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Acknowledging the agencies of others as an epistemic practice: An example from baking

ABSTRACT

This paper employs the first author's baking practice as both the focus and the medium of research. Panicuocoli, a commercial sourdough bakery run from 2020 to 2024, allowed us to investigate how knowledge emerged through collective acts of making, in which human practitioners became entangled with other-than-human agencies to co-produce bread. The practice embraced the inherent variabilities of local agricultural cycles and their products, leading the research to operate across multiple scales and temporalities. Through different sources of documentation derived from this practice, we employ the complex, unstable, and unpredictable space where the practitioner-researcher worked as a means to transcend maker-material conversations and accommodate the evolving needs and circumstances of human and non-human actors alike. As a result, this practice-led study emphasises the epistemic dimension of acknowledging the agency of others, where knowledge is co-produced in ways that transcend human temporality, understanding, and intelligibility.

Keywords: acknowledgement; sourdough baking; knowledge production; nonhuman others

INTRODUCTION

Research guided by creative practice often focuses on the intimate, personal, and implicit conversations that occur between maker and material. Terms such as reflective practice (Schön, 1983) are used by practitioner-researchers to discuss how the tacit knowledge underpinning these conversations can be used to produce new explicit knowledge that others can use in their practices (e.g., Mäkelä & Nimkulrat, 2018). While this view recognizes materials as active and responsive elements that practitioners think through and negotiate with (Aktas & Mäkelä, 2019), it also reinforces an anthropocentric mode of inquiry in which the practitioner remains the main agent of knowing. This paper employs multi-actor bread baking to shed light on how knowledge production guided by creative practice necessitates new frameworks that recognize the agencies of others, human and non-human. Using the example of a baking practice in which the first author was a practitioner, we discuss how acknowledging the active role of agricultural cycles, ingredient variations, bacteria, farming practices, and other bakers

contributed to a mode of knowledge production that inherently transcended human modes of sense-making.

MATERIALS AND METHODS

We employed practice-led research as an overarching methodology (see, e.g., Redström, 2017). The first author operated as a baking practitioner and researcher at Panicuocoli in Helsinki, Finland from 2020 to 2024. Daily baking was the site where insights emerged through sustained and iterative engagement with ingredients, bakers, recipes, and variable environmental conditions. Due to the collective engagement with multiple material agents that is necessary in bread-making, this practice served as a means to acknowledge how the agencies of all actors involved—human and otherwise—prompted new ways of doing, understanding, and communicating.

The bakery willingly embraced the inherent variabilities of agricultural cycles by working with locally sourced grains, maintaining lasting relationships with farmers and millers, and caring for sourdough cultures. Relevant aspects for this study are, therefore, daily bread production routines involving multiple fermentation stages, continuous adaptation to changing ingredient properties, maintenance of sourdough cultures across changing conditions, and adaptation to changes in local cereal availability. These aspects generated a creative situation imbued with complexity, instability, and unpredictability that are central to the findings outlined later.

Empirical data were collected through systematic documentation (Mäkelä & Nimkulrat, 2018) across multiple sources and temporal scales. These included: (a) production logs captured through digital recipe calculators and paper-based records; (b) raw material procurement documented via email correspondence, invoices, and organic certification logs; (c) retrospective observational notes of baking processes; and (d) audio recordings archived in Telegram chat conversations. This allowed us to capture immediate, extemporaneous observations as well as longitudinal records related to changes in seasons and ingredients. It is important to mention that while the same dataset has been used to discuss matters of emergence and relationality through baking (Giabardo et al., 2025), this paper presents an original contribution by focusing specifically on the idea of acknowledging multiple agencies as a knowledge-generating practice.

To analyse the data, we employed a diffractive reading (Barad, 2007) by examining how different actors interacted within the documented events. This involved reading our documentation to trace patterns of interference between the data sources and temporal scales listed above, meaning that instead of looking at them as data points to ask what they could mean, we examined them as data traces by crossing them with one another to ask what else they could reveal. For instance, an email correspondence documenting the substitution of a type of grain was read through production notes recording taste and texture changes, which were further read through subsequent ingredient sourcing decisions. This permitted us to identify new patterns between the documented events rather than analysing them as discrete incidents, revealing multi-actor entanglements that could have been overlooked otherwise.

FINDINGS

Our findings shed light on how materials, environments, and human responses evolve beyond human planning, control, or mastery. In this light, ingredients, harvest conditions, milling processes, farmers' decisions, and seasonal rhythms only exist in constantly flowing and renegotiated intra-actions (Barad, 2007), co-existing in mutual change rather than in causal, concatenated production processes and relationships. For example, we introduced a new flour from a different farm. The new wheat's strong

but extensible gluten initiated a movement where its properties co-evolved with pre-existing mixing techniques, taste expectations, and dough handling approaches in ongoing negotiations where each continuously influenced the others.

This created new possibilities that were not dependent on the wheat's individual characteristics alone, revealing how knowledge exists dispersed while interwoven across the flour's physical and material expressions, the embodied knowledge of mixing and fermentation approaches, and the memories held in taste. Each carries their own ways of knowing that interact and operate also beyond human comprehension. This means recognizing that all contribute to what emerges, creating new possibilities through intra-actions rather than through control. The practitioners work within these disseminated knowledge/practice by staying present with what unfolds from grain-technique-expectation without necessarily seeking to translate these into human understanding.

Working within these ongoing relational movements amounts to an epistemic practice we term acknowledgement, meaning a repositioning of the knowers-in-the-practice as they learn to be-with what is unfolding (Haraway, 2016). Drawing from Latin, we define this through *constare* (i.e. *con-stare* as in being-with) as a practice of being, and staying present with (material) changes rather than attempting to master them as a form of dominance or domestication. In making a *crisis* of "*cum-vivere*" (living-with) and "*cum-stare*" (being-with), acknowledgement involves being present with what already exists in ingredients, microbes, seasonal rhythms, and farmer expertise, while embracing what is inscrutable, inexplicable, and not-know-able as enabling rather than impeding.

DISCUSSION

Acknowledgement as an epistemic practice addresses how humans learn to work within ongoing relational movements involving constituencies of actors that are in the space but exist, interact. and interfere beyond human control, mastery, or exploitation.

Unlike tacit knowing (Polanyi, 1966), in which practitioners integrate embodied and implicit expertise through practice, acknowledgement recognizes ways of knowing that emerge from relationships between multiple actors rather than human integration. Feminist scholar Alexis Shotwell's (2014) conceptualization of implicit knowledge examines how marginalized communities possess and develop ways of knowing that resist dominant articulation. In contrast, acknowledgement expands to include other-others (in this case, for example, materials, microbes, farmers, and seasonal processes) in an effort to recognize that they express forms of implicit knowing-with that cannot be translated into propositions yet remain salient in the practice and to the practitioner. Our framing also differs from attunement (Hey, 2021), which proposes embodied "response-ability" to multispecies engagements, because acknowledgement involves working also with what remains partially inscrutable without positing a better human/practitioner respons-ing. Other similar approaches, like Actor-Network Theory, seek to follow the link between actors and make visible the associations and translations that connect them (Latour, 2005), yet they differ from acknowledgement as the latter works with material entanglements that cannot or do not need to be fully traced or mapped to make sense and be meaningful. Through acknowledgement, we also stay with (see Haraway, 2016) what might exceed analytical comprehension altogether.

This case of practice involving multiple agencies beyond the human allows for an understanding of how practitioners develop ways of working and making with what cannot be fully grasped, understood, or controlled, a space we are trying to define from the *crisis* of *con-stare* (being-with) and *cum-vivere* (living-with) as a concurrently active and static posture with(in) the practice. Acknowledgement can offer a valuable positioning for practices because it embraces generative engagement with inscrutability. This approach recognizes that some of the most crucial aspects of practice, in this study

e.g. seasonal rhythms, microbial processes, or material expressions, operate in fluid and changing ways that somehow exceed human comprehension yet remain essential.

This alternative vocabulary emerges from practice because existing concepts we have confronted maintain subtle and diverse forms of human-centrism that limit access and abilities to describe being-with modalities. Acknowledgement provides a framework for understanding practices that navigate multiple temporalities, materialities, and agencies without seeking to integrate or control them. This perspective becomes relevant for where human agency operates within rather than over material systems. The insights gathered from the baking practice point toward further investigations into how acknowledgement might function across other domains where the presence of inscrutable agencies is core to a decentering and displacement of the human, particularly where practitioners must navigate between material temporalities and (human) planning operating at different scales and velocities.

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