Knowing Through Matter: Material Practice and Cultural Epistemology

Olga Cuxart Oriol, Independent Scholar, Spain

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Abstract

By examining how material practice generates forms of knowledge that emerge prior to, alongside, and beyond discursive representation, this paper challenges cultural frameworks in which knowledge is primarily understood as symbolic, linguistic, and transferable. Drawing from artistic research and process-based inquiry, it proposes material practice as a cultural site where knowledge is not merely acquired or applied, but actively produced through situated engagement. In this context, matter is not approached as a passive substrate but as a co-constitutive agent within epistemic formation. Knowing arises from irreversible interactions between bodily action, perception, and material response, rather than through symbolic instruction or explanation. Selected examples demonstrate how forms of understanding develop through continuous perceptual recalibration in response to evolving material conditions. Cases including ceramic transformation, Eduardo Chillida's Peine del Viento XV, and Joan Miró's Chicago illustrate how making operates through temporal adaptation, technical mediation, and ongoing negotiation with material conditions. By foregrounding material engagement as a form of situated cognition, the paper repositions artistic practice as a legitimate epistemic domain within contemporary artistic research.

Keywords: material practice, epistemic process, tacit knowledge, material engagement, situated knowledge

Introduction

In recent decades, the so-called “material turn” within cultural studies and epistemology has challenged the long-standing prioritization of symbolic systems as primary carriers of knowledge. Within this shift, matter is no longer understood as a passive substrate shaped by human intention, but as an active participant in processes of meaning-making and knowledge production.

This paper contributes to this discussion by proposing that material practice itself functions as an epistemic process, through which understanding emerges from making and negotiating with materials. In this framework, knowledge is not external to practice but is constituted through it. The central questions guiding this research are: how does material engagement generate and transmit knowledge? More specifically, how do processes of making produce forms of understanding that resist full formalization within codified instruction? These questions are explored through selected examples drawn from sculptural and ceramic practice.

Figure 1
Clay Studies by Cao Chunsheng (曹春生), Sculptor and Professor at Jingdezhen Ceramic University

Source: Images courtesy of the artist.

Theoretical Framework

Recent approaches within artistic research, phenomenology, anthropology, and material culture studies have increasingly challenged the separation between thinking and making. Tim Ingold’s notion of making as correspondence is particularly relevant in this context. For Ingold, skilled practice does not consist in imposing fixed forms onto passive matter, but in responding to continuously changing material conditions through iterative adjustment and attention. Knowledge therefore develops relationally, through ongoing engagement between practitioner, action, environment, and material process (Ingold, 2013). In this sense, both practitioner and material are continuously transformed in the course of interaction.

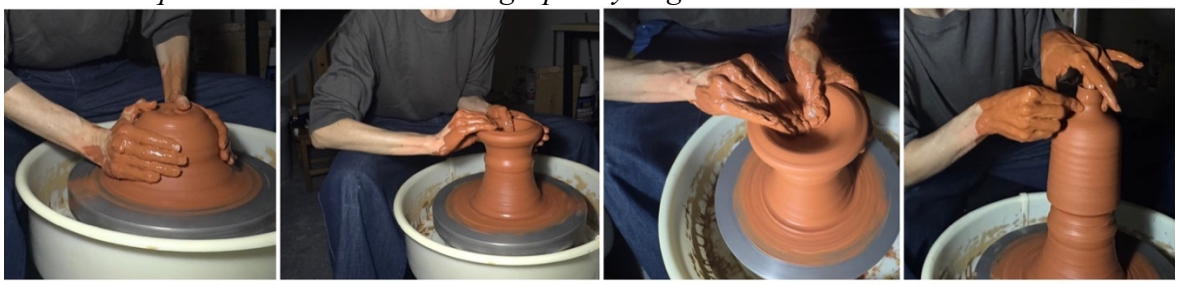
This perspective also resonates with John Dewey's understanding of experience as an active and transformative relation between perception and action. In Art as Experience, Dewey rejects rigid separations between thinking and doing, proposing instead that understanding emerges through continuous interaction with the conditions of practice itself (Dewey, 1934). Richard Sennett's writings on craftsmanship similarly emphasise the importance of repetition, correction, and material responsiveness in the development of skill. For Sennett, technical refinement is not merely mechanical reproduction, but a gradual process in which judgement and sensitivity become increasingly calibrated through practice (Sennett, 2008).

The paper also relates to Michael Polanyi's concept of tacit knowledge, particularly his proposition that "we know more than we can tell" (Polanyi, 1966). Certain forms of material judgement, timing, and perceptual discrimination often resist complete verbalisation or codification, despite being fundamental to skilled artistic practice. Similarly, Juhani Pallasmaa argues that material engagement constitutes a fundamental condition of artistic and architectural thinking, where knowledge is formed, tested, and transmitted through practice itself (Pallasmaa, 2009).

More recent approaches, such as Lambros Malafouris' Material Engagement Theory, further reinforce the idea that cognition itself may emerge through material interaction rather than existing entirely prior to it. From this perspective, making is not simply the execution of thought, but part of the very process through which thought is formed and reorganised (Malafouris, 2013).

Figure 2

Ceramic Sequence. Process and Photographs by Olga Cuxart Oriol



Source: Photographs by the author. © Olga Cuxart Oriol, 2026.

Drawing on these perspectives, this paper argues that material practice generates forms of situated knowledge through irreversible interaction with evolving conditions. Rather than understanding making as the application of pre-existing knowledge to passive matter, the paper proposes material engagement as a continuous process of perceptual recalibration shaped by temporality, transformation, resistance, and technical adaptation. The clay transformations shown in Figures 1 and 2 illustrate how materially distinct processes—ranging from additive sculptural formation to subtractive wheel-based calibration—require different forms of tactile judgement and responsiveness to ongoing change.

Material Practice as Epistemic Process

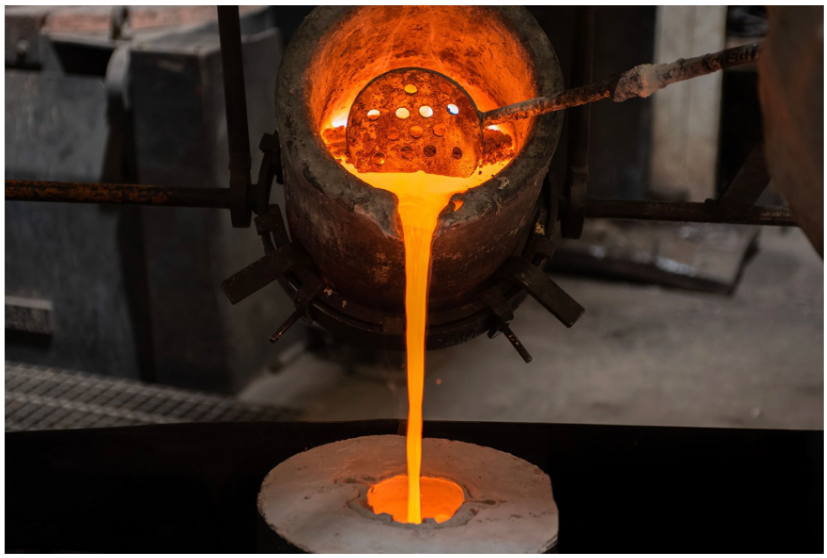
Building on this framework, material practice can be understood as an epistemic process grounded in continuous sensory and embodied interaction. Knowledge develops not only through conceptual reflection but through direct engagement with material transformations over time. This process is characterised by three interconnected but distinct dimensions: contingency, irreversibility, and situational judgement.

First, contingency refers to the inherent unpredictability embedded in material properties and responses. Because the outcome of an action depends on specific, often unpredictable, material characteristics, practitioners must remain perceptually responsive and adaptable throughout the process. Interaction, therefore, unfolds under conditions that cannot be fully predicted or controlled in advance.

Second, irreversibility concerns the unidirectional nature of transformations. Once an action is taken—such as firing clay or casting metal—it often cannot be undone, and each step irrevocably alters the material's state. This introduces a temporal dimension to knowledge, as understanding develops through sequences of irreversible transformations that continuously reshape subsequent conditions and future possibilities.

Third, situational judgement involves real-time decision-making in response to shifting circumstances. Rather than relying on predefined rules, practitioners must continuously evaluate and respond to unstable, evolving states of the material, adjusting their actions accordingly. This capacity for ongoing perceptual and technical adjustment is central to navigating these processes.

Figure 3
Bronze Casting Process



Source: Capa Esculturas.

Together, these dimensions position material practice as a form of knowing that operates through action. While contingency and irreversibility both address unpredictability, they highlight different facets of it. Collectively, they foreground an embodied, situated, and temporally aware understanding of practice, where understanding develops through lived engagement. Their interconnectedness underscores a nuanced epistemology that values responsiveness, temporality, and situated judgement as central to processes of making.

Material Transformation and Processual Knowledge

The epistemic character of material practice becomes particularly visible in ceramic processes and large-scale sculpture, where form cannot be fully separated from material behaviour, environmental conditions, and technical mediation. In such contexts, knowledge develops progressively through sustained interaction. This dynamic can be observed in ceramic firing,

where transformation continues beyond direct intervention. Under high temperatures, clay gradually softens, contracts, and reorganises structurally before reaching vitrification. During this stage, matter continues to transform inside the kiln, often beyond complete visual control. Small variations in humidity, thickness, support, or temperature distribution can significantly alter the final outcome. Therefore, timing and experience become essential components of making, requiring practitioners to work with conditions that remain in flux after the moment of action. These observations are informed by long-term engagement with porcelain and ceramic practices in Jingdezhen, China.

A comparable pattern can be observed in Eduardo Chillida's Peine del Viento XV (1977), where the final form was shaped through an ongoing process of negotiation between sculptural intent, technical constraints, and the demanding conditions of the coastal site itself. Due to its scale and weight, the sculpture could not be transported as a single unified form and required on-site assembly and welding in direct relation to the rock formation, as shown in Figure 4. Rather than functioning as secondary technical adjustments, these factors became constitutive of the work itself. The sculpture does not simply occupy the landscape but remains in dialogue with wind, salt, erosion, gravity, and structural resistance. Recent restoration work carried out around the site further demonstrates how environmental conditions continue to evolve and affect the sculpture long after its initial installation. In this sense, the work exemplifies how material interaction progressively reshapes the artwork over time, extending the epistemic dimension of creation beyond the moment of production.

Figure 4

Installation of Eduardo Chillida's Peine del Viento (1977), San Sebastián

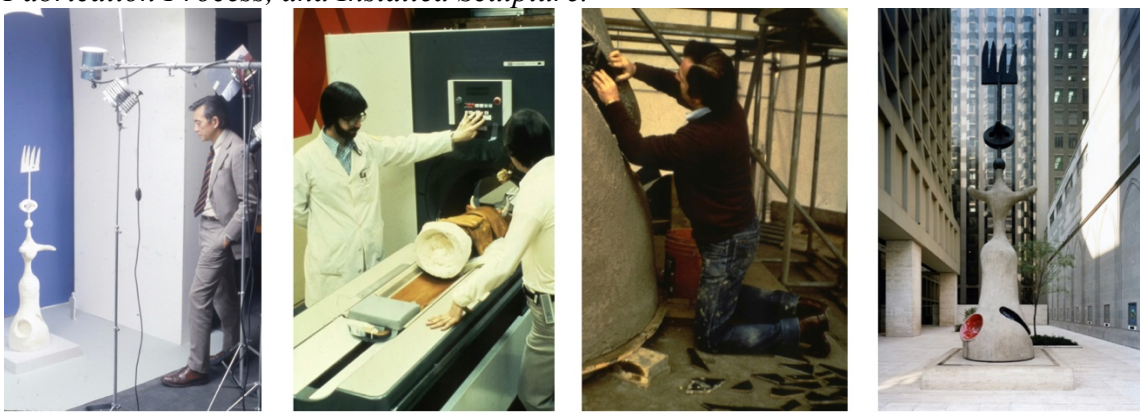
Source: Museo Chillida-Leku.

A different but equally significant example can be observed in the development of Joan Miró's Chicago (1979). The transformation from a small-scale maquette into a monumental public sculpture involved multiple stages of reinterpretation across media, evolving technologies, and collaborative production methods. During the enlargement process, as illustrated in Figure 5, medical CT imaging technologies available at the time were adapted in order to translate the original form into enlarged coordinates, long before contemporary 3D scanning technologies became widely accessible. The final work also involved the collaboration of ceramic artist Joan Gardy Artigas, whose technical expertise played a fundamental role in translating Miró's formal language into large-scale sculpture. Here,

knowledge emerges not from isolated authorship, but through successive forms of technical mediation and collaboration across different stages of fabrication.

Figure 5

Successive Stages in the Production of Joan Miró's Chicago (1979): Maquette, CT Imaging, Fabrication Process, and Installed Sculpture.



Source: Composite image assembled from archival documentation.

All these examples demonstrate how practice does not simply apply pre-existing knowledge to matter. Understanding develops progressively through adjustment, responsiveness, and negotiation. In this context, material engagement functions less as a system of control than as a field of calibration, where action and transformation remain in continuous relation throughout the process.

Conclusion

This paper has articulated material practice as an epistemic process through which understanding develops. Rather than operating through fixed procedures or complete control, making unfolds in response to uncertainty, transformation, and the temporal conditions of practice itself. In this context, knowledge is formed not as detached abstraction, but through direct exposure to the constraints and adjustments that emerge from material interaction.

The examples discussed throughout the paper demonstrate how making functions as a situated form of inquiry in which perception, judgement, and technical action remain inseparable from the processes that generate understanding. Material practice therefore expands conventional approaches to knowledge within cultural and artistic research by foregrounding forms of awareness that cannot always be fully externalised through codified explanation alone.

At a moment increasingly shaped by accelerated technological mediation and disembodied forms of interaction, material engagement reaffirms the importance of attention, situated perception, and lived experience. In this sense, material practice not only produces objects, but cultivates forms of responsiveness through which practitioners remain connected to bodily experience, environmental conditions, and ongoing transformation unfolding over time. Recognising making as an epistemic domain therefore opens broader possibilities for understanding how knowledge is generated and experienced within contemporary cultural practice.

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Contact email: ocuxarto@gmail.com