

Implement; drawn

By

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Abstract.

Through the discipline of sculpture, the project explores the nature and purpose of hand tools as a significant technological extension of humans. The exegesis firstly establishes the utilitarian function of the hand tool in its historical context. It is then argued that the possession and use of tools can be perceived as a form of fetishism. The term fetishism in this context describes a certain satisfaction that arises from the look and the handling and use of hand tools. It also refers to the gratification involved in the process of using tools to create or realise a sculptural form.

The intent of tool use in manufacturing, domestic activities and artistic creation is to make the 'significant object'. These processes always create a marginalised 'leftover' or residue. The value and significance of different forms of residues as signposts or traces of an interaction is investigated in the context of artistic practice and interpretation, discussed in terms of the work of Long, Cragg and others. In the context of this visual art exploration the residue has come to be seen as the significant result of intentional action.

The outcome of this research is realised in a visual art exhibition. In these artworks the notion and form of tool residue has gained its own distinct identity as a concept. As in the exegesis, the visual art element of this project also interprets the historical and fetishist constructs of the hand tool by specifically focusing on the leftover residue from the process of manufacturing.

The residue that has influenced the form of the sculptures in this thesis is, by its very nature, free of intentional imagery and as such contains the freedom and gesture of the verb 'to draw'. The exhibition *Implement; drawn* references the idea of how line mediates space and as a consequence the residue has become important as an informing device for moving line or a sculptural body through space.

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Introduction.

In this exegesis I will put forward the conceptual origins and context of my visual art project, *Implement*; drawn, in which the residue from the use of hand tools has gained its own distinct identity as an object of sculptural form. It is appreciated that many functional classes of tools exist. However, within this exegesis only edged tools will be considered. That is, tools that contain one or more of their edges sharpened for the purpose of deliberately removing material from another object.

This research will focus on the nature and purpose of hand tools in the context of utilitarian function and also as objects fetishised¹ by cultures throughout history. The project will also examine the significance of the residue created from the physical process of making as both a narrative and an influence in the execution of the sculptural forms.

In my life, tools and implements hold a significance that transcends mere utilitarian function. Equally the residue, the by-product or marginalised trace of the tool's action, also possess significance. This product can be considered a form of wisdom, possessing contained potential energy.

The rituals of walking, observation and collection began early in life for me. I was raised on a remote mixed farming property in Victoria. Artefactual relics and the residue from the processes of past farming endeavors were plentiful.

As a child I kept a series of boxes in which collected residues were stored. These boxes contained interesting rusted, bent and broken shards of metal from disused implements and machinery, nomenclature tags, badges, and text from old tractors and pumps, as well as a seized Winchester rifle. Unusual fragments of wood, stones and rocks were also collected, chosen for a particular quality of form, texture and colour. During summer trips to the beach, where the focus was supposed to be on swimming, instead I walked and collected shells, seedpods, feathers and bones. In my child's imagination, I was an archaeologist discovering and exploring, collecting, categorising and storing these artefacts for an imagined special purpose.

¹ An obsessive preoccupation or attachment; a fixation. See also Chapter 3

Several times a year our family would travel to the city. I looked forward to these excursions because it meant that I could indulge my passion by spending the day in the Melbourne Museum or The National Gallery of Victoria. I spent many hours pondering artefactual curiosities, from the ancient to the contemporary, and from science to art. This context of museum installations, the displaying of objects, the aesthetic and conceptual fragmentation and reduction of culture, art and science into a unified display, is and has been a source of immense contemplation for me and has been extremely influential in the development of my own art practice.

The impetus for this specific research project was born out of a single event in February 1998 when I came across an undiscovered Aboriginal midden² whilst on one of my walking and collecting excursions on the East coast of Tasmania.

Walking along the shoreline, I was drawn into a clear section of bush where four distinct rings of a crusty white substance contrasted against an almost black sandy-loam soil. Investigating closer, I saw that at the centre of one of the white rings there was a series of small flakes of chipped black stone along with one larger stone that was about the size of an adult's palm. The realisation of what this site was became clear. I noted that the larger black stone was a stone hand tool – probably used to crack open shellfish and scrape out the flesh. The white rings of residue were the calcified remains of the smashed shells.

The small flakes of stone were the residues from the making of a stone hand tool and it appeared that up to fifty skilful blows from another tool had created this stone tool. The memory of the action of making this tool (actional technics) was apparent through the scalloping of the surfaces of the stone. Repeated blows had created one sharpened edge, and the refinement of the form had become shaped as an ergonomic extension of the human hand.

Upon later reflection, three elements of the site seemed to have special significance. Firstly, the hand tool itself was a symbol of human culture and activity. It could be identified as a utilitarian object, used for processing food for human consumption. Secondly, the stone flakes and chips (the residue) that had fallen from the pre-tool stone, contained significant information about how the tool was made. The stone and

² A historically and culturally significant site at which shellfish were processed for consumption.

shell residues had formed a document of the activities of both the tool making and the food processing at the site. The size of each stone flake had recorded the brevity of the impact, the angle of the blow and its point of impact, as the maker with another pointed tool struck the original stone. The number of flakes indicated how many blows were needed to create the tool. Thirdly, the flakes also record the geological properties of the stone and, if analysed, might show the stone's geographical origin. I surmised that the black stone tool had been collected from elsewhere, as no stone in the area of the site resembled this material. After experiencing this midden, I was sufficiently influenced and inspired to create works that made direct reference to tools and personal memories.

To stumble across an actual lithic site was an extremely significant moment for me. The ramifications of that find and the shift in my perceptions were not initially realised. The midden site itself was a snapshot of Aboriginal life and culture. It was as though the original humans had just left. The site could easily have been missed or overlooked if not for my curiosity. It looked as if environmental artists Richard Long or Andy Goldsworthy had created one of their earthworks, as the visual quality of the contrasting colours and shapes seemed like it was created with artistic intent.

The relationship between humanity and their tools is one of symbiosis and the significance of the tool from pre-humans to the twenty-first century is an inseparable part of human culture. Tools are the means by which humans have constructed the material and cultural worlds from the natural world.³

The *Collins English Dictionary* defines a tool or implement as 'anything used as a means of performing an operation, or achieving an end, a piece of equipment and a verb pertaining to being put into action'.

³ Tattersall I, *The Fossil Trail: How We Know What We Think We Know About Human Evolution*, Oxford: Oxford University Press, 1995, p. 72

The hand tool is an object that extends the human hand.⁴ Man is distinguished from other animals by virtue of the fact that he has elaborated what Edward Hall termed 'extensions of his organism'.⁵ By developing his extensions, man has been able to improve or specialise various functions. 'Man has elaborated his extensions to such a degree that we are apt to forget that his humanness is rooted in his animal nature.'⁶ The computer is an extension of part of the brain, the telephone extends the voice, and the wheel extends the legs and feet. 'Language extends experience in time and space while writing extends language'.⁷

The anthropologist Western LaBarre has pointed out that man has shifted evolution from body to his extensions of his body and in doing so has tremendously accelerated the evolutionary process. It may be suggested that man has elaborated and specialised his extensions to such a degree that they are 'rapidly replacing nature'.⁸ Since the earliest history of man, pre-humans or hominids enhanced their physicality by making tools to sustain their existence.⁹

Evidence of the earliest tools show that they were constructed using stone. 'From the most basic, primitive and perhaps fortuitous moment in prehistory when man first created and used a hand tool as an extension of himself, it activated a parallel growth in human culture'.¹⁰ The development of man as a maker and user of tools has evolved into a relationship between man and his cultural dimension in which man and his environment participate in moulding each other.

⁴ Within this exegesis 'man' describes a human being regardless of sex or age; considered as a representative of mankind, human beings collectively, and a member of the race *Homo sapiens*, because of the traditional language of archeology, anthropology and tool making.

⁵ Hall E, *The Hidden Dimension*, New York: Anchor Books, 1982, p. 15

⁶ Hall, *The Hidden Dimension*, p.8

⁷ Hall, *The Hidden Dimension*, p.17

⁸ LaBarre W, *The Aymara Indians of the Lake Titicaca Plateau: Memoirs of the American Anthropological Association*, Washington: American Anthropological Association, 1984, pp. 18-34

⁹ De Bono E, *Eureka, An Illustrated History of Invention, From the Wheel to the Computer*, New York: Holt, Rinehart and Winston, 1974, pp. 2-3

¹⁰ Leakey R, *The Origin of Human Kind*, New York: Basic Books, 1994, p. 46

The role of tools and technology in shaping our destiny is so dramatically obvious that it may distort our sense of its relative importance. The characteristics of a culture not only condition the appearance of tools but also their use, and spread.¹¹ The invention of any tool or technology can only be explained in human terms, although this should not imply that technology is a neutral consequence of human activity.¹²

When we speak of the challenges of a given environment or the needs of a given society, we must be aware of thinking in terms of purely objective, exogenous factors.¹³ The challenge counts insofar as to how it is perceived by man. Technology deeply affects the material culture of a society, the size and composition of its population, the nature of its labour force and the physical environment.

Both technology and invention arise from historical circumstances.¹⁴ When we try to explain why a given technological development occurred at a certain place and a certain time it is easy to subscribe to facile determinism. With hindsight many a development may look simply like the natural, almost inevitable product of a specific need. We are frequently told that a given society developed any number of inventions because of perceived need. The type of response to any given need or necessity is largely dependent upon the prevailing culture. Various societies will as a result respond to differing environmental factors in a multitude of ways.

The same might be said of art where the artist may respond to the need and necessity of his/her environment with imagination and endeavour. Don Ihde begins his own enquiry into *Technology and the Life World* with the broad notion of technologies as the objects of the material culture that we use in various ways within our environment. I suggest that as a result of man's production and use of tools, material culture is born. Out of material culture, art has been born. It is not my suggestion, however, that art has solely been a consequence of tools and technology. Ihde suggests that if we were to imagine the 'New Garden' as a place without technologies. As a consequence humans might well develop their oral and physical expression into song, poetry and dance in both aesthetic and religious senses.¹⁵

¹¹ Leakey *The Origin of Human Kind*, p. 47

¹² Hall *The Hidden Dimension*, p. 10

¹³ Cipolla C M & Birdsall D, *The Technology of Man*, New York: Holt, Rinehart and Winston, 1980, pp. 30-32

¹⁴ Cipolla & Birdsall, *The Technology of Man*, p. 34

¹⁵ Ihde D, *Technology and the Lifeworld: From Garden to Earth*, Indianapolis: Indiana

Ihde imagines that within the 'New Garden', none of these activities could involve 'artefacts in actional technics'.¹⁶ Ihde uses the term 'technics' to suggest the human action of employing artefacts to attain some result within the environment. In my own work I am concerned with results that do involve artefacts as a result of actional technics.

The tool (artefact) itself is an activator and residue of material culture. *The Collins English Dictionary* describes residue as 'the matter remaining after something has been removed, from the Latin residuus, remaining over, to stay behind, to reside'.

As a consequence of using the tool, residue is created in the material form of something that has been removed. This is the (in) significant result or by-product that evidences the making process.

As my research developed, Ihde's idea of result within the environment as a consequence of the tool (artefact) and indeed the physical residue from the making process has become the focus of my sculptural work.

Tools may be classified as cultural residue. Natural residues may be used to make tools. For example, obsidian is a natural glass formed when hot lava flows on to the surface of the Earth and cools quickly. Obsidian is then the result and the residue from the action (eruption) of a volcano. The residue (obsidian) is both a record of the action of the volcano and a documentation of the unique mineral deposits from each volcanic episode. Obsidian was the material of choice for toolmakers from before the Pleistocene epoch throughout Europe and the Americas.¹⁷ It was much prized for its unique edge holding capabilities. As a material it was collected and commodified. Obsidian was prized both as a fetishised material and as a product that enabled the multiple productions of specific tools.

University Press, 1990, p. 26

¹⁶ Ihde, *Technology and the Lifeworld*, pp. 27-33

¹⁷ Diamond J, *Guns, Germs and Steel, A Short History of Everybody for the Last 13,000 Years*, London: Vintage, 1988, p. 72

The process of boat building could be perceived as a metaphor for the discussion of the notion of tools and residues. Regardless of technological advances, boat building remains a skilled craft in a continuum reaching back for approximately 100,000 years.¹⁸ To begin construction, the boat-builder may select a tree or timber for its specific qualities and begins to use a multitude of tools to shape, mould and construct the desired boat form. If we were to consider this process in terms of the tool and the residue, we would observe that by using a saw to fell the tree the elements are: saw (*the tool*); wood chips from the action of the teeth of the saw against the timber (*the residue*); the felled tree which is re-cut, profiled and joined to become the desired vessel (*the tool and the residue*). The boat itself could be perceived as a functional tool and from a more abstract position, a form of residue from the application of tools. Hypothetically, if the vessel was left behind as residue or simply sank, archaeologists could find this vessel at a future time and use it as a means of understanding a culture and evaluating the prevailing society at a specific time and place.

The *tool* becomes the residue of material culture and the fragmented remnants left behind are a vestige or traces from the process of interaction between tool and material. Specifically the wood chips or residues from the making process of our vessel contain the memory and information of the hand tool's action. Through the application of different tools, various physically formed residues are created. Sawing and carving creates flakes and chips and planing or shaving produces a curled spiral of residue. Specifically, this curled spiral is known as swarf, and is also the name given to material removed by various tools in the machining of metal, wood and plastics. This residue contains information of the making process and is more often than not swept up and discarded.

Anthropologists endeavour to determine our ideas about human culture by studying and analysing tools and residue and tools as residue. Within the bounds of my own practice, I liken my role as an artist to that of the anthropologist in that I observe culture and analyse the material or artefactual evidence of our culture to make a realisation in visual form.

A significant part of my art practice is walking and collecting. Collecting natural and man-made objects (residues or the traces of what it once was) has formed a large

¹⁸ National Geographic Society, *National Geographic*; Vol. 191, No.5, May 1997, p.85

part of my practice over time. The selection of an appropriate object is both a conscious and an unconscious process. Usually, these found objects are categorised when I make assumptions about the origin, history and context of what it is and where it was found.

These objects may themselves initiate new ideas and provide information about how sculptural form may be resolved. For example, a weathered stone might present an aesthetic or tactile quality that may find usefulness as the impetus for future application.

To this day my penchant for walking, discovering and collecting is a key factor in the creation of many of my art works. This process manifests itself physically in my works *Quiver*, 2001 and *About Three Hundred Miles*, 2002. These sculptures are constructed entirely out of objects (bones, feathers, stones, found objects and thread) collected whilst walking the Tasmanian coast.

These two works conceptualise residual memory. They embody, fragmentary memories of disused hand tools or implements of curious origin and utilitarian function from my childhood on the farm, and also my memories of the museum artefact-the tool or implement from a distant culture and time.

The memory of the act of walking and collecting residue becomes a documentation of the journey taken as part of the process of making new work. In this way, memory itself can also be perceived as a form of residue, a kind of personal fragmentary trace of an event or time. Memory and personal perception also play an integral role within the context of my work.

The creation of a tool as artefact remains a strong influence, although as this research developed, it occurred to me that the surface finishes that I was seeking for my implements were becoming more about the processes of making. I reflected at great length upon the curled residues that recorded my own making processes. Piles of swarf- the residue, recorded a morning spent carefully shaving a piece of wood, each curl recording the action of my hand in companion with a hand tool. Unconsciously and inadvertently I had created material sketches for new forms that had personal significance.

This exegesis, in its form, is like the sculptures. It circles, spirals and works across the grain of the material, as does the residue from the hand tools' application.



Chapter 1

Hand Tools

The evolution of human material culture is categorised by the material from which the tools of a given culture are constructed. Known as the Three Age System, the Stone Age, the Bronze Age and the Iron Age represent the main paradigm shifts in technology. (Fig.1) It locates an artefact of material culture at a specific place in time. However within remote regions of Australia, the Pacific, Africa and South America certain cultures today continue to utilise stone as the chief tool-making material and therefore may be said to continue existing in the Stone Age.



Figure 1. Axe heads: Iron Age; Stone Age; Bronze Age

This chapter explores the significance of the hand tool as a technological extension of humans. It traces the earliest developments and the later growing sophistication of tool technology and its related processes. The main focus is on the evolution of edged hand tool manufacturing. However, it is also the inevitable production of residue, the byproduct of a tool's implementation that is significant to this project.

The tools of our time share a common ancestry, originating with the sharpened stones that were the keys to early human survival. There are two main categories of modern hand tools: primary tools that have a sharpened edge (such as the chisel) and secondary tools which are used to drive the edged tools (such as the hammer acting on the chisel).

The removal of material from a work piece is the common denominator and primary function of edged tools from the first humble stone tool to the latest computer guided robotic lathe. This removal of material is achieved through a form of cutting. The presence of a cutting edge is therefore the main and essential characteristic of tools and implements.¹⁹ The principle concern of all toolmakers is the pursuit, development and maintenance of a superior cutting edge.²⁰

The earliest known species of the genus *Homo* evolved the ability to create sharpened edged tools and is therefore named *Homo habilis* – ‘handy man’. ‘The tool manufacturing process involves the use of memory, prior planning and abstract problem solving; this marks the beginning of culture and environmental adaptation – a uniquely human ability’.²¹

Tools made from stone that were shaped by basic chipping or flaking have been dated as far back as 2.6 million years.²² Initially the earliest humans were casual tool users, using a convenient stick or stone to meet an immediate need only to then discard the tool. This ‘casual’ tool use is not solely a human activity as other primates and mammals are known to use sticks to withdraw insects from their mounds or to use stones to crack open seedpods and fruits. Humans however are the only species to use one set of tools to manufacture other tools.

To rise above mere subsistence the earliest humans came to depend on the sharp edge of a tool to cut through the skin of an animal to access the meat. These first intentionally formed stone hand tools represent humans’ first technological break through. Conceptually the tool making process had arrived at a point where the maker imagined a desired tool existing within a given piece of stone. The maker’s task was to ‘uncover’ the form from within the stone.

Stone as a tool making material covers a wide variety of types, ranging from the dense and grain-less flint and obsidian, to coarse-grained granite and quartzite. Each type of stone possesses unique properties but all are difficult to manipulate. Flint is a form of silica and is distributed throughout most parts of the world. It is

¹⁹ Goodman W L, *The History of Woodworking Tools*, London: Bell and Hyman Ltd, 1964, p. 8

²⁰ Goodman, *The History of Woodworking Tools*, p.10

²¹ Wilkinson P, ed. *Early People*, London, Dorling Kindersley, 2003, p. 8

isotropic, having equal grain flow in all directions. Its hardness is greater than most steels. When flakes are removed by striking it displays the shell like conchoidal fracture of a brittle glass like material with a sharp edge. (Fig. 2)

Other stone materials such as obsidian were also used to make tools. However most edged tools were sculpted using flint.



Figure 2: Conchoidal surface flaking, flint hand tool, approximately 300,000 years old.

The earliest stone tools were also the largest. They were manufactured from a fist-sized stone (core) with another similar stone (hammer stone) by tapping off flakes on one side to produce a jagged sharp crest. This was a general-purpose implement that would have been used for pounding, hacking and cutting. By a process of development and by acknowledging the efficiency of a more refined blade, thinner, sharper and more versatile core tools were developed.

The traditions of stone tool manufacturing display an evolution and the developments of the technology, leading from one form to another in a seamless transition. Innovations were made possible through the logic of improvements to the tool's sharpened edge, by developing a new tool based on the old tool for a new specific purpose.

A study of the implements of successive tool making industries displayed the great efforts undertaken to pursue cutting edges in a longitudinal direction. Knifelike instruments predominate, and thus define the nature of the fundamental need, that of

²² Leakey, *The Origin of Human Kind*, p. 64

a cutting tool, which could slit, sever and scrape.²³ The ensuing development of a hunting economy provided food and also made available vast quantities of bone, antler and hide for tools, clothing and housing.²⁴

The most advanced stone tool making cultural periods begin with the Neolithic Period and coincide with other significant contemporary events. The melting and retreat of the last glaciers, affected the development of a sedentary culture, the invention and development of cropped food production and the domestication of animals. During this time the development and elaboration of stone technology into specialized tools had also brought in the extensive use of materials such as wood, horn and bone. These new materials could not have been manipulated without the aid of specific hand tools, such as serrated blades and gravers or burins – small scrapers with either pointed or narrow chisel like ends. As new technologies grew they exploited the unique properties of these materials which made possible a technological diversification whose specialization and complexity fitted them to fresh tasks. For example bone was a particularly useful material. Its toughness made possible barbed fish hooks, eyed needles and small leather working awls.

As new technologies grew, exploiting the unique properties of these new materials it made possible a technological diversification whose specialisation and complexity fitted them to fresh tasks. For example bone was a particularly useful material, its toughness made feasible barbed fishhooks, eyed needles, and small leather working awls.

The later Neolithic Period also defines that period when ground and polished stone tools incorporated the fitting of a wooden handle to increase their leverage (hafting). The notable developments during this period were simple wood working tools such as chisels, axes and adzes. These made possible precise and intricate designs in timber. The home, cradle and coffin, furniture and utensils were all products of these polished stone tools.

²³ Grey M, *Man the Tool Maker*, London: Priority Press, 1973, pp. 8-9

²⁴ Grey, *Man the Tool Maker*, p. 17

The use of wood began its broad and successful role in human life during the Neolithic Period due to the use of ground and polished stone tools. The Neolithic tool kit turned wood into a universal building material.²⁵ Many new possibilities were realised, such as dugout canoes and framing for hide covered vessels. The development of maritime culture – sledges and skis – opened access for further habitation. Substantial habitations were made possible due to the evolution of sophisticated framing techniques, using the polished and halfted stone tools – the adze, axe and chisels. This new adaptation (halfting a handle) together with the polishing and refinement of stone tools encapsulates the pinnacle of innovation in the development of the stone tool's edge.

An examination of the evolution and development of stone tool technology gives insight into the growing conceptual sophistication of humankind. Tools, which evolved from the earliest purely functional, roughly formed 'core' stone forms represent a basic utilitarianism where the tool's form and function are inextricably linked. The later 'blade' and 'flake' tools represent a further evolution with the refinement of the tools edge leading to a finer and therefore sharper tool. These blade and flake tools also depict the beginnings of ergonomic and aesthetically considered tools in which the actual appearance of the tool becomes an important consideration.

This pinnacle of stone tool technology, the 'polished' technique, also marks a significant point in the manufacture of non-functional fetishised tool forms. These tools were manufactured for ceremonial, ritualised or aesthetic concerns where the form is the primary objective and the function is not a significant consideration.

The Neolithic or late Stone Age ended with the discovery of metallurgy. The significant point in the paradigm of the Stone Age was the discovery and acknowledgement that particular stones did not respond to the traditional flaking methods. Instead these stones were soft and remained intact when struck. These stones were composed of naturally occurring copper, which when heated in a very hot fire changed to a liquid state. This discovery led to the production of the first significant metal suitable for tool manufacture. Copper was the first metal to be smelted. At a later, undetermined time, a new alloy was created, by the smelting together of two separate ores, one bearing copper the other tin. The new alloy

²⁵ Goodman, *The History of Woodworking Tools*, p. 72

(bronze) was a far superior material for tool making due to its ability to hold a sharp edge.

The Iron Age began with the first evidence of man-made iron 4.5 thousand years ago in the Middle East. A millennium later the abundance of this ore led to the displacement of copper and bronze as the chief tool making materials by the Hittite Empire. In the Early Western Iron Age, when the metal was in scarce supply, local armament makers were the primary consumers of this new metal. Later iron tools were developed for clearing forests and for cultivation.

With the advent of the Iron Age came the development of numerous technologies, such as foundry practices. These allowed the exploration of the manipulation of metal. Thus the first approximations to the modern forms of the craftsman's basic tools were established. The main thrust of further tool development was directed at improving the cutting edges of the tool, as well as the methods of attaching 'the edge' to new iron hand tools.

In my sculptural practice the steel hand tools and implements that I use, such as drawknives, spoke shavers, planes, awls and palm carvers, all had their genesis in these early Stone Age and the later iron tools. Chisels and palm carvers are therefore direct descendants of the Paleolithic stone hand tools. The earliest evidence of the process of chiseling appeared approximately 10 thousand years ago and was created by rectangular chisel shaped flints. The later copper chisels and the slightly more recent bronze chisels were used not only on wood but also soft stone. The Egyptians used chisels and club-like mallets to create monuments and sculptures of limestone and sandstone. In later centuries, with the development of iron working technologies, chisels and gouges were made in great variety.

Over the following two millennia, the increasing demand for more decoration and luxury in both religious and secular trappings and furniture required the development of new tools. The crude and heavy tools of the early carpenter were refined into more delicate models suited to woodcarvers and joiners who created wall paneling and made stairs, doors and cabinets.²⁶ In the 18th century a cabinetmakers and woodcarvers kit may have contained 170 or more chisels and gouges.²⁷

²⁶ Goodman, *The History of Woodworking Tools*, p. 118

The drawknife was one of the first wood shaping tools made from iron. It is a two-handled blade that is pulled toward the operator and is the earlier relative to the plane and spoke shave. The drawknife's handles are bent at right angles to the blade's plane. A skilled hand is required to regulate the depth of the cut as a slight change in angle can cause the blade to dig out an incorrect amount of material.

The drawknife has undergone little change since the Viking craftsman, when it was used to level off axed and adzed timbers for boat and housing construction in medieval Scandinavia and Russia.²⁸ Further development of the tool's edge was centred on methods of fixing the blade to ensure a consistent amount of material was removed with each draw of the tool.²⁹

When confronted with a particular or unique task, a skilled craftsman develops a special tool to cope with the situation. In the seventeenth century, for example, the taste and fashion in wood carving and joinery for highly ornate woodwork led to a proliferation of creative wood planes made for specific purposes by individual craftsman.³⁰

The first known users of the plane were the Romans, and the earliest examples come from Pompeii. The Roman scholar Pliny the Elder ascribes its invention to Daedalus, the mythical Greek representative of all handiwork.³¹ Excavations of the Ancient Roman settlements in Great Britain and Germany have yielded eleven planes of differing sizes.³² By the late seventeenth century the plane and its earlier relative the spoke shave had established a significant place in the craftsman's tool kit.³³

Bench planes were used for surfacing and leveling timbers on panels and for creating straight edges on boards so that two or more boards could be joined to form a wide panel. By the early nineteenth century the wood worker possessed numerous planes and specialised tools in their tool kits to shape and form the necessary mouldings and joints used in their craft.

²⁷ Goodman, *The History of Woodworking Tools*, p. 130

²⁸ Nagyszalanczy S, *The Art of Fine Tools*, Newtown: Taunton Press, 2000, p. 65

²⁹ Goodman, *The History of Woodworking Tools*, p. 99

³⁰ Goodman, *The History of Woodworking Tools*, p. 101

³¹ Pliny the Elder, *Natural History xvi*, trans & ed. Gregory Cranc, The Perseus Project, <http://www.perseus.tufts.edu>, March 2004

³² Nagyszalanczy, *The Art of Fine Tools*, p. 108

³³ Nagyszalanczy, *The Art of Fine Tools*, p. 72

The spoke shave may be likened to a short-bodied plane but is constructed in the same manner as the draw knife. The spoke shave has a handle either side of the blade, allowing the tool to be pulled toward the operator but with control over the depth and consistency of cut or shaving.

Although the word *spoke shave* is recorded as early as 1410, artefactual evidence shows its first appearance approximately 400 years ago.³⁴ As its name suggests it was originally a specialised tool of a wheelwright and later it was used for various other purposes by craftsmen in many different trades (for example, cabinet making, carpentry). The spoke shave is an example of a tool having been generalised rather than specialised.³⁵

The unchanging technique of the hand's action in companion with the hand tool throughout history demonstrates an on-going connection between hand and tool. The technology of the tools edge is historically constant. The variables have been the materials of which the tool is made.

A further constant is the ever-present residue, left over from the production of the object. There are two forms of residue produced from the action of tools. Chips, flakes or shards are produced by cutting edges that are hafted or attached to a lever, such as a chisel, adze and axe. The other form of residue is the spiraled form: these shavings are familiar on the floors of any woodworking shop and are sometimes referred to as swarf. These shavings are created by tools with a cutting edge that provide a constant depth of cut and an elongated draw of the tool, such as a spoke shave or plane. Other hand tools such as the drawknife also produce a spiraled residue, when drawn across timber.

³⁴ Nagyszalanczy, *The Art of Fine Tools*, p. 78

³⁵ Goodman, *The History of Woodworking Tools*, p. 173

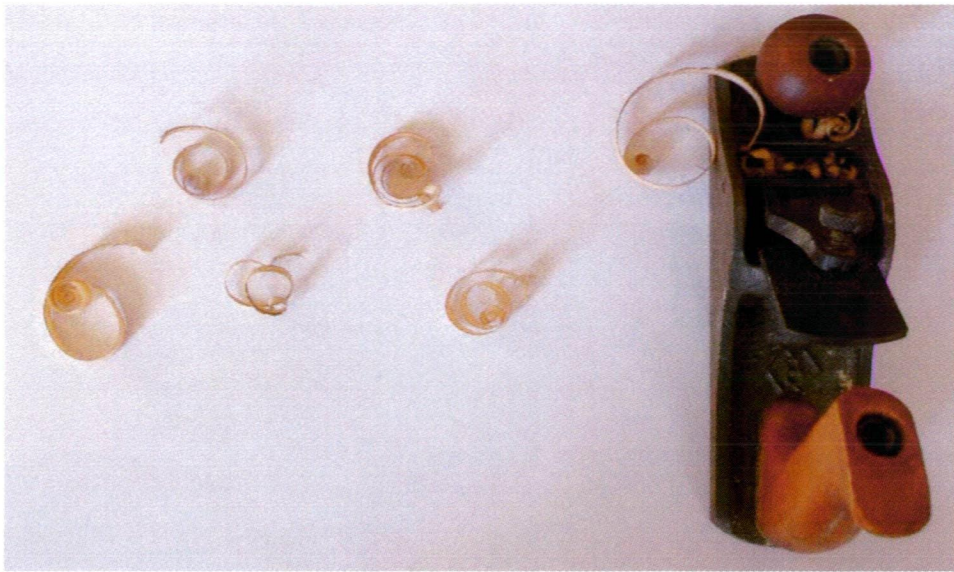


Figure 3: Swarf, the spiraled tendril-like residue from a plane.

Pliny the Elder noticed this curling effect of tool residue. Pliny describes the resulting residue from the hand tools action and the tools action itself, in a volume of his writings, on natural history: 'The shavings of this wood, when briskly planed, curl up like the tendrils of vine'.³⁶ As the spiraled form of hand tool residue, swarf is significant to me and pertinent to this enquiry. (Fig.3)

Hand tools are extremely important to me. They are not only the 'means' or the tools in the most basic utilitarian sense but they also possess significance for me in my own art practice. Through many museum excursions and by viewing exhibitions of relics and artefacts I developed a keen interest in history. The inspiration I gained from these exhibitions was not only from the visual quality of the artefact or the objects themselves, but it was also from the technological methodology that the earlier humans used to create them. This notion of 'what has gone on before', indeed the inspiration of primitive technology has developed into a self imposed ethos of methodology and a construction technique that I use to make sculpture. This approach is centred around working with traditional hand tools on natural materials.

These manual techniques are inherently more time consuming than machining with power tools, yet through the slow and repetitive carving and forming process, small improvements evolve within the piece. Furthermore the process also communicates information and possibilities for the next sculpture. Each new sculpture has been an evolutionary result from a previous sculpture as one form leads to the other. I find the

³⁶ Pliny the Elder, *Natural History*, xvi

connections between how our collective contemporary tools have evolved from the first humble stone tool, similar in form to the stone tool discovered in the midden site an inspiration.

Chapter 2

The Hand Tool as Fetish Object

The term fetish or fetishism (the belief in a fetish) is defined in the *Collins English Dictionary* as:

1. 'Something; an inanimate object that is believed to be the embodiment or habitation of a spirit or magical power. 2. Any object or activity, to which one is excessively devoted. From the Latin *facticius*, made by art and the Portuguese *feitico*, sorcery'.

Within this exegesis fetishism is a term that is used to describe a certain satisfaction that arises from the look and the handling and use of hand tools and also the pleasure of creating a form that generally, is appropriate to their application.

At different points in our lives we may become attached to objects. This attraction could possibly be through a belief in a hierarchy of an ideal or through the sentiment initiated by a tactile or aesthetic response. These complexions could perceivably be projected onto any object; in my case it has been hand tools. Two tools in particular were the subject of this attachment and fascination. When I was young my father gave me a toolbox of my own, in the manner of a kind of 'right of passage' gesture and now these tools act as mnemonic objects. Within the tool box one screwdriver in particular shows the wear and tear markings from his use of the tool. After my father died, these tools are my only physical connection to him. To me the sight and the use of this tool triggers a very precise memory, in that I can remember every detail of certain events, including smells and sounds, much like replaying a home movie.

Another hand tool to which I have a particular emotive response to a hammer that I inherited from my grandfather. I have several hammers at my disposal, but I always reach for my grandfather's. As a consequence from many years of use the wooden handle has worn down to a more ergonomic and smoothed shape. The handle has also developed a rich patina from the handprints of countless applications. The head of the hammer possesses an 'older style' shape, with just the 'right' amount of weight. This hammer rewards the user through its tactility, perfect balance and 'old school' aesthetic.

These hand tools discussed represent an opposite ideology, in the first instance, my fathers' screwdriver is perceived by me to project some kind of essence of a memory. In the second instance my grandfather's hammer is instead, imbued with the memory of the tools action, and is significant due to the unquantifiable satisfaction of being put into use. These hand tools are the connection to my own history and relationships to these significant men in my life.

Tools and implements are so intrinsic and ever-present to human collective lives and existence that they have become incidental and perhaps transparent. The notion of a tool as a functioning extension of the hands is an accepted concept. At the same time, a contemporary interpretation of 'tool' is far removed from the traditional concept and the reality of its physical use.

The computer is a tool that extends the hand and the mind. Computers are operated by means of engaging icons to facilitate functions. These icons, also known as tools, and are located on the 'tool bar'; use the concept and image of hand tools as a metaphoric signal of the manual tool's operation. The spanner, hammer, and screwdriver are rich images of purely manual techniques. Now they are wrestled out of our hands and displayed out of reach, to be put into action by remote control.

Tools have also found a place in our language and add colorful metaphors in colloquial dialogue such as: 'an axe to grind', 'to have an edge,' 'to call a spade a spade,' '(s/he) is not the sharpest tool in the shed', and '(s/he) is a chip off the old block'. 'To bury the hatchet' provides a metaphor pertaining to a resolution between disputing parties, whereby the act of embedding an implement in the ground is an act of mediation- agreeing to disagree. The original concept of the 'burying the hatchet' came from the Indigenous American culture. The Native Americans possessed implements known as calumets, peace pipes or tomahawks these are highly fetishised and crafted sacred tobacco smoking devices that also have a hatchet blade attached opposite the pipe bowl. The calumet encapsulates war and peace in one ritualised tool and every aspect of their construction and use was and is considered and symbolic. To refuse to smoke from the peace pipe when invited was considered an extreme insult, and a declaration of war. So to paraphrase thousands of years of ritual and history, you can either smoke for peace or bury the hatchet and make war.³⁷ This is the opposite meaning to our contemporary use of the term.

In many cultures throughout history certain rituals and beliefs are associated with tools. For example, a tradition of Japanese carpentry from approximately 1700 years ago developed concurrently within a family guild system. The carpenter was the architect, the engineer and joiner. The family of carpenters with its authority and with absolute protection guarded the secrets and specialised techniques of their guild. The guild specialised in specific forms of construction such as those for shrines, temples and domestic constructions.

The two significant features of Japanese carpentry pertinent to this enquiry are the ritualised methods of joinery and the perception of the tools used. Each carpenter's guild developed its own unique method of cutting and slotting timbers together. Their techniques transcend into an almost religious, precisely ritualised process of placement, measurement and execution. These joints of which approximately four hundred types are still in use today, are not only designed and executed for their utilitarian function but are carefully designed as an aesthetic composition.

Japanese carpenters use a very special, respectful term for their tools, which are not referred to as mere 'tools' instead are instruments named *dogu*, which has no direct translation in any language, but roughly translated means 'instruments of the way'.

³⁷ Biederman H, *Dictionary of Symbolism, Facts on File*, Oxford: Roundhouse Publishing,

Due to the special pride associated with being an accomplished professional, ceremonies about the ritual 'of the way' take place as a part of earning the right to use the instruments.³⁸

Tools are also physical metaphors in our society in ways that signal religious and state or empirical significance in ceremony or ritual. This is witnessed in the 'ribbon-cutting' by a politician signifying an official opening or the 'turning of the first sod' officialising the commencement of work on a civic project. Often the tools used in these ceremonies are especially embellished but fundamentally mimic the production versions. For example a spade for the dignitary to turn the first sod is frequently stylistically crafted with highly polished blades and carved wooden handles.

In the Queen Victoria Museum and Art Gallery, Launceston, there is an apt fetishised version of such an implement. When the Duke of Edinburgh arrived in Launceston on the 15th of January 1868 to turn the first sod of the future site of the Launceston Western Railway, he used a carved wooden spade and an elaborately carved wheelbarrow. The barrow, made from Huon pine and Blackwood was adorned with detailed hooves as handles, legs as Phoenix heads, and the Royal Coat of Arms on the inside face, and is thus being rich in symbology.

These two examples of 'tool fetishism' are conceptually in opposition, yet the vehicle of the ritual, 'the tool', is the common and significant feature. To the Japanese craftsman the object or tool is of primary significance and the meaning is secondary. To the dignitary the meaning is primary, and the object or tool is secondary to the act. This concept of a tool functioning as a utilitarian device, and also having attached specific meanings, beliefs or rituals can be perceived as a fetish object or tool fetishism.

Further evidence of tool fetishism, from a modern consumer's perspective is the way in which hardware manufacturers actively set out to seduce the (generally male) purchaser, by displaying tools in visually, delightful repetitious patterns, or on shadow boards. There is an unstated imperative that to do a job properly, purchase of a complete set will ultimately be necessary. Consumerism and fetishism uniting! (Fig.4)

1992, p.72

³⁸ Seike, *The Art of Japanese Joinery*, pp. 7-15



Figure 4: Sidchrome 'Classic Collection' tool box

In their advertising, tool companies also have a tradition of overlaying utilitarian function with a suggestion of sexuality. Semi-naked women holding tools have appeared as a metaphor of perceived power and desire to the male consumer since the 1950s. (Fig.5) Paradoxically, more recently the purchase and use of tools can be seen as a form of empowerment for the female consumer as well.³⁹

³⁹ The sexualisation of tools is an aspect of tool fetishism deserving further enquiry, but is outside the field of this project.



Figure 5. Ridge Tool Company Calendar. 1956

Utilitarianism has given way to high polished lustre, even chromium plating, to emphasise tactility and aesthetics to further woo the would-be user into tool purchase. So specialised have tools become that whole catalogues are devoted to tools based on narrow fields of application.

Television and press advertising exhort self-perceived do-it-yourself tradesmen to purchase a complete range of electric or power tools. The implication being that to own a large range of such tools is the only significant means to actually create something of quality, glossing over the talents and technical skills that are required.

A further example of the notion of 'tools maketh the skill' is displayed in the prolific lifestyle or reality TV shows, for example Scott Cam from *Better Homes and Gardens*.⁴⁰ These programs often show a short segment of a skilled craftsman creating something; by 'simply' using tool 'A' on material 'X', here' is the finished object ready to paint, with no account for the role of trade skills and experience.

Artists and craftsmen are often depicted in their studios. They are shown toiling away at their latest projects with a backdrop of specific tools hung neatly in patterns on the wall. These are in readiness and awaiting use, in a manner that I term tool fetishism. It is a tradition (shown in various hieroglyphs) that goes back to biblical times,

⁴⁰ *Better Homes and Gardens*, Southern Cross Network, screening 7.30pm Friday, 2004-2005

perhaps even earlier. The craftsman is depicted working with his tools, more tools waiting in the background, carefully mounted on boards. It is all preparatory to the actual point of tool use. This is where the magic happens and the tools are implements that facilitate this magic. (Fig.6)



Figure 6: A typical shed, workshop or studio – with all of the tools hung neatly.

In conversations about tools, discussing as to what makes one tool better than another, one generally ends up trying to consider a subjective X factor. This is part magic, part visual, part tactile, the weight, the fit in the hand and even more abstract, the quality of satisfaction gained through the tool's application. This indefinable 'X factor' can also be considered a fetishism of tools or a tool fetish.

The concept of tool fetish culture is of ancient origin. It dates back approximately one hundred thousand years when the concept of spirits, the afterlife and belief in a non-corporeal existence brought forward rituals centred on burials. The Neanderthals are attributed as being the first culture to bury the dead in this manner. This behaviour suggests a special concern for the departed. They began to bury tools with the deceased, perhaps as a means of preparation for the afterlife.⁴¹

The tradition of fetish belief is continued in most cultures. Fetishism of tool construction, that is, tools embellished to become utilitarian metaphors began at a similar time. For example, carefully carved morphemic figures were abstracted to conform to the shape of the tool. Carved bone and antler atlatls or spear throwers depict the prey hunted by early humans. This was to perhaps gain something of the spirit of the beast?

⁴¹ Times Atlas of Archaeology, *Past Worlds*, New York: Times Books Ltd, 1988, p. 67

Throughout history tools became emblematic of one another. In northeastern China, during the fourth and third centuries BC, the Eastern Zhou Dynasty Chinese created knife money. This rounded edge money was up to 190 mm long and was inspired by the earlier nomadic hunters and fishermen's knives. The inscriptions indicate that they were issued in commemoration of important events. Other markings signify words such as 'fish' or 'sheep' and 'legal currency Qi'. From approximately the fifth century BC, the Zhou Dynasty Chinese further created a currency based on the tool. (Fig.7)

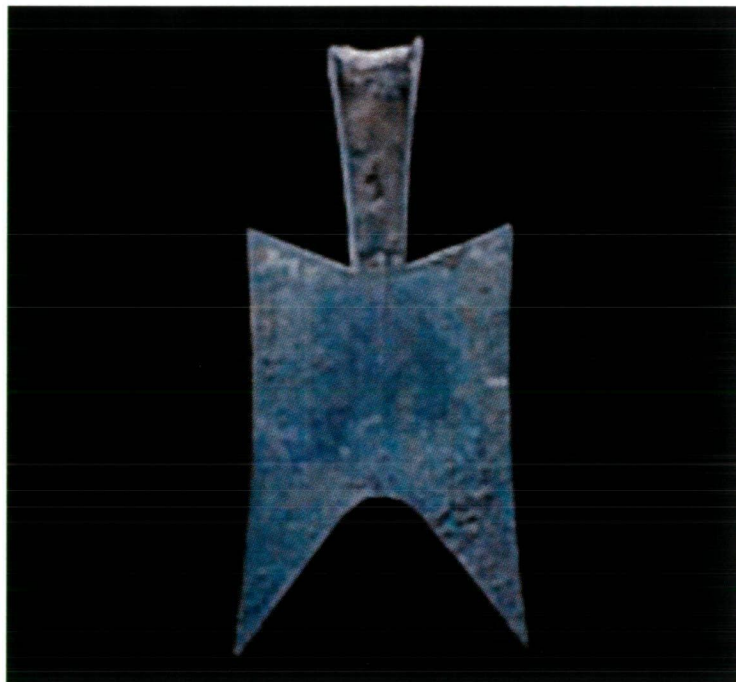


Figure 7: Chinese spade money, c. 5th century BC, Jin state, bronze

Described as hollow-handled scale models of spades, they were up to 150 mm long, detailed in every aspect of the utilitarian version, with inscriptions describing the origin and weight or value. The alloy composition of cast spade money and knife money differs from that of the utilitarian tools, evidencing their differing significance to utilitarianism.⁴²

⁴² Williams J. ed. *Money: A History*, London: The British Museum Press, 1997, p.65

Approximately nineteen hundred years ago the Roman philosopher Plotinus enquired into the concept of fetishism asking, 'What is it that attracts the eyes of those who behold a beautiful object, and calls them, lures them towards it, and fills them with joy at the sight?'⁴³

Fetishism has paradoxical meanings. According to Anthony Shelton, in early theories of religion in psychiatry, and in the work of Freud and Lacan, fetishism came to be associated with deficiency, loss and disavowal (the simultaneous belief in the truth and falsity of something). For others, including Marx, Bataille and Baudrillard, it signifies excess.⁴⁴ Fetishism informs discussions about power or the projection of power or authority onto supposedly subordinate groups including ethnic minorities. Shelton sees that fetishism is an essential part therefore, of the West's hidden history of sex, mind and commodity.⁴⁵

Throughout these philosophers' and writers' discussions there is an assumption that fetishism is an expression that gives rise to deviance, discomfort or displeasure. Yet exactly the opposite can be argued. Derek Clifford in his book, *Art and Understanding: Towards a Humanist Aesthetic*, interestingly refers to a tool as a means to discuss a notion of fetishism.

A tool produced by an exaggerated gesture may be deficient in utility, but each time its creator sees it he feels anew the pleasure, which the gesture gave him; and others, unequal to his skill, on beholding it, feel within themselves his vitality and disciplined control.⁴⁶

Clifford further queries, 'Is the step far from the tool that pleases because it works well to the tool that pleases although it will not work at all?'⁴⁷ In other words, a tool need not necessarily reflect its intended utilitarian function or purpose to give a certain positive satisfaction.

Another perspective on tool fetishism is the use of a tool that over time has become transformed from its original practical use into a metaphor with no purpose other than as a ritualistic tool for an imagined purpose. Yet it remains a tool with visual links to

⁴³ Plotinus, 1,6,1, *The Six Enneads*, trans. MacKenna, S. and Page, B S, viewed 16/7/2004, <http://www.sacred-texts.com/cla/plotenn>, London, 2003

⁴⁴ Shelton A, ed. *Fetishism – Visualising Power and Desire*, London: The South Bank Centre & Lund Humphries Publishers, 1995, p.16

⁴⁵ Shelton *Fetishism*, p. 18

⁴⁶ Clifford D, *Art and Understanding: Towards a Humanist Aesthetic*, London: Evelyn, Adams & Mackay Ltd, 1968, p. 45

utilitarianism, both through its material and that it references placement in the hand. An example is the pike-like halberd used by the Papal Swiss Guard.

American artist Dominic Di Mare creates delicate tool-like objects, using carved wood, bones, string, and feathers. His implements reference the notion of the tool both as an historical reference point and as a point of departure for his sculpture. Di Mare's materials and techniques employed to construct his meticulous works act like mnemonic devices, a reliquary for memories of rituals and events of a familiar but not identifiable culture. Di Mare refers to his implements as 'dream wands' bringing forth the concept of hand held objects that are for a metaphysical purpose or an abstract application or fetish. (Fig.8)

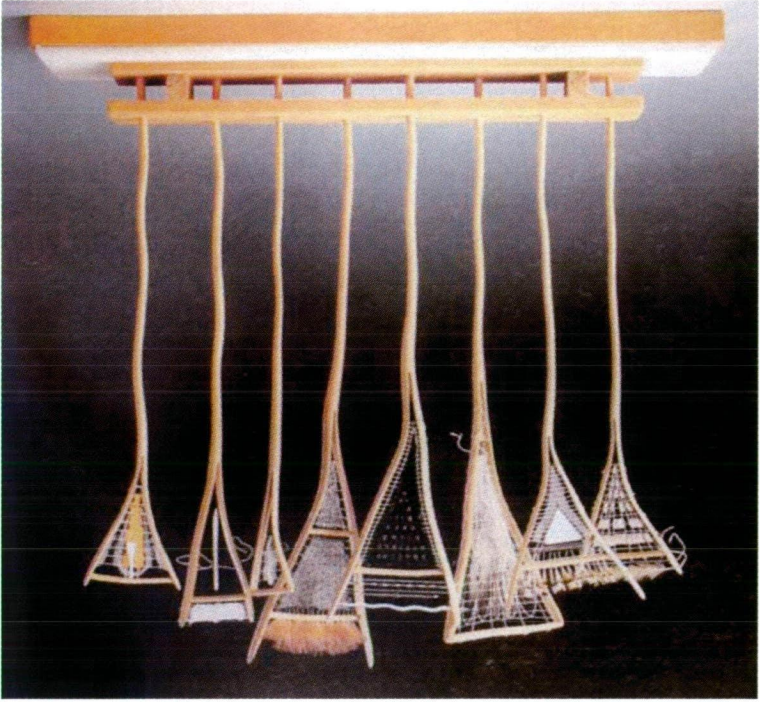


Figure 8: Dominic Di Mare, *Shaman/Dream/Wands*, 1979, wood, thread, shells, feathers

Within the context of the larger body of my sculptural practice the tool has been and still is a returning manifestation of my work. Like Di Mare's, my works *Brush* and *Implements: 1-6* (both 2003) all reference the essence of the hand tool in that they are made to 'fit' in the hand. Yet they are dysfunctional tools that discuss different metaphorical aspects of the human condition. (Figs.9 & 10)

⁴⁷ Cliford, *Art and Understanding*, p. 46

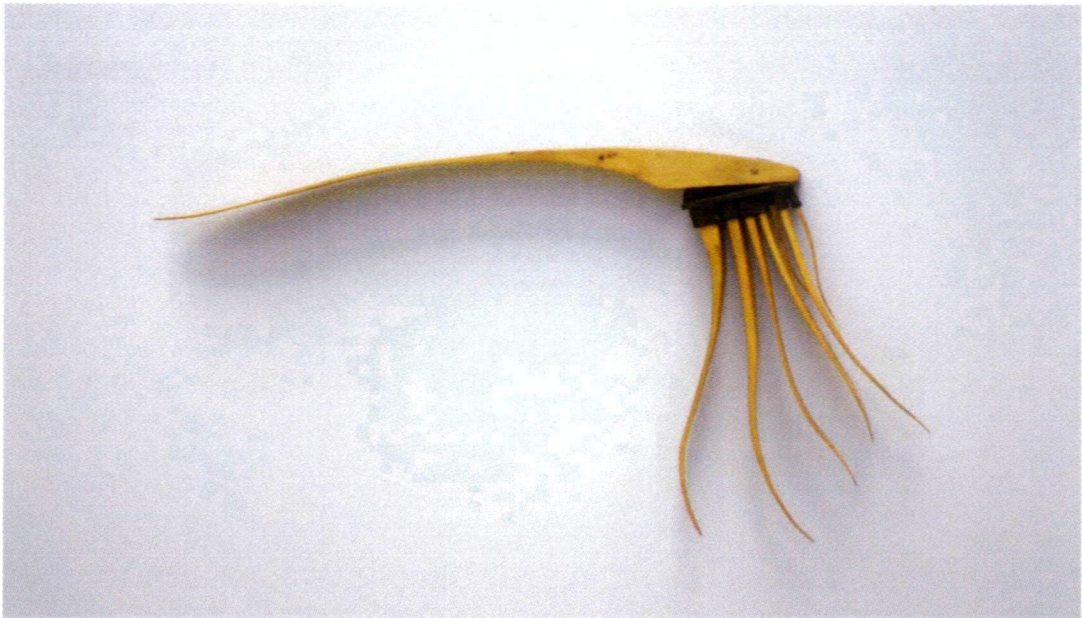


Figure 9: Tim J. Edwards, *Brush*, 2003, Huon pine, bronze

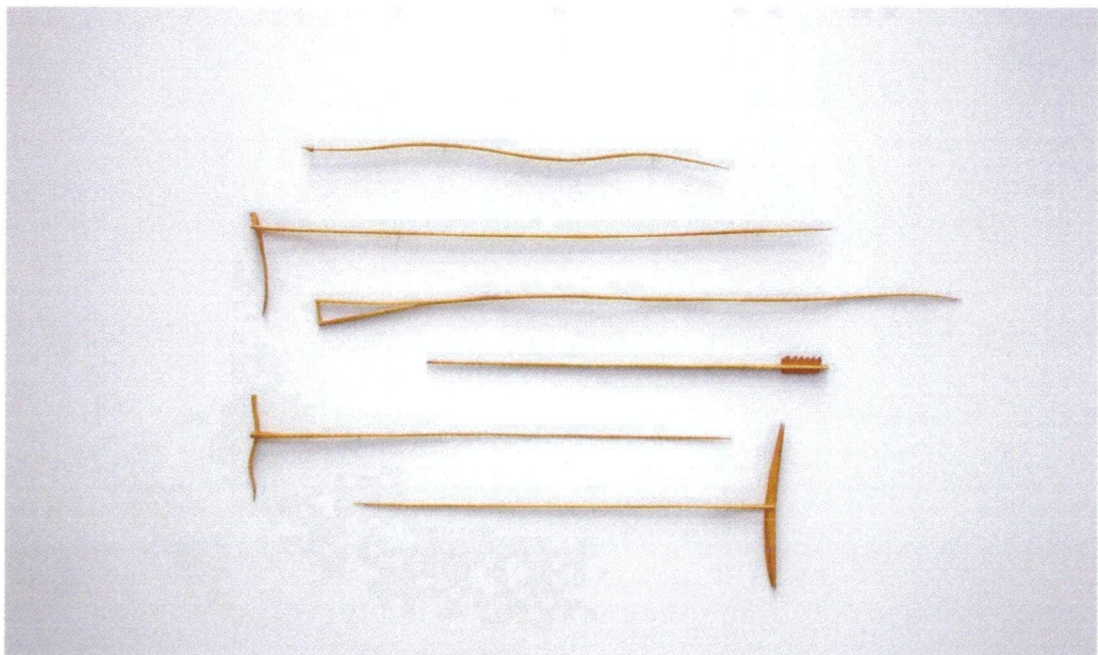


Figure 10: Tim J. Edwards, *Implement 1-6*, 2003, Huon pine, silver

The sculptures of Martin Puryear also physically reference the tool, and sometimes recall the action of a tool such as in his various *Lever* sculpture series. Puryear's works are always crafted with precise skill and an obvious passion for materials. With a background of woodworking as a child he generally carves and manipulates wood. He worked with craftsmen in Sierra Leone during his Peace Corps placement in

1963. He learned valuable techniques and gained a respect for these craftsmen who work without electricity, simply creating with their imagination and hand tools.⁴⁸

Puryear's work was further developed both technically and aesthetically during his time spent living in Stockholm and working with Swiss designers and carpenters. One repeated iconic image of Martin Puryear is depicted in several journals, web pages, books and catalogues. He is shown standing at his bench, with a background of carefully placed and ordered hand tools, reinforcing an obvious passion for hand tools and the 'old school' techniques Puryear applies in creating his sculptures.

(Fig.11)

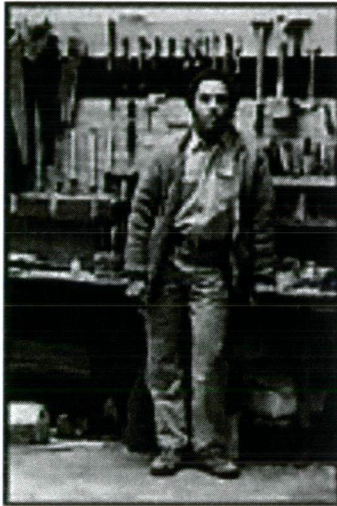


Figure 11: Martin Puryear, with tools.

There is a sensibility and tactility of tools. This notion I have had with me from an early age. My father, who owned many tools for every application, often said, 'There is a tool for every job; always use the right tool and clean it and put it back on the shadow-board', and 'Only I can sharpen the tools'. These tools were housed in a shed that contained any manner of objects without any order, but in contrast, his tools were always shiny and hanging on the wall in precise placement, on the black outlines of the shadow-board. A tool that was not replaced called for an explanation.

This order is not unique to my father. Mechanics of cars or motorcycles, and even builders and tradesmen who rely on tools for their income have the same ideas about this virtual hygiene, and passion for the use and handling of their tools. Their

⁴⁸ Benezra N, *Martin Puryear*, The Art Institute of Chicago, London, Thames & Hudson, 1991, p.16

toolboxes are ordered in the extreme with every tool in its correct position and cleaned to a luster. Such is the nature of tool fetishism.

The concept of a tactile fetish object was introduced to me at Catholic secondary college. During one woodwork class I was visited by a nun who asked me to carve several crucifixes. These were to be given to terminally ill patients. The crosses were used as hand-held objects that were not only imbued with a sense of religious belief, but also as a tactile object that gave a therapeutic solace through the sense of touch. Each cross was unique in its form, carved from wood, with only a vague memory of a true cross. All of the surfaces were smoothed out and rounded, giving an amorphic appearance. During the shaping and carving process I directed attention to the 'feel' of each object, conforming it to the hand, so these fetishes may be a sympathetic object to clasp.

In my art making, the tool is not only the means of construction and the physical connection between the hand and the form but it also possesses a certain fetish significance. Over time and after gaining feedback through the process of making, I gained knowledge about technique and the action of each tool.

When put into use, my tools epitomise a sense of tradition of using the hand in conjunction with a tool to produce a form. Each tool is a quintessential vestige of form following its function, which also aligns it with a continual history of development from the initial primitive stone tool. Each tool requires a disciplined approach to its care. There is something of a ritual in their maintenance, their sharpening, oiling and storage. A craftsman will always keep a keen edge on his tools, knowing that the return will be the satisfaction that comes from making quick, clean and relatively effortless cuts.

The notion of tool use as a fetish is constantly reinforced, in wood working at least, through the sound the tool makes when shaving wood – when the tool is sharp, it sings, and easily gets on with the job. Even the aroma of the freshly shaved wood adds to the sensation. What is taking place is not merely machining, but something more than this - an act of creation with an intimate relationship between the tool, the material and the hand.

Pablo Picasso once told French author and statesman André Malraux 'If we give [*the process*] spirits a form [*the artefact*], we can become independent'.⁴⁹ It can be said that to Picasso, art acts as a fetish or tool to fend off evil spirits. I believe the controlling of the demon is in the making process, not the artefact. By making a finished form, one is giving an expression to the Devil, but unlike Picasso, I feel that the process of making is a method of expunging. I believe that the labour and the mental processes during creation are where we meet the demon and seek our independence.

Once the work is complete we are independent from it, yet for me there is immediately an imperative to get back to the trenches with the devil. The correlation between the repetitious and therapeutic act of carving and constructing, using tools and the realisation of a vision of a form, is my fetish. The parallel consequences of creating forms inevitably produces residue, the trace of hand tool fetishism.

⁴⁹ Spies W, *Picasso, the Sculptures*, Stuttgart: Hatje Cantz Publishers, 2000, p.73

Chapter 3

The Form of Residue

Residue is the stuff left behind, the 'insignificant' vestige or trace of an interaction or action and an implementation. According to the Collins English Dictionary residue 'is the matter remaining after something has been removed'. This chapter is an investigation into notions and possibilities of different forms of residue.

The project, *Implement*; drawn, specifically focuses on the leftover residue from the process of manufacturing and using hand tools. The process of using tools for manufacturing, domestic activities and artistic creation aims to make a 'significant object'. These practices always create an unwanted 'leftover' or residue. In the context of this visual art exploration the residue becomes a significant outcome.

The theorisation of residue within this exegesis, and more specifically hand tool residue, opens broader categories and notions for other forms of residue. Residue holds certain significance throughout my history. The searching, uncovering and collecting of objects that are various forms of leftovers or residue, remains an integral link with my childhood memories and is a valuable vehicle in my process of art making. These collected residues serve as both the components for assemblages and also as a base material to carve and form. An example of this process is the timber that I use. It is retrieved from the bush after the loggers have been through. These logs in themselves are the unwanted left overs or residue from the practice of clear felling.

I have always collected residues for a perceived purpose, which may be the making of 'art', but not yet conceptualised. The agricultural environment where I grew up was an ideal place for this activity. The older generations of Australians, particularly in my family, never threw anything away. Things were kept and stored for a future purpose. This was as a direct result of the Great Depression when living was so tight for most people that everything had values that directly related to survival. The discarded tools and implements from the practice of farming are ever present on most Australian farming properties, appearing like archaeological ruins. They often await the time

when a piece of any dormant implement can be recycled to build up or sustain another implement.

Farming has always been a fickle industry, subject to environmental conditions that can vary both productivity and income. Through this uncertainty, ingenuity is born. Self-reliance develops special skills for remaking, repairing and sustaining tools that are needed. Necessity breeds invention and often new tools are created by their construction, new from old residual tools.

Humans are unique in their ability to create residue. Residue can be perceived as the negative outcome of the positives of applying technological skills to all forms of manufacture and production.

Residue, the leftovers or waste, is also a means to establish categories of taste, aesthetic value and the composition of what may constitute beauty. As noted by theorist Thorsten Veblen in his book, *The Theory of the Leisure Class*;

Although the requirement of conspicuous wastefulness is not commonly present consciously in our canons of taste, it is none the less present as a customary norm selectively shaping and sustaining our sense of what is beautiful and guiding our discrimination with respect to what may legitimately be approved as beautiful and what may not.⁵⁰

It might be said that everything can be perceived as residue, or at least in the state of flux of becoming a residue. In opposition to this idea, the significance of residue can be restated in the idea of 'one person's trash is another person's treasure'. People live in different spaces and times, thus what in one time period is of no value, later becomes imbued with a value at a later time.

The formation of a theory of the value of residue can be found within the discipline of cultural studies. Michael Thompson, in his book *Rubbish Theory: The Creation and Destruction of Value*, states 'rubbish is a zero-degree of value'.⁵¹ For Thompson, residue, or what he calls 'rubbish' is central to a theory of the formation of value; and as such it's either the visible limit point of social value, or it's something that we

⁵⁰ Veblen T, *The Theory of the Leisure Class: An Economic Study of Institutions*, New York: Macmillan, 1892, pp. 129-130

⁵¹ Thompson M, *Rubbish Theory: The Creation and Destruction of Value*, Oxford: Oxford University Press, 1979, p. 9

actively conspire not to see. It is thus in an asymmetrical relation to the two major categories of value which Thompson calls the *transient* (this is the normal state of things: a state of decreasing value) and the *durable* (an exceptional state in which objects have permanent and increasing value).

Consumer goods are in the paradigm case of the former; works of art in the latter. These processes of value shifts are categorized by their abruptness:

The rubbish to durable transition is an all or nothing transfer. An object cannot gradually slide across from one category to the other, as is the case with the transient to rubbish transfer. The transition involves the transfer across two boundaries that separate the worthless from the valuable and that between the covert and the overt. It involves a loss of the polluting qualities of rubbish, and at the same time an increase in aesthetic value.⁵²

This oscillation in the structure of value corresponds to Thompson's proposition that value is a process, a movement, a cycle rather than a quality of things or a structure of contemporal relations.

The nature of Western contemporary material culture is that of a throwaway, disposable tool society. Disposing of or throwing away is not a new phenomenon, as residual material evidence of humanity has existed for at least 4 million years. Marketing strategies in contemporary technological mass-producing cultures have constructed a perceived need, indeed acceptance that we should constantly update, for the faster, the smaller, the cheaper and the disposable. The result is that our tools become our residue. For example in 2001 over 250 million mobile phones were sold in America. The average mobile phone user upgrades their handset every 18 months, and this is accelerating. Although an initiative of handset recycling has begun the majority of these will reside as landfill.⁵³ The generation rate of electronic scrap in Australia is large and accelerating. There are approximately 9 million computers, 5 million printers and 2 million scanners currently in households and businesses across Australia, and all of these will be replaced, most within the next three years.

In terms of manufacturing, residue is the opposite and a by-product of design. It is the expression of the spontaneous and unpredictable. Residue alone is a broad term.

⁵² Thompson, *Rubbish Theory*: pp. 10-26

It begs for greater definition, a statement of its origins. It is a reference to the process that was its creator and within the context of this examination, an indication of future status. That is, something which is no longer residue in the broadly accepted sense but rather an article or substance which has its own intrinsic value – either personally or aesthetically. The design of an object begins with a clear intention, whereas residue is born out of marginalization – it is a trace of the practice of design.

In modern history residue represents an invaluable tool to decipher the nature and status quo of the broad history of humans and our world. For example, as a marker of climatic residue and/or chemical residue, deep core drilling in the Antarctic reveals changing levels in heavy metal pollution and dissolved oxygen levels indicate climatic changes.⁵⁴ These are environmental results originating from residual traces of our technological culture. Climate change may not however be the result of human technology until recent times.

The residue or leftovers from human activity begins with the production of stone tools and residue from the use of these implements, which traces a 4 million year history. The residue of culture as a signifier of prehistoric life is also in synchronisation with this time. Scientists and anthropologists use the discoveries of forms of residues to determine theories about the nature of culture from different epochs, and read the residues to classify paradigm shifts in technologies and lifestyles.

Over time, maps of human origin have been devised based on the discovered residue. These maps are usually based on assumptions, which are often disputed, and contradictory evidences abound. It must be said however that a new discovery can lead to 'irrefutable' evidence to justify a habit or technology of early humans or the earlier hominids.

Debitage is the term used to describe the oldest surviving form of true residue, (The matter left over, from a making process. Later the tool becomes a form of residue). Debitage is defined as a piece of rock detached by pressure during the process of making stone tools. This aspect has been virtually ignored in the study of that

⁵³ The Collective Good Inc., *Answer the Call*, viewed 28/4/2004, <http://www.collectivegoodinternational.com/answer>, 2004

⁵⁴ Planet Ark, *Environmental News*, viewed 17/2/2004, <http://www.planetark.com/Reuters/environmental>, 2004

industry until recently.⁵⁵ 'The collection, exploration and classification of debitage in an archaeological context is only decades old'.⁵⁶

The theorising of tools left over as cultural residue began during the period of European Enlightenment.⁵⁷ Several prehistoric sites were discovered and theories proposed about the culture from their residue: '[These] discoveries provoked a re-examination of the Western belief systems at the time'.⁵⁸

The earliest noted and theorised discussion of stone tools and bones was in 1679 when geologist John Conyers discovered a prehistoric site in London. Conyers uncovered a stone hand tool made from flint, 'submerged in gravel along with the bones from an elephant'.⁵⁹ At this time, Europeans believed in the idea that humans appeared on earth relatively recently, and these artefacts were laid down by Noah's flood, although they recognised that a human without the technology of metallurgy had created these tools.

After Conyers' death, John Bagford published a theory stating that the stone tool from the time of the Roman conquest of Britain in AD 43, the elephant having been brought to England by the Roman army and subsequently killed in battle. Conyers' stone tool is now understood to be approximately 350,00 years old.⁶⁰

The prevailing perception of any given time frame is the believed reality. For example, stone hand tools were also known to the Ancient Greeks, who believed them to be the thunderbolts thrown down by Zeus. These tools were held sacred with fetish belief and were displayed in religious temples, such as The Temple of Apollo at Delphi, which displayed two such objects. The Early Christians due to their particular belief in human origin destroyed these and many other fetish and sacred objects.⁶¹

Residue as signpost of history is subjected to much interpretation and personal prejudice. Until the development of technologies such as carbon dating, it was

⁵⁵ Roger G, *Lithic Analysis*, Internet Archeology, viewed 15/4/2004, <http://www.intarch.ac.uk/journal>, 1998

⁵⁶ Roger, *Lithic Analysis*

⁵⁷ Sloan K, *Enlightenment. Discovering the World in the Eighteenth Century*, London: The British Museum Press, 2003, pp. 181-182

⁵⁸ Sloan, *Enlightenment*, pp. 184-185

⁵⁹ MacGregor A, *Horn Hand Axe*, The British Museum, viewed 12/4/2004, <http://www.thebritishmuseum.ac.uk>, 2000

⁶⁰ MacGregor, *Horn Hand Axe*

⁶¹ Sloan, *Enlightenment*, p. 199

difficult to gauge with precision the exact era of residue. Furthermore, more refined technologies will undoubtedly lead to greater reassessment of what is currently accepted as fact.

Truth and fact are terms that are associated with many disciplines including science and history. Yet through this research comparing documented histories, the currently accepted truth appears in flux, being individually interpreted while the objects or artefacts themselves are the concrete factor.

Historical objects and relics may also be considered potentially questionable. Fake residue has been manufactured as a hoax to influence the doctrine of human evolution. In the early part of the 20th century, the academic pressure to find a missing link between humans and the apes was sufficient for an unknown scientist to combine an orangutan's jaw with a human skull creating a fake human residue, and thereby creating a new narrative in support of the missing link theory.⁶² In 1915 Charles Dawson and Sir Arthur Smith Woodward, of the British Museum, discovered a site at Piltdown, Sussex, which contained skeletons of extinct animals and the skull of 'Piltdown Man', which at the time, was accepted as the missing link. In 1953 it was proven to be an elaborate hoax.⁶³

To a lesser degree I have also contributed to this modification of history. I have worked with Gondwana Studios, whose business is the creation and duplication of images of dinosaurs. In 2001 Gondwana Studios was contacted by a television documentary production house, Beyond Productions, to make a facsimile of the Laetoli footprints for a human evolution documentary. The true Laetoli footprints were created approximately 3.6 million years ago by the pre-human or hominid species *Australopithecine afarensis*.⁶⁴ These foot prints were left in the mud after Sadiman, a volcano in northern Tanzania had erupted blanketing the savannah with an ash, across which three hominids walked, leaving a residue of this action-foot prints. This trace of their action documented a bipedal and upright walking position and enabled scientists to establish height (90 cm) and weight (27 kg).⁶⁵

The footprints created by Gondwana Studios were made true to the original site through precise documentation, yet were portrayed in the documentary as 'the'

⁶² Wilkinson, *Early People*, p. 10

⁶³ Wilkinson, *Early People*, p. 11

⁶⁴ Leakey, *The Origin of Human Kind*, p. 22

⁶⁵ Leakey, *The Origin of Human Kind*, p. 24

Laetoli footprints. The cast resin dinosaurs created by Gondwana are made using rubber moulds that were taken from the genuine one hundred million year old skeletons. Each casting differs minutely so effectively modifying the appearance of history. Most reproduced dinosaur skeletons are brought and displayed in museums. These installations and dioramas of prehistory can potentially be perceived as 'the true artefacts'.

The Aboriginal midden site referred to in the Introduction speaks a truth. It possessed the visual quality of the museum diorama, yet it was the genuine article. A midden site is the residue of what was once the equivalent of our kitchen, a place of food preparation, where shells were shucked and then discarded.

The phenomenon of the midden is not unique to Tasmanian Aborigines. Middens have been discovered throughout the coastal world, and at times can be very large with vast quantities of residue from repeated occupations. Sites in the Americas such as Poverty Point, Louisiana dated at 1500 B.C. show accumulation mounds approximately 12 metres high and 60 metres wide containing shells, bones and tools.⁶⁶ The midden sites at Taperinha, Brazil, which cover twenty hectares in area and up to twenty meters deep, indicates a large and permanent settlement dating from 7,500 B.C.⁶⁷ One cannot help pondering what future archaeologists will theorise about our unwanted contemporary residue, land filling tip sites and radioactive waste 'storage' facilities.

The discovery of the midden site brought to me an appreciation of the reality of our own impermanence. Here I was looking at the residue of what had only fairly recently been a vibrant civilisation now vanished in its traditional form and on its way to assimilating into a new culture. Many of the original activities of their forebears became a residue or trace of their ancient culture.

⁶⁶ Trigger B G & Washburn W E, *The Cambridge History the Native Peoples of the Americas*, Vol. I: *North America, Part 1*, New York: Cambridge University Press, 1996, pp. 150-153

⁶⁷ Trigger & Washburn, *The Cambridge History the Native Peoples*, p. 243, p. 317

In the Tasmanian Museum and Art Gallery's Aboriginal and Pacific Island collection, the residue from Western culture is made into Stone Age hand tools. Originating from Victoria and New South Wales and dating from the early 19th century, these hand tools were created using the traditional ancient flaking method. The almond shape hand implements and spearheads were manufactured out of contemporary materials such as, dinner plate ceramic, beer bottles and coloured glass and ceramic telegraph insulators.⁶⁸ In this instance the tools of the colonising industrialised culture, were discarded becoming a residue. The discard was then transformed from a waste material into a hand tool and further, after use, the discarded hand tool again descended into the realm of residue. Later, after the hand tool's discovery and classification by an archaeologist or anthropologist, the significance of the residue is reinstated and displayed in a museum.

From my own artistic perspective the discovery of a midden site set me on a voyage of discovery into the whole question of the culture of leftovers and residue, and why is it significant. It has crystallised a lifelong body of loosely organised thoughts encompassing a fascination with history and a passion for making things.

Artists have used residue both as a source of material and also as a form of artistic context. There are two areas of artistic venture participating with residue: artists who use residue or the 'left over' as a material and reinterpret it into new ways of seeing; and those whose work uses residue as an idea or concept to which to attach the physical artwork.

In 1959, Sir Anthony Caro, who at that time was famous for his Rodinesque sculptures, visited America where upon viewing a sculpture by David Smith *Sentinel*, 1959 (Fig.12) was sufficiently inspired to shift his sculptural 'way' from his figurative style to a method of constructing forms out of steel.⁶⁹ These new steel forms were constructed out of left over steel fragments or industrial residues, and this methodology has continued. Although Caro's work could be described as a fusion of left over found elements, he uses these elements in combination so as to render their origin unrecognisable. (Fig.13)

⁶⁸ Tasmanian Museum and Art Gallery, Hobart, Ethnographic Department, viewed 26/3/2004

⁶⁹ Waldman D, *Anthony Caro*, London: Phaidon Press, 1982, pp. 12-15



Figures 12: David Smith, *Sentinel*, 1959, stainless steel.

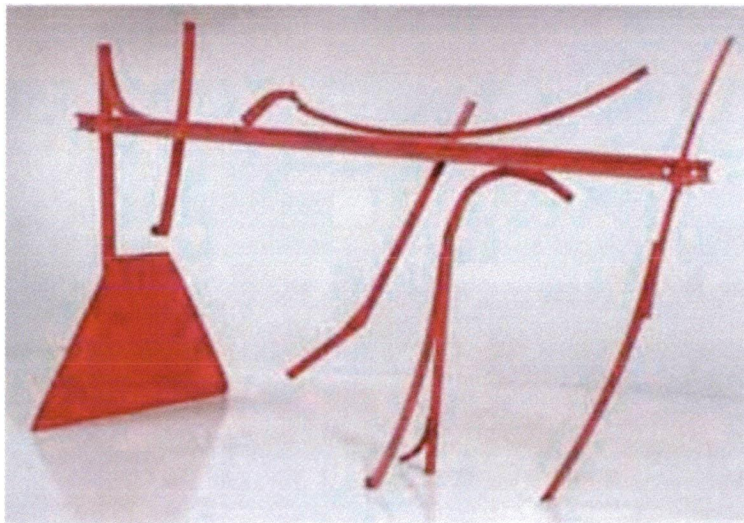


Figure 13; Anthony Caro, *Sculpture three* 1962, 1962, steel, aluminium, paint.

Caro's steel sculptures are constructed entirely out of found steel as opposed to new steel products. These steel fragments are from industrial applications, such as old riveted bridge trusses, domed tops from boilers, distorted off-cuts from steel yards and the pastry-like scraps of steel cut from the edges of hot rolled steel sheeting. A

self-confessed relentless scavenger, for Caro these residues are the starting points of forms for his ideas and concepts.

The materials employed by Caro, are often scarred and indicate their history before being used in his sculptural work. The memory of what the material was once used for, leaves the material with traces of cutting lines and shapes, surface markings and textures and with details from the initial construction such as bolts and rivets.

Pertinent to this enquiry of tools and residue, Caro has interestingly used discarded metal hand tools in the work *Writing piece, spick*, 1978 (Fig.14).



Figure 14: Anthony Caro, *Writing piece, spick*, 1978, welded steel, paint.

Tools such as spanners and pliers are used to create sculptures where the tool's significance is reduced to formal assembled shapes. This creates a new abstract composition and concept unrelated to the tools' original function.

Caro's use of residue contrasts with Pablo Picasso whose artworks use forms of residue instantly identifiable as the original object, such as Picasso's *Bull Head*, 1942 constructed from bicycle seat and handle bars. (Fig. 15) The original purpose of the elements used in this artwork originated from the realm of tools. It can be perceived that Picasso is the originator of the use of residue in art. Picasso's father used to pin samples of coloured paper on his canvasses to gauge the tonal value he required, this gave Picasso the idea to invent a method of constructing images and sculptures from residue, termed 'collage'. 'Collage as everyone knows was invented by Picasso'.⁷⁰

⁷⁰ Caws M A, *Dora Maar: With and Without Picasso. A Biography*, London, Thames and Hudson, 2000, p.103

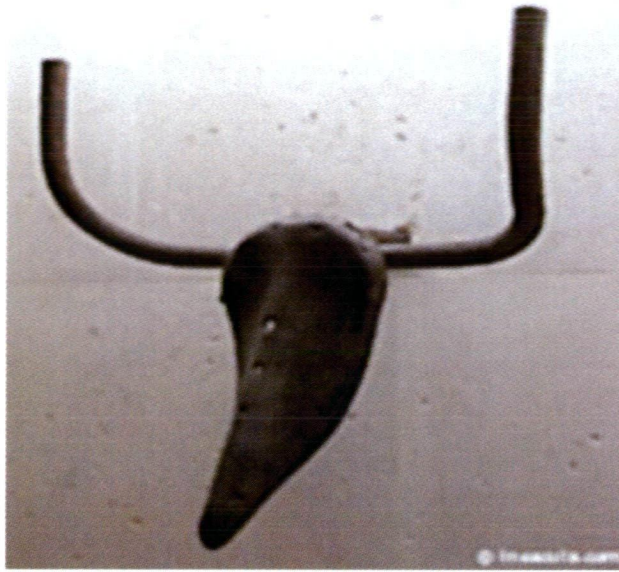


Figure 15: Pablo Picasso, *Bull's Head*, 1942, leather and metal

Prominent British sculptor Tony Cragg also uses the waste products of modern technology. He uses the residue of our mass consuming material culture as a vehicle to describe the nature of waste and residue both as a material and as a concept. Cragg states:

We consume, populating our environment with more and more objects with no chance of understanding the making processes because we specialise in the production, but not in the consumption.⁷¹

Cragg's installation pieces set in a gallery context consists of accumulations of 'left over' remains which are found on the ground in the German city of Wuppertal where he lives. The residue he selects is chosen for its tonal value as opposed to Caro's selection by form or shape. These accumulations consist of fragments of any manner of stuff, for example in the piece *New Stones, Newton's Tones*, 1978, the materials are listed as plastic and metal while the actual objects collected and presented include toys, combs, handles, lighters, gears, mesh, springs, a toy gun, a jelly mould, pipes, roofing iron, wheels, caps, bottles and many unrecognisable fragments. These traces of contemporary culture are arranged in a rectangular format, with precise placement according to colour and tonal value. This placement, titled *Newton's Spectrum*, visually depicts the colours of a rainbow. (Fig. 16)

⁷¹ Hilty G, ed. *Recent British Sculpture from the Arts Council Collection*, London: The South Bank Centre, 1993, p. 24

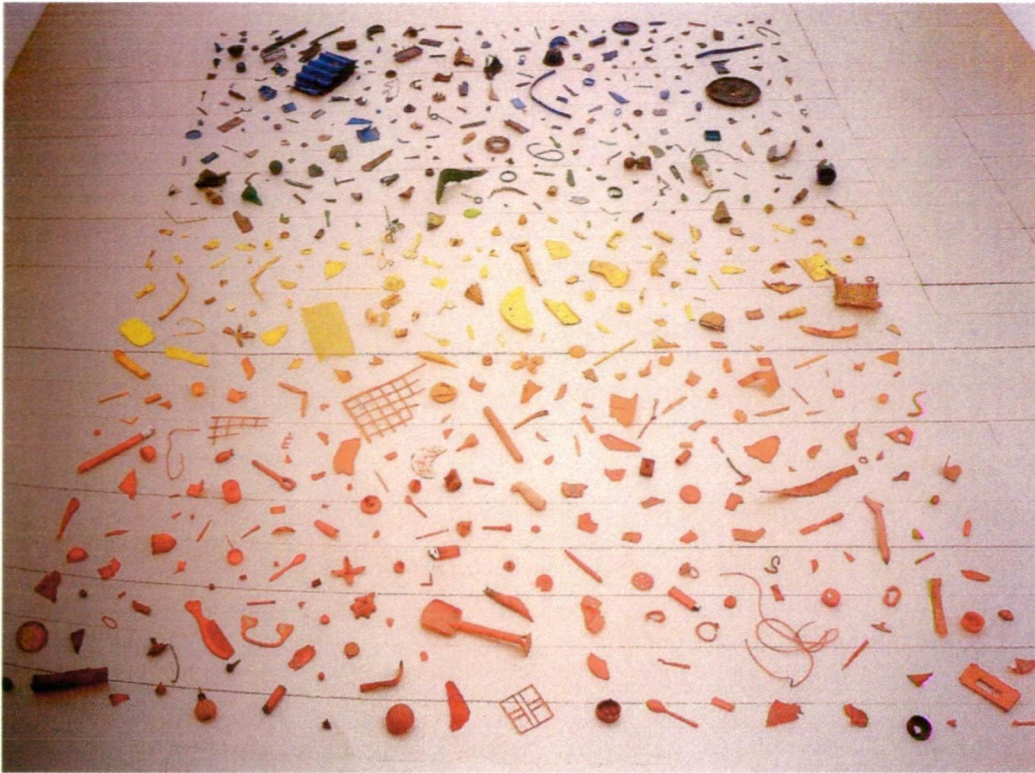


Figure 16: Tony Cragg, *New Stones, Newtons Tones*, 1978, found objects.

A recent collaborative exhibition between artists Claire Healy and Sean Cordeiro, *The Cordial Home Project* at Artspace, Woolloomooloo, Sydney, was an installation that discussed ideas of possession of environments and the traces and residues of human living.

This 2003 exhibition was a project in which the artists teamed with a demolition company to deconstruct a weatherboard house from suburban Sydney. They then reconfigured the house's materials into an artwork in a gallery context.⁷² (Fig. 17) The artwork itself was a massive precisely stacked rectangle of the entire components that formerly went together to form the house. Layers of stained and deteriorating timbers from the construction were intersected with plaster from the

⁷² New South Wales, Ministry for the Arts, *The Cordial Home Project*, viewed 17/12/2003, <http://arts.nsw.gov.au>, 2003



Figure 17: Claire Healy and Sean Cordeiro, *The Cordial Home Project*, 2003, Artspace, Woolloomooloo

interiors, which contrasted with the electrical cabling and insulation. The top layer consisted of sheets of roofing, corrugated iron with an aged red hue forming a neat top to the pile of once inhabited house debris.

The Cordial Home Project reduces the house – a form of tool, into a fragmentary vestige that possesses a trace or residue and the memory of what it once was. This residual memory of the past inhabitants is evidenced through the wear, tear and staining of the materials.

For me, the actual material residue that comes from object making has inadvertently provided an impetus for new ways of designing work by looking at the spontaneous and random physicality of this residue's form. The residue or shavings from the use of traditional hand tools applied on timber to carve sculptures form an afterglow from the act of creation. This form of residue is a documentation of the action of carving. These shaven forms of residue are the tangible and unwanted by-product evidence of the carving process, but to me the residue has become a visual signpost of possibilities of forms for future work. From a fetishistic perspective the very act of carving becomes an enjoyment in itself. The tactile act of the hand in action with the tool reinforces the pleasure of the creation process. Is this creative action an act of introspection or self-indulgence? It's a notion questioned by Derek Clifford:

There must surely be something in the way in which we live that either requires a capacity for art making or else produces the ability to make art as a necessary by-product of some other activity, a sort of industrial residue.⁷³

To paraphrase Clifford, it is intrinsically human and fundamental to a human need to create artworks. Within this notion it might also be perceived that the creation of an artwork possesses a certain fetish quality by the way the process rewards through the activity. Furthermore, artworks could be perceived as the left over or the trace or the residue from another physical or cerebral process. One could also perceive that the object created is a form of residue from the cerebral process of ideas. This is a tangible outcome of an abstracted human notion or vision.

British environmental installation artist Richard Long's works in the landscape are made spontaneously using the materials at hand. Part of his work is created while walking: 'places give me the energy for ideas'.⁷⁴ During the course of walks, Long collects 'components' and brings these materials of nature to a sheltered environment to create artworks in museums and galleries. (Fig. 18)



Figure 18: Richard Long, *Red Slate Circle*, 1980

Another facet to Long's work are the works created and left in the environment. Long's environmental works are exhibited in the form of documentation. They can take the form of a written description or a marked map of the journey undertaken. Long's works are about the traces of the artist's action. But it is also the visible residue or trace of the artist's activity, which becomes separated from him and continues to resonate as an idea even after, say, the circle of upright stones has

⁷³ Clifford, *Art and Understanding*, pp. 72-74

been stood down and the artist and time have moved on. He states, '.... my work is real, not illusory or conceptual. It is about real stones, real time, real actions. I use the world as I find it'.⁷⁵



Figure 19: Richard Long, *Hoggar Circle*, The Sahara, 1988

Long, like Cragg, discovers residues and metamorphoses these fragments into eloquent artworks. 'There is something powerful, fascinating and mysterious about such residues, which are both essentially meager and represent the measure of time and the condition of mortal life'.⁷⁶ In my mind artworks are the residual manifestations of thought. Whether consciously working with a clear concept or a known, imagined or drawn form or working intuitively or haptically with accumulations of memories of different forms. The result, the form or artwork is the vestige of an idea.

In retrospect, looking at the larger body of my sculptural practice, both notions are evident. I enjoy the freedom of creating haptically, orchestrating the hand (actional technics) and tactility in companion with the tool in a symbiotic relationship and engaging with the material to sculpt a form.

Working this way, I find the sculpture almost creates itself. I feel as though I am a vehicle or mediator for the realisation of a 'residual' form. On the other hand, intentional or conceptually driven works begin with a clear concept of what I want to

⁷⁴ Seymore & Fulton, *Richard Long*, p. 7

⁷⁵ Seymore & Fulton, *Richard Long*, p. 14

⁷⁶ Seymore & Fulton, *Richard Long*, p. 67

discuss, but I also have a clear vision of what the finished form will look like. When creating idea driven works I endeavour to create discourse by contrasting opposing ideas and then seek out points of commonality. These notions can be discussed quietly through the material to activate an idea. The form may be overt by juxtaposing ideas-rich objects and reinforcing the concept with a provocative title: 'smart – but not smart-arse'.⁷⁷

One particular sculpture entitled *Stihl life*, 2003, is analogous to a chain saw blade and is made from hand carved Huon pine. *Stihl life* is a 2-metre long wall mounted piece. The teeth of the saw are individually formed components that are joined together. (Fig. 20)



Figure 20: Tim J. Edwards, *Stihl life*, 2003, Huon Pine

The overall appearance that I hoped to create is a fluid form that lends an appearance as if gravity and prior use has rendered it to look like a used band or belt. The protruding teeth are a visual quote of a chain saw blade. The title initiates the conceptual dialogue. *Stihl* is a brand of chain saw whose advertisements appear

⁷⁷ Hansen D, Head Curator at the Tasmanian Museum and Art Gallery, Personal communication, Poimena Art Award, opening speech, 2003

on Tasmanian television. Many Stihl products are designed to cut down trees. Within the Tasmanian environment the current forest practice of clear felling native forests for wood chips has become a major social, political and environmental issue. I object to the trading off of the natural environment. *Stihl life* is a work where I endeavour to discuss the silencing of this action – to make the chain saws 'still'. To add irony this piece is carved out of wood. *Stihl life* is a tool-processed sculpture that uses another tool or implement as a vehicle to discuss the trace or residue of the forester's practice.

According to Stella Kramrisch:

The remainder or residue is that which remains or subsists when everything else has come to a conclusion. If something is complete in itself, perfection, nothing is left over, there is an end to it. So the remainder is the germ and material cause for what subsists. It is the concrete reality of a thing.⁷⁸

The creative parallel is curiously apt, in the context of the double presence of tool and residue in *Stihl life*.

⁷⁸ Miller Stoler B, ed. *Exploring India's Sacred Art: Selected Writings of Stella Kramrisch*, Philadelphia: University of Pennsylvania Press, 1983, p.156

Chapter 4

Implements and artworks

This chapter investigates the role of the tool in art, and artists for whom tools are also significant.

Looking back over the larger body of my artwork, tools or implements are constant metaphors that reflect my experience of growing up in the Australian bush. My world of exploration was the natural bush, animals, cropped paddocks and sheds. These sheds held a special place in my childhood – it was the place where I spent my time. These sheds contained all sorts of hand tools and machinery, they were where I built and repaired objects, machines and tools.

The notion of a shed culture is unique to Australia and is encapsulated in Mark Thompson book *Blokes and Sheds, behind the corrugated iron curtains of Australia's sheds*.⁷⁹ Interestingly, Thompson's second book *Rare Trades* is about the dying manual arts of using specific tools in trades that were once the mainstream and are now minute and fading cottage industries (for example, wheelwrights and coopers).⁸⁰

Typically sheds are where congregations of (generally) men work and discuss all manner of subjects and hang out. Sheds can be perceived as the masculine centre of a house or farm and in some ways constitute a sacred space. 'Time can stand still here, [in a shed] making it a place for meditation and contemplation'.⁸¹

In my family, the shed was significant and not only for its utilitarian purposes. For it was a space where ideas were shared, things were built and repaired - often with a background of footy or cricket from a crackling 'wireless'. The shed was where valuable life lessons were passed on to the younger generation, and the fridge always had cold beer.

⁷⁹ Thomson M, *Blokes and Sheds: Behind the Corrugated Iron Curtains of Australia's Sheds*, Sydney: Harper Collins, 1995

⁸⁰ Thomson M, *Rare Trades*, Sydney: Harper Collins, 2001

⁸¹ Thomson, *Blokes and Sheds*, p.3

Sheds were the genesis of my ongoing attraction to the creative processes using hand tools. Today working as a sculptor, my time in the shed has been replaced by time in the sculpture studio – a venue with obvious links to the shed. The sculpture studio is now my sacred space. The construction of objects, provide opportunities for both intense and quick discussions about ideas, forms and techniques.

In contemporary art culture, objects and ideas (things) are often appropriated and transformed and juxtaposed to suggest new meanings. The tool can be used as a vehicle to investigate another thing, and conversely things can be vehicles to discuss the notion of tools.

Tools reflect a rich and diverse vein of objects and ideas in modern and contemporary art practice. The form and function of tool and practice are inextricably linked. An example of contemporary artwork using tools as part of the visual and conceptual language is seen in the work of Indian artist Rummana Hussain. Her work entitled *A Space for Healing* was exhibited in the Third Asia Pacific Triennial of Contemporary Art at the Queensland Art Gallery in 1999. (Fig.21)



Figure 21: Rummana Hussain, *A Space For Healing*, 1999. Installation comprising implements, poles, cloth, paint

This work explores different aspects of healing. It was an installation consisting of a room completely painted vermillion, referencing blood, which through its saturation of the space, connoted a sacred space. A grid of army medical stretchers was laid on the floor with hospital apparatus resting on the beds. At eye level around the walls were mounted hand tools of varying shape and function. Bladed, tweezer-shaped, callipers, pliers and spatula-formed tools were mounted in such a manner as to suggest Arabic script contextualising the installation.

The hospital is seen as a space for the possibility of physical healing. The Mosque heals the spirit and perhaps is a space in which to question life itself. '...And in times of war and other calamities, both the hospital and the mosque provide shelter, refuge and protection'.⁸² In this context, tools act in opposition. At once they are the weapons of war and mutilation, while also being the means for repairing, both practically and metaphorically.

In juxtaposition to Hussain's work is an earlier exhibition by Polish artist Magdalena Abakanowicz. For her 1987 exhibition entitled *War Games*, Abakanowicz created a series of large-scale sculptures of mixed media. (Fig.22) Like Hussain, these sculptures dealt with a similar concern for war. *War Games* is a visual exploration that describes what it was like to be a child growing up in Falenty, Poland. Abakanowicz recalls her mother and father, their house, the landscape, the war, people dying, and the ever-recurring experience of loneliness.

⁸² Queensland Art Gallery, *Beyond the Future: The Third Asia-Pacific Triennial of Contemporary Art*, viewed 21/12/2003, <http://apt3.net/> Rummana Hussain, 1999

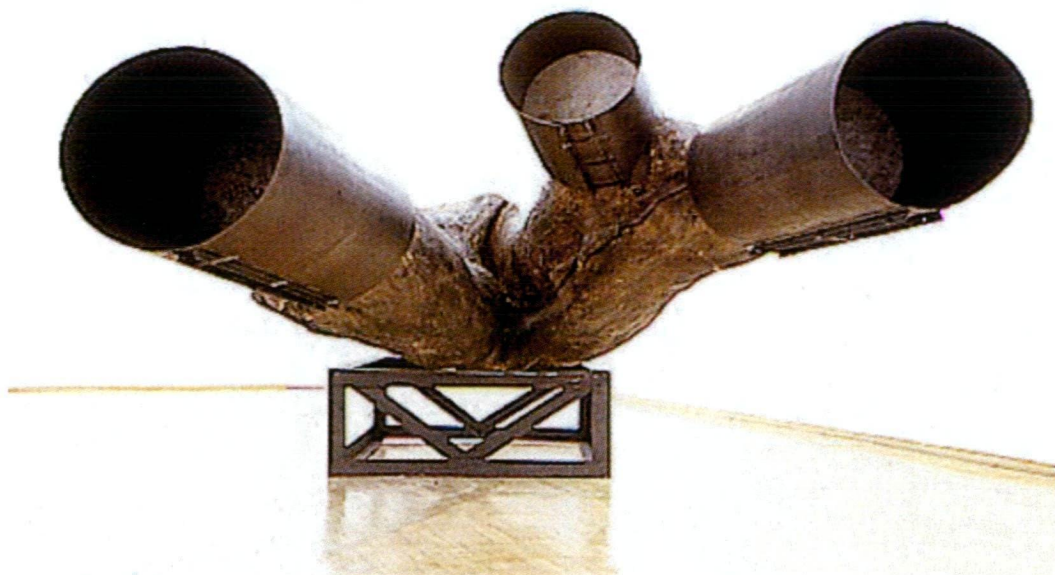


Figure 22: Magdalena Abakanowicz, *Anasta*, 1989, wood and steel.

Abakanowicz uses tools as a vehicle, yet the sculptures were created from the notion of a tool – a blade, a plough shape, forms in wood and steel, suggesting the farm implements, and military tools which were part of Abakanowicz's childhood memories. The whole work was influenced by several passages from the Old Testament. In Isaiah (ii. 4), we read: '...and they shall beat their swords into ploughshares, and their spears into pruning hooks: nation shall not lift up sword against nation, neither shall they learn war any more'. The Book of Joel (iii.10), however gives a very different exhortation: 'Beat your ploughshares into swords, and your pruning hooks into spears: let the weak say I am strong'.

The *War Games* series of tool-like sculptures are imbued with a certain fetishistic significance, recalling Picasso's ethos of 'giving spirits form...[to] become independent'⁸³ Abakanowicz conjures up 'inward images, feelings of fear, in order to exorcise them, holding them up like a Gorgon's head to herself and to others'.⁸⁴ The objects used in these artworks originate from a utilitarian function yet transcend this function into conceptual and aesthetic formal propositions.

Armand Fernandez or Arman as he is known, was born in Nice, France in 1928. Arman was a founding member of New Realism with other artists Yves Klein and Jean Tinguely and the theorist Pierre Restany. In the late 1950s Arman embarked on

⁸³ Spies W, *Picasso*, p. 23

⁸⁴ Abakanowicz M, *War Games*, exhibition catalogue, Zurich: Turske & Turske, 1998, p. 29

a series of 'happenings' and events with Yves Klein. Later in the early sixties he began creating the works for which he is now famous for, *Poubelles* or 'destructions' and 'accumulations'. These 'accumulations' incorporated objects that are the residue of utilitarian function, including tools such as wrenches, broken bicycles, phonographic records, pliers, and industrial scraps.

Arman composes these residues into repetitious patterns using the same object over and over to create a visual quality that references other things. These accumulations debase utilitarian function and also negate the individual object's or component's form. The works possess a new reading as a whole. *School of Fishes*, 1982, is a work that describes this process aptly. (Fig. 23) Arman has welded literally hundreds of vice grips into a wall-mounted composition. The artwork gives a true sense of its title as the composition of vice grips give the illusion that the tools weave, dart and swim. The tools' shiny metallic-silver surface shimmers and reflects light as though we are spying a school of young whiting close to the seashore.

The rivets used in the construction of the tools themselves appear eye-like and the jaws of the vice grips with their tiny serrations are reminiscent of fish jaws.



Figure 23: Arman, *School of Fishes*, 1982, welded vice grips

Arman's other complementary series of artworks 'destructions' reduces single objects through processes such as cutting, burning and smashing, an example being a musical instrument that is reduced into a fragmentary residue of material for

reconfiguration. Similarly Arman's larger public works include the dynamiting and cutting up of sports cars. In these works the final form or object is a result and residue of these actions. These are in themselves the technique.

'Actional technics' is a term describing a methodology of making whereby the technique of manufacturing an artwork is derived through an instant action or gesture.⁸⁵ The early Post-Minimalist work of American sculptor Richard Serra is pertinent to this notion, as his approach to materials and the physicality of the actions employed to create his works in the 1960's directly reference the notion of actional technics. At this time Serra focused on industrial materials such as steel and lead that he had worked with as a youth in West Coast steel mills and shipyards. 'He was interested in the behaviour of materials and process-like production methods whose compactness of expression was reflected in the finished work'.⁸⁶

Serra's *Splash*, 1968, was the first public showing of work resulting from his explorations involving throwing molten lead against the walls of his studio. He recorded on film the physical action and exhibited the residual cooled lead casts as evidence of the making process. (Fig.24)



Figure 24: Richard Serra, *Splash*, 1968, lead, Castelli warehouse, New York

Though the casts were created from the impact of the lead hitting the walls, the emphasis of the piece was really on the process of creating it: raw aggression and

⁸⁵ Ihde, *Technology and the Lifeworld*, pp. 12-14

physicality, combined with the self-conscious awareness of material and a real engagement with the space in which it was worked.

When I first started, what was very, very important to me was dealing with the nature of process. So what I had done is I'd written a verb list: to roll, to fold, to cut, to dangle, to twist... and I really just worked out pieces in relation to the verb list physically in space. Now, what happens when you do that is you don't become involved with the after image of what it's going to look like. So basically it gives you a way of proceeding with material in relation to body movement, in relation to making, that divorces from any notion of metaphor, any notion of easy imagery.⁸⁷

This notion of 'actional technics' is also evident in four works by Andy Goldsworthy. These include throwing of dust, *Breath of Earth*, 1994 and throwing of sticks and leaves, *Maple leaf throw*, 1990, *Susuki throws*, 1991 and *Stick throw*, 1995.⁸⁸ (Fig.25) His technique is both the methodology and the inspiration for the creation of these works. In these works the significance is in the spontaneity of 'the doing'. What is recorded on film with the fallen materials forms a residue of these processes. In Goldsworthy's works, the throwing action gives the dirt and sticks their shape and form whilst in flight.



Figure 25: Andy Goldsworthy, *Breath the Earth*, 1994

⁸⁶ Schwander M, ed. *Richard Serra: Intersection*, Munich: Richter Verlag, 1996, p.34

⁸⁷ Public Broadcast Service, *Richard Serra*, viewed 12/7/2004, <http://www.pbs.org/art21/artists/serra/index>, 2004

⁸⁸ Goldsworthy A, *Wood*, New York: Harry N. Abrams, Inc., 1996, pp. 3, 17, 28, 58

Richard Serra's early actional *Splash* artworks have recently been revived in the multi faceted performance project and film work of Mathew Barney. *The Order* is a film version of Barney's earlier project work from the 1997 *Cremaster* series.⁸⁹

In the film of the Donkey Kong-esque game of *The Order*, Matthew Barney as the Entered Apprentice must climb from the ground floor of the Guggenheim Museum upward to the top level of the buildings spiral. The Entered Apprentice must ascend through five degrees or stages, each presenting him with an opponent or obstacle whilst molten Vaseline flows slowly downward from the top level or fifth degree. This provides the game with its time base. The Entered Apprentice must be initiated before the fluid Vaseline reaches the first degree at ground level.

In his artwork, *The Order*, Richard Serra is found on the top level of the spirals in the Guggenheim's rotunda assuming the highest role with a Donkey Kong- like physicality. Heating the Vaseline as he did with lead in the sixties, he throws or splashes it against one of his later 'prop' sculptures, enabling the Vaseline to act like the sand in an hour glass, flowing down the building's spiral. (Fig.26) The resulting physical residue of Serra's action evidences his gesture in its form and in turn documents time, gravity and material processing – heating, cooling and solidifying.



Figure 26: Richard Serra, 'Splashing' from *The Order* by Mathew Barney, 2003

⁸⁹ Barney M, *The Order, Film Version* from *Cremaster 3*, DVD viewed 22/4/2004, Accent Film Entertainment, 2003

Conceptually, *The Order* presents for consideration ideas of elitism and the hierarchies of orders such as the Masons, whose symbolic emblem or badge uses the imagery of hand tools, in the manner of tool fetishism. These metaphoric hand tools are also incorporated within the Game of *The Order*. In level three the Apprentice uses the Masons' tools that he finds in the 'perfect cube' to eliminate an opponent.⁹⁰ The imagery of these Masons' tools also appears as discreet details throughout this work.

In my practice the use of specific hand tools in the creation of a sculpture also creates a physical residue from this making process. This spiraled residue encapsulates the gesture of the hand and the tool and is perceivably akin to Serra's actional lead forms. I believe the artefact or object made and the residue produced during its forming, both possess aesthetic significance.

The shavings, curls and spirals – this residue has become the focus of my investigations, influencing context, shape and form. In this, the art object is the intentional outcome; the residue is the spontaneous, marginalised and gestural result – an actional shape and form.

I am endeavouring to create forms that possess a universal form of gestural line, a line that contains a kind of potential energy. The line is solid yet in flux, caught potentially in a continuum of movement or growing, perhaps cut off and without a finish. It is both an organic line and simultaneously an industrial form.

In a literal and pragmatic context the creation of my sculptures reference hand tool residue. These sculptures also act as a vehicle to discuss the process of using tools in a broader sense with a significant link to history. The residue of the application of tools and implements is and has been a constant by-product from the dawn of tool manufacture approximately four million years ago.

The sharpened edge of an implement used against the surface of a material always creates forms of residue. These forms of residue contain significant information about the processes by which the residue was created and the implementation and gesture of the tools action, and indeed what type of tool created it.

⁹⁰ Public Broadcast Service, *Mathew Barney*, viewed 12/05/2004, <http://www.pbs.org/art21/artists/barney/index>, 2004

Previously the sculptures I have created have always been realised via traditional techniques, that is, by using time-tested hand tools over modern equipment. In my wooden sculptures, I feel strongly that the use of traditional hand tools gives me a sense of connection to countless generations before me who have worked with these implements. In my earlier work there is a strong influence of the ancient artefact, as concept and as aesthetic. The historical use of simple techniques and technologies has brought forward my concern for the concept of 'what has gone before'.

My Implement; drawn, (2004-5) series of sculptures endeavours to be an artefact of the making process and at once refer to the action of the tool, a recording of its action, and the mechanism of the process. This series of sculptures, explores this intersection of the making process and the residue created through application. Implement is both a noun and a verb. It is both an object and an action. It pertains to the tool and the doing of the tool. Moreover the term refers to the methodology of actional technics and a regime of actuality and toil.

At the start of this project, I had made tools that referenced historical tools in their appearance and manufacture. I was making abstracted non-functioning fetish tools, but during this process, the focus shifted from the actual practice of using tools to a fascination with the residue created through their action. It was a distinct shift from the tool/implement as art object to the artifactual material that evidences the making process as art object. Paradoxically in the *Implement; drawn*, series of sculptures, steel was the chosen material in the execution of these sculptures.

Steel's plasticity and strength and the ability to add and subtract infinitely, made it the obvious choice for the *Implement* series. As Richard Serra explains: 'If you want to do something new, you have to use new tools or misinterpret the old tools and their use'.⁹¹

⁹¹ Schwander, *Richard Serra*, p. 38

Through the process of this visual research I have developed new skills and have also grasped the use of new media and technologies such as the rolling, heating and bending sheets of steel. Welding and fabricating and the use of oxy-acetylene are now permanent fixtures in my sculpture making oeuvre. Like Arman, I now have two veins of practice that I work on simultaneously: the Richard Serra-like fluid steel works and the Martin Puryear-like wood working technique.⁹²

The research imperative became an attempt to create forms that have the essence of the original residue material, yet demonstrate a deliberate act and freedom of line and form. The essence I endeavoured to capture can be likened to the gestural and precise yet roughly edged and rapid brush strokes of traditional Chinese calligraphy.

Implement; drawn contains an imprint and a visual memory of the tool's action. Their surface texture and colouring reflect not only the actual hand tool's cutting process, but also the effects of subsequent heating, grinding and addition of oils, which influence the ultimate patina of the object.

The repetitious action of the tool on a material has become a fetish satisfaction. The resulting sculptures in this exhibition are themselves a fetishistic interpretation of the 'line' and the dynamic form of hand tool residue that to me is akin to the adage of artist Paul Klee of 'taking a line for a walk'.⁹³

Bernar Venet's sculptures possess a similar 'line' in comparison to the works in *Implement; drawn*. His forms can be perceived as organic forms from an industrial process. Venet's sculptures are created by feeding solid 150 mm diameter steel bars into an industrial electric roller. The usual job of these rollers is to produce a 'perfect' circle for industrial applications, yet to create Venet's sculptures, the steel is fed into the machine at angles, adulterating the 'perfect circle'. The resulting form is a rhythm of torqued, increasing and decreasing organic-like spirals. (Fig.27)

⁹² Refer to Chapter 2

⁹³ Hayward Gallery, *Paul Klee: The Nature of Creation*, viewed 8/2/2003, <http://www.heyward.org.uk/exhibitions/klee, 2002>



Figure 27: Bernar Venet, *Deux Lignes Indetermines*, (Two Indeterminate Lines), 2003, rolled steel

For me, it is interesting to consider the identical visual links between the forms of industrial residue and a natural occurrence of the organic line. If we reflect on the swarf or residue from machine lathe or drill we can notice a production of uniformly shaped spirals and curls. In the organic world, many species of animals possess spiralled horns and tusks, the shells of sea animals and the growth habit of countless species of plant, such as the grape vine's tendrils, also mirror the same curled or spiral shape of this common 'line'. (Fig. 28)



Figure 28: The visual link between the 'organic line'- grape vine tendrils (left), and the 'industrial line' spiralled residue from the action of a tool: plane (right).

Venet discusses and titles his works in a manner describing the line. '*Straight Lines*, the *Angles and the Arcs*, [of his 1960's works], became the basis for my investigation into the theme of the line'.⁹⁴ Venet further explains his process: 'First translated onto canvas then in relief form, these subjects, to which the indeterminate lines were added, took on a central place in my sculptures'.⁹⁵

Venet's sculptural works possess a similar essence of the gestural line to the works in *Implement; drawn*. (Fig.29) Although I enjoy their 'presence', technological processing and line, I feel the majority of his sculptures to be clumsy in the articulation of these lines. For me they sit uneasily in between the natural line and the industrial line. The mechanical process of rolling inherently stamps a certain rhythm onto the material. To break this mechanical rhythm Venet heats and twists random sections out of this line thus creating an 'off beat' in the form. My discourse is formed at the conjunction of line and 'off beats'.



Figure 29: Tim J. Edwards, *Filament*, 2004, welded steel

⁹⁴ Tansini L, 'Bernar Venet: A Renaissance Artist of the Third Millennium', *Sculpture*, Vol.23 No.4, May 2004, p. 30

⁹⁵ Tansini, 'Bernar Venet...', p. 32

With my sculptures, I have also tried to articulate the 'off beat' as a potential point to break the formality of my line. I believe a sculpture imbued with a certain amount of visual rest contrasting moments of visual activity, extracts more potential out of a line.

Australian born sculptor Clement Meadmore, whose large-scale steel sculptures have been highly influential in my works, also describes this off beat.

But you can't just make a column, that's not going to make much of a sculpture. So then I thought, what if I do make a column but bend it? That'll activate the single element [the column or line]. Thus the single column idea was really a way of getting to something more expressive without complexity.⁹⁶ (Fig.30)

Meadmore's sculptures are lines composed out of steel square cross-sections.⁹⁷

These elements often resemble large twists interrupting a continuous line. They also possess a fluid, gestural and organic-like quality. It is interesting that his works follow the common line of nature and the similar industrial line (the residue of the tools action).

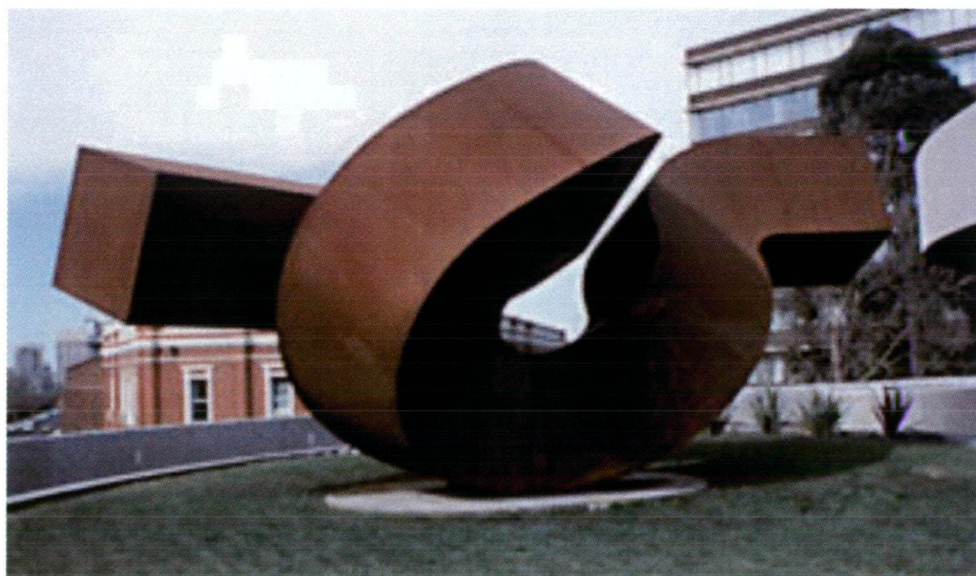


Figure 30: Clement Meadmore, *Curl*, 1968, welded and painted cor-ten steel

In my opinion the artist who has extracted the most potential and expression out of a straight line or sheet of steel is Richard Serra. His recent works are evolutionary from his earlier 'prop' pieces. Whereby flat, thick and heavy steel plates, articulate tension and spatial disruptions within the gallery space context. These forms set up enormous tensions of gravity, due to the way Serra props and leans these plates

⁹⁶ Gibson E, *The Sculpture of Clement Meadmore*, New York: Hudson Hills Press, 1994, p.27

against each other and against walls. The 'prop' pieces follow a certain logic in how the work was assembled or how gravity held these pieces together as described in the work, *Corner Prop No.7*, 1983. (Fig.31)

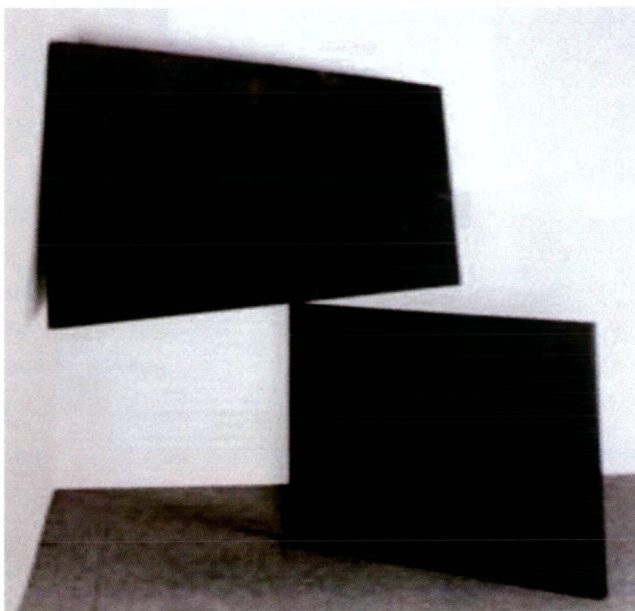


Figure 31: Richard Serra, *Corner Prop No.7*, 1989

In Serra's more recent works (from the late 1980's to now), he creates extraordinarily large forms out of thick sheets of steel. These rolled, curved and also linear forms, also possess this universal organic and industrial 'line'. (Fig.32) Through sheer scale and volume these linear forms discuss Serra's intentions of declaring, defining and dividing the space.⁹⁸

⁹⁷ Meadmore's sculptures are fabricated out of steel sheet; they appear solid, yet are hollow.

⁹⁸ Schwander, *Richard Serra*, p. 42

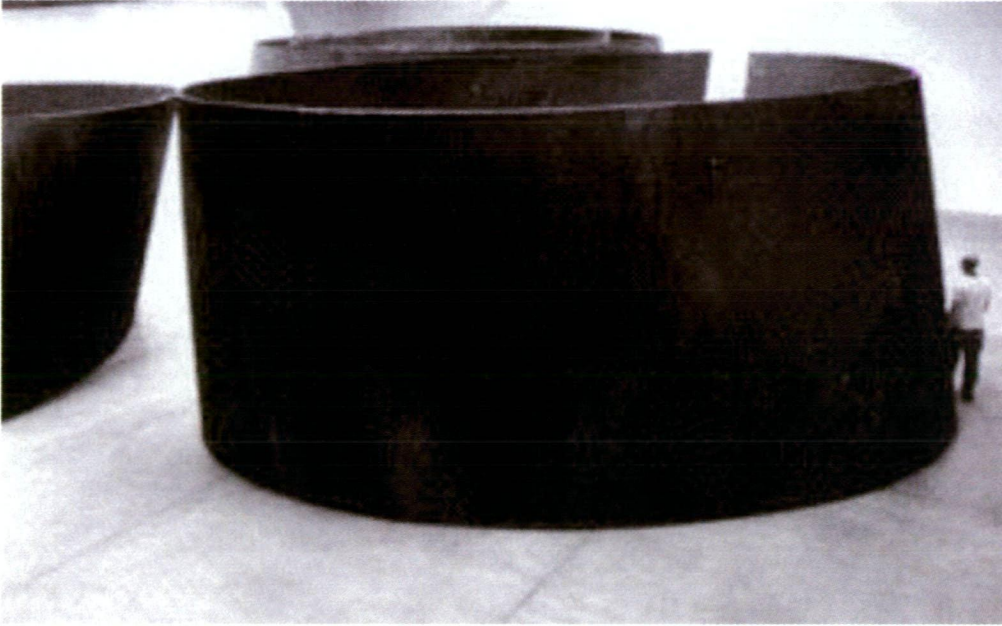


Figure 32: Richard Serra, *Torqued Ellipses*, 1997, cor-ten steel.

Serra's sculptures incorporate, in form and surface detail, a trace or residue of the industrial processing and are left to be part of the work like badges of honour.

He states: 'Where the evidence of the process of making can become part of the content... In most of my work the construction and decision making processes are revealed. Material, formal and contextual decisions are self-evident'.⁹⁹

Serra's works are like enormous shards that can be perceived as the residue from a tool. For Serra,

... steel mills, shipyards and fabricating plants have become my on the road extended studios... [These] plants have provided a source for material, inspiration, fabrication and construction. Usually I study their equipment, look at the processing of materials and study their tools. I try to extend their tool potential.¹⁰⁰

Although the actuality of Serra's work depends on, and is in some way limited by industrial processing, the gentle organic-like curves transcend mere residue or the outcomes of tool use. They become gestural compositions of spatial dissection and containment. Related to Serra's prop pieces these single linear forms also rely on gravitational tensions:

⁹⁹ Schwander, *Richard Serra*, pp. 42-43

¹⁰⁰ Schwander, *Richard Serra*, p. 45

Perfect balance, that's what has always interested me. If you take the spirals, which weigh upwards of 120 tons, you never think about their weight. You get implicated in their speed and movement. My concern is with gravity, weight or weightlessness, and balance.¹⁰¹

Meadmore's sculptures also possess this contradiction of large-scale forms appearing 'weightless'.

When a sculpture meets the ground it should not appear to sink into it like a tree or a building. A building is part of the environment, but a sculpture is a presence inhabiting the environment. The conviction with which a sculpture makes contact with the ground is a large part of its strength.¹⁰²

As these eminent and personally influential sculptors (Serra and Meadmore) have discussed, the notion of weight and the manner in which a sculpture interacts within space (especially) in relation to the ground, is also of great significance to me. From a conceptual stand point, it is essential to me that these works rest lightly and appear to be in a state of flux or transition, that is that they appear to have 'just landed', visually and conceptually linking the notion of the hand tool residue found on the floors of sheds or studios. More significant is the manner of manipulating and rolling the forms to maximise the occupancy of the three dimensional space. This rhythm is interjected with moments of minimal grounding, in the hope that the works are like hovering gestural lines.

Like Serra, I endeavour to define and divide space through tangible dimensional lines, with the addition of a further transitory element – the shadow. This is also a link to the shed or studio shadow board, the home of the tool. The linear forms of *Implement*; drawn, inherently and deliberately cast a shadow in which the memory of the form is cast across the ground, adding a 'trace' or 'residue', of the form.

Then there is the decision about scale. Scale is a vehicle to produce a sense of significance to the viewer, to feel the form and to read the line at a human scale. The actual tool residue's micro scale in other circumstances renders it invisible. Unnoticed in its smallness and overwhelmed by the quantity of other individual forms competing for attention to their uniqueness. Up scaling rescues the residue from invisibility, making visible what is usually invisible.

¹⁰¹ Peyser J, 'Richard Serra: Declaring, Defining, Dividing Space' *Sculpture* Vol. 21 No.7 October 2002, pp. 48-51

¹⁰² Gibson, *The Sculpture of Clement Meadmore*, p.52

Residue normally would be considered ephemeral, something to be discarded; yet I feel residue clearly has status, identity, and importance. The sculptures that form the subject of this exhibition, although informed by the residue of the hand tools' action, can be considered – through scale and material – the abstracted embodiment of hand tool residue. Specifically, they are no longer random shavings or swarf, but rather, abstractions of these residues that recognise their own identity as declared lines piercing space.



Conclusion

The sculptures in the *Implement*; drawn project explore the abstraction of line and its subsequent form as influenced by, and resulting from, the process of the use of a hand tool. This process is a conjunction between the user and the tool in action against the material being worked. The artwork draws together the concepts of the value of residue as a marginalized outcome from the process, and 'tool and process' as fetish. These constructs of fetish and residue have been discussed in previous chapters.

The residue thus created in the sculptural process (Serra – his lead throws) and the hand tool user, are informed by intention and action. The physical evidence of their processes is the pure result of cause and effect as documented by the chosen material.

Like Serra's *Splash* (1968), *Implement*; drawn recognises that the extension of the hand in companion with the tool both physically and psychologically extends notions of the haptic through space. In my work the reference is to the 'drawing' of a blade-edge along a piece of material, thus creating swarf is heavily implicated in the process.

The perception of residue will vary according to the environment from which it is viewed. On the workshop floor it has no significance, other than as a nuisance, and is swept up and trashed. On the floor of my sculpture studio it possesses aesthetic form and acts as an initiator of ideas involving line, form and texture.

The residue (swarf) that influenced *Implement*; drawn is completely free of intentional imagery and in itself contains the freedom and gesture of the verb 'to draw'. As the research developed the idea of how the *line of residue* mediates space has become important as an informing device for moving form through space. Swarf breaks, kinks, and twists back on itself and generally shows it to be a free line. *Implement*; drawn references the way this type of residue has no definitive beginning, middle or end and seeks to pierce the space with line.

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Appendix

Implement; drawn

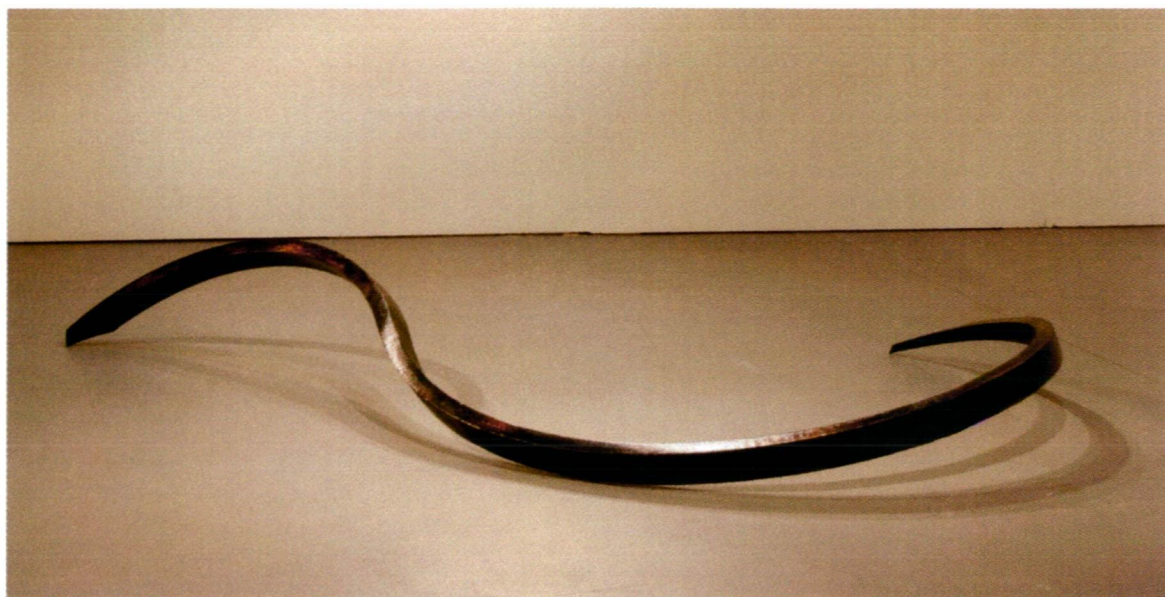
Images of Assessment Exhibition

Academy Gallery, Launceston

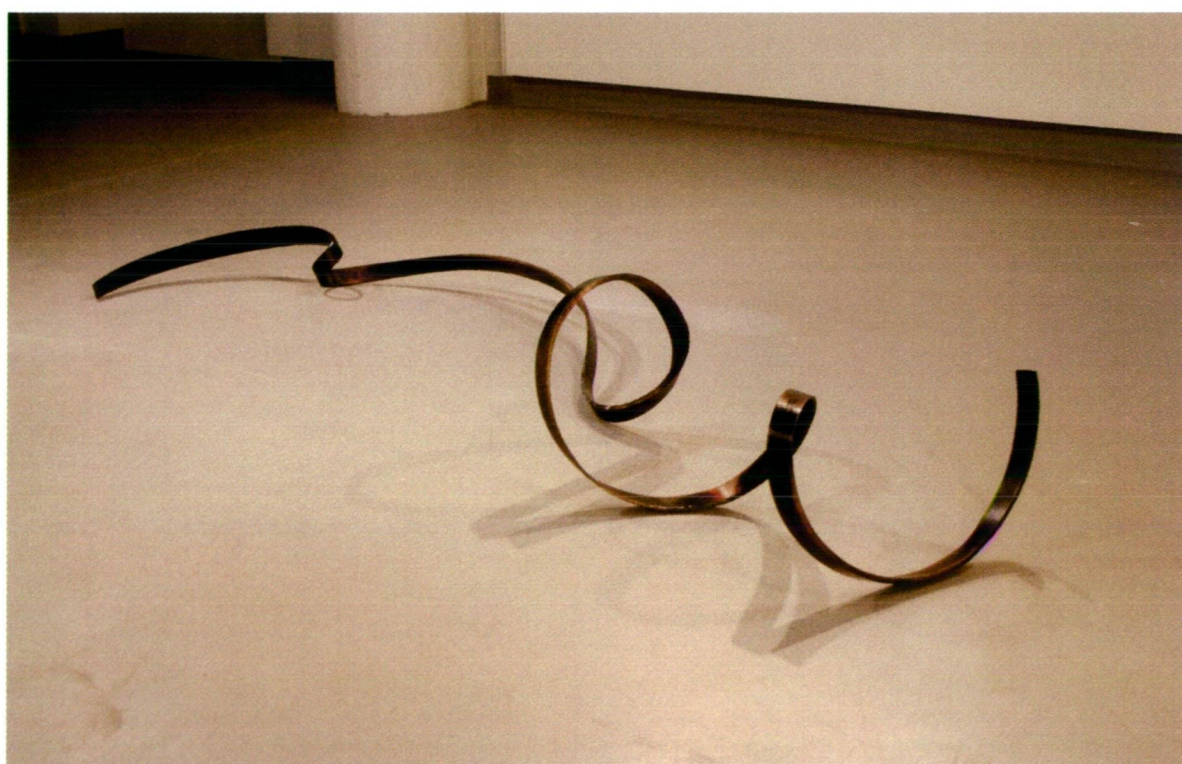
June 2005



Implement; drawn exhibition over view.



'Whence', 2004. Rolled, welded and forged steel with patina. 423 cm x 215 cm x 12 cm.¹



Implement drawing 1, 2005. Rolled, welded and forged steel with patina. 470 cm x 150 cm x 7 cm.

¹ All measurements are as follows: length x width x height.



Implement drawing 2, 2004. Rolled, welded and forged steel with patina. 200 cm x 260 cm x 40 cm.



Filament, 2003. Rolled, welded and forged steel with patina. 160 cm x 140 cm x 110 x cm.



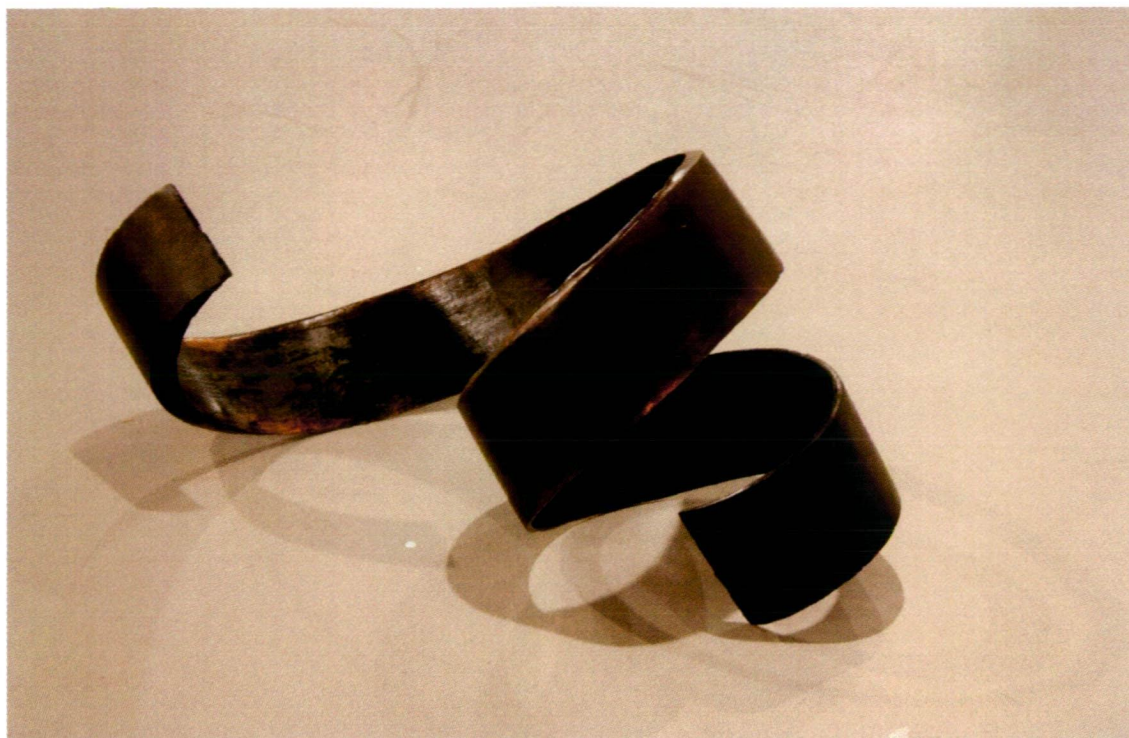
Implement drawing 3, 2005. Rolled, welded and forged steel with patina. 210 cm x 210 cm x 45 cm.



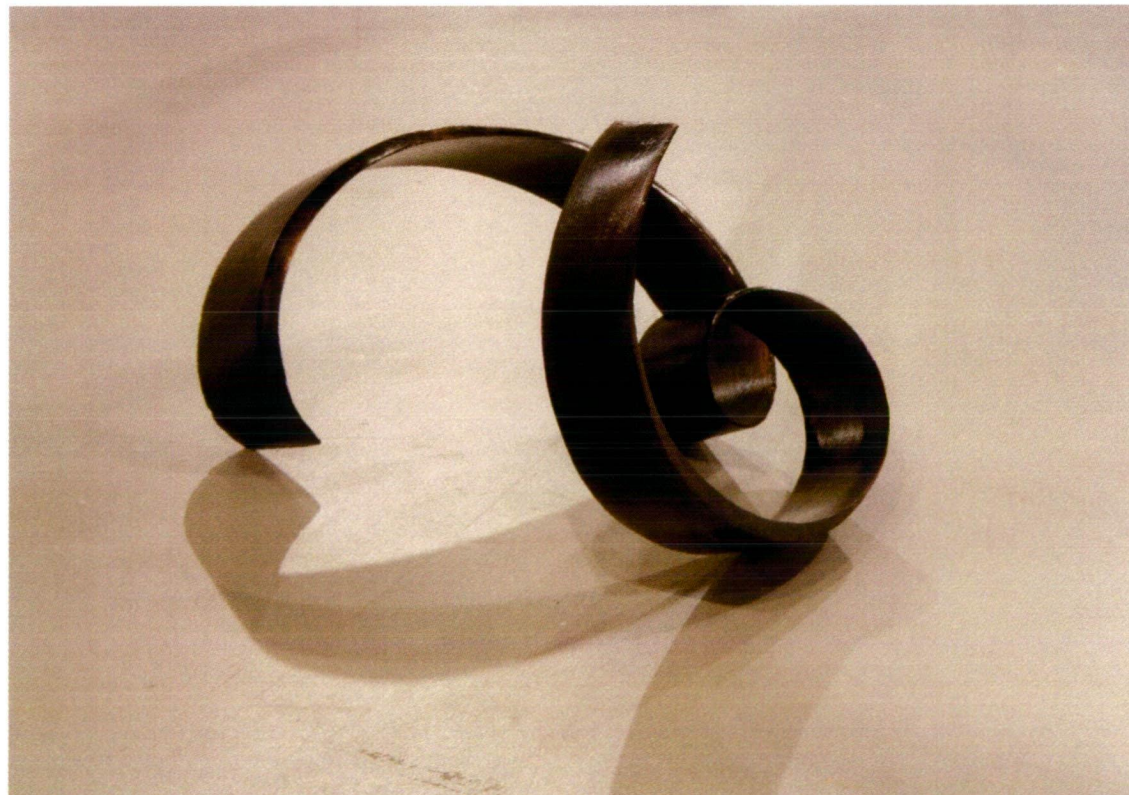
Implement drawing 4, 2005. Rolled, welded and forged steel with patina. 145 cm x 160 cm x 20 cm.



Implement drawing 5, 2005. Rolled, welded and forged steel with patina. 160 cm x 65 cm x 20 cm.



Implement drawing 6, 2005. Rolled, welded and forged steel with patina. 140 cm x 80 cm x 60 cm.



Implement drawing 7, 2005. Rolled, welded and forged steel with patina. 160 cm x 85 cm x 70 cm.