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## Printed Forms , Invalid Geometry and Contemporary Printmaking Practice.

What is Printmaking ? is it merely a reprographic function, a process of propagating skilled multiples , an impress , offset or stenciled form on to paper or a flat surface. A crafted autographic process or a very particular conversation in the visual arts where processes of contemporary practice meet the world of possible , the world of “ What if ? “ The world of action lead construction ,of chance ,reaction and application. A freeform act of composition without a predictable end .

Printmaking has sat secure in it 's certainties , rules and conventions . A reasoned position serving a public perception crafted production of conventional subjects “nicely” rendered .Yet Printmaking historically has been associated with the radical , the inventive , the application of new technologies and processes. Often lead by the need to express complex new changes in both society , it various means of production and the changing status , activity of artist in their time . To give or assign values to the artist printmaker harking back to a long lost romantic past where the rendition of recognizable forms in a soap opera version of modern life would seem strange .The recent remembrance of the First World War is dramatic reminder of a primary drive that still drives many questions that burn brightly in the mind of contemporary artists. We are no longer in Eden nor do the beliefs or certainties of ages a guide to examine or understand the modern world .Only the lack of predictability ,our conditional sense of the world allows for a testing world where the experimental ,the challenging and questioning nature give a rational edge to our perceptions .

My first desire over many years was to wrap images around a printed form and if possible mould that form at the same time . Over the years I experimented with many approaches . Printed work was sourced in interests in Primitive European Art particularly from the North , African art , the collaged (and Montage ) .the overworked photographs , fertility symbols , outside art ,memories of pass heavy industry machinery , engineering constructions and biological forms. All have fused together in the new work ,in the production of three dimensional prints. My approach to the drawings that would translate to the 3D printed form was like a freeform musical script , drawn within the limits of a engineering CAD package but pushing ,breaking the internal rules and intention of the software. This improvisation within the original drawings is a strange procedure to someone used to the predictable ends and work that followed a pattern of production .I went through a process that produced an print by a series a restricted limits open to an unpredictable course.

It was a radical change to work in the virtual world ,building a printable object by a series of hundreds of small instructional steps using stock geometric forms which can be extruded from basic drawings into three dimensional forms on the computer screen . For artist used to mapping out ideas by pencil and paper working through a series of commands which give a functional visualization on the computer screen , did not come easily.

## 2.

When large format digital printers arrived , printers that can print digital images on various large size papers , canvases and plastics . I produced a large body of work on stretched canvases. It was not such a large jump from my earlier graphic works done by traditional means but a lot faster and quicker than printing through older means . Starting with collages I could scan each original than complete the work through a drawing software package or simply through Photoshop .The final works were a combination of studio and digital work . It was during this period I started to think whether it would be possible some how to fold over an image across the outer surface of a three dimensional form.

At the time there were rumors about machines that in remote research centers , which at great cost with numerous technical staff could print crude three dimensional forms. But it was a distant , science fiction dream that was some time in the future and economically beyond the limits of artists . It was also the first time I met critical attitudes towards works produced by computers . Art from a computer was criticized as lacking skill ,craft , not creditable , merely the production of a machine without the human 'touch'. It is a view that has dogged anything I did connected with a computer for years , even though the digital means was a clear extension of my print work shop practice . It was a resurrection of similar arguments that hunted printmaking practice during the 1970's over the use of photographic methods in the production of limited edition prints –(even though newspapers and other commercial print works had used photographic methods since the late Victorian period) There was the smell of the reproduction ,the simulation as opposed to the product hand crafted by human hands . Fears of a lost of originality , a production distance from the human are the subtext to these criticisms.

Questions of originality have often been raise against the progression of different printmaking practices particularly from painters and sculptors ,who believe their practice to embody those human factors that cannot be mimic or copied . A position soon changed once a painter or sculptor attempts for the first time at the making of an etching . But both painters and sculptors have been using mechanical and process aids for years when considering casting , mould making perspective drawing , camera obscurer and series of various means of measurement , tracing and reproducing three dimensional sections or surfaces. Yet Printmaking is still seen as lacking control or skilled intention as though the process in itself can produce artwork without reference to the human creator –a blind but perfect photocopier . Work originated through a computer have inherited this mantle with greater fears and suspicions . These fears are communal between the processes of printmaking and the workings of the computer , print works with presses that have little changed since the machine manufacturing age demand a methodical approach and respect for the physicality of heavy metal machine whereas computers require basic logical understanding , methodical approach , respect for the software limits and patience . Far from casting a pencil line freely across a surface . It hard to accept the plodding rational progression of a computer could ever match the production of a work in a studio seems difficult in comparison . Yet we are still at

the stage of technology where the digital however complex needs our ideas and direction , our imagination and invention .

The 3D printer found it's practical application with design and engineering with the requirement to visualize a form or design in a rapidly produced touchable form . To bring drawn plans into a volume that can be held , felt , explored between the fingers of the hand . It is a process that appeals to a primitive need to feel , weigh , view from all sides the product of our imagination . As such the early production from 3D prints were model visualizations , scientific embodiment of data or forensic elements . Architects rapidly understood the potential with growing improvements in software and improved resolution /detail of more recent printers .Machines reach the price range that a small practice or university could afford . Research areas such as the Centre for Fine Print Research , in the University of West of England became among the first in the arts to explore the potential of 3D print away from its more practical use. It was in that Bristol University I first saw how 3D printers had progressed and wondered about the possibility of drawing freely within three demensions.

My first steps with the 3D software was to draw up a work were clumsy , painful slow and driven more by mistakes than a clear measured approach . I longed at first to draw with the same speed as I did with the pencil and paper . It was not until I applied the same stepped approach I would use with the making of a print through traditional means . As I would in the print workshop by mind was best lead by asking simple but stepped questions-'What happens if I do this-where does this lead-do I think this works or is it interesting –should I continue this way –even if I am not sure or even hate it but does it take me somewhere new and so on . I found the internal questioning open pathway that I never go to if I had totally plan a form out. Ideas which lay forgotten or untouched for years seemed released from there fixings , freed to combine with more recent ideas and notions .

The imagery , forms ,themes and ideas that appeared match nothing I had visualized before yet on reflection it embodied elements forms and ideas not explored until working with the 3 D printer , a mean of coalescing disconnected thoughts over a long period of creation since the age of twenty . But still based in notion of improvisation through drawing exploration of associated ideas .Like music the structure can swing on a slight twist of order or tone , every pixel can change the balance or direction , which stand or falls on the overall feel. The resultant work appear to be ghost versions of mechanical devices particular clocks , larger general heavy factory presses , elements of architecture or monumental forms . All the work was complex ,very distant in feel to my pervious work . A collection of proposals that may never reach a conclusion.

Many problems arose through trying to understand the 3D form in virtual imagery –it does not fully encompass the total form-it easy to believe that a fully connected form has been constructed but without careful review it is easy to make constructional mistakes of a couple pixel size that end in a disjointed object once sent to the printer . Once processed to remove the support material which is printed at the same time one can find a pile of disconnected pieces .

The printing is achieved by the production of a final drawing in a CAD software which is reprocessed by the printer software to the right sided orientation and position so that the main object plastic and support material are printed by a heated head at the same time. The object is built(printed) in thin layers in a cross pattern which gives a grained directional pattern to the surface of the printed object .This is a process that takes hours and may take a day or so to print depending on its complexity .The simpler or smaller the object the faster the printing . You can also vary the density and proportional size. Objects can easily distort or break with weight of different aspects of the printed object once the support material is removed .Until the last minute it is possible to be sure of the results.

After year of working with extended conventional means I feel as though I am back at a start point where the magic of producing a print has returned. The computer like photography before has radically changed the nature of printmaking .The 3D print is a means of wrestling a printed object from a virtual geometry of the mind eye and memories.