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When Manufacturing Workers Make Sculpture: Creative Pathways in the Context of Australian Deindustrialisation

Jesse Adams Stein*

Introduction: Engineering Patternmaking

The subjects of this article are not ordinarily discussed in writing about Australian art. For that matter, the subjects of this article are not ordinarily discussed at all, in almost any discipline. The subjects in question are engineering patternmakers—and patternmaking is now a relatively obscure industrial trade.¹ From the mid-nineteenth to the late twentieth centuries, patternmakers performed a fundamental role in pre-production for metal casting and also, by the mid-twentieth century, for a variety of plastics manufacturing methods. The trade produced the three-dimensional forms that were necessary for moulds to be successfully produced.² Patternmakers were not designers, since in their industrial roles they did not generate the original ideas for the forms to be manufactured. But neither were they production-line workers: their hands did not touch the finished products, and their work was rarely repetitive. Working from engineering drawings, patternmakers planned and produced the three-dimensional shapes used to generate mass-produced objects, usually using wood, but also resin, fibreglass, plaster, or metal.³ Alongside toolmakers, patternmakers made the forms for everything that was cast or moulded: from large earthmoving equipment to Tupperware containers, from glucose sweets to a car's rear-vision mirror.⁴ In essence, patternmakers physically generated the original forms expressive of twentieth-century mass-production and consumerism. But to be a patternmaker who is also an artist? That is another thing altogether. The patternmakers discussed in this article are not examined in relation to their industrial work. Instead, I engage with the deindustrialised aftermath, when many patternmakers have shifted out of the manufacturing industry and into more creative endeavours.

This article reveals how, for some patternmakers, their art practice can be seen as an assertion of technical, craft-based mastery in a context that no longer values their trade skills. For others, moving from patternmaking to art has fulfilled

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creative aspirations never provided for by their paid labour. Deindustrialisation is a gradual process—not a sudden rupture—which overflows into the present in a variety of unexpected ways, including cultural expression.⁵ As this article will outline, the pathways of patternmaker-artists have been shaped by social expectations and limitations surrounding Australian understandings of social class and hegemonic masculinity. Using oral histories as a source, I focus on the life experiences of patternmakers Paul Kay, Serge Haidutschyk, and Peter Watts, alongside shorter samples of material from patternmakers Debra Schuckar, Bryan Poynton, and Tim Wighton. These six patternmakers traverse complex territory across and between class stratification, through shifting landscapes of skill and employment security, both within and beyond patternmaking.

Towards the end of the article, the patternmakers' experiences are contrasted against that of the Australian sculptor Robert Klippel, notable for his modernist assemblages featuring found industrial objects. These industrial objects included discarded industrial patterns, assembled together in balanced, abstract agglomerations with their own particular dynamism and integrity. As this article explains, Klippel benefited from the decline of Australian heavy industry—through access to its discarded remnants—but he also came from that world. As a trained industrial modelmaker himself, Klippel's initial training—prior to his formal art education—was not too dissimilar from that undertaken by the patternmakers featured here (albeit from a different generation).⁶ This counter-example draws out undercurrent tensions between industrial craft, Australian manufacturing, social class, and the art establishment.

In order to understand what it means for a patternmaker to become an artist, the broad contexts of Australian class structure, hegemonic masculinity, and deindustrialisation are relevant. For much of the nineteenth and twentieth centuries, skilled tradespeople such as engineering patternmakers maintained a reasonably secure place in Australian society and its economy. Broadly speaking, tradespeople were protected by a relatively strong industrial presence, national manufacturing tariffs, and near full employment for much of this period. The identity of the 'skilled tradesman' had a firm place within social constructions of Australian masculinity.⁷ Tradespeople were a key part of the Australian working class, although patternmakers sat somewhat awkwardly within this group. Some belonged to unions as part of their employment in large industrial organisations, while others were business owners running small pattern shops, contracting out their services to other manufacturing businesses. The role of the artist-craftsperson as an *individual* was therefore more familiar to patternmakers than it might have been to those working in other, more collective trades, such as printing. The specialist nature of their trade led patternmakers to favour claims of their 'exalted' status as craftspeople and artisans, inheritors of a guild-like secrecy where skills were passed on to a lucky, talented few.⁸

Here I use the term 'working class' in a relational sense: not as a static, unchanging group, but as one that operates in relation to other social groups, subject to the power dynamics determined by who controls the means of production.⁹

I use the term 'tradespeople', but evidently industrial trades tended to be restricted to men (until the 1970s), providing what was imagined to be a 'breadwinner' salary. Accordingly, the constructions surrounding Australian craft masculinity are discussed in parts of this article. A patternmaker's identity (and masculinity) was tightly bound to the skills they accrued during their apprenticeship: both in terms of their manual woodworking capacity and their cognitive understanding of engineering and technical drawing.

From the late twentieth century onwards, patternmakers faced dual, interrelated threats: politically driven economic restructuring and technological change (this applies both in Australia and in other affluent capitalist economies in this period). Australian manufacturing suffered the human and industrial consequences of the opening of trade to global markets—particularly from the 1980s onwards—resulting in widespread manufacturing decline. The ramifications of these challenges ran deep. The patternmakers' reliance on other manufacturing industries (rather than being producers of their own final products) made them particularly vulnerable. Then came the technological challenges: the 1990s and early 2000s brought the introduction of digital fabrication technologies—such as Computer Numerically Controlled (CNC) milling machines and CAD (computer-aided drafting) software.¹⁰ While digital technology did not entirely 'replace' patternmakers' labour on the same scale as it did in relation to letterpress printing compositors, for example, it made their work more alienating, reducing manual tasks to sanding and painting machine-generated forms.¹¹

The gradual degradation of patternmakers' labour—through both local manufacturing decline and technological change—was not simply felt as a matter of job losses. It fractured their class position, disrupted the skills that were core to their identity, and did not create many viable alternatives. Patternmakers responded to these dual challenges variously: many left the trade for other industries, while some retrained in CAD and CNC. Moving into teaching at TAFE (Australia's public Technical and Further Education system) was common, as was a shift into carpentry or building construction. One pathway, however, is rarely acknowledged: some patternmakers turned to art-making, developing a sculptural practice.

Oral Histories

The primary source material drawn upon here is the *Reshaping Australian Manufacturing Oral History Project*, which I conducted in partnership with the National Library of Australia (2017–19). It comprises twelve oral history interviews with current and former patternmakers, with working experiences from the 1940s to the present.¹² These are 'whole of life' accounts, lasting up to five hours. Evidently, my quotations from these interviews here will reveal only a partial picture of these patternmakers' lives and experiences. There are many layers of interpretation occurring: oral history interviews capture a moment in time in which memory is reformulated through a relation between the interviewer and interviewee; furthermore, the construction of meaning continues through to the stages of transcription, quote selection, and historical writing.¹³ Nonetheless, I hope the

quotation selections hint at the contextual richness that this type of interview can provide. As working-class studies scholar Sherry Lee Linkon notes, 'if we want to understand the *cultural* influence of economic restructuring, we must attend to its emotional, intimate, everyday effects'.¹⁴ The detailed human stories afforded by oral histories provide one such way to examine the impacts of industrial transformation.

In keeping with other studies of deindustrialisation in affluent Western nations, these interviews revealed a now-familiar narrative of personal and community heartbreak.¹⁵ But they also revealed other narratives. A strong emergent theme was the satisfaction patternmakers gained through creative practice, using their trade skills to make things that are not patterns. This was not an anticipated outcome of the project but, rather, emerged as the interviews unfolded. In this way, this project began as a study of technological change in Australian manufacturing but resulted in a collection of articulate voices of tradespeople asserting their creativity. At the time of their interviews, five patternmakers were still working in the manufacturing sector, seven were practising artists (often while continuing to work or being involved in other activities), and two were too elderly to continue patternmaking or creative practice. Six had sought fine arts or design education at some point in their lives, and of these, two had completed fine arts degrees and two had undertaken industrial design studies. At least three had exhibited in Australian galleries and museums across the fine arts and craft sectors. Importantly, the fact that several former patternmakers gained fine arts qualifications precludes me from proposing an amateur/professional or outsider/insider binary; journeys of artistic training and practice are messier than the distinctions such neat categorisations can provide.

Art/Craft

The fact that a craftsperson might make things in their home workshop is clearly unremarkable in and of itself. But for this article, I want to anchor us within a very specific relationship between deindustrialisation, technological change and creativity, emergent across and between different modes of cultural production. The actual *works* made by these patternmakers are not, for the most part, my main focus here. Certainly, the works are diverse in terms of aesthetics, and some may be considered by the established art world as amateur or outsider art.¹⁶ As noted by Julie Bryan-Wilson and Benjamin Piekut, however, 'it is probably a mistake to think that there has ever been a strictly policed line between the "amateur" and the "advanced" within Western canons of modernism'.¹⁷

Just as the industrial landscape dramatically shifted in the twentieth century, so too did the world of sculpture. Western sculpture evidently experienced a dramatic transformation, from the dominance of figurative, monumental sculpture in the nineteenth century, through the masculine confidence of modernist abstract form in the early to mid-twentieth century, and then on to a more expansive set of three-dimensional material and conceptual possibilities. As outlined by Rosalind Krauss in her oft-quoted 'expanded field' essay, by the 1960s and 1970s, sculpture

was better defined by what it was not.¹⁸ With the opening of possibilities in minimalism, conceptual art, and land art, sculpture was pushed to a point beyond modernism and into an ontologically negative sphere.¹⁹ And yet, even for the most 'cutting-edge' practitioners, the crafted quality of the thing (or the non-thing) still mattered very much, even when this was not acknowledged openly. Donald Judd is one example: in making his hard-edged minimalist forms, Judd turned to professional tradespeople—sheet metal workers and metal fabricators—to get his works *crafted* as perfectly as possible, thereby removing his own 'hand' from the process.

Other sculptors retained their physical connection to materials and making. Design historian Gregory Votolato provides some helpful historical contextualisation here. In describing American modernism post-World War II, Votolato reminds us that there was an 'increasingly fluid culture of art production', which 'blurred the old distinctions' between sculpture, painting, performance, and the traditional crafts (etc.). He notes that 'a new generation of post-war craftspeople worked in studios *and* workshops. They called themselves "artist-craftspeople" or "object-makers"'.²⁰ The patternmaker-artists charted here have sculptural tendencies that are certainly not at the avant-garde end of the artistic spectrum, but sit more comfortably in the world of the 'artist-craftsperson'. For them, 'sculpture'—as both a term and a discipline—has retained its more traditional connection to the integrity of the 'monument'. When the patternmakers said 'sculpture', they imagined a three-dimensional object that was *carved* and *shaped* from traditional materials: timber, metal, stone, or clay.

Craft theorist Glenn Adamson expands further on the art/craft relationship. In exploring the place of craft in relation to the visual arts, Adamson follows Theodor Adorno in emphasising the unhelpfulness of the 'but is it art?' question.²¹ Rather, Adamson argues that craft 'might be more usefully conceived as a process ... not as a classification of objects, institutions or people'.²² By considering craft as a way of doing things, Adamson opens our eyes to how craft comes into being, its organisation 'around material experience', and the role of skill in the constitution of craft as an 'active, relational concept rather than a fixed category'.²³ This relationality allows us to leverage craft's long-established status as something second-rate when compared with art. But rather than asserting that craft must somehow be elevated within the cultural canon, Adamson asserts that 'craft's inferiority might be the most productive thing about it'.²⁴ In that engagement with inferiority, status, and social judgement, we can learn a great deal about our society and its creative practitioners.

Accordingly, in this article I emphasise patternmakers' artistic practice in a manner that accounts for the subjectivities of class and the opportunities and restrictions of creative practice as experienced from the economic and social margins. That is why I am not particularly concerned, in this article, with judgements about artistic quality, nor with declarations of whether something is 'art' or 'craft'. Instead, my emphasis falls on how patternmakers discuss their relationship to art-making, to cultural boundaries, and to skill accrual, and how they articulate their

creative motivations. What is revealed through the way the patternmakers talk about their art is a distinct relationship between technology, creativity, social class, and manual skill. Likewise, when Klippel discussed his art, similar concerns arose: concerns for the discovery of his own artistic integrity and for creative freedom. I will expand upon the distinctions between Klippel and the patternmaker-artists further on.

Patternmakers emerged from their apprenticeships as precision woodworkers, with sophisticated materials literacy and a capacity to produce almost any shape in three dimensions. Some spoke to me of how this capacity made them feel as if they had 'magic' in their hands: they knew how to produce forms beautifully and precisely in three dimensions, and they were also aware that this capacity was increasingly rare in the late twentieth century. Moreover, this level of skill opened up possibilities: what else could these hands create? The patternmakers' drive to prove their skill was furthered, in some cases, by a desire to be 'better than the machines' that usurped them. In other cases, patternmakers' artistic motivations emerged from a yearning for independent creativity, beyond the limitations of replicating an engineer's blueprint in three dimensions. In all cases, the skill of making has remained deeply important to them, while their encounters with various art worlds have sometimes shown them that this level of technical skill is no longer valued (particularly from the 1960s onwards).

Paul Kay

When we eat glucose sweets such as jelly babies and snakes, we do not tend to think of their forms as being originally hand-shaped by a skilled maker; but that is precisely what Paul Kay (b. 1954) does for a living. Kay is a currently practising patternmaker, who specialises in making the moulds required for glucose jube manufacturing. These moulds are made from resin, wax, or timber and are designed to have an exact mass in order to be suitable for food production (fig. 1). To achieve this, Kay does not use digital rendering, 3D printing, or CNC machine tools, but produces moulds and patterns through hand carving and with manually controlled machine tools. A second-generation patternmaker, Kay joined his father's business (W.G. Kay & Co.), becoming director when his father retired. Recent years have resulted in difficult times for Kay, due to a combination of factors: confectionery clients are now accustomed to the idea that Australia is no longer a manufacturing producer, and some of his clients have opted for more high-technology options overseas. Kay is now close to retirement; his factory has closed, and his client base has shrunk. He now works alone, from a workshop he built underneath his house in Sydney's northern suburbs.²⁵

Although Kay's training is trade-based, in the 1990s he attended art classes at the Julian Ashton Art School, Sydney. He reflected:

I do think there are times when that's helped me with my confectionery work. I did that for ... three years. Then I met my wife ... and things

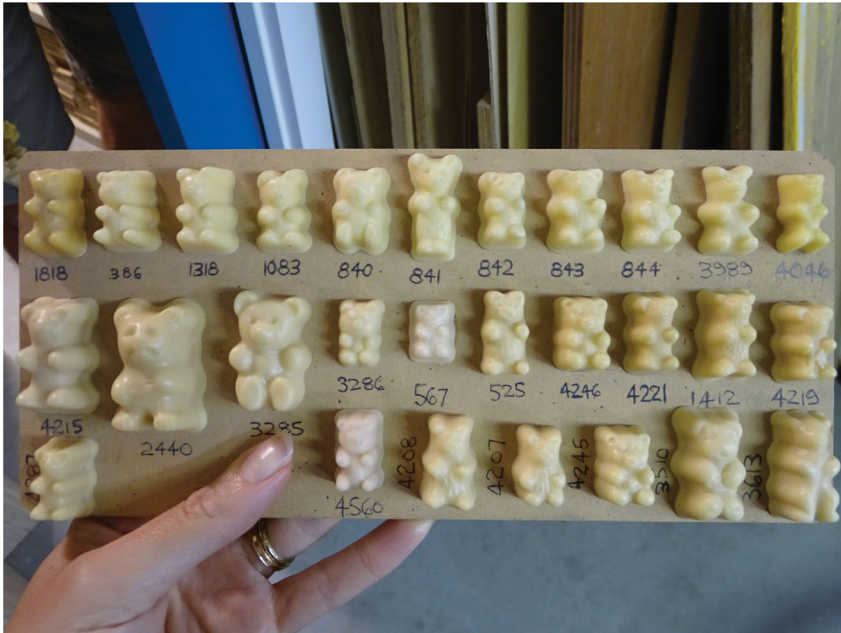


Figure 1. Paul Kay's jube patterns for food manufacturing, 2018. Photo: the author.

changed pretty dramatically after that. We decided to build this house and get married and have children so there was no returning to the art world.²⁶

In fact, there was. In the second decade of the twenty-first century, Kay's business took a turn for the worse, and his response was to aim for an ambitious creative project that would keep him busy:

I had periods when one of these confectionery manufacturers went broke ... we just didn't see any work in that industry for about eight or nine months. It just came to a stop ... So I had this idea and then it went from an idea to a full-blown art exhibition in Double Bay, which was incredible ... All I was doing was, I guess, being creative and using my patternmaking skills as well, because I was making these sculptures out of wood.²⁷

In this period, Kay produced a series of small-scale timber sculptures that were ultimately exhibited in a 2017 solo exhibition at Frances Keevil Gallery, Sydney (with eight of his eleven sculptures selling). He is realistic about the chances of this becoming a career-changing move. Art-making, Kay says, presents 'the same problems that patternmaking has—labour intensive, you're never going to make any money'.²⁸ Nonetheless, Kay perseveres, and at the time of writing he is continuing to work towards a second exhibition.

Kay's sculptures are stylistically reminiscent of postmodern eclecticism, with a heavily additive visual schema. Not that this is something that Kay would have identified as a personal aesthetic: he cites early modernism (potentially de Stijl or Constructivism) as an influence. His works are neither purely abstract nor completely figurative, but straddle both domains depending on how Kay feels about the particular sculpture he is planning. Like industrial patterns, each work begins life as a drawing, which Kay then uses to form up a shape using a single piece of timber. Using Jelutong and White Beech timbers, Kay sets himself particular constraints to guide consistency and test his skills:

I guess the difficulty being that they were all being machined out of one piece of wood, there's nothing stuck onto them or built up, you really have to think about how you're going to achieve this sculpture out of one piece, and it's a mixture of machining and hand skills.²⁹

The forms he makes are deliberately complex, containing undercuts and meticulous geometric detail. This makes them almost too complex for a CNC machine to produce without breaking and splitting the timber. CNC machines, Kay explains, cannot 'read' wood grain.³⁰ Using one piece of timber, Kay's carving method is also purely subtractive. This skill challenge is distinct from patternmaking: patternmakers are not usually purists about using a single piece of wood, and will happily build up surfaces with glue and bog-filler if it is logical to do so. In this way, Kay's sculptural method is a curious parallel to the actions of CNC machines—which are also subtractive—although most machines are not able to do undercuts with ease unless they have a pivoting robotic arm.

Kay's work might perhaps be dismissed by some contemporary art critics as amateurish—and his work does demonstrate some disconnection from formal art historical knowledge—but to emphasise this would be to miss the point. His work is a response to the technological and economic conditions of his time, as well as a search for a personal aesthetic. This is no easy task when one has worked exclusively in an industrial trade for one's lifetime, where the emphasis is on creating a three-dimensional *replica* of someone else's image. The titles of some of Kay's pieces are quite literally statements of his own precarious position, such as *Contemplation of an Uncertain Future* (fig. 2). Kay's work is an assertion of mastery, given its competitive relation to automating machinery. It pits the human hand against the CNC machine, asserting the grace, knowledge, and personalised technique of the former against the dull consistency of the latter. We will see a similar motivation echoed in the following section.

Following studies of the printing industry by Cynthia Cockburn (among others),³¹ it might be argued that the digitisation of patternmakers' labour made their tasks less traditionally 'masculine', seemingly reducing their work to the 'feminised' activity of using a computer. The determination to continue to use their original manual skills—albeit through sculpture rather than in manufacturing—could be seen as an attempt by the patternmakers to retain a core part of



Figure 2. Paul Kay, *Contemplation of an Uncertain Future*, 2017, Queensland White Beech, 37.5 cm 37.5 cm 5 cm. Courtesy of the artist.

their masculine sense of self. However, as is often the case, things are not always that simple. CNC machines can also become symbolically gendered—as ‘men’s tools’—through social use. Likewise, artistic tendencies can, in the crudest versions of mainstream Australian culture, be belittled as the work of ‘soft’ men. In short, it is unlikely that Kay sought to restore his identity as a skilled *tradesman*, but rather, his artistic practice restores a sense of self-respect, derived from his capacity to carve an object *better than a machine*, as well as satisfying creative inclinations.

Serge Haidutschyk

Now retired, Serge Haidutschyk (b. 1950) is a former engineering patternmaker based in Melbourne. The Australian-born son of Ukrainian refugees who escaped

Europe in the late 1940s, Haidutschyk is a passionate storyteller. In his interview, he shifted with ease between detailed narratives of his family's hardship, his nationalistic passion for Australian native flora, and his soaring pride at acquiring patternmaking skills. These themes were interwoven with life-history pinpoints: Haidutschyk lost his job three times from his mid-career onwards. He was apprenticed in engineering patternmaking at the Victorian state government's Newport Railway Workshops, where he worked in the pattern shop from 1967 to 1992. In 1992, the government closed down the workshops as part of a neoliberal economic program of privatisation and funding cuts. From 1995 to 2000, Haidutschyk worked at the foundry Graham Campbell Ferrum, until this company also closed, unable to compete with overseas businesses. Finally, Haidutschyk worked for almost thirteen years as a maintenance worker at an aged care facility in Melbourne, a position he adored because it enabled him to talk to the residents. This too resulted in a redundancy, one year before his retirement age. Haidutschyk explained:

It was the best feel-good job I've ever had in my life. I'm sad that I was made redundant at the age of sixty-four. I had twelve months to go before I retired. I was made redundant by this company that I put my heart in ... And they put me on the scrapheap at the age of sixty-four ... I had to go and register with Centrelink. I felt embarrassed. Horrible. That was a dark age in my life, that twelve months.³²

Haidutschyk followed this statement with a clarification, not wanting to dwell on negative times: 'I'm comfortable now, doing my art work. Artisan', he corrected himself. He would not call himself an artist (according to Haidutschyk, his wife Elizabeth paints, so he reserves 'artist' for her).³³ Notwithstanding his reticence in terms of terminology, much of his work has such an intensity and strangeness to it that, if exhibited in a more fashionable context, it might be classified differently. For example, if Haidutschyk had formal art qualifications—and if he spoke with ease about his work's relation to Baudrillard's simulacra, for example—then his work might easily be accepted as contemporary art, something not too far removed from the chillingly realistic but mono-material forms of Ricky Swallow's sculpture in the early 2000s.³⁴

Haidutschyk's work speaks acutely of the human experience of deindustrialisation, without this necessarily being his conscious intention. Take, for example, his life-size timber replica *Makita Drop Saw* (1992–94, [fig. 3](#)), a piece that has only been exhibited in craft contexts. It is a careful copy of Haidutschyk's own drop saw from his workshop. Every part of the object is wood, including the intricately fashioned electrical cable. The saw is produced from thirteen different recycled Australian timbers, such as Huon Pine, King Billy Pine, Kauri, Red Gum, and Blackwood. This piece was produced in a period when Haidutschyk was between jobs, after his redundancy from the Newport Workshops:



Figure 3. Serge Haidutschyk, Makita Drop Saw, 1992-94, thirteen Australian recycled timbers, dimensions unknown.

People say, 'How can you work in one place for twenty-five years, at the same bench?' I could walk in there with my eyes closed. I loved it ... It was my home. The environment, I loved my job. I loved working, what I was doing. When all that came to an end, I was actually quite depressed ... I was told, 'Wake up, grow up, be a man.' That's what I was told by people outside. Anyway, it was difficult, it was very difficult, and I was very, very upset that I lost my job. I thought, 'What am I going to do?' I was unemployed for two years ... I was trying to get my head around things, and what am I going to do next in my phase of life? Forty-two years of age. I don't want to retire ... I thought to myself, 'I'm going to occupy myself, and make something completely different and unusual.' I decided to make a model. I've got a Makita electric saw. It's an eight-inch diameter electric saw. I looked at that one day and I said to myself, '... I'm going to make a model of my circular saw,' which I started making in 1992. It took me three hundred hours to complete, and it took me two years.³⁵

In 1994, Haidutschyk entered the saw in the National Australian Woodwork Exhibition, Melbourne, and was awarded first prize in the 'Decorative Woodwork Section', sealing the work's place in the milieu of artisanal craft. Since then, he has made models of other industrial equipment and tools, including a model Stanley hand plane, which won prizes at the Royal Melbourne Show. (It is worth noting

that Haidutschyk's industrial replicas are something of an anomaly in these wood-work craft shows. One might surmise that he wins prizes precisely because his works are so distinct from the usual bowls, furniture, and other decorative pieces in this context.)

Haidutschyk specifically chose to replicate complicated, hard industrial machinery and tools out of a soft, natural medium. Timber is notoriously fickle and difficult, especially when you opt to combine thirteen different types, each with their own grain, density, and dimensional stability. The saw captures both Haidutschyk's skill as a woodworker and his industrial experience as a tradesperson in manufacturing: it is *of his world* entirely. Yet this object is not an industrial model, nor a pattern. It is a non-utilitarian object, designed in many senses to impress, designed to be exhibited, designed to be seen. It was also generated—as with Kay—to keep Haidutschyk busy at a time of personal and economic crisis. It was produced as an affirmation of self-worth and as a distraction from the realities of unemployment.

Art historian Rachel Weiss considered the distinction between the replica and the 'original' or 'authentic' thing:

The replica is, in a way, the realm of pure craft. It is a vehicle par excellence for bravura displays of craftsmanship since, for one thing, its success is measured by the closeness of its resemblance.³⁶

Certainly, Haidutschyk is a craft artisan. But the saw is also *more than* a mere replica, by virtue of Haidutschyk's material choices, which are both 'un-saw-like' and not at all sensible in the context of industrial modelmaking. Haidutschyk's combination of thirteen timbers adds complexity to our consideration of the saw: it is an utterly impractical and very deliberate decision. If he were merely making a model for industry, he would have used a dimensionally stable timber, such as Malaysian Jelutong or Sugar Pine. His emphasis would have been on the ability of the model to replicate the form to facilitate mass production, not on aesthetics or contemplation. Although 1992 predates the widescale uptake of digital fabrication in Australian industry, Haidutschyk was aware of this looming threat to the patternmaker's skillset; developments in the United States and Japan certainly heralded what was soon to come in Australia. For its time, Haidutschyk deliberately produced an object that was *not* possible to make in timber through machine production, in a similar manner to Kay.

Peter Watts

Peter Watts (b. 1955) traverses different territory to the other patternmakers mentioned thus far. His journey shifts from the industrial factory floor at a large-scale Melbourne engineering works, to the alternative nightlife of the Melbourne art and theatre scenes in the 1970s and 1980s, to the fast-paced commercial world of special effects and film prop-making, and finally, to a quieter life of art-making and child-raising in regional Australia. Of all my interviewees, Watts was the

most cognisant of the structuring role that class, education, and gender played in his experience. Growing up in the working-class suburb of Doveton in south-east Melbourne, Watts was part of a migrant English family who were keenly aware of their difference from the white Australians they lived among. Watts remembered the local school culture as rough and violent, and he retreated away from that world by helping his father restore a 1928 Bentley car, accruing practical skills in the process.

Watts's grandfather—a toolmaker by trade—noticed his grandson's inclinations and told him as a child:

'You know what Peter? When the time comes, I think you'll be a good patternmaker.' Of course, I had no idea what a patternmaker was ... but he said, 'Peter, it's the cream of the trades.' I said, 'Well, it sounds pretty good.'³⁷

For Watts, this conversation was enough. The fact that Watts was also creative and an avid reader was not a consideration in the broad social configurations that shaped his initial vocational journey. No other pathway was presented as an option: a boy who was 'good with his hands' was, generally speaking, supposed to become a 'tradesman' and work in manufacturing or other heavy industries. Here, the expectations of gender and social class are deeply interconnected. For much of the twentieth century in Australia, undertaking an apprenticeship in a skilled trade offered boys from working-class and lower-middle-class families a relatively secure path. It enabled ongoing employment on a breadwinner salary and membership and acceptance within the union associated with their trade. Such a pathway was widely understood to be socially responsible, practical, and aligned with mainstream understandings of acceptable masculinity.³⁸ So it was to be: Watts commenced his patternmaking apprenticeship at the engineering works Vickers Ruwolt in Melbourne in 1973, where he trained for four years.

Vickers Ruwolt made large-scale wooden patterns for casting in their foundry. Watts immersed himself in the factory environment, among fitters and turners, toolmakers, moulders, and patternmakers:

The first moment when I walked in the pattern shop, on that first morning, and the thing that hit me was the smell of the sugar pine. Oh my god! The air was thick with it ... It was intoxicating to me. Kind of ambrosia. I just loved it. I walked around the place and was introduced to the men, and I was terrified, but kind of secretly thrilled to bits.³⁹

Watts soon developed into a highly competent patternmaker; his demonstrable skills swiftly garnered respect. The pattern shop was a zone in which a tradesman's sense of identity and manhood was conjoined with the accrual of craft skills: these elements developed in tandem and were essential for an apprentice's

acceptance into the group norms. But with that acceptance into the world of craft masculinity came an awareness of that world's limitations:

There was a sort of camaraderie amongst the men. I paused briefly there because you can't imagine how much hope I had pinned on this new life as a patternmaker, and the joy and how good it would be to be finally amongst adult men. And it became apparent after, I suppose about the first year, that in many respects it was not dissimilar to the playground that I'd experienced at school ... The guys were very competitive ... There was a kind of brutality to it, and for me, I had been raised ... to accept that brutality as fairly normal, in the playgrounds of the schoolyard ... There was also a, you know, a kind of extraordinary pecking order in there, from management down to the lowly apprentice, and if you didn't happen to fit in ... it was really hard for men ... As an apprentice, this is all a mystery unfolding, and I was as wide-eyed as any of them. But it became apparent to me pretty early on that people were watching me very carefully. Number one was that my hair was most of the way down my back ... This set me apart from the crowd. It was fairly clear to them that I was a hippie ... [But] if you were a skilled tradesman, or, as I like to think, an artisan ... you were highly respected ... People might overlook flaws of character ... It's hard to describe the little scraps of affection and tenderness ... the little things that gave men a sense of their own self-worth. They're pretty hard to find, and skill and ability was the main driver.⁴⁰

As Watts's apprenticeship unfolded, he met other 'long-haireders', who introduced him to Melbourne's music, theatre, and art scenes in the mid- to late 1970s. His life soon became beset with cultural tensions and conflicting priorities. On the one hand, Watts was an increasingly skilled apprentice; he won 'Apprentice of the Year' with the Apprentice Commission of Victoria. But on the other hand, he read Bertrand Russell's *In Praise of Idleness* and socialised with artists, musicians, actors, and university students in his spare time.⁴¹

The world outside seemed so exciting, and I was getting glimpses of it in the evening, and despite the fact that I loved patternmaking and was enjoying working with these guys, I was finding the atmosphere in the pattern shop ... pretty unpleasant ... This kind of gulf developed ... It began to dawn on me that this machinery we were making was the very machinery they were using to dig up, and, you know, destroy the Earth! ... I was getting to this kind of logjam.⁴²

For Watts, something had to give. At the conclusion of his apprenticeship, Watts worked briefly as a patternmaker. But in 1978, he left the trade and enrolled in a Fine Arts Tertiary Orientation Program at the Royal Melbourne Institute of Technology (RMIT). He soon built up a portfolio and gained admission to a Fine Arts degree at the Victorian College of the Arts (VCA), Melbourne. Vickers Ruwolt had lost one of their most talented younger patternmakers (although the tradesmen were unsurprised, having sensed Watts's desire for a more creative life

for some time). It is relevant to note that this was an historical period during which university education in Australia was free, due to the Whitlam government's policy change in 1974.

Watts's introduction to the world of fine arts education, however, was not smooth. Keep in mind that this was the late 1970s and early 1980s, and by this stage the Australian art world drew its influences primarily from the United States. Conceptual art, feminist art, minimalism, installation, and performance were increasingly in vogue. Watts explained, 'The art scene was rapidly changing, and I was still in a space where I imagined that Henry Moore ... was the ultimate sort of sculptor, you know? Well, Henry ... was pretty old hat.'⁴³ Watts had by now developed highly refined technical skills in terms of drawing and shaping materials—wood, metals, wax, and clay—and his initial artistic instincts were figurative. He quickly found that he was just as much a 'fish out of water' at the VCA as he was at Vickers Ruwolt. He had been enculturated into a factory environment, with its own particular idiom and culture of craft masculinity. Now, at art school, among mostly middle-class students and educators, Watts learned to shift his language and mannerisms. Moreover, his eyes were opened to feminist values and environmentalism.

It is worth mentioning at this point that another patternmaker I interviewed, Debra Schuckar (b. 1966), also undertook a Fine Arts diploma (in painting), approximately a decade after Watts. Unlike Watts, however, Schuckar did not speak to me about difficulties with identity or sociality. Her struggles related more to the challenge of attending university while also being a parent (and for some of that time a single mother):

I was always an artist when I was young, I've always been an artist. I felt the need that I wanted to study art and change my career, go down a different path ... I was living sort of an art-world life ... But I realised after a while that freedom of thinking didn't pay the bills ... Trying to bring up children – gotta have money to pay the bills.⁴⁴

Patternmaking, at the time, did not offer part-time work, which meant Schuckar could not stay employed in her original trade once she had children. The point of this brief aside is to emphasise that each interviewee's particular circumstances and subject position impacted upon their educational and employment pathways considerably. Watts had the privilege of whiteness and maleness, which he only learned about through encountering feminist art education at the VCA.

Having said this, Watts gradually realised that his identity—more specifically, his background and skillset as a patternmaker—was not particularly valued by the art establishment:

I kind of hit a crunch then because I began to realise that I was *so* skilled that it was actually working against me, and over several years I began to deskill myself ... I was absolutely bewildered, really. Trying to plumb a

new set of values that at that time were invisible to me ... I was utterly perplexed to try and find, what is this magic thing? ... How is it that art is created? That perplexed me for years ... and by the end of it, I was just making balls out of clay. I'd reduced myself to the simplest thing ... They were a little bit like Alexander Calder, except they were made out of wood ... There was a kind of elegance to them ... That was about as far as I was able to progress ... I'm on such a big learning curve with no prospect of any kind of employment. Conceptual art? God! I certainly didn't have the background of parents who even understood what I was doing, or could support me.⁴⁵

By now, the journey of this patternmaker-turned-artist may be looking as if it were heading for disaster, but it is a credit to Watts's adaptability that he was able to carve a life from two such disparate contexts.

Space precludes me from providing extensive details about Watts's journey thereafter, but it included working in theatre and prop design, clay modelling for automotive design, producing special effects for television and cinema, and teaching design and fine arts at RMIT. While Watts loved teaching, another seismic shift soon confronted him. By the 1990s, RMIT, like most tertiary institutions, was beginning to identify with a culture of specialised professionalism, and with that came an embrace of digital computing. Watts was not interested, and avoided computers as much as he could. While his work was not 'replaced' by digital technology, he still had to contend with its influence. 'The world of computers was kind of creeping in on to the field in a way that I ... was just so uncomfortable with.'⁴⁶ Finally, Watts left teaching and returned to art-making. He moved to Castlemaine, in regional Victoria, with his wife. There, in addition to child-raising, Watts finally had the space and time to make work without the judgement or approval of any particular art establishment. Watts asserts that he has now found his artistic 'voice':

It is so far from the world of design, so far from the world of blueprints and drawings and timelines. It's so far outside of reason and logic ... You know, there's a sort of gossamer-light kind of impulse that passes through from time to time, and if one is responsive and ready, and receptive ... you can hear that voice ... I think they call it a 'moment of flow'. It's like you're not there ... It's like that with sculpture ... It's that quality of aliveness that, for me, is home.⁴⁷

This potted biography holds wider lessons in terms of understanding the constraints the Australian masculinity has placed upon men (and women) in terms of their careers, identities, and trajectories. As described by Andrea Waling, the social construction of the Australian 'tradie' is of a relatively 'rough working-class man', who is unlikely to step beyond normative gender binaries in his choice of activities.⁴⁸ To put it simply, 'tradies' are not imagined to be creative in a cultural sense. While the stereotype has changed over time, it is still possible to make



Figure 4. Peter Watts, *Creek Sculpture*, 2003, Castlemaine Steiner School, ferro cement, 12 m (length). Courtesy of the artist.

some generalisations: tradesmen are often imagined to be tough, unemotional and hetero-normative, and this has been bolstered by homosocial banter that has included the sexualisation of women and the use of homophobic terminology to deride those perceived to be weak, or social misfits.⁴⁹ They are expected to be strong and manually skilled, sometimes inventive and resourceful, but never 'intellectual'. They are not supposed to be expressive, philosophical, wistful, or sensitive.

Watts's account also shows us that the middle-class 'cultured' art world of the late twentieth century was similarly beset by its own limitations. Generally speaking, a tradesperson's class position implicitly excluded them from full acceptance into the art world, except as a novelty or as a curiosity. Some tradespeople went to great lengths to conceal their industrial background, to avoid sully their artisanal or artistic reputations.⁵⁰ Watts now comfortably operates outside the demands of critical recognition and the art market. His work is now infused with all of the influences of his background—industrial, design-based, and artistic. These influences combine in works he makes for himself, and for his local community:

I built a kind of water sculpture for the [Castlemaine] School ... It was all the old things I'd learned. A real hybrid mix, actually, of ... design, structural stuff, working with concrete, working with very beautiful,

organic, circular forms. I brought everything to bear I had on doing that sculpture, and it took me quite a while.⁵¹ (fig. 4)

Over time, Watts has become aware of the contradictions at play in his own identity. These tensions were made explicit upon encountering the work of Robert Klippel, as the following section will outline.

On Encountering Robert Klippel

Deindustrialisation in affluent Western economies evidently brought many profound (and often negative) changes to working life and employment security for large groups of workers, but it also produced a wealth of discarded industrial *things*. For artists interested in assemblage, readymades and found objects, this offered great opportunities. In Australia, as industrial establishments closed down, they auctioned off their equipment, including vast warehouses of wooden patterns. In some cases, artists simply 'scavenged' what they could find. In the 1960s, Klippel, together with the artist Colin Lanceley, collected disused patterns from an industrial warehouse in the Sydney suburb of Balmain.⁵² Lanceley used the patterns earlier, while Klippel kept them in storage, and it was not until the 1980s that he began using wooden patterns in his assemblages.⁵³ (fig. 5)

During my interviews with patternmakers, the subject of Klippel and his use of patterns came up often. The initial sentiment shared was annoyance. For example, upon encountering a large Klippel sculpture in the foyer of the Art Gallery of New South Wales, it seemed to many that Klippel was gaining recognition for *their* hard work. Klippel had not planned each pattern's layout, had not carefully sawed the timber, nor had he hand-carved the details. Klippel had 'assembled', and was accordingly lauded by critics such as Robert Hughes, his work celebrated as being of an international standard.⁵⁴

Former patternmaker and artisanal woodworker Bryan Poynton (b. 1939) remembered seeing his first Klippel assemblage:

When I first saw his work I thought, 'This bloke's a phoney!', you know? He's getting old foundry patterns and just sticking them together ... But at least I suppose they were saved. <bleak laugh> ... The only creative part of that was perhaps in the assembly.⁵⁵

Immediately after discussing Klippel, he explained his own sculptural aesthetic, which is grounded in his foundational skills as a patternmaker and woodworker:

If I make something, a sculpture for instance, I have to do everything, you know I can't sort of farm bits out. I know sculptors who design things, and they have other people actually make it. Some of them don't even acknowledge that somebody else has made it ... I could not do it that way ... To me, sculpture has to really be saying something.⁵⁶



Figure 5. Installation view of *Assembled: The Art of Robert Klippel*, TarraWarra Museum of Art, 2019-20. All works # Andrew Klippel. Courtesy of The Robert Klippel Estate, represented by Annette Larkin Fine Art, Sydney and Galerie Gmurzynska, Zurich/Copyright Agency, 2019. Photo: Andrew Curtis

Poynton's educational background included some fine arts training (including figurative woodcarving lessons from sculptor Leopoldine Mimovich). But Poynton identified that he had a particular 'outsider' status in relation to various art worlds. While describing a 'renegade' sculpture he was making to exhibit alongside—but not be an official part of—the Lorne Sculpture Biennale in Victoria, Poynton made this distinction:

The artists involved are usually ... they already have a 'leg-in', I think, because of their qualifications in the art world. Well, some people locally think that the likes of myself and a few others should maybe be given the opportunity to be a 'wildcard' in one of these shows.⁵⁷

Poynton's viewpoints here demonstrate a particular respect for craft labour, and a world view that ties artistic integrity to the direct manual manipulation of materials.

Watts, too, faced the discombobulating experience of viewing a pattern-laden Klippel assemblage. With typical eloquence, he said:

The very thing I'd been paid to make, he was now standing up, rearranging, maybe adding a bit of colour here and there ... and was showing them as art! Now, there's a great gulf there for tradesmen, whom I recall at the time showing them pictures of Robert's work, and they were really angry and

upset that he seemed to be abusing or devaluing what they'd made. I, by contrast, thought he was adding value to it. But I could see where they were coming from. The kind of energy and expertise that created these things was almost being made a joke of. I don't think that's what he did, but it took me a long time to really see Robert Klippel's work and value it deeply. ... There was a kind of expressive quality to [his sculptures which] transcended the origins or the skill of their making. They were no longer about the made product.⁵⁸

Here it is possible to see Watts wrestling with Klippel's work from both 'worlds', as it were. The fact that Klippel was using these patterns *in the 1980s* also has relevance: while deindustrialisation was a feature of the Australian urban landscape from the 1960s onwards, it was in the mid- to late 1980s that the crunch really began to be felt. Manufacturing workers were particularly insecure and worried. For some of them, the use of industrial 'relics' appeared more of a statement about their own societal redundancy in that period.

The patternmakers' various responses to Klippel should not necessarily be seen as the uncovering of some kind of basic, underlying 'truth' as revealed by an authentic set of workers' voices. To some extent, their reactions are unfair, in that they do not acknowledge the Duchampian legacy of the readymade in early twentieth-century modernism. Their views privilege both manual skill and the original industrial context over other potential future contexts for disused industrial objects. This tells us something of the patternmakers' own boundaries in their conceptions of Klippel's assemblages: once they recognise parts as industrial patterns, they cannot un-see them, making it harder to appreciate Klippel's works as whole, aesthetic forms. More interesting, however, is how the patternmakers' reactions focus on the *labour* of artisanal production. This emphasis is important to note, given the patternmakers' subject position as (now) marginalised workers. Patternmaker Tim Wighton (b. 1986), when discussing Klippel, noted what he saw an inequity of compensation:

I think my reaction to Klippel's sculpture comes back to the artificial divide that's been put between art, design and industry. When used in an industrial way, the patterns a patternmaker produces brings him no credit and only an hourly wage. However, when they are used in an artistic way they are displayed in the national gallery and the artist fairly well compensated.⁵⁹

This implicitly refers to the way in which class position bestows cultural value. Wighton's statement should be understood in the context of his own working experience. As a currently working patternmaker in his mid-thirties, his position is more precarious than many of the retired patternmakers I spoke to. The matter of an 'hourly wage' is a genuine, ever-present concern for a manufacturing worker with a young family, hoping one day to own his own home.

The contrast between the critical reception of modernist sculptors and the pattern-maker-artists' outsider status also tells us about how the art establishment may prefer to dwell on industrial objects as aestheticised 'relics' of a distant past rather than as things produced by ongoing, living keepers of maker knowledge. This speaks to a broader struggle afoot between deindustrialising regional communities and elite, urban 'creative industries'.⁶⁰ Manufacturing communities feel forgotten, told (as Haidutschyk was) that they need to 'move on' and 'get over' deindustrialisation. Meanwhile, in their efforts to fit the cultural expectations of the neoliberal era, they find relatively little security or acceptance for their forays into creative practice.

The mild irony of this discussion is that Klippel himself trained in a trade and was a skilled craftsperson in his own right. In the 1940s, Klippel trained in industrial modelmaking, and during World War II he made wooden model aircraft and ships at the Gunnery Instruction Centre, Sydney. During this immersion in model-making and wartime technology, Klippel was simultaneously attending night-time art classes under Lyndon Dadswell at East Sydney Technical College (an experience not unlike Poynton's a decade or so later). Klippel quickly became comfortable with art-making 'because I had the craft behind me',⁶¹ demonstrating the link between his technical training and his ability to undertake artistic endeavours. It is relevant to concede that a 1940s art-education environment would have been more receptive to Klippel's woodcarving skills than a late 1970s art-school environment was to Watts's likely equivalent technical capacities.

For Klippel, the (often) industrial source of his found objects was not relevant. His work had a conceptual basis that came from somewhere 'deeper', as he described in his 1965 oral history interview:

It's not good enough to just take bits of machinery and join them together. One must have some kind of concept, or some sort of philosophy, or something deeper ... That's the nature of art, I think, is to give life to form ... It doesn't seem to make any difference to me, you know, I don't see any meaning in where it has come from, or the sociological implications ... I'm not trying to make any comment on our society as such ... I'm more interested in a deeper, sort of, spiritual problem of our time.⁶²

Curiously, this quote could almost have come out of the mouth of Watts or Poynton when discussing their personal views on sculpture. This is not to say that Klippel and the patternmakers should somehow be conflated—their works, their skills, and their journeys are entirely different. Rather, it is to show that two quite diverse streams of creative practice may be more interconnected than it might first appear.

Conclusion

The respective hegemonic cultures of twentieth-century manufacturing and modernist sculpture shared a key feature: a cultural normativity that conjoined and celebrated skill and masculinity. This value set excluded women and others who

did not fit the norm, but perhaps provided a hazy pathway between manufacturing trades and sculptural practice. Adamson obliquely alluded to this when examining a photograph of sculptor David Smith, posed with one of his wrought-iron pieces:

Here we have the craftsman as artist, or perhaps the artist as craftsman ... Skill enters into the equation, to be sure, but that daring composition—a line drawing silhouetted against a broad sky—transcends its making and enters into the realm of pure, autonomous form.⁶³

Adamson's point is that the distinction of 'pure' art from craft, in some kind of 'unadulterated form', is impossible to pinpoint. It is the same for manufactured products: we tend to think of factory-produced plastic as 'machine-made', but a patternmaker's hands made the original patterns that were used to make the mass-produced thing. This interconnection between machinery, organic form, and human expression is threaded through the motivations of all these makers, regardless of whether they are known as artisans, artists, or patternmakers. Certainly, there are differences in terms of art education, critical recognition, class position, and understandings of theory, but perhaps it is the similarities, not the distinctions, that it would serve us well to remember. Perhaps it is precisely this intersectional fusion and collective understanding that are needed in our current time of political divide between the left, the right, and the angrily 'anti-political'.⁶⁴

The patternmaker-artists have broken through an invisible barrier between industrial production and fine art, and they think nothing of it. It feels like an appropriate extension of their tendencies and capacities, and the relationship between trade skills and creativity is ultimately generative. They seek quality in their sculptural work not in spite of their trades training, but because of it. Their industrial background steadies their hand and gives them the technical range to confidently explore conceptual questions without encountering basic material problems in realising their vision in three dimensions. Notably, this was the same dynamic occurring in Klippel's work: his early technical training meant that his assemblages had the precise integrity he was seeking. Among other things, this also demonstrates the far-reaching value of trade apprenticeship, well beyond direct industry application. I make this point at a time when vocational education in Australia is facing the consequences of years of neoliberal austerity and shrinking industry support. Apprenticeship intakes are declining and refined manual skills are increasingly in short supply.⁶⁵

Trades devaluation and skills shortages are not merely a problem for 'industry'; they are also a cultural issue. Calls have been made to inject 'creativity' into Australian manufacturing, to make it more 'innovative' and able to withstand the challenges of the global capitalist market.⁶⁶ Usually these suggestions are aimed at bringing 'creativity' *into* industry, not at identifying its preponderance within the existing manufacturing workforce. This speaks to the notion that Australians are not really accustomed to thinking about manufacturing workers as

‘creative’, nor as divergent thinkers in their own right. The oral histories shared here do not smoothly uphold this mainstream construction of Australian ‘tradie’ masculinity. Instead, what has materialised is a plurality of creative identities both within manufacturing and emergent in its cultural aftermath. We must engage more closely with this legacy of deindustrialisation to gain a fuller picture of how creative practice manifests, looking beyond the most obvious candidates and opening our eyes to who else might be quietly practising on the cultural fringe.

Notes

1. For detailed introductions to engineering patternmaking, see Sarah Fayen Scarlett, ‘The Craft of Industrial Patternmaking’, *Journal of Modern Craft* 4, no. 1 (2011): 27–48; and Jesse Adams Stein, ‘Hidden Between Craft and Industry: Engineering Patternmakers’ Design Knowledge’, *Journal of Design History* 32, no. 3 (2019): 280–303.
2. While I am using the past tense here, it must be acknowledged that patternmaking is an ongoing and active trade, albeit a rare one. See Larissa Romensky, ‘Hard, Dirty Foundry Work Copes with Digital Disruption and Lack of Apprenticeship Courses’, *ABC News*, 30 September 2018, <https://www.abc.net.au/news/2018-09-30/hard-dirty-foundry-work-coping-with-digital-disruption/10303254>; Jesse Adams Stein, ‘Don’t Be Too Quick to Dismiss “Dying Trades”, Those Skills Are Still in Demand’, *The Conversation*, 6 December 2018, <https://theconversation.com/dont-be-too-quick-to-dismiss-dying-trades-those-skills-are-still-in-demand-107894>.
3. Glenn Adamson, *The Invention of Craft* (London and New York: Bloomsbury, 2013), 145–46.
4. ‘Patternmaker’ [unidentified author], ‘Pattern Making and Capitalism’, *The Socialist* (November 1904): 7.
5. Sherry Lee Linkon, *The Half-life of Deindustrialization: Working-class Writing About Economic Restructuring* (Ann Arbor, MICH.: University of Michigan Press, 2018).
6. Klippel attended art classes at East Sydney Technical School under Lyndon Dadswell and later studied at the Slade School of Fine Art, London.
7. Andrea Waling, *White Masculinity in Contemporary Australia: The Good Ol’ Aussie Bloke* (London and New York: Routledge, 2020).
8. John Looker, *I Want to Be a Patternmaker* (Melbourne: Memoirs Publishing, 2011).
9. R.W. Connell and T.H. Irving, *Class Structure in Australian History* (Melbourne: Longman Cheshire, 1979).
10. This occurred earlier overseas, for instance in the United States. See: David F. Noble, ‘Social Choice in Machine Design: The Case of Automatically Controlled Machine Tools, and a Challenge for Labor’, *Politics & Society* 8, nos 3–4 (1979): 313–47.
11. John Charles Wren, ‘Skilled Trades’ Work and Apprentice Training in the Manufacturing Industry with a Primary Focus on the Millwright Trade’ (PhD thesis, University of Toronto, 2008).
12. *Reshaping Australian Manufacturing Oral History Project*, conducted by Jesse Adams Stein, 2017–19, held in the National Library of Australia’s oral history collection. See <https://reshapingaustralianmanufacturing.com> and the Library’s catalogue record: [https://catalogue.nla.gov.au/Search/Home?lookfor=my_parent%3A%22\(AuCNL\)7540760%22&iknowwhatimean=1](https://catalogue.nla.gov.au/Search/Home?lookfor=my_parent%3A%22(AuCNL)7540760%22&iknowwhatimean=1).
13. Linda Shopes, ‘Editing Oral History for Publication’, *Oral History Forum d’histoire Orale* 31 (2011): 1–24; and Alessandro Portelli, ‘The Peculiarities of Oral History’, *History Workshop Journal* 12, no. 1 (1981): 96–107.
14. Linkon, *The Half-life of Deindustrialization*, 9. Author’s emphasis.
15. See Linkon, *The Half-life of Deindustrialization*; and Steven High, Lachlan MacKinnon, and Andrew Perchard, eds, *The Deindustrialized World: Confronting Ruination in Postindustrial Places* (Vancouver and Toronto: UBC Press, 2007).
16. Julia Bryan-Wilson and Benjamin Piekut, ‘Amateurism’, *Third Text* 34, no. 1 (2020): 1–21.
17. *Ibid.*, 12–13.
18. Rosalind Krauss, ‘Sculpture in the Expanded Field’, *October* 8 (1979): 30–44.
19. *Ibid.*
20. Gregory Votolato, *American Design in the Twentieth Century* (Manchester and New York: Manchester University Press, 1988), 169.
21. Glenn Adamson, *Thinking Through Craft* (London: Berg/Bloomsbury, 2007), 2–3. See also, Theodor Adorno, *Aesthetic Theory* (London and New York: Bloomsbury, 1997 [1970]), 3.
22. Adamson, *Thinking Through Craft*, 3–4.
23. *Ibid.*, 4.
24. *Ibid.*
25. Stein, ‘Don’t Be Too Quick to Dismiss “Dying Trades”’.
26. Paul Kay, interviewed by Jesse Adams Stein, *Reshaping Australian Manufacturing Oral History*

- Project, 30 April 2018, National Library of Australia, BibID: 7765725.
27. Ibid.
28. Ibid.
29. Ibid.
30. Ibid.
31. Cynthia Cockburn, *Brothers: Male Dominance and Technological Change* (London: Pluto Press, 1983).
32. Serge Haidutschyk, interviewed by Jesse Adams Stein, *Reshaping Australian Manufacturing Oral History Project*, 4 December 2018, National Library of Australia, BibID: 7889878.
33. Ibid.
34. Justin Paton, *Ricky Swallow: Field Recordings* (Melbourne: Craftsman House, 2004).
35. Haidutschyk, interviewed by Jesse Adams Stein.
36. Rachel Weiss, 'Between the Material World and the Ghost of Dreams: An Argument About Craft in Los Carpinteros', *The Journal of Modern Craft* 1, no. 2 (2008): 34–36. See also, Adamson, *The Invention of Craft*, 141.
37. Peter Watts, interviewed by Jesse Adams Stein, *Reshaping Australian Manufacturing Oral History Project*, 11 July 2019, National Library of Australia, BibID: 8059117.
38. Waling, *White Masculinity in Contemporary Australia*.
39. Watts, interviewed by Jesse Adams Stein.
40. Ibid.
41. Bertrand Russell, *In Praise of Idleness* (London: Allen & Unwin, 1935).
42. Watts, interviewed by Jesse Adams Stein.
43. Ibid.
44. Debra Schuckar, interviewed by Jesse Adams Stein, *Reshaping Australian Manufacturing Oral History Project*, 23 February 2018, National Library of Australia, BibID: 7580622.
45. Watts, interviewed by Jesse Adams Stein.
46. Ibid.
47. Ibid.
48. Waling, *White Masculinity in Contemporary Australia*, 161.
49. Andrew Warren, 'Crafting Masculinities: Gender, Culture and Emotion at Work in the Surfboard Industry', *Gender, Place and Culture* 23, no. 1 (2016): 36–54.
50. Scarlett, in 'The Craft of Industrial Patternmaking', offers one such example of this (albeit in the United Kingdom).
51. Watts, interviewed by Jesse Adams Stein.
52. Brian Ladd, *The Sculptor's Studio: Robert Klippel*, exhib. cat. (Sydney: Art Gallery of New South Wales, 1990), 5.
53. Fiona Gruber, "'He Was a Pure Artist": Robert Klippel's Junkyard Sculptures Return to the Spotlight', *The Guardian*, 12 December 2019, www.theguardian.com/artanddesign/2019/dec/12/he-was-a-pure-artist-robert-klippels-junkyard-sculptures-return-to-the-spotlight.
54. Robert Hughes, 'Robert Klippel', *Art & Australia* 2, no. 1 (1964): 18–29.
55. Bryan Poynton, interviewed by Jesse Adams Stein, *Reshaping Australian Manufacturing Oral History Project*, 22 February 2018, National Library of Australia, BibID: 7580610.
56. Ibid.
57. Ibid.
58. Watts, interviewed by Jesse Adams Stein.
59. Tim Wighton, personal communication with the author, 4 August 2018, following interview: Tim Wighton, interviewed by Jesse Adams Stein, *Reshaping Australian Manufacturing Oral History Project*, 27 November 2017, National Library of Australia, BibID: 7540155.
60. Linkon, *The Half-life of Deindustrialization*.
61. Robert Klippel, interviewed by Hazel de Berg, 17 May 1965, National Library of Australia, BibID: 232877.
62. Ibid.
63. Glenn Adamson, 'Directions and Displacements in Modern Craft', *Australian and New Zealand Journal of Art* 10, no. 1 (2009): 23.
64. Michael Zweig, 'Six Points on Class', *Monthly Review* 58, no. 3 (2006): 116–26.
65. Margo Couldrey and Phil Loveder, *The Future of Australian Apprenticeships* (Adelaide: National Centre for Vocational Education Research, 2017).
66. Sam Bucolo, 'Design Led Innovation – Underpinning a Future Manufacturing Workforce', in *Manufacturing in 2030: The New Horizon. Symposium Stimulus* (Sydney: Manufacturing Skills Australia, 2014): 21–27.