

## **The Constraints of Habit: Craft, Repetition, and Creativity**

### **Abstract**

The nature of craft creativity has often been ignored in research which focuses on innovative and novel ideas and thought processes. This view of creativity casts the repetitive nature of craft as antithetical to the disruptive nature of genuine creativity. Drawing on combined enactivist and pragmatist accounts of habits and on a focused cognitive ethnography of a wooden bowl turner, this paper explores the nature of the constraints wrought by habitual action. Habitual action will be shown to be less repetitive than may be initially assumed because of the uncertainty inherent in working with both the wood which forms the initial material and the tools necessary to transform it. Rather, this paper proposes habitual learned movements as an important concept in a pragmatist-informed theory of creativity since they mark the skilled co-ordination of material, tool and maker, at once constraining and enhancing the creative craft process.

**Keywords and Phrases:** Creativity, Craft, Expertise, Habit, Workmanship of Risk, Pragmatism

*Every good craftsman conducts a dialogue between concrete practices and thinking; this dialogue evolves into sustaining habits, and these habits establish a rhythm between problem solving and problem finding.* (Sennett, 2009, p. 9)

Craft has a difficult relationship with creativity. This is a tension reinforced by misconceptions about both the nature of craft and that of creativity; these misconceptions are informed at all levels by a model which disrupts the continuum of mind/body/world and introduces a false dichotomy with creativity as a form of “higher” cognition in opposition to the embodied, situated and habitual nature of craft. The unfettered freedom associated with folk notions of creativity sits in an uncomfortable relationship with the routine nature of craft (Glăveanu, 2017). To some extent, the craft-art dichotomy is reinforced by the misplaced notion that craft processes are routine while artistic processes are idiosyncratic, that craft reflects what is shared within a culture while creative art expresses one’s uniqueness. The common-sense view which sees creativity as generating something novel and useful (Barron, 1955; Runco & Jaeger, 2012; Stein, 1953), casts habits, which are simplistically described repetitions of the same actions in the same context (Wood & Rüniger, 2016), as the opposite of creative thinking, an idea with old historical roots (Collingwood, R. G., 1958; Kristeller, 1951). Indeed, creativity is sometimes described in terms of the inhibition of repetitive behaviour (Tantucci & Di Cristofaro, 2020). From this perspective, habits are cast as “cognitive entrenchment” and inflexibility (Dane, 2010) and, as such, as a constraint on creative thought by inducing unhelpful fixations (Ibáñez de Aldecoa et al., 2021; Ramírez-Vizcaya & Froese, 2019).

From a combined enactivist and pragmatist standpoint, these separations between mind and body, person and culture, ‘high’ art and ‘repetitive’ craft, are deeply problematic and come out of a long history of separating cognition from its context that continues to the present day (see also Dewey, 1925, 1934). Playing into this false division between cognitive and embodied processes, there is also a social layer that classifies the work of the intellect above the work of the hands in terms of its value; an implicit hierarchy between theory and practice which leads to a devaluing of manual and tacit knowledge (Hacking, 1982). Habits do not rely on conscious thought and are often realized through bodily actions. The ‘higher’ cognitive function of creativity is theorised as an essentially cerebral act ( a moment of ‘insight’; Vallée-Tourangeau & March, 2019) and so a display of fast, embodied tacit knowledge which appears to be done *without thought*<sup>1</sup> is not able to be creative. Manual creativity is considered to be somehow less valuable than that which reflects a disembodied and abstract thought process. This view is reflected in Hutto and Robertson’s (2019) distinction between the two attitudes to habits – as either part of the nature of intelligence or the epitome of unintelligent action. The idea (most clearly espoused by Ryle) that habits are mindless and automatic is threaded through the psychological literature and underlies claims that habitual actions cannot be creative.

However, as pragmatists and enactivists are both keen to remind us, this position which posits that habits are antithetical to creativity proper, is not ontologically neutral, instead it ignores the growing wealth of evidence that creativity is a materially engaged process (Malafouris, 2014) relying on different forms of knowledge and different forms of cognition beyond that which is

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<sup>1</sup> Although this is not to discount the subpersonal thinking which is the hallmark of habitual engagement with a changing world.

purely internal manipulations of semantically laden representations. Creativity is an action driven process which requires bodily and material engagement and takes place across multiple time scales. Furthermore, qualitative evidence indicates that both craft and those more traditionally artistic and aesthetically processes rely on domain specific expertise which manifests itself in the form of habitual movements and gestures with material. For example, in their large scale qualitative analysis of professional creators, Glăveanu et al (2013, p. 5) note that for fine artists “most of the time, the process is based on repetitive gestures”.

The purpose of this paper is to draw on empirical evidence in the form of a detailed case study to argue that habits do constrain the possibility space but that this does not stifle creativity, on the contrary, it rather scaffolds and supports it by attenuating some of the inherent risk. This case study aims to demonstrate the connection between pragmatism and enactivism by describing the act of creating as the coordination of multiple sensory inputs alongside tool and material-based affordances (which the first author has elsewhere called “choreoception” to underline the importance of skilled coordination; Ross & Groves, 2023). This coordination is reliant on skills which are in part informed by habitual, embodied processes. Thus, the view of habits advanced in this paper is not one of inflexibility but rather demonstrates that habitual skill is one of flexible responsiveness to a changing environment and openness to uncertainty which takes place in the realm of bodily rather than cerebral knowledge. To borrow from Hutto and Robertson (2019, p. 6), habits are repeated *doings*. These sorts of habits are essential once we take creativity out of the head and into the world where it is necessarily enacted (Glăveanu & Beghetto, 2020; Malafouris, 2014).

The research reported in this paper is therefore informed by a perspective that moves beyond common sense approaches to both habits and creativity and sees creative cognition as not opposed to habitual movements but dependent on them. This requires a move to both an enactivist approach to creativity as a phenomenon emerging from a process of interaction with the world, and a pragmatist approach to habits where habits are conceived of as “special sensitiveness or accessibility to certain classes of stimuli, standing predilections and aversions, rather than bare recurrence of specific acts” (Dewey, 1983, p.32). This fruitful conceptual encounter between enactivism and pragmatism offers us the opportunity to reach new insights about the nature of creative cognition at the intersection between mind and body, nature and culture. In particular, this paper showcases, through a microgenetic analysis of craft, how the overlaps between a pragmatist and enactivist perspective can explain the *doings* of creative cognition in a materially rich and risky world.

### **Wooden Bowl Making and the Workmanship of Risk**

The study of crafts and craft activities offers unique insights into the connection between mind, body, and culture. Widely regarded as part of tradition and, as such, the broad set of social practices meant to maintain and transmit culture, crafts are in fact essential for the transformation of culture through the constant renewal of customs and the emergence of what is called ‘neo-traditions’ (Negus & Pickering, 2004). This is because craft activities, while grounded in repetition and imitation, always reflect a kind of ‘repetition with a difference’, i.e., acts of repetition that adapt to ever-changing contexts. In this sense, the story of craft cannot be separated from that of habits and, in fact, it makes us sensitive to new understandings of habit itself. Instead of the psycho-physiological view of habits as relatively simple reflexes, acts engaged in without much reflection or intention, quasi- or fully automatic (Camic, 1986), sociological accounts like the one formulated by Bourdieu emphasize the intrinsic flexibility of habitual action, what he theorised as ‘habitus’

(Bourdieu, 1990). Engaging in craft activities requires both the patterned nature of repetition and the idiosyncrasies of adaptation to one's environment. This balance is reflected in other characteristics of craft and crafting. First of all, in the use of material tools and technologies. Crafts famously depend on material engagement across a range of physical objects, from wood, clay, textiles and eggs, to name a few, to the technologies used to manipulate, decorate, and transform them. This connects to a second key characteristic: the high level of embodiment and the use of one's hands, in particular, to handle or operate materials and tools (hence the term handicrafts). Habits, in this sense, reflect not the body alone but the relationship between the body and its context, at once social and material. Third, and related to sociality, craft activities are learnt usually as part of apprenticeships and community participation rather than formal schooling (Rogoff, 1990). These apprenticeships ensure that the transmission of knowledge, especially embodied knowing, is flexible enough to ensure success within a wider range of circumstances.

While the features above are sometimes used to distinguish between craft and art, the latter is arguably as material, embodied, and steeped in tradition as the former. Most of all, art and crafts both depend on repetitive gestures and the kinds of practice that lead to mastery. The repetitive gestures which mark both artistic and craft based creative work, far from being impediments entrenchments and lacking in flexibility are required by creative work. Although characterized as thought-less, skilled repetition is always open to thoughtful modulation. As Sennett (2009, p. 50) writes: "In learning a skill, we develop a complicated repertoire of such procedures". The industrial craft work which is the focus of this paper is a skilled coordination of tool, material, maker and potential audience conducted through an embodied and tacit *sensing* rather than a conscious manipulation. For a piece to be successful, all aspects must come together to produce something of value. There is, therefore, the constant risk of failure which is why skills and expertise become important. Indeed, they are necessary for the mitigation of real physical danger.

The case study from which this paper draws its observations is that of a wooden bowl turner, that is a maker who takes reclaimed wood and turns it on an industrial lathe into bowls which are sold to create a profit. It is essential to note that turning a wooden bowl carries layers of risk. First, there is the risk described by David Pye (1968) to characterize the nature of the workmanship of risk, that at any point the workman might make a mistake which will spoil the piece. It is this risk that differentiates craft work from factory work or, as Pye calls it, the workmanship of certainty. Second, there is the risk of working with unknowable material which in the case of wood is clearly articulated by Schwalbe (2010, p.107) who writes:

"There is also the risk of investing hours in turning a piece only to discover rot and cracking that can't be worked around. There is the risk of misorienting the raw wood and failing to make the best use of a grain pattern that is revealed only as a piece is cut. There is the risk of severe cracking during the months it takes a roughed-out piece to dry prior to final turning and finishing. Skill reduces these risks but can't eliminate them."

These first and second risks carry consequences for those who rely on the products of their craftsmanship: the loss of the material and time represents a financial loss. Finally, there is the very real risk that a fast-turning machine loaded with a heavy wooden blank coupled with sharp tools could actually cause a physical injury. These risks acts as constraints on creativity and by assessing a critical incident where these risks become more salient, the work in this paper will demonstrate that, in the normal flow of creativity, the craftsperson turns the conscious knowledge

of risk mitigation into a bodily knowing taking the form of intrinsically flexible habits. This allows him to become more creative; thus, rather than constraints on creativity, habits can be seen as supports which act as foundation to creative processes.

### **Theoretical Perspectives on Habits**

To understand habits, in the pragmatist tradition, we need to start from action. Human action in and on the world is agentic, embodied, social, material, and symbolic (Brenner, 1980). Most of all, it is patterned in the sense that it often includes what James called “sequences of behaviours” (James, 1890, p. 107) or habits. For him, habits support complex forms of activity by automatizing simpler actions. Habits are omnipresent and fundamentally useful. What makes them so is the fact that habitual action is never fully automatised but remains open to change and to adapting the organism to new circumstances. Whenever habits break down because of obstacles and accidents, there are opportunities for reflective thought. And yet, there is no strict opposition between habit and reflexivity given that reflexivity both departs from and feeds into habitual action. In the words of MacDougall, “from preexisting habit through accommodation to later modified habit” (MacDougall, 1911, p. 326). Importantly, there is no moment in this dynamic in which habits are static and completely outside the scope of reflective, intentional action. As Kilpinen (2009) rightfully notes, “intentionality (or rationality) without habituality is empty, whereas habituality without intentionality and rationality of course is blind” (p. 105). This observation is also made by Dewey, another key theorist of habit, who likened this phenomenon with art making, writing that:

They involve skill of sensory and motor organs, cunning or craft, and objective materials. They assimilate objective energies, and eventuate in command of environment. They require order, discipline, and manifest technique. They have a beginning, middle and end. Each stage marks progress in dealing with materials and tools, advance in converting material to active use” (Dewey, 1922, p. 15).

Dewey’s active view of habits, rediscovered by contemporary scholarship from multiple domains (e.g., Cohen, 2007, Sullivan, 2000) is not, however, the only one. Barandiaran and Di Paolo (Barandiaran & Di Paolo, 2014) trace a genealogy of habits and divide the main theories into two schools: associationists and organicists. The associationists’ view of habits is rooted in stimulus-response theory and forms the basis for much of the research on habits and also the way that habits are conceptualized and disregarded in cognitive science while the organicists view habits more as reflecting a plastic equilibrium between organism and environment in which the two are in mutual coordination. The latter view takes a more active approach to habits than the passive model of the associationist. It is this active, relational view, akin to the pragmatists’ discussion of habits as action, that both provides the theoretical backdrop for the work presented in this paper but also most clearly reflects the role of manual knowledge in the craft process as shall be demonstrated. It is this manual knowing which is often cast as automatic and therefore of lesser importance simply because it is not as accessible to conscious processes.

The dichotomy between “thoughtful” and “manual” echoes the Cartesian split between mind and world. The idea of habits as static processes is laced through with this dualistic thinking which marks much of psychological research, especially that in creative cognition (Vallée-Tourangeau, forthcoming). Even in some of the work of associationists, habits can be seen as active dispositions, a reframing and positioning towards an ever-changing world. Ramírez-Vizcaya and Froese (2019) suggest that habits are too complex to be either reduced to automatic behaviour or intentional

dispositions, being both flexible and yet beyond conscious control. They suggest that habits are better seen through an enactivist framework which cast them as engaged processes dependent on maintaining an equilibrium between agent and environment. Enactivist approaches therefore would see habits as a form of intelligence – that is, a situated, embodied and responsive intelligence, reflective of the crucial role of previous knowledge and practice for human cognition (Hutto & Robertson, 2019). In this way, while habits would act as constraint because they draw on prior knowledge, they would also scaffold the creative, materially engaged process under a framework which sees creativity as emergent from action driven, socio-materially engaged processes rather than the combination of cognitively isolated processes (Malafouris, 2014). Indeed, they support cognitive theories which insist that far from hampering creativity, prior knowledge inspires it (Ormerod & MacGregor, 2017).

There are, to date, few theories of creativity that recognize the role of habit and even fewer that give habits a central position in the dynamic of the creative process. An example of the latter is offered by Glăveanu's (2012) notion of habitual creativity. He suggests we rehabilitate the notion of habit by drawing on a pragmatist conception of habits as actions open to reflection during the course of action and on habitual action as the basis for mastery. Glăveanu's model of habitual creativity influenced by Baldwin (1894), Dewey (1934) and Bourdieu (1984) has at its core the notion that behaviour cannot be segregated from the cooperation of organism and environment. Habit in this model is not cast as automaticity and repetition but a sensitivity to the environment in which the person is situated. This is similar to Bourdieu's notion of habitus, described as a "feel for the game" (1990), a set of dispositions. Habitus is simultaneously formed and supple – it is an open system of dispositions rather than something predetermined, something which is therefore rather aligned with indeterminacy than fixedness. In other words, habit can be conceived as a "social, situated and open system" (p. 83). Building on this, Glăveanu suggested that all creativity be seen as habitual, that is stemming from a detailed understanding of culture or materials. Rather than a lightning-bolt, creativity arises from the type of open ended and indeterminate habit espoused by the pragmatists. In his typology, other forms of creative action are improvisation, whenever the person faces an obstacle and cannot overcome it using tried and tested solutions, and innovation, when facing an obstacle is also accompanied by the decision to respond to it creatively (i.e., by generating something new, original, and useful). Improvisational and innovative creativity typically receive considerable attention in society as well as research; however, habitual creativity represents the basis for both. Using a visual metaphor, our attention when studying creative cognition tends to fall on the mountain slopes of improvisation and especially the peaks of innovation. And yet, these all grow out of habit, the mountain base.

This paper starts from the same assumption about the foundational role of habits for creative cognition and, as such, it will build on these observations to show that habit is part of creative mastery not only because it reflects an embodied *being* in the world and sensitivity to creative material but because it mitigates the risks inherent in acts of creativity and in so doing allows for creative expression. While we draw from research based in craftwork, the importance of risk and situated habitual knowledge applied across creative industries.

## **The Process of Making a Bowl**

Broadly, the production of a wooden bowl such as that in Figure 2 consists of three main phases: the sourcing and prepping of the wooden blank, the turning on an industrial lathe of the blank

shaping the outside and hollowing out the inside and, finally, leaving the bowl to dry out. So, while this paper will mainly focus on the shaping, it does so with a recognition



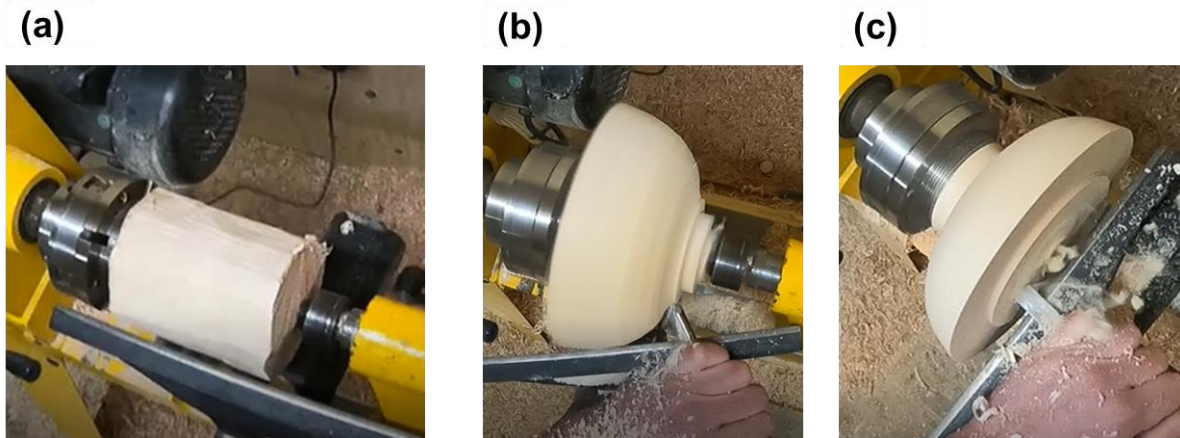
**Figure Two:** Fluted Sycamore Bowl Produced By MG (© Skapa Woodturning)

that this is only a part of the process, one stage in a journey which does not have a clear beginning or even end. Indeed, the skilled coordination of elements begins before the woodwork “proper” starts and wood is being sourced. The bowl turner (MG) prides himself on his skill of sensing where wood can be found:

I always get a feeling of when I know there’s gonna be wood around. I don’t know why, how that’s come about. But I tend to now know roughly where and when things are going to be coming up. Kind of build yourself into a rhythm with like, where work might be going on in the area.

Note that this is not an intellectual process but one where experience builds into a knowing and sensing. Similarly, the preparation of tools is another aspect which dominates part of the journey of bowl making but which is peripheral (although essential) to the main activity. These processes have been documented in other types of craft as well, for example Easter egg decoration (Glăveanu, 2013). In this different setting, sensing leads to gathering tools – and sometimes fabricating them – and anticipating what kind of motif or pattern can be applied on an egg depending on the subtle properties of the former. This type of embodied knowing often distinguishes between novice and expert of experienced decorators and can often make the difference between success and failure when it comes to the act of decoration and its outcomes.

However, the core of the process discussed in this paper is the turning of the wooden blank into a bowl. This has three main phases: the smoothing of the blank, the shaping of the exterior and the shaping of the inside. Each requires different tools, movements, and forms of skill.



**Figure Three:** The Process of Turning a Bowl. From (a) A Prepared Blank, (b) Shaping Inside the Bowl and (c) Hollowing The Interior

## Methodology

We follow Baber et al. (2019, p. 284) in suggesting that “the primary way to appreciate embodied activity is through the study of skilled practitioners in their places of work”. In this paper, we present findings from a focused cognitive ethnography (see for example (Alač, 2011; Hutchins, 1995)), conducted by the first author, of the process of making a wooden bowl interwoven with theoretical reflections.

This is not a traditional ethnography: The detailed video analysis draws from the depth of a few events to identify moments of interest (Katz-Buonincontro & Anderson, 2020). In this way, it is more closely aligned with Ball and Ormerod (2000) who adopt an “analysis for a purpose” approach to ethnography and while the data are not as thoroughly emmeshed as traditional ethnographies (Ball & Ormerod, 2017), they are analysed through an interpretative lens which means that the themes and observations drawn out here come from a complex mix of distanced observations and constructed, reflexive thematic analysis (Braun & Clarke, 2006, 2019). In the end, a hermeneutical approach to understanding human action – whether it is primarily habitual or not – cannot do without the ‘vocabulary’ of everyday language, for example, “action, agent, intention, purpose, desire, belief, hope, fear, reason, plan” (Gauld and Shotter, 1977, p. 77), and so on. This kind of interpretation is, at the same time, deeply collaborative, with researcher and participant exchanging perspectives as part of the investigation and reaching joint insights (see also Subjective Evidence-Based Ethnographies; Glăveanu & Lahlou, 2012).

## Method

MG is a semi-professional bowl turner who at the time of the research discussed here had been turning bowls for four years. He approached the first author (WR) at an academic conference to discuss collaboration across anthropology and psychology.



The data which form the basis of this research are drawn from three main sources, a) a series of videos taken across three trips by WR to the workshop, b) her field notes and c) the transcript from a dyadic review conducted shortly after the ethnographic work which used one video as a form of elicitation (see for example Kimmel & Hristova, 2021)) but also touched upon broader topics. At the time of the research, MG was conducting doctoral work into the craft process and was practised in self-reflection and so the dyadic review unfolded not as a process of interviewer/interviewee but a mutual co-construction of understanding. The current paper takes a broad-brush approach to habits drawing on evidence from the whole ethnographic period. However, between visit two and three, MG changed industrial lathes to one which was more powerful (see Figure 1). The change between the two lathes created a natural experiment which by frustrating habitual gestures allowed an analysis of their function and importance.

LATHE A



LATHE B



**Figure One:** The Two Lathes Used Over The Course Of The Ethnography

## Analytical Strategy

The study followed a qualitative dominant case study approach. Grounded Theory Method (Bryant & Charmaz, 2011; Charmaz, 2014; Glaser & Strauss, 1967) seemed a particularly appropriate framework for the analysis of the data. This method has pragmatist roots as it aims to start from an assessment of the data rather than generating theories. Urquhart et al. (2009) identify four key characteristics of GTM: First, it has as its main purpose theory building. Second, it requires a theoretical naivety from the researcher to avoid the imposition of preconceived ideas. Third, data are collected iteratively and compared with all existing concepts as the theory grows. Fourth, slices of data are collected through theoretical sampling where more data are sampled to strengthen the growing theory. The video data were analysed on two levels. First, the video data from each of the visits was watched by the first author to extract global themes and critical incidents. These critical incidents were then subjected to closer coding and dyadic review. The research question relating to the role of habits emerged from the initial round of coding.

GTM requires a theoretical naïveté so the researcher is not tempted to undertake a top-down analysis of the data. Such theoretical naïveté is in practice hard to sustain: All members of the research team have a commitment to complex theories of creative cognition. We aimed, however,

to ensure that the data were not used to support existing ideas. To support the deductive approach, the research question around the value of habits arose from the first viewing of the whole video corpus and was applied to the identified critical incident. The iterative nature of GTM also suited the process of research in this instance. The initial observations were made in the field and could be followed up with theoretically motivated sampling of the video data in a recursive manner as underlying concepts arose. In addition, the use of video data rather than a recounting of the experience means there is no underlying double hermeneutic: The data here are not doubly constructed and therefore follow a more traditional GTM approach (Urquhart et al., 2009).

The study diverged in a surface way from the notion of theoretical sampling because the data collection only happened at one time point rather than involving a return to the participant to collect data which might expand on the nascent theories (theoretical sampling). However, in practice the recursive nature of the data analysis from initial in vivo observations to behavioral coding to conceptual construction meant that a form of theoretical sampling emerged. That is the video data were revisited to clarify and enrich the research questions. Video data even outside of GTM often elicits this type of data analysis because the very rich level of the data requires the researcher to selectively code in the open coding phase and revisit the data later to resample in light of conceptual developments (Heath et al., 2010).

The initial observations generated in vivo were followed up by close watching of the video data with time stamped qualitative memos. Conversation was transcribed and also time stamped. These were then grouped in conceptual categories before the videos were watched a second time to substantiate these categories (this is the modified theoretical sampling which while did not generate new data did return to the existing data with modified questions) and questions were generated for the dyadic review. Finally, the videos were watched again in line with the information from the dyadic review until saturation occurred. Two main themes in relation to habits were drawn out: Habits enable creative gestures because they allow the mitigation of existing risks, and habits rely on a different form of thinking which is more related to tacit knowledge.

## **Results and Discussion**

### **Habit as Creative Scaffolds**

This overarching theme addresses two reasons why habits may seem to support creativity by moving the knowing *that* aspect of creative practice to a knowing *how*. In terms of the creativity examined here, that allows the wood turner to manage the physical risks of his practice and so explore different risks (risk mitigation). It also supports the development of different techniques and processes by absorbing some of the effort required to generate novel forms. We use two critical incidents to support these two sub themes: the change in wood turning lathe and the non-intentional development of a novel technique.

#### *Risk Mitigation*

At the start of the third visit to the workshop, WR became aware of the disruption occasioned by a new lathe. MG was originally working with a lathe which was smaller with a smaller diameter. He had a comfortable relationship with this lathe, but the new lathe was more powerful and would

allow greater possibilities and, in addition, it was a loan from a professional body (The Worshipful Company of Turners<sup>2</sup>) and so represented both tradition and support from that tradition. As an object, then, it encompassed possibilities both practical and symbolic and so it was worth the changes in habit that it wrought. These changes are ultimately forms of reconstruction of one's habit that Dewey (1922, 1934) talked about whenever crises or novelties are encountered.

However, the new lathe was more powerful and, as a result, the first times it was used it required MG to develop new habits for physical protection if nothing else. As he clearly states “And then the vibration because you have no control and all the kind of you know, the panic mode starts where you start to think well it like pop out of the chuck. And will it you know, it could really injure me if it flew out” (DR). The risk is highest when the bowl blank is rough and unshaped such as in Figure 4.



**Figure Four:** The Variety of Sizes and Shapes of Roughed Out Blanks (© Skapa Woodturning)

At this point in the process, the wood is unbalanced on the lathe and not centered because the roughness of the blank means that there is no one centre. This means that it does not turn “true”, that is the blank turns in an unpredictable manner and causes strong vibrations which MG finds intimidating. The additional power means that the relationship which he has already established with lathe A needs to shift when dealing with lathe B and this is a relationship that requires different habitual gestures. These are gestures which only develop over time because they require both trial and error and then embodied learning. MG tries “short, sharp cuts” to try to shape the blank enough for it to turn true and “sometimes it’s fine. [...] It’s still terrifying, but it gets it done. Sometimes it just doesn’t. It’s too lumpy.” (DR) Without the comfort of habitual gestures, MG is on the back foot.

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<sup>2</sup> <https://turnersco.com/>

Additionally, this “sometimes it gets it done” indicates that MG is in the middle of learning how to deal with the new combination of this particular lathe and the different material affordances of different wooden blanks. The process of smoothing the blank he has developed to deal with the new, more powerful lathe only works with certain shaped blanks. Crucially, this has not yet become a habit, it is a conscious trialling of different techniques to mitigate for the anxiety at this stage. Habit under this framework, therefore, is not the application of routine, learnt procedures no matter what the surrounding environment, rather, it is developing a responsiveness to changing dynamic systems. It is only when this responsiveness becomes skilled that it can be unnoticed. To return to the division from Barandiaran and Di Paolo (Barandiaran & Di Paolo, 2014), this is an organicist approach to habits.

This *inbetween* phase captured in the results here highlights the unconsciousness nature of normal skilled adjustments in smooth coping which moves from explicit to implicit and back to explicit again. As O’Connor (2005, p. 189) writes in her autoethnographic work on glass blowing, the development of skill is that of “making an implicit technique explicit, improving and re-aligning that technique with its intended purpose, and allowing the revised technique to again recede into unconsciousness, with the effect of shaping the still nascent glassblowing element of her habitus”. At the moment of change in the lathe, the previous implicit actions which led to the shaping of the blank have been made explicit through the change in tools and are yet to develop into implicit gestures. The presence of WR at this moment allowed it to be captured.

### *Habits as offloads*

The phase of learning laid out above, when a technique works once but the environment has different characteristics requiring conscious rethinking and updating, lays bare the importance of unconscious adaption upon which habits rely and how these foundations allow other skills to become dominant. The automaticity of driving to work (borrowing from Christensen et al., 2016) with no conscious thought or even memory does not require that the road and traffic are the same, rather these habits are habits of engagement which move from conscious awareness but are still responsive.

This is clear from the individual nature of the crafted piece which gives it its value. Take, for example, the range of bowls produced by MG. Each uses the same broad technique based on repetitive gestures but the size, type of wood and design all change the nature of the techniques necessary. Again, we see that habitual unconscious gestures are adjusted to the different materials in an idiosyncratic rhythm. The dynamic video shows that, in woodturning, these gestures are reactions to the movements. Often at first glance MG seems almost still as the chisel he is using moves along the surface of the spinning wood (see Figure 5) and the movements are micromovements which register through the whole body require a form of extended proprioception. These movements are not large enough to be registered consciously and yet they constitute the majority of the process.



**Figure Five:** Standing at The Bowl Face

The final piece of work that MG created during the ethnographic period was two bowls made from a single piece (Ross & Groves, 2023). Although we documented the moment of uncovering a new technique, it has since become a regular way of carving a bowl for MG, so what we also tracked was the moment of the starting point of a habit. For the analysis here, the important thing to note is that MG was dissatisfied with the end of product of this innovative process although the objects he produced went on to be sold. The new process did not produce something with which he was happy until he had consolidated it, until he had turned it into a skill which he was: “But I think now that I’ve done that two or three times, I’d love to either add a bit of flair, and do like the fluted rim.” (DR).

In this we can see MG is moving from explicitly novel discovery (making two bowls out of one piece of wood) to refining and generating aesthetically pleasing forms as the new skill becomes acquired expertise. The initial discovery of the process needed continual refinement. As Sennett (p. 50) writes:

“In the higher stages of skill, there is a constant interplay between tacit knowledge and self-conscious awareness, the tacit knowledge serving as an anchor, the explicit awareness serving as critique and corrective. Craft quality emerges from this higher stage, in judgments made on tacit habits and suppositions.”

Too intense a focus on the moment of inspiration ignores the work and effort which goes into the realisation of that moment and its crafting over time. By becoming rhythmic, habitual and unconscious, these repetitive gestures far from acting as a constraint on creativity, actually work to support and scaffold future creative extensions. The role of habits is to lessen some uncertainty to allow creative practitioners to develop further habits.

There is an implicit hierarchical dualism in the divide between craft and artistic creativity. This reflects wider social structures which implicitly place mental processes higher than manual

processes – epistemic knowledge as higher than technical knowledge. Tacit knowledge embodied in habits is often inaccessible to semantic understanding. Take when MG gets (mildly) frustrated at explaining his process when divorced from his material situation and having to translate tacit embodied knowledge into words:

All of this is a lot easier to explain. If I've actually got like, logs and partly made objects in hand. You know, [...] visual prompts and like, tangible objects are so much easier to communicate these things with [...] it's really hard to try to translate this so like why?

This inability to articulate underlying processes, points to a different form of knowledge than thought-full knowledge. Rather, here, we are talking about tacit knowledge and this is a knowledge wrought through bodily habits as much as explicitly mental ones. This knowledge becomes most clear when it is frustrated, when habits are fractured.

Again, this can be clearly illustrated when MG switches lathes. The lathe needs wood to grip onto, a tenon, and MG favours the narrowest tenon possible. The yellow lathe requires a wider tenon and so MG has to measure this using a ruler. This measuring is thoughtful skill, but it is non-habitual and disruptive. Habituation to the dimensions of the machine mean that by the time of the dyadic review three months after the recording, MG has already lost the need for the ruler to check his sizing. This is an indication of the passing of knowledge from explicit to tacit knowledge and the development of a habit: “Once habitual responses are activated, people can act on the response in mind without making a decision to do so. (Wood & R nger, 2016, p. 11.4)”



**Figure Six:** Measuring The Size Of The Tenon

What is important is that this cognitive knowledge transfers to an embodied knowledge not through the application of learning techniques but through the repetition of a gesture so that it becomes a habit. As a glassblower interviewed by O'Connor (2005) tells her:

“[G]lassblowing has to become something that's in your body and not something that you're thinking about and that only comes from doing it. It doesn't come from thinking about it. And

that's why it is important to go through the process again and again. (Interview with Gus Jenson, glassblower, 22 April 2004)"

The automaticity of habit can be explained by thinking of it as moving from a cognitive, thought-full consideration to an embodied understanding. As MG says: "it's the way that you learn to do or learn to know is the ultimately sort of felt and registered through the body." We take this as evidence that the intelligence of habits lies not in the intentional manipulations of internal representations but rather that an enactivist approach which avoids over or under intellectualizing habits is the best explanation (Hutto & Robertson, 2019)

## Conclusion

Craftwork is a highly repetitive activity (Atkinson, 2013) and this also leads to the idea that it is not "creative" because novelty cannot be found in repetition. However, the repetition of the craftsperson is not the blind repetition of the machine, it is not the workmanship of certainty; rather, it is a rhythmic repetition of movements which are finely attuned to the different affordances of the material and also of the relationship between the material and the maker – the affordances of the actions binding the two. A repetitive gesture is not always the same gesture. Imagine the simple building of a pile of logs. The placing of each log can be seen as repetitive but log weighs slightly differently requiring different body movements to control it. The other logs on which it could be placed are different each time requiring different small and yet vital shifts in gesture. To repeat exactly would lead to disaster. It would also require considerable effort and concentration. As one of the Easter egg decorators noted, in the study of creativity and craft, that it is much easier to change something, however small the change is, than to reproduce an identical egg (Glăveanu, 2013).

Ingold (2007, p. 74) uses the example of sawing a plank to demonstrate how what could be seen as a repetitive gesture actually consists of different movements in response to the movements of the saw, the wood and the carpenter and that skill reflects (as discussed above) the coupling between maker, tool and material:

For the novice every stroke is the same, so that the slightest irregularity throws him irretrievably off course. For the accomplished blacksmith or carpenter, by contrast, every stroke is different. The fine-tuning or "sensory correction" of the craftsman's movement depends, however, on an intimate coupling of perception and action.

There is an increasing focus on "creativity" as a key skill of the 21<sup>st</sup> century. Much of the current research in psychology is interested in the internal processes which mark the moment of creativity, the "spark" as it were. This has been a productive research programme which has deeply expanded our understanding of the complex psychometric and cognitive underpinnings of the phenomenon of generating novelty. Carruthers (2010) talks, in this context, about 'thought first' and 'action first' accounts of creativity. He concludes that, taken to the extreme, neither of these accounts can be the case. And yet, a closer look at craft activities reveals the importance of action first account above and beyond what the existing literature suggests. In his words:

“Consider examples of swift on-line creative action, such as can occur in jazz or organ improvisation, or extemporized movements in free dance. In such cases, it is implausible that each creative action should have been preceded by a creative thought, since it seems unlikely that there would have been time for this to happen. For consider just how fast creative actions can be. (...) A jazz improviser can be playing at full speed, piecing together and recombining previously rehearsed phrases and patterns, when he suddenly finds himself playing a sequence of notes that he has never played before, and which surprises him (Berliner, 1994)”

The quote above supports the idea that improvisational forms of creating still depend on habit. And they do so because acting in the real world is not straightforward; there are detours, accidents, and there is a lot of ambiguity. The downside of conceiving of creativity as sequestered mental functions and testing it in the psychologist’s labs is that it downplays the role of uncertainty and discomfort which leads to an element of risk. Creativity outside of the laboratory is conducted without knowing whether the final outcome will be successful (Ross, 2022). This leads to a large element of risk and ignoring this downplays the reasons for developing skilled habits. If creativity consists simply in generating ideas, then there is no risk.

In the case of the craftwork explored here, the habits are key to mitigating three forms of risk. First, the risk of injury that comes from working with moving equipment and sharp tool, second, the risk of splitting and ruining the bowl and wasting the raw material, third, the risk of creating something which is unsuccessful. All these risks are particularly salient in the wood turning and are explored in more detail in Ross and Groves (2023) but for the focus of this paper, it is important to note that these risks are mitigated by learned bodily habits: “And there’s a huge physical risk that goes with it in not being able to perform a body technique efficiently” (MG). Besides risk mitigation, the other role played by habitual scaffolding is to offload especially aspects of the task that can be turned into routines. Focusing on the domain of music, Chaffin and colleagues (Chaffin, Lemieux, & Chen, 2006) observed that the extensive use of habits, accumulated through practice, serves the purpose of allowing one’s attention to focus on the important details of a performance; for instance, how it is experienced by the audience, what kind of aesthetic additions can be made to it, how it can best respond to changing circumstances. These kinds of micro-adjustments, as the authors call them, reflect the dynamic of habitual creativity. Skilled musicians, expert bowl makers, talented egg decorators, they all solve problems in and through the course of work, just that these problems often fall under the radar. If our habits were completely automatic, they could not respond to micro-changes and lead to micro-transformations. If they were too flexible, they would require supplementary attention and embodied engagement. Between scaffolds to offloads, habits support creativity and they do so across domains (for more details across five domains, see Glăveanu et al., 2013). Studying craft activities is particularly illuminating when it comes to habitual action because we are ready to see habits, repetition, and tradition in everything labelled as ‘craft’. And, at a broader level, this kind of research points to the craft-like quality of our overall creative expression, from science and art to everyday acts.

In situated creativity, the freedom associated with brainstorming and divergent thinking contrasts with the constraints of material and situation. The suggestion explored in this paper is that habits do act as constraints but it is these constraints that grant the freedom and ultimately the safety to explore and be more creative. A pragmatist approach to habits and an enactivist approach to creativity can take us a long way towards understanding the relation between mind, body, and culture in and beyond craft. Risks, constraints, micro-adjustments and the intelligence of (working



with) materials are all part of what makes our behaviour, at all times, embodied and situated. When using these double, pragmatist and enactivist lenses, we notice that habits and creativity are not opposites, on the contrary. That cognition and context are not disconnected, they are interdependent. And that the distance between craft and art, or between craft, like bowl making, and any other human activity we consider to be part of ‘high culture’, like painting, sculpting, or creating music, is smaller than we thought it would be.

### **Conflict of Interest Statement**

The authors have no conflict of interest to report.

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