

Film, Video, Computers are all the product of our science and used liberally within the arts. They are also the product of a century of military research. This unlikely partnership between Art and Militarism is not of course new. Leonardo's war machines and blasphemous dissections were all fuel and part of his art. Once the casting of cannons and the castings of bronze figures marked the pinnacle of an art and a technology. Both art and technology were equal parts of a science. Now, however, we see a great chasm between art and science, art and technology. Artists may make limited use of the artifice of science, they are however second hand tools and years out of date.

16mm film was ideal for filming the bombing raids of WW2, video is its usurper. Image enhancement, micro-chip tubes and high sensitivity did not spring out of the benevolent god of the home or independant video maker. Any improvement in the quality of the picture is the result of military science attempts to provide optical-guided missiles, spy satellites and night sights. The computer may play an important part in the art class and the 3D design CAD packages, yet the movement of the simplest micro is restricted from the West to the East. Look into a holograph and see the illusion of a conscience free science, the perfect application is the representation of the instrument panel and weapons systems in the bio-control-helmet of the pilot of a jet fighter. There are even organisations set up to find civilian applications for military break throughs, where else would your holographic jewelry come from or the Teflon on your saucepan.

A culture can be defined by its technology, a technology can be defined by its culture. The shuttle program was brought to abrupt halt by the skimping and saving of competitive business practises. The whole American space program can be seen as a display of a cultural ego, some thing that was required and after some considerable effort achieved. However so much money and faith was invested, that the whole project decides a path for technological progress for several decades. Like wise the Nuclear Power programme. Artists using the technology produced by a science driven by militaristic goals may find that these goals, through the technology, decide aesthetic and cultural progress.

The divide between the Art technology and the 'state of the art' is widening. Back in the sixties the 'phenomena' revealed by the state of the Art technology was the fashion. Groups of artists such as E.A.T. and A&T, primarily inspired by the Futurist's Toad of Toad hall enthusiasm for the machine and the phenomenon of speed, light and noise, bravely flashed strobes, amplified flowers and bubbled mud. Groups of artists were paired of with large corporate industries, and spent millions on phenomena and technology for its own sake, and by working like this came close to matching the 'state of art'. The emphasis was on the spectacle, to procure in the spectator as strong an emotional experience as possible. The use of technology to inspire awe in the observer and to bombard the senses, made attempts to use technology for more subtle arts experiments look feeble. There was of course a price to be paid for this co-operation. Work although experimental was not allowed to progress at its own pace. Many artists, then as now, found that the process of experimenting with technology in art required the making of many mistakes. The companies did not like this apparent wooly thinking as it was not cost effective. One of the worst examples of this was the World Expo 1970 at Osaka, Japan. Pepsi Cola had used E.A.T. to construct their pavilion. Work on the installations took longer, and became more expensive than expected. Finally the artists were kicked out and the place was run as a large disco come entertainment palace. So with the phenomenon, kinetics and the technic artist declined into the gratuitous and the fashionable. The phenomena of the 60's kinetic art was technological trickery that soon became transparent. A trick that can be seen through looses its magic. There was also a certain naivety in these artists, according to Jack Burnham, "While E.A.T. and other art groups held out the boon of "new discoveries" to corporations funding them, most companies were cynical and wise enough to realise that the research abilities of nearly all artists are nil." Art groups were taken for a ride by large corporations who in fact got a lot of favourable publicity out of the artists activities. And then there was Vietnam, the very same people who were funding this fashionable and gratuitous art were killing and maiming. This was rather unfavourable publicity for technic art, suddenly it was not so fashionable, the magic was lost, technology became a bad thing.

Experimental art had more to contend with than its conscience. Never before has an art-form had to justify itself with such frequency and against such harsh attack. From the start the gallery circuit had it in for experimental art. Primarily because it could not be framed and hung on a wall or posted on a plinth and also because it was very hard to purchase. It could not conform to the commercial laws of transaction. Mainly due to the transient nature of much of the work, an awful lot of kinetic work broke down and needed constant repair, "things fall apart, its scientific". The critics had no vocabulary with which to deal with work that operated outside the limits of their critical language.

It was like this, it became apparent that technology could do things, reveal things and see things that had never before been realised. A new 'pen' was nothing more than the phenomenon of the 'pen' itself. From the turn of the century the divide between the artists and the scientist grew, specialists were needed to delve deeper into the mysteries of this growing science and technology. As this gap grew, a divide also grew between the specialisms. As soon as the technology became readily available and accessible this gap could be filled by people who could make connections. People who were not confined to specialist research.

Today's technology is now a vital part of our culture. It changes our language, our recognition of time and our acceptance of the possible. Talking computers that understand speech are still things of the future, if only the not too distant future. English is the international computer language, only having 26 characters in its alphabet makes it the ideal interface. Spoken english is however a frighteningly complex language, something of such extreme complexity that an english speaking computers vocabulary and grammar would far exceed a realistic memory capacity. Japanese on the other hand has suffered from a couple of thousand characters in its alphabet. Spoken Japanese is far simpler than spoken English. It may be that soon we will be speaking Japanese to our computers and each other. English would become as dead as latin.

Most American detective TV series that are transmitted through out the world are speeded up fractionally for a punchier tempo. The voices of the actors are therefore faster, and a higher pitch. Has this not effected the viewers speech patterns? Will we not soon speak faster and slightly higher, and when this is the norm, the actors who play the detectives will begin to speak faster and higher. What then when the next detective TV series is speeded up? The native given a transistor radio for his vasectomy hears his village fertility dance being played over the air-waves, it has been incorporated into a pop song by a roving pop star looking for new sounds. This is the fashion, the pop song must, therefore, be better than his original fertility song, and so gets incorporated in the next generation of village fertility songs. The next roving pop star to go looking for new recordings finds a great new sound in a small village fertility dance. It gets incorporated into a pop song, its played over the radio, so it goes. Technological Chinese whispers.

The first edited films were a mystery to the film goer. Grasping the concept of a projected image, and distinguishing between illusion and reality was hard enough. When films were edited, and separate apparently unconnected images were strung together to tell a narrative, the viewers were mystified. With no previous knowledge of what we now accept as a film language, real time and film time were indistinguishable, the images on the screen were incomprehensible. Likewise any new technology requires the development of a new language and the establishment of new conventions for its understanding. The first printing presses imitated the monkish script before the potential of print could be explored. The computer keyboard still uses the 'qwerty' key pad, originally invented to stop the hammers clashing. This type of layout is a left over from another era. Now with computer/user interfaces like WIMP environments greater levels of interaction are achieved. Always the technology leaps ahead of the user. Without a relevant language technologies potential is best limited and at worst mis-used.

Now in the latter part of this century we have the technology, we are developing a language to deal with it and we are happy to translate this new language into our common tongue and freely mix and match. The technology is interacting with our culture. even Sci-Fi is finding it hard to keep up. In our modern world the language of the people now uses a vocabulary which includes technology. They understand and appreciate the rapid change in conventions and speak in tongues. This allows today's artists to write things with the 'pen'. Not just video and film which by now are getting to be as weighed down with tradition as painting is, but the nuts and bolts of the moving image, the recording process, the ferrous oxide and the silver nitrate, the magnetic force and the light. These things all mean more than the sum of their phenomena. Historical references can be made and, because of the speed of the technology, conventions can be made and broken, this creates a new fluctuating tradition.

Experimental art is more than playing with bits of electronics and phenomena, its piecing together the words of a new language. This new language, coming from the development of an experimental technology that is not governed by a militaristic science is entering the cultural melee to become a force of change. The technological pen may prove to be mightier than the technological sword. As Rauschenberg put, "I'm talking about conscience in industry, an individual responsibility among artists, scientists, engineers, bankers, politicians and doctors, leading to a more realistic structuring of the Earth and its activities". What may have been a naive hope then is beginning to look achievable.

With its democratisation of technology comes the necessity to make it accessible. The need is for greater research into the technological language to allow human interaction with the technology. An interface is required to translate a morality between the user and the used, and to more clearly define which is which. Burham's quote is now not true. Because of an easy familiarity with our technology the artist can contribute to its development. Computers no longer require bespectacled hermits to operate them, the translation of numbers into images, symbols and icons and a less logical approach is needed. The traditional role of an artist as an communicator is once again applicable. A technic convention or tradition created some twenty years ago by the likes of Tanguely, Robert Whitman and Rauschenberg is the involvement of the operator or the audience. People interacting with machines and phenomena.

Members of the group E.A.T. 88 are just some of the artists who find the involvement of the spectator an integral part of the whole piece. The operator actively translating and communicating with the work. Now things can be written with the technological pen, stories can be told and associations can be made, the phenomena is still there, but now they have a context, and it is hoped we have learned from many of the previous mistakes. It is, however, in the nature of experiment, part of the process, that mistakes should be made, it is the act of discovery. There is still a code that needs to be broken, because it can be touched and heard, and responds to the operator it does not require any less mental activity. Indeed it often requires a great deal more than the passive viewing of an image, this is what provokes the greatest cries for justification. There is still resistance from the art establishment, often out of fear of the political implications of technology. However the artist can find new relationships within technological, scientific and educational establishments now that is being realised there is a vital role to play. Human interaction with technology is becoming a vital part of this democratisation of technology, from computer software to weapons systems. There is an opportunity for artists working in experimental technological fields to influence the development of this language, to effect the process of translation. If only it is to de-mystify technology, it is far more than style, fashion and design, its comprehension and communication.