

Craft
1907877
Design craft
4907
Julia Lockheart

In this paper I will discuss what craft means, and how modern craft fits into this world and an ever-modernising society. I will investigate what really makes a craftsperson and discuss the deep understanding and ties to material that they possess. Through a critical examination of how the teaching of craft is delivered in a modern educational system, I will also look deeply at whether this academic and structured approach is appropriate or effective for craft.

The word craft is ambiguous. It exists as both an adjective and a verb. One may craft a material and also embark upon the endeavour of craft. It is defined by the Oxford English Dictionary as an activity involving skill in making things by hand (Oxford English Dictionary, 2009). This broad definition of the word craft is used by many people to describe a myriad of different disciplines. In a 1970 omnibus of the magazine *Objects:USA*, curator Lee Nordness wrote: "The term craft confusedly connotes in many people's minds, something that's done as an avocation, something done as a therapy, something done by the aged. Actually, what is being created by the top artisans in the United States should be associated with such names as Benvenuto Cellini, Peter Carl Faberge, and Paul Revere" (*Objects: USA*, 1970). While complimentary, the beginning of this statement seems to indicate a sense of inferiority towards the crafts.

Craft is used to define human skills classed as "endangered" in the UK, those at risk of becoming moribund, or lost forever. Among the one hundred and fourteen skills listed as endangered by the Heritage Craft Association (Heritage Craft Association, 2017) is Welsh coracle making. A coracle is a small, round, one-man type of canoe (Breverton, 2012). Made of willow or ash woven into a large basket, and with a reinforced inner structure, it is then covered on the outside with skin in such a way that allows the coracle to float on the top of the water, rather than in the water like a boat (See fig 1) (John Geraint Jenkins, 2006). The lives that depended upon coracle making were those of fisherman working on small, local rivers to provide food for their families and enough of a catch to trade locally. However, the salmon that were once plentiful in Welsh streams and rivers are now permanently protected due to low stocks and environmental changes, and there is no longer a practical need for coracle making.

Another example of a craft that is no longer practical or useful and, sadly, one of the four completely extinct skills in the UK, is mould and deckle making (See fig 2) (Heritage Craft Association, 2017). This is the hand building of mahogany frames for use in hand making paper (Hunter, 1978). In a time where paper was made by hand, the deckle was a frame that would hold a layer of wire mesh that would separate water from a parchment slurry. Once it had dried in the frame the paper could be removed and cured on a flat surface or rolled to form a scroll. The end of this UK-wide skill finally came in 2017 when Ron Macdonald, the last [mould and deckle] maker in the UK, died, taking with him the last lived experience of the craft (Tappenden, 2020). While mould and deckle can still be bought online, manufactured on mass scale from a foreign source, the human skill in being able to create these frames has been lost forever.

Commented [JP1]: this is new - what is it? perhaps introduce it and then go on to talk about it being a dying skill.



Fig 1 Coracle men



Fig 2 Deckle Frame

From the 12th to the 15th centuries, medieval craft was practised through artist collectives and guilds (Epstein and Prak, 2008), serving the desires of the wealthy, producing fine and lavish works using generationally honed skills. Guilds also served to establish a monopoly on specific trades in their area, setting and maintaining a standard in quality of goods and trading practices (Sheilagh Ogilvie, 2021). The formal pathway for training in craft skills in these guilds was usually that of the apprentice, then journeyman followed by master (See fig. 3).

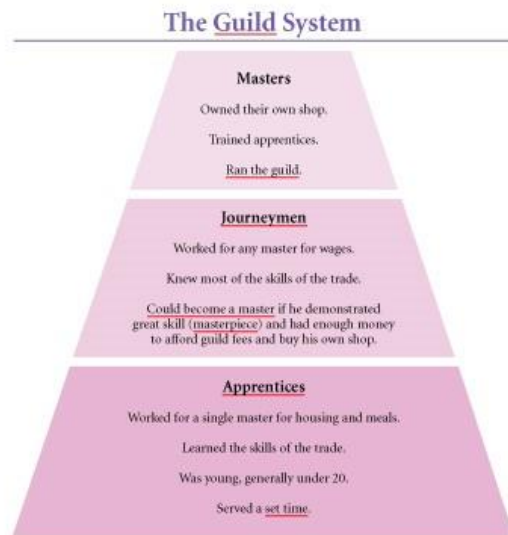


Fig 3 Guild Table

These three levels are used to describe the level of proficiency and professional standing of a craftsperson. Beginning with the apprentice, usually a youth of about 14 years of age, would leave his home and birth family to live full time within a master craftsman's household. There he received clothing, food, and shelter from the governing body of the guild. An apprentice would typically serve for three years before reaching the stage of journeyman. The journeyman would then, as the name suggests, travel to different guilds in a way that would diversify the skills for a period of roughly five years, being paid wages for the work. This experience allowed the craftsman to learn from new masters, and his skills to grow and spread rather than becoming stagnant under a single roof. When the journeyman's time on the road was finished, he would return to his original guild and eventually produce a masterpiece as proof of his proficiency, before becoming a master of the craft. The cycle of apprentice to journeyman, and journeyman to master was vital to economic and social condition of the guild in the given trade (Jovinelly and Netelkos, 2007). Mastery of a person's craft was a membership that allowed them to practice, as without this one would be barred from their trade by all local guilds collectively. Unfortunately, the power of guilds over its members, meant compliance with guild law was essential to maintain one's trade.

Guilds worked to maintain stability in pricing for their goods which led to guilds seeking control of town or city governments in order to achieve their

economic objectives, or indeed the interests of individual guild members (Sheilagh Ogilvie, 2021). This, in combination with the ever-growing standards of the masters over journeymen to take their place led to a decrease in people seeking to learn a trade, and a slow decline of the guild system over the European renaissance and reformation periods. During this time artists had begun to reformulate classic works based upon the creativity of individuals. Many even breaking away from these collectives and demanding payment for their works based upon merit (Basye, 1957). Between the rampant corruption in the guilds and artistic reform, by the 16th century there were very few individual craft guilds left.

In the mid- late 1800s designer, William Morris, art critic, John Ruskin, illustrator Walter Crane, and architect and designer, C.R. Ashbee, among others, started the arts and crafts movement. Fuelled by a growing public distaste for poor design, this movement gained momentum when artists and craftspeople working within the decorative and applied fields felt there was no recognition or representation within the Royal Academy (Oscar Lovell Triggs, 2018). Ignored by the Academy, these artists and makers organised a separate exhibition, one which represented a wave of over a hundred new craftsmen of the age. First known as the “combined arts” they eventually changed their name to Arts and Crafts. They believed it signified more specifically the union of artistic creation and the industry for which the society stood for (Oscar Lovell Triggs, 2014). As machines began to replace workers, people believed industrialisation was beginning to replace traditional skills in favour of speed and profit. Some craftspeople even began to form themselves into guilds based loosely on the medieval style to foster better standards and quality. Almost immediately some of these guilds were criticised for their exclusivity and were forced to undergo reform (Parry, Moss and Morris, 1989). The result were guilds that tried to combine all areas of craftsmanship such as painting, sculpture, ceramics, or woodworking. Despite playing a key role to the Arts and Crafts movement, most of these guilds were disbanded within a decade.

In the modern era, the difference in pricing between fine art and craft is another key contributor to a perceived inferiority in craft. It’s a simple fact that fine and contemporary art commands a high price, while artisan created work continues to be compensated by the metre, or pot, or tile. In 2019 artist Maurizio Cattelan’s piece “comedian” was unveiled at the art Bazel festival in Miami, which was in fact a banana simply duck taped to the wall (see fig 4).

Commented [br2]: Any idea why they were disbanded? what can be learned from the reasons they disbanded?

Commented [br3R2]: This is where the transition to Bauhaus might fit.

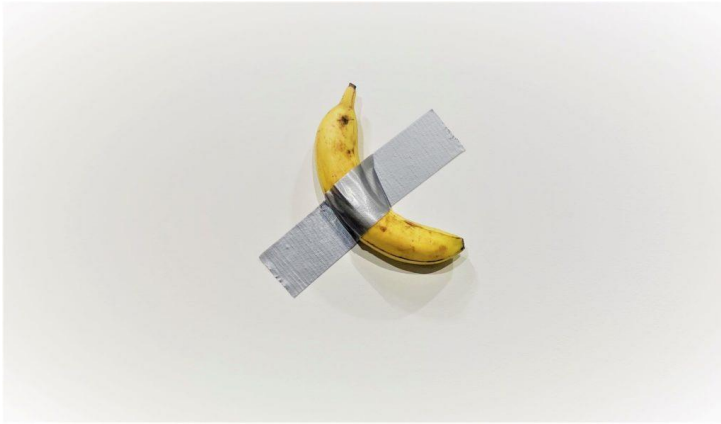


Fig 4 "Comedian"

While this is seen as a statement about the contemporary art climate as well as consumerism and hype-driven art, this statement has been made multiple times in fine art. The fact remains that this work sold repeatedly for £120,000 and it is this monetary value that I will be focusing on.

In this instance, I am looking at how the piece came to be valued, solely for its concept and standing amongst other art works of a similar nature without consideration for the material costs of the artist or actual labour. In fact, Cattelan was quoted as saying "The banana is supposed to be a banana, however the shape of the fruit, the angle it was taped to the wall and its placement in the booth were all carefully considered." Despite the artists consideration, the value of raw material for this work would easily be under £3 and the skill required to accomplish this project would be minimal. It could be argued that something of the artist's hand can be seen in the placement of the banana, but in truth it is negligible. Therefore, the monetary value of the artwork in this instance is based upon its subjective value, which depends on what other similar artworks are worth (Menger, Dingwall and Hoselitz, 1994).

The labour theory of value, written by Karl Marx (Marx and Engels, 1908), states that 'the value of an object is a result of the labour expended to produce it.' Looking at value in this way, the value of the "comedian" would simply be the hours required to go to the shop, purchase the banana and the duct tape and then adhere it to a wall. The labour value of craftwork on the other hand, would be dictated by the amount of labour hours in addition to the material cost of production and basic overhead costs.

In 2019 Ceramic artist Danny Meisinger created a 43cm high Ceramic vase called “embrace” Which sold for \$2500 in America. (See fig 5)

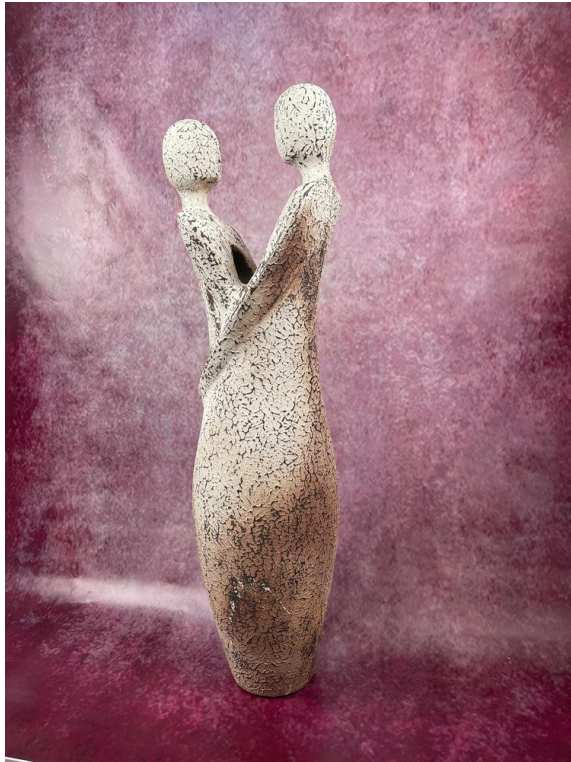


Fig 5 “Embrace”

The vase is made from stoneware and at the top two silhouettes have been sculpted holding each other in an embrace. The price of this large vase will undoubtedly cover the cost of the clay, glazing materials, and labour, which includes the experience and skill of this potter, but not much more. Throwing large pottery on a wheel requires the kind of control and material understanding that can only come with time (Kindersley Publishing Staff, 2019). Many hours would have been spent drying and working in between stages to build height and then alter the form, adding the sculptured silhouettes. These skills are what allows this artist to create a vase with such a refined shape on this large scale.

Danny Meisinger is well known as a potter and artist in the same ways as Cattelan is well known for his conceptual work, so why the difference in

value? I would suggest that when mass produced items are as readily and easily available as they are today, craft has lost value while meaning and hype are desirable. Perhaps because we have become disassociated with craft as a society, craft is devalued on the whole. And yet, working with materials is engrained into our being as many of our ancestors would have crafted tools to accomplish tasks in order to survive. (Hummel, 2006) Making and using tools is one of the key factors that sets humanity apart from the rest of the creatures on this planet. The more reliant humanity has become on automated manufacture, the further we seem to drift from an understanding of craftsmanship.

All craftsmanship is built upon a skill that has been developed through trial and error. (Sennett, 2009). Once the craftsman has begun to master their skill, the level of problem-solving moves from very simply completing the project, to working out the finer points of finishing or even innovation in design that would have been previously impossible. So, the craftsman becomes a person striving for perfection in skill, and almost never satisfied with their own level of work, constantly bettering processes and refining elements of their craft. A great sentiment of artisanship can be found in the Isaak Stern quote "the better your technique, the more impossible your standards." (Sennett, 2009).

Understanding a little more about craft's relationship to materials we can even begin to draw parallels between hand craft and all-other area of creation that could be viewed as craft. You could argue a musician is a craftsman using his musical instruments as tools to craft a musical composition, or that a landscaper is a craftsman using huge machinery and moving hundreds of tonnes of earth to create a beautiful landscape. What is fascinating is that within all craftspeople there appears to be a possible underlying commonality. What people of craft seem to share is a material intelligence. Material intelligence is the idea that some people can achieve an almost measurable material literacy or a comprehensive understanding of material and process (Adamson, 2020). This implies a very deep ability to read the world that surrounds them as a material environment, and the ability to give it a new form. Material intelligence is not necessarily craftsmanship, but an understanding of the environment around us, and how the things that we interact with on a daily basis are created, in turn influences decisions in how we select material to craft with (Adamson, 2007). Selection of material and material understanding are extremely important to craftspeople, while basic material understanding can give you a finished product, knowledge and experience can lead to understanding the true nuances or potential of a material.

A maker who exemplifies material intelligence is spoon maker Barn the Spoon, who especially prizes the wood from the bent branches of trees, which are usually sawn from timber and consigned to the chipping pile. Generally seen as waste, it's the natural bend in these branches that provide the material that Barn says makes the very best spoons (Barn the Spoon, 2017). It is the natural curvature of the grain which allows the wood fibres to perfectly run along the entire length of the bowl section of the spoon. This piece being used for carving instead of just standard wooden billet will create a much stronger shape, a spoon that will last generations, rather than simply a few years (Barn the Spoon, 2017). In this way material selection is influenced by material intelligence contributing to a much better overall design. (See fig 6) Studying the relationship between a maker, such as Barn, and his materials we start to look at making as a growth process, viewing the maker from the very beginning as a participant amongst a world of materials (Ingold, 2013), making conscious design decisions with a clear view of what will emerge based on experience and practical knowledge.



Fig 6 Carving spoons

The future of craft seems to be heading towards a sort of middle-ground of production in which craftspeople can produce enough work to sustain a high turnover business, and employ staff to assist with making, while still offering work that reflects their elevated level of craftsmanship. An example of this is American ceramicist John Pandolfi (see fig 7), who employs 15 potters in his studio using the ceramic process of jigger and jolly. Pandolfi tableware is used in Michelin star restaurants domestically as well as in Australia, Europe and the middle east (Eater, 2019).



Fig 7 Pandolfi J.

The process of jigger and jolly uses a spinning form in which soft clay is pressed into, and then a blade lowered down to give a profile to the upper side. Usually reserved for tableware as it is a means to achieve uniformity and increased production rates, while using hard clay rather than liquid which creates a much stronger plate. (Krupanski, 1992) (see fig 8).

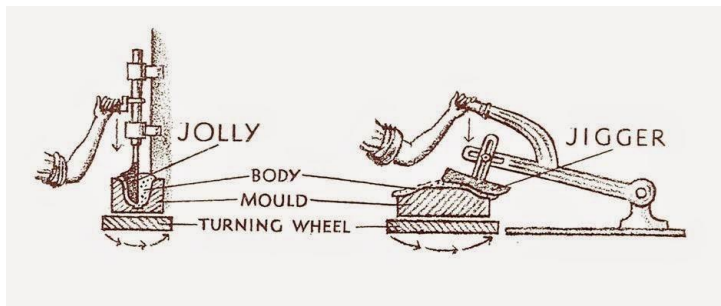


Fig 8 Jigger and jolly

This machine was one of the very first built in the industrial revolution and bridges the gap between handmade and mass produced. Pandolfi still creates the moulds and profile cutters by hand, as well as decorates and finishes the work all in studio. (Jono Pandolfi Designs, n.d.) Using technology in this way not only allows the studio to make a large number of pieces per day but also to make a wide variety of high quality and handmade work.

Paying attention to the environmental implications of materials and making sustainable choices in design is the mindset of the future craftsperson. Regardless of what is being designed, designers have an obligation to the planet to be conscious of the materials they use and the projected lifetime of what they are making. It is important that craftspeople and designers explore the space where art, science, engineering and design meet, not solely for the purpose of personal innovation but to develop new ways to use materials or in some cases invent them. This where modern material intelligence can give way to material innovation. Neri Oxman is a professor of the MIT Media lab, in Cambridge Massachusetts and a multi material designer. The Media lab is a place where all elements of design and science collide to produce forward thinking ideas on a material level. (Albert, 2019) Working with her research team she has created what they call a ‘biomass pavilion’, Aguarocha for the Smithsonian Museum in New York. (See Fig 9) This is really important to craft as its ability to survive in a sea of growing technology will be its ability to adapt to newer and perhaps more sustainable materials.

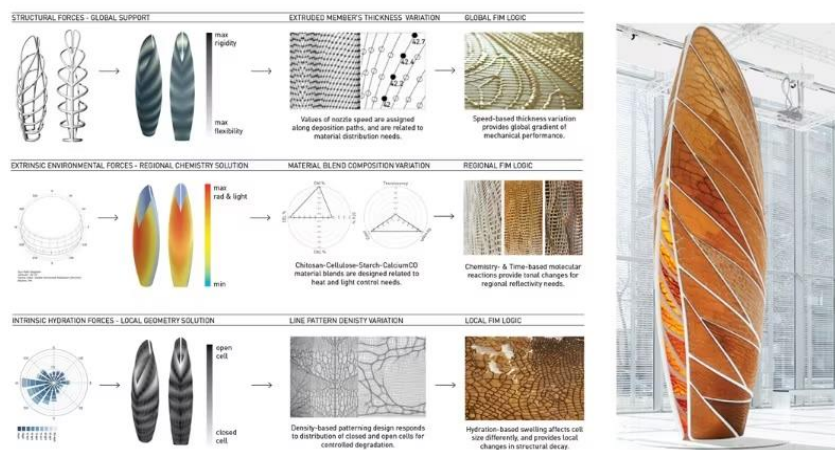


Fig 9 “Aguarocha”

Built using a scientifically engineered combination of chitosan, calcium carbonate, starch and cellulose; this is designed to showcase the ability to create a solid structure using readily available biological materials. These materials are sustainable and are engineered in such a way that they will break down completely and return to the environment within a single lifetime. (Oxman, 2020) Given the current overall worldwide environmental situation,

the creation of new material by either using scientifically made sustainable sources, or utilization of pre-existing waste into reimagined material could be a way for craftspeople to design a way into the future. One of my favourite quotes from Oxman is “we choose to create in nature's way, with growth as opposed to assembly”(Neri Oxman and New, 2020).

Year on year more young people are seeking craft apprenticeships, many look to bypass a costly higher educational route in favour of immediate access to learning a skill (Correspondent, 2022). With its deep connection to materials and design, and historical educational roots set in guilds and collectives, it seems strange that practitioners of modern craft are being taught in such a way that to attain an academic qualification in order to be taken seriously. Perhaps the structure in which craft and skills are taught are in some way strangling the ability for young people to realise a potential material intelligence by being unable to finance or rise to the workload of an academic degree. In fact, the underlying framework and ideologies of the education system in the UK still represent the values of what used to be taught exclusively to the ruling elite of the past. (Wood, 2000). The system we use today is not necessarily designed with traditional skills or handcrafts in mind. It is also common practice for modern university courses in higher education to replace useful practical skill based modules in a degree program for mandatory common modules (BBC, 2021). These modules are shared by every degree program and are a cost-effective way to water down taught hours and targeting general employability. This generalised information sits in contradiction to teaching a student the specialised skills required to be a self-sustaining craftsperson.

During my own first year in university, I enrolled in a foundation art and design course which was described as having been based off the German Bauhaus art school itself. While the course taught me lots of things that I never understood about design and, indeed, about myself, I was surprised at the lack of representation of hand craft or master craft within the curriculum and teaching body. In the Bauhaus manifesto the relationship of art and craft is clear, as there was to be no difference between artist and artisan (Gropius, 1919). These two were to sit equally in importance, and yet with regards to my foundation year, of the 5 lecturers teaching only one was a craftsman. While this is simply my own personal experience, I did begin wondering where exactly craft fits in to the modern academic world.

In *The Culture of Academic Rigour: Does Design Research Really Need It*, author John Woods states that rigorous education is fundamentally organizational, and rule based, which is at odds with the more opportunistic

and situated decisions involved in most of design practice (Wood, 2000). Woods proposes a re-design of academic writing protocols in design education by way of absolving the word rigour and adopting a more empathetic model in an effort to make writing more like a live project with a client in mind. While truth is typically associated with scholastic knowledge, design knowledge is focused within the elegant, practical, or appropriate response to real-life situations or experiences (Ingold, 2013) and would be more effectively taught in an environment that supports this.

Many designers are successful with little contextual reading or writing. In many ways it would be more beneficial to someone in design education to complete more hours of practice, self-directed learning, and thinking-through before being considered proficient. Writing can be linear and is better suited to the competitive bureaucratic style of employment, in a craft practice it may even be detrimental by taking from the hours in which a person could be practicing their craft and improving. It is important that education is tailored to the type of skills you wish to acquire. The point of design education is to change our perspective from the endless shuffle from image to object and then object to image, which is one of the most pronounced features of academic writing within anthropology, design, archaeology, architecture, and art education (Ingold, 2013). We could instead adopt a style of material flow and understanding, currents of sensory awareness in which objects simply take shape reciprocally (Juhani Pallasmaa, 2009). Practical examinations should exist to determine skill level, which could also serve as another step on the path to mastery of a skill rather than a body of collected information that may never be looked at again.

In many large cities independent community potteries have begun to appear, offering prospective potters a chance to learn at their own pace, come and go as they please and pay no more than the cost of an average gym membership plus the cost of materials used. One such studio is Cottage Pottery Studio in London, Ontario (Cottage Pottery, 2021). Offering a monthly and annual membership they can teach people in the area offering many benefits to the local community such as wellness and on a small level employment.

Through this investigation, the ideas around material intelligence have proven significant to my own understanding of craft practise. Before enrolling in university I was a fishmonger and commercial fish filleter from the age of 18. Through many years of employment, I had become adept with a knife, and skilled at recognising the bone structure of the myriad fish species I encountered. My goals were simple and included learning to make a beautiful fillet with no scarring on the flesh from the knife; learning how to use the length

Commented [br4]: In craft practice, writing about craft takes away hours that may be spent practising.

Commented [br5]: Why full caps?

of the knife to cut smoothly in one cut rather than three or four. In 2011 my skill brought me to the attention of the producers of the BBC tv show “young fishmonger of the year”. I didn’t win. Yet the experience proved an invaluable opportunity to meet other fishmongers with and share skills and techniques. Much like a medieval journeyman, I came away from the experience with a deeper understanding of my craft.

Shortly after that I went on to enter competitions in the national fish craft championships across the country representing my employer at the time. This is a tournament where the best UK Fish filleters compete in various events testing their knife competency, speed, and presentation, against their peers for the title of best filleter of the year. At this level of competition, filleters are of the highest calibre of skill, and in truth make the cuts they use to fillet these fish look absolutely effortless. A great epiphany in this research into material understanding for myself is that I have been a craftsman for the last 17 years of my life without really realizing it. While my chosen material is clay in my current craft, I have also used fish as material and used a knife as my tool. The material interactions I have had through my life have shaped the way in which I interact with new materials in my work today. It is this material intelligence that leads me through the design process.

Would my life have been different were I to have found a place that I was able to freely learn what material speaks to my heart in the creation of more permanent handcrafted items than fish fillets? There is a part of me that wishes I were introduced to ceramics at an earlier stage in my life in a situation that was accessible and comfortable. Chances are there are many other people working day to day who would benefit from the exploration of a material like clay at an affordable accessible price. I feel that in my immediate location of Swansea, Wales; such a place does not exist. In Cardiff there is the makers Guild in Wales, founded in 1984 from the desire of Molly Curley to exercise a sort of quality control on a proliferating craft scene at the time. What began as 22 Makers from all walks grew quickly and over the course 25 years had occupied several disused heritage buildings in the heart of Cardiff city giving them a new lift and purpose as a collective workshop (Cardiff Makers Guild, 2015). The Guild became an Incorporated Charity in 2006, moving away from the Co-operative origins when set up now functioning as a charitable makers outreach and a hub for craft and applied art in the Welsh capital (Cardiff Makers Guild, 2015). The idea of using disused or historical buildings that are vacant as a working space for a ceramic studio is what is most appealing to me.

Swansea has a rich historic culture of industry, in 1823 there were nine copper works in the lower Tawe valley as metalworking industry favoured Swansea for its readily available coal and water supplies. However by the mid twentieth century the industry had declined, leaving much of the valley polluted and unusable for years. (A World of Welsh Copper, Swansea University) As such, Swansea has been at the forefront for a variety of regeneration projects worth nearly £1bn in 2021. Most recently a further £2m was announced for rejuvenation projects from 2022 in Swansea city centre alone (ITV, 2021). Given the changes Swansea will be undertaking, I feel as though the city would benefit from an accessible location allowing a person to learn a craft at their own pace, concentrating on the material knowledge and skill-building instead of academic rigour.

Teaching and helping others to understand material has always been a passion of mine through my career as a fish filleter. Since beginning my degree and learning to craft ceramics, I have discovered that as I have been climbing the ladder of skill and craftsmanship, dragging myself from the beginning stages of ceramic competency to the intermediate; all the while I have still been looking behind and offering assistance to those less able. Through my education I have realised that I am a craftsperson, and my chosen material is clay, but I am also a teacher and wish to take my place upon the cycle of learning/teaching craft. Therefore I plan to open a public ceramic studio in the heart of Swansea city in the next year. The underlying focus of my proposed studio is making clay accessible to as many people as possible and engaging with the local community by allowing budding artists a chance to sell their work to the public. A regular open kiln schedule would also allow learners to make ceramics from home and get them fired in an economically feasible way. Open days would allow people to investigate clay as a material, or simply to discover the joy of making something for oneself. Materials and tools could be made available for members of this studio to purchase at either cost, or with a minimal markup to further accessibility. This studio could become a hub for those learning craft to exchange ideas with others and promote a collective mentality and care for its members without politics or a medieval guild style hierarchy. "Work inspires work", being able to see the things that others make will generate newer designs and ideas (Draft Craft Manifesto, Maria Fonseca). My vision is a melting pot for ideas and for learning ceramicists to grow and even feel a sense of belonging.

Reference list:

- Adamson, G. (2007). *Thinking Through Craft*. Berg Pub Limited.
- Adamson, G. (2022). *CRAFT : an american history*. S.L.: Bloomsbury.
- Adamson, G. (2020). *FEWER, BETTER THINGS : the hidden wisdom of objects*. Bloomsbury.
- Albert, M. (2019). *ABSTRACT: Neri Oxman episode*. Vimeo. Available at: <https://vimeo.com/376548593>.
- Barn The Spoon (2017). *Spon - a guide to spoon carving and the new wood culture*. Ebury Publishing.
- Basye, E. (1957). *A Documentary History of Art: The Middle Ages and the Renaissance*.
- BBC (2021). University of Wales Trinity St David told to repay online module fees. *BBC News*. [online] 17 Oct. Available at: <https://www.bbc.co.uk/news/uk-wales-58947138>
- Bergdoll, B. and Dickerman, L. (2009). *Bauhaus 1919-1933 : workshops for modernity*. New York: Museum Of Modern Art.
- Brevertton, T. (2012). *Wales*. Amberley Publishing Limited.
- Cardiff Makers Guild (2015). *mollycurleyretrospective*. [online] the makers guild in wales. Available at: <https://www.makersguildinwales.org.uk/molly-curley.html> [
- China, D. (2022). *Tools*. DK.
- Correspondent, A.N., Economics (2022). Young are forging a route to careers in traditional crafts. www.thetimes.co.uk. [online] Available at: <https://www.thetimes.co.uk/article/young-are-forging-a-route-to-careers-in-traditional-crafts-b75vlqstv>
- Cottage pottery (2021). *Cottage Pottery Studio*. [online] Cottage Pottery Studio. Available at: <https://www.cottagepotterystudio.ca/> [Accessed 12 Dec. 2022].
- Dorling Kindersley Publishing Staff (2019). *Complete Pottery Techniques : Design, Form, Throw, Decorate and More, with Workshops from Professional Makers*. Dorling Kindersley Publishing, Incorporated.
- Eater (2019). *How a Ceramics Master Makes Plates for Michelin-Starred Restaurants — Handmade*. YouTube. Available at: <https://www.youtube.com/watch?v=H1QYeuy3buE>.
- Epstein, S.R. and Prak, M. (2008). *Guilds, Innovation and the European Economy, 1400–1800*. Cambridge University Press.

Fonseca, M. (2012). *Maria Fonseca - Draft Craft Manifesto Publication*. [online] mfonse.myportfolio.com. Available at: <https://mfonse.myportfolio.com/draft-craft-manifesto-publication>

Gropius W. (1919) "Bauhaus Manifesto and Program"

Heritage Craft Association (2017). *Categories of risk*. [online] Heritage Crafts. Available at: <https://heritagecrafts.org.uk/redlist/categories-of-risk/#extinct> [Accessed 9 Dec. 2022].

Hummel, R.E. (2006). *Understanding Materials Science : History, Properties, Applications*. Dordrecht: Springer-Verlag New York Inc.

Hunter, D. (1978). *Papermaking : the history and technique of an ancient craft*. New York: Dover Publications.

Ingold, T. (2013). *Making : anthropology, archaeology, art and architecture*. London: New York.

ITV (2021). *New bridge installed as part of Swansea's £1 billion regeneration scheme*. [online] ITV News. Available at: <https://www.itv.com/news/wales/2021-03-07/new-bridge-installed-as-part-of-swanseas-1-billion-regeneration-scheme>

Jenkins J. (2006). *The Coracle*. Welsh Crafts.

Jovanelly, J. and Netelkos, J. (2007). *The crafts and culture of a medieval guild*. New York: Rosen Central.

Krupanski, P. (1992). NCECA Journal. *Serials Review*, 18(3), pp.61–63. doi:10.1080/00987913.1992.10764085.

Marx, K. and Engels, F. (1908). *Manifesto of the Communist Party*.

Menger, C., Dingwall, J. and Hoselitz, B.F. (1994). *Principles of economics*. Grove City, Pa: Libertarian Press.

Ogilvie S. (2021). *EUROPEAN GUILDS : an economic analysis*. S.L.: Princeton Univ Press.

Objects: USA. (1970). *Art Education*, 23(2), p.20. doi:10.2307/3191472.

Oxford English dictionary. (2009). Oxford: Oxford University Press.

Oxman, N. (2020). *Aguahoja*. [online] Aguahoja. Available at: <https://oxman.com/projects/aguahoja>.

Oxman N. and New, A. (2020). *Neri Oxman - mediated matter*. New York: The Museum Of Art.

Pandolfi J. (n.d.). *Inside the Studio*. [online] Available at: <https://www.ionopandolfi.com/pages/our-studio> [Accessed 25 Nov. 2022].

Pallasmaa J. (2009). *The thinking hand existential and embodied wisdom in architecture*. Chichester Wiley.

Parry, L., Moss, G. and Morris, W. (1989). *William Morris and the Arts and Crafts Movement. A design sourcebook*. London: Studio Editions.

Sennett, R. (2009). *The craftsman*. London: Penguin Books.

Swansea Bay News (2022). *Young people prepared with skills for future local employment as five City Deal pilot projects are approved*. [online] Swansea Bay City Deal. Available at: <https://www.swanseabaycitydeal.wales/news/young-people-prepared-with-skills-for-future-local-employment-as-five-city-deal-pilot-projects-are-approved/> [Accessed 12 Dec. 2022].

Tappenden, R. (2020). The traditional crafts in danger of dying out. *BBC News*. [online] 1 Sep. Available at: <https://www.bbc.co.uk/news/uk-england-51724046>.

Triggs O. (2014). *The Arts & Crafts Movement : Art of Century*. New York: Confidential Concepts.

Triggs O. (2018). *Chapters in the History of the Arts and Crafts Movement*. Franklin Classics Trade Press.

Wood, J. (2000). The Culture of Academic Rigour: Does Design Research Really Need It? *The Design Journal*, 3(1), pp.44–57. doi:10.2752/146069200789393599.

Image List:

Coracle Men - https://i2-prod.walesonline.co.uk/incoming/article12838038.ece/ALTERNATES/s810/IL_CJA_030417coracle_01.jpg

Deckle Frame- <http://vgpaper.com/MouldeDeckle.html>

Guild Table - <020419-25-History-Medieval-Middle-Ages-Guild-Economy.jpg> (368×366) (brewminate.com)

“comedian” Maurizio Cattelan - <https://news.artnet.com/art-world/maurizio-cattelan-banana-explained-1732773>

“Embrace” Danny Meisenger - <https://www.patreon.com/posts/sculpture-52628322>

Spoon Carving - <https://barthespoon.com/>

Pandolfi - <https://www.youtube.com/watch?v=H1QYeuy3buE>

Jigger and Jolley diagram - <https://gotheborg.com/glossary/jiggerandjolly.shtml>

“Aguarocha” Neri Oxman - <https://www.domusweb.it/content/dam/domusweb/it/design/gallery/2019/03/25/aguahoja-il-composto-organico-che-ci-salver-dalla-plastica/gallery/domus-aguahoja-13.jpg.foto.rmedium.png>

Commented [JP6]: Where are your books?