

Peter Vogel's work is hard to categorise, refusing to align itself with any single artistic movement while seeming in tune with the aims of so many. Drawing on the artistic values of the 20<sup>th</sup> century as much as prefiguring the emerging concerns of the 21<sup>st</sup>, his pieces combine the open form sensibilities of interactive multimedia with an almost classical visual aesthetic that emphasises clean lines balanced forms and delicate structures.

While firmly rooted in recent traditions of both the visual arts and of music, Vogel's work at the same time asks new questions about the relationship between the spectator and the aesthetic object that bring it right up to date with contemporary artistic and philosophical enquiry. Vogel emphasises the importance of the perception of time in his work and the use of sound and light to articulate this, using his skill as a circuit designer to create beautiful sound-machines that respond to the movements of gallery visitors.

However despite the prominence of raw, almost retro- technology in both the look and sound of his work, his is not a mechanistic world view. The behaviour of Vogel's circuits is complex and responsive to their environment and he has spoken of the influence of the life sciences on the systems he creates. Indeed, some of his sculptures have an unmistakable organic quality, taking the form of living mechanical creatures, which probe and respond to the world around them.

The role of the viewer is complex too. Vogel stresses that by interacting with its sensors, the spectator "completes" the work, implying that it is incomplete without the human presence, that it is intrinsically relational. Vogel thus enters current debates about the role of the art object and the active participation of the gallery-going public. His own performances with his sculptures and his collaborations with dance-artists extend the reach of his work beyond the traditional gallery situation, revealing it as simultaneously and effortlessly inhabiting the worlds of sculpture, musical instrument design and composition.

Vogel's early paintings have been likened to the Art Informel of artists such as Wols and Hans Hartung, and he himself has described his technique of the 1960s as action-painting. These early pieces exhibit a strong gestural quality that seems at odds with the clean geometry of his later work. Nonetheless they are crucial to an understanding of his motivations and later artistic development. On reflection, it is easy to see how the dynamism of his early work would lead him to think about time and how it might be explored in a visual medium. As he remarks on the accompanying DVD he wanted these early paintings to be read like scores, indicating that in common with other abstractionists of the time he already considered his painterly gestures to be essentially temporal rather than spatial.

Unlike the futurists who attempted through techniques such as the superposition of discrete moments and the representation of a kind of motion blur to compress the passage of time into the two dimensions of the canvas and consequently into a single moment of perception, Vogel is interested in the actual passage of time as we stand before these pieces, following the paths of individual gestures and

locating each in an unfolding narrative. Time is not represented in these paintings, it is experienced.

It is from this starting point that he soon hit upon the idea of incorporating actual movement into the work, adopting technologies that would genuinely effect temporal variation within the visual structures. Using light emitting diodes or small motors his canvases become genuinely kinetic, following in the footsteps of Duchamp or Moholy-Nagy whose kinetic work, while possibly a subplot in their own development as artists, had a strong influence on artists such as Gerhard von Graevenitz and Pol Bury to whose work Vogel's early pieces bear some resemblance. These works bring time directly into the painterly domain adding a third dimension to the flat surface of abstract painting.

As the temporal dimension begins to dominate his art, the seemingly improvised, spontaneous visual aesthetic starts to subside in favour of an ordered geometrical style which reminds one more of the artists of De Stijl, Mondrian and Van Doesburg or the constructivist sculptures of Gabo or Tatlin. It is as if the gestural language adopted to make the viewer aware of time in their experience of the work has become unnecessary as the passage of time becomes explicit in the changing forms of the pieces themselves.

At first the mechanics are hidden from view, but very soon the painted visual surface is replaced by the exposed circuitry itself, producing the style we most associate with the artist. While one could read the exposed circuitry as a kind of modernist statement of form following function, an anti-mystical anti-illusionist stance, we are led to suspect a double-bluff as we contemplate the mystery of electricity and the way this neat arrangement of components can produce complex responses to our presence.

Just as Tinguely's kinetic sculptures reveal their secret workings, allowing the viewer full access to the mechanisms of their magic, Vogel too lets you see all the components of his electrical circuits, hiding nothing from view. But whereas in a Tinguely the recycled wheels and levers reveal a world of motion, a complex network of cause and effect, Vogel's bare circuitry frequently sits motionless, revealing its activity only through the resulting play of lights, sound, or at most an individual moving part that forms the physical output of the system.

I have remarked elsewhere (somewhat simplistically perhaps) that the world of sound art seems to be populated by musicians with an interest in space and artists with an interest in time. Certainly there are a number of kinetic artists, Tinguely is the obvious example, whose work has led them into the domain of sound-producing objects, but in many of Vogel's pieces sound soon becomes the primary mode in which time is explored.

As the articulation of time in Vogel's work is increasingly confined to the sonic output and the element of physical movement is transferred from the object to the interacting viewer, the very stasis of the object itself stands in stark contrast to the dynamic beeps and buzzes that emanate from the loudspeaker. Indeed, the highly organised arrangement of the components only serves to magnify this

dichotomy. As viewers, we are challenged to relate the timeless constancy of the work's physical manifestation to the extreme temporality of its sonic activity, the result of the interplay between the ordered structures of the bare circuitry and our own movement in the space.

This conflict between the apparently motionless surface of the object and our knowledge of the dynamism of the system is reminiscent of the magnetic pieces of Takis, such as the *Telemagnetic Installation* (New York, 1960) in which huge weights are held in position by powerful electromagnetic forces which, if removed, would cause a (literally) disastrous collapse of the sculpture. Takis' work holds the viewer in a state of tension that is a direct personification of the forces at work in the piece, a physical and emotional manifestation of potential energy.

In Peter Vogel's work this relationship is gentler, but no less corporeal. Through our experience of our own physical movement in relation to his objects, we become aware of the movement of electrons through the structure and the ultimate impossibility of stasis. The balanced perfection of the visual form is revealed as an illusion of scale behind which lies a vibrant and dynamic world of electrical forces. The immediate auditory feedback in response to our movements binds us to the object in a direct causal relationship which reveals the hidden forces within the sculpture. The kinesis in Vogel's sound work is that of the audience eliciting and experiencing the hidden movement of electrons through the physical sensation of our own bodies in motion.

It is no accident that Vogel has long been fascinated by dance, working with choreographers to create performances in which the musical 'score' is generated by the performers' interaction with his sculptures. Here Vogel links to a number of interactive artists who work directly with dance and the body, contributing to an artistic project dating back as far as Leon Termen (Theremin)'s experiments using his *Terpsitone* in the 1930s with the members of the Harlem Ballet. For the Terpsitone, Termen scaled up his famous Theremin (an early electronic instrument which uses the capacitance of the human body in relation to two aerials to control pitch and volume of an oscillator) to reverse the common practice of dancing TO music to allow the dancers' movements themselves to generate the sound directly. Of course we could trace the idea of dancer-generated music back further to the many traditions of clog or tap dancing etc., but in more recent times the use of sensors to directly mediate between the dancer and electronic music has entered the contemporary dance repertory through the pioneering work of such artists as Thecla Shiphorst, Todd Winkler and Rolf Gelhaar. Much of this work, like Termen's and Vogel's emphasises unrestricted movement by sensing motion from a distance using ultrasonic, video or other forms of proximity sensing, removing it from the instrumental paradigm of direct tactile interaction with an object. In such cases the sensors themselves are often hidden from view forming a (more or less) transparent bridge between the dancer's movements and the sound produced.

Where Vogel's vision departs from the work of these interactive dance artists, is in the sculptural qualities of the sensor arrays and musical machines themselves.

When a dancer engages with one of Peter Vogel's sculptures it is the relationship between the body and the object that is emphasised. The objects used in a Peter Vogel dance performance are the same as those experienced by the public in gallery space. The dance is a special case in the presentation of the piece but is perhaps not to be regarded as a separate artistic statement. The use of dancers serves to make public the private experience of the individual inter(actor), revealing through exaggerated gestures the responsive and temporal character of the sculpture allowing it to be seen by a larger group of people. The sonic result is a means of elucidating the relationship between the body, the sculpture and the resulting patterns in time.

Vogel describes his use of sound in purely functional terms: "The sound was another possibility to show time patterns, how the object changes its structure of reaction .... With sound you can hear the smallest details." However his engagement with sound and music goes deeper than this and it would be a mistake to underestimate the importance of musical thought in his approach.

Music has long been considered the "art of time" and Vogel's involvement with it stretches back to early experiments with musique concrete and electronic sound which predate the introduction of the time element into his visual works. Indeed, seeing Peter Vogel work at his desk in the DVD that accompanies this booklet, it is easy to cast him in the role of a classical composer, carefully composing his latest score on manuscript. On closer inspection we notice the pen he is using is in fact a soldering iron, the manuscript paper a wire frame into which he is inserting electronic components. Just as the composer might insert a note or two, perhaps try a harmony at the piano, return to the score, erase and change the pitch or note value, Vogel can be seen testing his circuit, judging by ear the effect of a new component, maybe replacing one resistor with another to achieve his desired musical effect.

Vogel has referred to his pieces as materialised scores which are completed by the spectator and the analogy with traditional musical scores is visually striking in many of his pieces. In *Metallischer Rhythmus* (1995) or the *Klangwand* (1979- ) series for example, transistors, resistors and capacitors appear as blobs on a frame of horizontal parallel lines like notes on a staff and in *Homage a Dada (Notenlinien)* (1981) this relationship is foregrounded by a fragment of actual music paper with movable mechanical noteheads activated by the circuitry below it. Here the legacy of his early paintings becomes clear. His desire to produce scores has not waned over the years it has perhaps merged with a desire to make instruments. Instruments that are scores that are instruments.

Vogel's works break down what Talmudi has described as the score/instrument dualism that has dominated western musical thought, the separation between, as he puts it, a "sequential memory unit – a score, and an execution unit – an instrument ... connected by a one-way translation mechanism." (Talmudi 2004, p.43) Unlike the mechanical Orchestrons of the 19<sup>th</sup> century, from which works like the *Schattenorchester* (1993) seem to derive inspiration, there is no equivalent of the perforated "piano-roll" mechanism, telling the instruments

what to play. Vogel's conception is much more organic than this. Fixed processes interact with processes governed by interaction with the environment to create complex and unpredictable, yet rational, results which he likens to the behaviour of living creatures.

Here we can see parallels with the experiments of the mid twentieth century musical avant-garde. It is fascinating to consider how the notion of open form, pioneered by composers and artists of the fifties and sixties and theorised by writers such as Umberto Eco, has become a fundamental concept in the digital age. Many of the schemes of composers such as Feldman, Cage and Stockhausen prefigure the complex algorithmic systems found in digital and interactive art and indeed computer programmes of all kinds. From the branching structures of Boulez *3<sup>rd</sup> Piano Sonata* (1958) to the astonishingly complex game-like scheme of a work like Stockhausen's *Plus-Minus* (1963), composers were challenging the notion of the musical work as a stable, repeatable pattern of sound, looking to aleatoric and chance processes to replace the fixed notion of the musical score.

Consequently they were confronted with the difficulty of notating music which could exist in a huge number of realisations. This problem produced almost as many solutions as pieces, each encapsulating a particular musical methodology in an appropriate graphic representation, many of which have become as iconic as the sounds they "represent". Indeed in the case of some works by Cage and Cardew for example, the identity of the piece is virtually impossible to discern by listening alone, the work being defined as any pattern of sounds that is produced by following the instructions in a given score, thus making the score indivisible from the musical work it describes.

Vogel's contribution to this field is the Reaction Score or Reaktionspartitur, a graphical representation of the processes at work in his sculptures. Yet again Vogel introduces the concept of a score into his work, and it is worth discussing these preparatory documents for the light they shed on his approach to composition and his relationship to musical minimalism which he has repeatedly recognised as a major influence. Unlike Cage's scores for pieces like *Fontana Mix* or *Cartridge Music*, which themselves could be combined into an infinite number of visual relationships, from which a specific realisation would emerge, Vogel's scores show the building blocks of the work and work through simple examples of their combination. Here the influence of musical minimalism becomes obvious. The audible result of a user's interaction with a sculpture is a complex combination of relatively simple patterns which the circuitry produces. The score shows these patterns and some of the possible "resulting patterns" This is analogous to the resulting patterns in Steve Reich's phase pieces such as *Violin Phase* of 1967, in which two (later three) recordings of a single simple phrase are superimposed at specific time intervals. The resulting complexity leads us to hear resultant melodies which the Violinist is then asked to pick out and bring to the fore. Where Reich is interested in how the ear combines the individual lines into a resultant whole, in Vogel the resulting patterns are created within the circuitry itself.

The complex interactions of relatively simple units can produce a varied and unpredictable set of results. This modular approach is also a feature of early synthesizers and Vogel's minimalism maybe owes as much to the minimalism of German synthesizer pioneers such as Tangerine Dream and Klaus Schulze as it does to Reich and Glass. Certainly, the use of titles such as *Minimal Music Klangwand* (1988) and *Techno-Klangwand* (1996) suggest an openness to influences from across the spectrum of music, demonstrating once again how this artist responds to the world of ideas around him.

As I have attempted to describe in this brief survey, precedents for Vogel's approach can be found in such diverse areas as abstract painting and sculpture, minimalist and aleatoric music, and of course kinetic art. However, as we have seen, Vogel's unique style grows from an even broader range of influences and ideas. His interests in dance and the body, in psychology and neurobiology, physics and engineering, combine with a virtuosic craftsmanship which can balance the demands of visual and sonic aesthetics with the strictures of electronic circuit design. His is an art in which movement and stasis are set in opposition and ultimately resolved through the interaction of the spectator. While it is possible to admire the work on a purely visual level, or enjoy the complex interactions of the pulsating musical patterns, it is the relationship of the visual structures to the sonic output and its mediation by the physical presence of the human subject that is the golden thread that runs through his work. Ultimately it is the humanity of his approach, the playful humour and the joy of invention that singles him out and makes a visit to a Peter Vogel exhibition so special.

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