In contrast to this explorative approach, my first act requires the absolute definition of a virtual form's geometry through CAD modelling. Thereafter, the forms may be animated so that their position, orientation and scale change over time; as may their actual geometry by animating the parameters of deformed surfaces such as bend, twist, squash, taper and skew. Only then are lines of motion bound to their external surfaces to determine the flow of brushstrokes that result in each form appearing to be drawn progressively. The paths the lines take can range from random scribbles to a tightly ordered sequence of concentric lines or spiral contours that demarcate form from top to bottom. Naturally, the choice of path influences the viewer's perception of the originating artist, who remains absent but implied. Making the paths somewhat casual counterbalances the prescriptive control and underlying 'knowingness' with a more intuitive approach and outcome. Overall, the process of virtually constructing the animations means they may be considered: sculpted drawings.

There, but not there explores one of the fundamental aims of drawing: creating the illusion of three dimensional space on a flat plane. The latter is especially relevant to the sculptor, and intriguingly animation appears well placed to recreate the perambulatory and kinetic nature of experiencing sculpture by manipulating the observer's viewpoint by proxy (achieved by rotating the object or moving the camera around it). It therefore unites the second and fourth dimensions to imply the third.

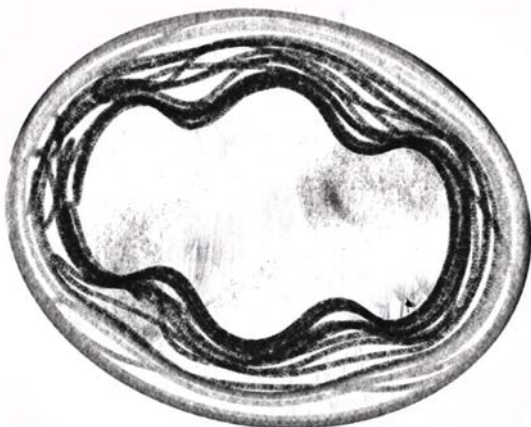


There, but not there
Michael Shaw
2006

Animated Drawing
7.11”

This work also references the act of drawing by effectively documenting its own creation. The continuous mapping of form through moving pencil lines is a surrogate drawing in space; a sculptural sketch of what might be; there, but not there.

Doodle was conceived two dimensionally to adhere to the restrictions of drawing on the page. The process of its creation remains identical to its predecessor in that the forms were initially modelled in the virtual round, however the outputted stills were rendered from a stationary ‘top’ camera and the forms were not moved or rotated to ensure a static overhead viewpoint. It is unlike *There, but not there*, which almost becomes a drawn sculptural artefact perceived to exist in the illusory three dimensional space of animation. Nonetheless, *Doodle* exhibits sculptural traits and seems to equate to standing behind a sculptor and peering over their shoulder whilst they draw. Allusions to the act of drawing are intensified by the lifelike depiction of materials including pencil, rubber, graphite, wax resist, pen and ink and the potential subtlety of marks such as smudges, overdrawing, traces, and bleeds. It appears eerily close to the ‘dirty’ and slightly indistinct nature of working with charcoal and rubbers. Most importantly, the possibility to stack layer upon layer of virtual material in film editing software such as After Effects means that a stained history of mark making can be brought to fruition.



Doodle
Michael Shaw
2007
Animated Drawing
6.12”

Whilst *Doodle* asserts two dimensionality *What might be* transposes the exploration of drawn light and traditional drawing materials more fully into three dimensions, and thus complements *There, but not there*. The latter may be perceived as somewhat more speculative than *What might be*, which is more assertive in its definition of form. A dramatic approach to cinematography sees the camera diving into and through several of the forms as they are being drawn, which further enhances the illusory sense of spatial dynamics.

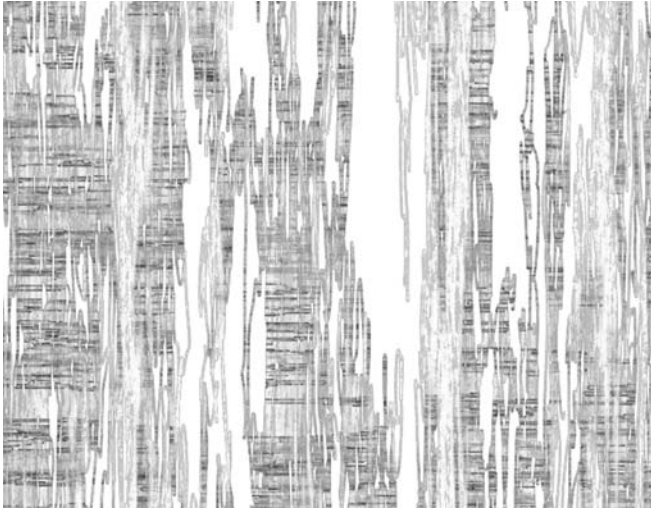


What might be
Michael Shaw
Animated Drawing
2007
4.30"

All three sculpturally orientated animated drawings explore the seemingly paradoxical potential for singular forms to exhibit qualities of both unity and variation in their geometry. These concerns were instigated by attempts to extend Donald Judd's sculptural concept *Specific Objects*² through computer aided design and manufacture. Through his concept, Judd championed unified sculpture where relationships between parts were minimised. However, this ambition prompts the dilemma: how to create a form of sculptural significance with both variation and unity? My approach has entailed subjecting singular forms to various distortions to disrupt symmetry and introduce variation. The CAD environment is especially adept at distorting geometry because the axis and origin of deformers can be shifted off-centre or rotated away from the horizontal or vertical to produce very subtle but extremely complex geometries that would otherwise be nigh-on impossible to realise by hand.

Anyone exploring animation orientated CAD software such as Maya is likely to realise that animation, or modulating between sets of Cartesian coordinates, not only produces the illusion of motion but progressively alters geometry. In other words, animation can be a modelling tool. Based on the films completed to date it appears that animation has some potential to extend Judd's concept in a broader sense in much the same way that drawing can only ever speculate towards sculpture. Animation allows a singular form to have its geometry deflected, but over time rather than statically. Therefore, variations in the geometry, colour and material appearance of the drawn singular form can vary greatly both in the rate of change, the symmetry of change, the dynamics of change and so on, without undermining its inherent unity. These changes in geometry are then reflected by the drawn strokes as they map out and move around each evolving form.

In contrast to the previous three animations, *Una linea nella sabbia* is a meditation on drawing for the sake of drawing and it is perhaps the least evocative of spatial dynamics. Rather it shares more in common with printmaking techniques such as etching, lithography and monoprinting. The rate of change is slowed to allude to animation's illusory trickery whereby the flickering presentation of twenty four still images a second convinces the eye of continual motion.



Una linea nella sabbia

Michael Shaw

Animated Drawing

2007

4.53”

In conclusion, the translation from paper to screen through CAD software provides no answers, as no one medium can, but it does create opportunities for the act of drawing to become: visible over time, kinetic, complex and sustained through the light of projection or back lit screening. The trade off is that the texture, touch and humanity of paper is at first glance absent; yet the seductiveness of the omnipresent screen often overcomes these bygone longings. However, as wonderful as the computer and CAD software undoubtedly are, they should only ever be regarded as complicated pencils. Hence the vision, technique and ambition of the artist in defining line, geometry and material qualities remains the ultimate determinant of a drawing's quality.

Michael Shaw

View Films @ www.michaelshaw.org/animateddrawings.html

¹ Examples include Cai Guo-Qiang's gunpowder drawings where the act of laying out trails of gunpowder, fuses, cardboard templates and stones on paper before setting it off is the performance and the resulting drawing that which documents the act.

² According to Judd, unity can only be achieved in sculpture when its form is specific and has only one quality. There must therefore be no apparent parts, no hierarchy and, therefore no relationships of parts. The sculptor Robert Morris further defined singular qualities as those which predominantly distinguish 'good form', thereby positioning it within the syntax of Gestalt psychology. Significant though Judd's sculptures are, few seem to conform to his definition of *Specific Objects* because through his use of orthogonal geometry and contrast of materials, many of his sculptures do indeed appear not only to be composed of parts, but actually rely on the relationships between the parts.