

# Frictional methodologies: Staying with silence, hesitation, and situated encounters

Methodological Innovations

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## Abstract

This article explores how moments of silence, hesitation, and misrecognition can become methodologically generative in participatory research. Drawing on empirical work in the context of health, care, and socio-technical design, and grounded in feminist epistemology, postcolonial critique, and care ethics, we approach methodology not as a fixed set of tools, but as an ethical and relational practice. Through a dialogical structure, we trace field encounters that unsettled our assumptions about participation, inclusion, and evidence—moments when participants withdraw, resist alignment, or are not legible within the formats research protocols provide. Rather than interpreting such instances as breakdowns, we propose a stance of attunement: a way of staying with epistemic friction, atmospheres, and forms of presence that escapes categorization. We argue that methods must adapt to the needs, rhythms, and expressions of participants—not the other way around—and that what remains unspoken in research is not a gap, but a form of presence. By staying with what remains untranslatable, we contribute to methodological discussions in qualitative research that challenge proceduralism and open space for epistemic elasticity, affective responsiveness, and situated accountability.

## Keywords

Situated methodology, epistemic friction, relational presence, epistemic elasticity, qualitative research, participation

## Highlights

- The article explores how methodological meaning emerges from hesitation, silence, and unreadability in participatory research.
- It uses dialogical writing and situated field encounters to explore epistemic frictions in participatory research.
- The authors argue for epistemic elasticity and attunement over procedural standards of inclusion
- Moments of epistemic friction are treated as generative, rather than disruptive.
- The paper redefines presence in research as atmospheric, non-verbal, and affective, challenging conventional assumptions of participation.

## Methodology as encounter

This paper is a methodological experiment. It does not aim to offer a blueprint, but to trace a terrain: uneven, affective, and shaped by friction. Emerging from empirical work at the

intersection of participatory research and socio-contextual negotiations of health, care, and technology, it is grounded in fieldwork encounters: in notes and workshops, in hesitation, irritation, and moments of epistemic dissonance, as well as unexpected openings. It is born of a shared sense that something in the way we “do method” needs to be rethought, particularly when we take seriously the insights of feminist epistemology, postcolonial critique, and care ethics. Each of

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these traditions has shown, in different ways, that knowledge is never produced in a vacuum. Situated knowledges (Haraway, 1988), epistemic positionalities (Harding, 1986), colonial legacies in research (Smith, 2012), and the embodied, relational labor of care (Mol, 2008; Puig de la Bellacasa, 2017) all challenge the idea of methods as neutral instruments. From these perspectives, methodology becomes not a set of tools, but an ethical and political mode of relation: One that must be continually questioned, stretched, and reconfigured.

While our institutional background lies in technology assessment (TA), this paper does not seek to refine TA methodologies or provide evaluative models. Instead, we understand assessment more broadly as a space of epistemic encounter, where demands, bodies, technologies, and institutions meet (often uneasily) and where knowledge is not simply gathered, but negotiated, co-constituted, and often resisted. We use the term epistemic encounter to describe points of contact between different ways of knowing, embodied, situated, institutional. These encounters are rarely smooth: they are charged and uneven. Epistemic friction, then, refers to the tensions that emerge when such models of knowing misalign. When participation stutters, expectations collapse, or voices slip through the frame. We treat these frictions not as failures, but as methodologically meaningful interruptions. They are not external disturbances, but arise from the entangled and situated relations that shape every research encounter. Thus, we ask not only what is being studied, but how, by whom, and under what conditions knowledge becomes legible or remains unspeakable.

Our central claim is this: methodology is never neutral. It is always a relation, shaped by power, positionality, infrastructure, and care. In our work, we encountered tensions between expert systems and lay knowledge, between care work and technological design, between normative ideals of inclusion and their infrastructural constraints. Rather than resolving these tensions, we stayed with them, and began to see them not as noise, but as data. A gesture of “staying with the trouble” (Haraway, 2016) that marks our commitment to attunement rather than resolution. These concerns place our work within a broader set of methodological debates in feminist science and technology studies (STS), critical qualitative research, and participatory design. Scholars in these fields have long emphasized that research encounters are affective, situated, and structured by epistemic asymmetries. Concepts such as refusal (Tuck and Yang, 2014), affective data (Blackman and Venn, 2010), silence as method (Mazzei, 2007), and thinking with theory (Jackson and Mazzei, 2012) resonate with our interest in what remains unspoken, unreadable, or atmospherically registered. Our intervention also connects to recent critiques of proceduralism in qualitative research (Braun & Clarke, 2021), particularly where standardized methods risk erasing the contingent and relational nature of participation.

Over the last two decades, both qualitative health research and parts of TA have shifted from expert-driven paradigms

toward more participatory and reflexive approaches. Calls for the democratization of assessment processes (Jasanoff, 2003; Van Est and Brom, 2012), the inclusion of experiential knowledge (Grunwald, 2019), and the recognition of value-laden assumptions in the framing of technology futures (Bogner and Torgersen, 2015) have gained traction. In health research, phenomenological and narrative methodologies (Mol, 2008; Pols, 2014) have highlighted the messiness of lived experience and the inadequacy of evidence hierarchies to grasp care, vulnerability, or chronicity.

What we offer, then, is a situated contribution to these ongoing discussions, one that draws on feminist commitments to positionality and relationality, on postcolonial interrogation of epistemic authority and legibility, and on care-ethical sensibilities toward dependency, slowness, and mutual vulnerability. From this vantage point, we argue that methodology should not be understood as a stable toolkit, but as a situated and contingent practice of responsibility and responsiveness. One that demands what we call epistemic elasticity.

To care, methodologically, is to ask: Who is allowed to speak? Who listens? Under what conditions? And what kinds of silence are made possible, or necessary? These questions do not lead to definitive answers, but to a commitment to stay with them. Our methodological stance is not a model, but a cartography of relation: affective, partial, and always in motion.

As co-authors, we come to this terrain from different locations: one from inclusive participation and citizen science cultures, the other from participatory technology assessment and empirical research on health and care technologies. Our shared dialog is not one of convergence, but of resonance: shaped by interruptions, asymmetries, and methodological unease. We write in alternating voices not to present positions, but to trace resonances. Frictions do not resolve into findings. They echo between us, and it is in these echoes that our method begins. What follows is not a fixed framework, but a set of situated attentions, drawn through scenes of friction, presence, and what resists being known.

## Frictions and first moves

**Author 1:** I remember one of our first conversations. It began with a moment of gentle irritation. One of those seemingly minor interactions in which fundamental methodological questions quietly concentrate, long before we recognize them as such.

My colleagues and I had proposed organizing a workshop. Our aim was to invite underserved communities into our institute in Germany: to learn from their needs and everyday experiences, particularly around the question of having a voice (or often, not having one) in shaping emerging health technologies. We were acutely aware, and hardly alone in

this, that our previous public dialogs, like many participatory initiatives in research, had been dominated by white, well-educated, middle-class participants. With this workshop, we hoped to create proximity, foster trust, and open a space in which different perspectives could be not only heard, but genuinely valued: together, in person, with coffee, flipcharts, and faces in the room.

And then Author 2 said that one sentence. Quiet, kind, but unmistakably clear: “Author 1, you’ve been researching participation for ten years. But if this workshop isn’t at least hybrid, it can’t be truly inclusive.” It wasn’t a critique. It was a precise intervention. And it struck me. I didn’t need long to realize how, even after all my years of work on participation and epistemic diversity, I had unconsciously reproduced a mechanism of exclusion: the primacy of physical presence. Without noticing, I had imagined participation as something that happens in the room, thereby excluding those whose mobility, caregiving responsibilities, health conditions, or technological resources make such presence impossible.

That scene stayed with me, not just as a learning moment, but as the beginning of a shared recognition: that research never takes place apart from our bodies and biographies. That methodology is not a neutral catalogue of techniques, but a field of ethical, social, and epistemic decisions, often invisible, sometimes uncomfortable. In that moment, I began to understand what a *dialogical* methodology might mean: not consensus, but resonance.<sup>1</sup> I brought my background in inclusive participation, self-tracking, and epistemic diversity. Author 2 spoke from her long-standing engagement with participatory research in care settings, her critical work on inclusion, and her attentiveness to embodied forms of presence. And from this space of tension, not despite, but because of our differences, emerged the methodological dialog that this paper continues.

**Author 2:** Here I immediately think of a presence that didn’t arrive through words. It was during a workshop session in a long-term care facility. We had invited residents to explore their daily routines with us, using photos, small objects, and shared stories. One woman said very little throughout. She didn’t follow the prompts. She didn’t respond when asked. But she stayed. She touched the same fabric square repeatedly. She smiled at another resident. She hummed, softly, irregularly, for almost the entire time. At the end of the focus group, a caregiver whispered to me: “She doesn’t usually stay this long, not in things like this.” It wasn’t feedback. It wasn’t participation in the conventional sense. But it was presence: dense, rhythmic, affective. That moment reminded me that participation does not always arrive as speech, as

opinion, or as input. Sometimes it takes the form of attunement. Of gesture. Of a refusal to exit. It reframed how I think about inclusion: not as access to a predefined format, but as shift in what it means to take part. It also changed my assumptions about method: less as a structured facilitation, more as a practice of noticing what tends to go unnoticed.

Author 1’s earlier scene, like mine, forced us to reconsider our roles. Not as experts assessing possible technological futures, but as participants in what we have come to think of as epistemic encounters: moments we engage, co-shape, and yet never fully control. We came to see that TA or any participatory research involving socio-technical change, is never merely analytical; it is performative. With every question we ask, every format we choose, every invitation we extend, we enact assumptions about relevance, normality, and access. What often appears as a “methodological choice” is, in fact, an act of world-making. And such world-making is rarely neutral. It is embedded in infrastructures, institutions, and unspoken expectations, but also in gestures, glances, or pauses. What counts as inclusion, what is made legible as participation, depends not only on frameworks and formats, but on the rhythms of being with others. The moments we shared unsettled our assumptions, and taught us to listen otherwise. They shifted how we understand method: not as a plan to follow, but as something partial, affective, and always in negotiation. At its best: capable of learning. What follows are not categories, but encounters, messy, affectively charged, and entangled in epistemic conditions that make them both possible and difficult to hold.

## Who is read? Atmospheres, bodies, and research formats

**Author 1:** There’s a moment I can’t stop thinking about. It happened during a public event on participatory research at the ZKM (Center for Art and Media Karlsruhe) in the winter of 2023. I had been invited to facilitate a table (one of several) in a huge hall filled with voices, chairs, microphones, artworks, conversations. The idea was beautiful: bring researchers and citizens together, talk about how participatory science might improve their lives. My table, a rotating group of about 10–15 people, came and went. We sketched ideas, reflected on inclusion, asked what counts as research. And then, halfway through one such round, a woman stood up quietly and came toward me. She smiled,

apologized, and said she would have to leave. I asked if everything was alright. And she said: “I appreciate the effort, I really do. But I have a hearing impairment. I simply can’t follow what’s happening here.” Her voice was calm. She wasn’t angry. But I was devastated. There I was, talking about inclusion, participation, co-design, and I had failed to notice how the very architecture of the event excluded her. The acoustics. The layout. The assumption that conversation equals inclusion. But not if you can’t hear it. Not if you have to strain through noise just to be in the room.

**Author 2:** That reminds me of something I’ve encountered repeatedly in research on assistive technologies in care: accessibility is often treated as an afterthought. It’s often added late, as a feature, not built in as a foundation. Many user-centered designs assume a default user: mobile, responsive, cognitively stable. But what happens when a body doesn’t fit that mold? When it stutters, hesitates, or moves differently? These bodies don’t just fall outside the design logic; they expose its limits. I’ve seen this with care workers, too. They’re asked to “test” technologies that weren’t built with their working routines, rhythms, time constraints, or sensory modes in mind. They become anomalies in systems that claim to include them. And sometimes, they adapt, but often, they withdraw. Not because they reject the tools or unwilling, but because the devices were never really built to register them. What your moment made visible, and what I’ve seen too, is that inclusion doesn’t begin with intention. It begins with structure.

**Author 1:** Not long after that, I spoke with a participant in a self-tracking study who had filled her app with notes, far beyond what the interface requested. She tracked not only symptoms and sleep, but also how she felt after walking her dog, the sound of her neighbor’s footsteps, her dreams. I asked why she added so much. She said: “Because otherwise I’m not really in there. Otherwise it’s not me.” She wasn’t resisting the system, she was trying to become legible, to the app, the study, to herself. maybe. But the interface didn’t respond. Her annotations weren’t visualized, weren’t echoed back. The app registered

steps, heart rate, calories. The rest vanished. That moment shifted how I understood epistemic friction. I had been thinking about hesitation, silence, withdrawal. But this was different: A form of expression that did not align with the system’s logic. She wasn’t “unreadable” because she said too little. She was unreadable because she expressed herself in a way the interface could not recognize.

**Author 2:** That reminds me of another moment in a care setting, one that stayed with me for its quiet complexity. We had invited participants to explore daily routines using picture cards. The format was calm and open-ended. Still, one woman, known for her attentiveness, gradually withdrew. She didn’t speak, but remained seated, softly tracing the edge of the table with her fingers. A caregiver leaned over and said, “She’s still with you. She just needs longer breaks between steps.” At first, we took this as a methodological insight: that our format had unintentionally imposed a tempo that excluded slower forms of presence. She had not disengaged, but she became “unreadable”: Not to us as people, but within the rhythm of the method. Over time, I saw something else: her gestures were not only a disruption of method, they were also a way of expressing how care unfolds. Her silence was not absence. It mirrored the fractured, nonlinear temporality of care—the pauses, repetitions, and micro-movements that resist capture but shape how care is lived. In that sense, the moment was not only methodologically generative. It offered a glimpse into the affective temporality of care work itself. A reminder that presence is not always articulated, but sensed, and that method must not only adapt to such forms, but learn from them.

**Author 1:** Coming back to the event scene at the ZKM (Center for Art and Media Karlsruhe), after everything we’ve just shared. I see it differently now. I had framed it only as a matter of sound, of architectural exclusion. But your stories opened something else: the atmosphere after. The things that didn’t make it into the feedback forms. After the woman left, I kept facilitating. But something in the room had changed. Even in our most “open” formats, we might be reinforcing



exclusions we don't see, because we're focused on content, not atmosphere. On questions, not audibility. On participation as response, not as condition. That night, I wrote in my notebook: "You can't participate in what you can't hear." I underlined it three times.

- Author 2:** I experienced a similar kind of dissonance. Not about hearing, it was about "too much." As part of a co-design process, the project partners set up a multi-sensory interaction in a care facility, visuals, sound, tactile elements. Everything was intended to invite engagement. But one woman, usually quite responsive, began to withdraw. She looked down. Another participant told the researcher: "It's too much for her. Too much going on." It wasn't refusal. It was self-protection. And again, the format couldn't see it. It made me question the assumptions we carry into participatory research. Many formats don't just ask for participation, they expect a certain sensory mode of being. When someone doesn't match that mode, their presence falls outside what the method is set up to recognize. Since then, I've come to see participation differently. Not as contribution, but as remaining. Not as articulation, but as endurance. Not as success, but as what the method is still learning to notice.
- Author 1:** That reframes the idea of inclusion altogether. It's not just about who is missing from the room. It's about who is present, but illegible as a participant. Not because they weren't present, but because the frame had no place for how they were. The question is no longer whether our methods include enough voices, but whether they can recognize forms of presences that do not come in the shape of voice at all.

## When the method notices late

- Author 1:** Epistemic friction rarely arrives with clarity. It appears as hesitation, in the soft withdrawal from a question. I remember an interview with a participant from a digital genetic testing community. She had been enthusiastic, about data, comparison, the feeling of being informed. Then I asked how she saw the platform's role in research. She paused and said: "I don't know. I just don't think about it too much."

Then she smiled. And changed the subject. It wasn't disinterest. It was something else.

A refusal to be positioned. A moment that did not collapse into insight, but remained, as residue.

I had thought I was listening well. But I had been listening for the wrong thing. A statement. A stance. Something I could work with. What she gave was the absence of alignment and that, too, was data.

Not for the codebook. But for the method itself.

- Author 2:** I remember a moment in a workshop with caregivers. We had asked a question about trust in technology. One woman began to answer, then stopped. Not because she didn't know what to say, but because speaking would mean implicating someone else. Or herself. Or the system. She looked at me and said: "I'll tell you later." What was recorded was the pause she opened, and then left unspoken. It was not avoidance. It was attention. And it unsettled the format more than any direct reply could have.

- Author 1:** That's what I keep circling around: What if silence isn't absence, but a shift in register? I used to think silence means we didn't ask right. Now I wonder: What if silence is the most precise answer we receive?

- Author 2:** Some moments don't resist method. They stretch it. A glance, a pause, a breath can disorient what we thought we were asking. If we stay with them, not to decode, but to remain, the method slows. It stops expecting clarity. In one co-design session, a participant said something just as we were packing up: "The robot? It's not for me. It's for someone who can do even less than I can." The engineers had designed the device with people like him. He was, demographically and functionally, part of their target group. And yet, in that sentence, he repositioned himself. Not outside the process, but outside its imagined projection of need and relevance. He didn't reject the robot. He offered exactly what was asked: a perspective. But it was not the one anticipated. What he gave wasn't resistance, but an unexpected reconfiguration of the role he had been assigned. He responded from within the method, but bent its contours. That sentence unsettled more than any critique. It didn't break the frame. It shifted it from the inside.

- Author 1:** This is when I stop thinking in terms of data and begin to sense something else: epistemic echoes. They don't clarify. They don't explain. But they stay. And they shift how we hold the encounter. So maybe the question isn't: How do we analyze what people don't say? Maybe it's: How do we stay with what exceeds our instruments?
- Author 2:** Often, this is not silence, but something else: affective signals, temporal delays, gestures that resist categorization. We think of these as atmospheric replies, forms of presence that do not resolve into answers, but nevertheless register. To be "not legible" is not to be absent. It is to speak in a mode the method has not yet learned to hear.
- Together:** We've come to think of such moments not as breakdowns in research, but as epistemic residues. Traces that don't fit into codes or categories, but quietly reshape the encounter. They live in the pause before a reply, in the smile that defers an answer, in the sentence that begins and then let's go. This is not failure. It's friction. It's not lack, but latency. And perhaps: the unspeakable, as the method's most honest form of relation. If there is a method here, it is not in what we captured, but in what we allowed to remain. And it is in these remainders that something like knowing begins again. From these fragments, we invite others to listen differently.

## Unstable knowledge as epistemic residue

What remains when the method ends? Not always findings. Not conclusions. Often, it is something smaller: a moment of hesitation, an unspoken discomfort, a sentence that didn't fit. These fragments do not fail to be data. They simply refuse to be reduced. Throughout this paper, we have stayed close to such moments: pauses, recalibrations, silences, gestures. Not because they are dramatic, but because they quietly disturb the frame. They signal, in Donna Haraway's sense, that we are not outside the world we study, but entangled in it, responsively; partially, with all the uncertainty that implies (Haraway, 1988). They are what María Puig de la Bellacasa (2017) calls "matters of care," not in the moral sense, but as relational conditions that call for attention, even when they resist solution. In conventional research writing, these moments are often treated as background noise, as delays, breakdowns, missed opportunities. But for us, they have become something else: Ruptures that don't resolve, but

reorient. We have come to think of method not as a stable structure that holds knowledge, but as a relation that must be held, again and again, with care, and with doubt. Not as a tool, but as a tension: between what we ask and what answers us. Between what we expect, and what arrives otherwise.

This is why we speak of *unstable knowledge*. Not as something to be fixed or stabilized, but as a practice of staying with what resists resolution. With what interrupts sense-making. With what asks not to be translated, but to be accompanied. A shrug. A glance. A sentence that begins and dissolves. These are not marginal, they are epistemic events. They invite not certainty, but attunement. Not finality, but relation. For us, unstable knowledge is not a theory. It is what remained when our instruments fall silent. And sometimes, it is precisely in that silence, in what eludes capture, that the ethical and epistemic method begins.

## Afterword: On attending to what remains

This paper does not offer a better method, nor does it call for new formats or protocols. Rather, it emerges from a sustained discomfort with what research so often fails to hold: the gesture that doesn't reach completion, the sentence that hesitates and retracts, the presence that withdraws without leaving. These are not failed contributions. They are contributions that resist the way we tend to define them. They ask not to be captured, but to be accompanied.

In our encounters, we returned again and again to moments that exceeded our instruments. There is this moment that started the dialog of this paper; a woman stood up quietly during a public event, apologized gently, and explained that she could not follow what was being said, because she could not hear. She left without complaint, without anger. And in doing so, she offered a kind of critique that no feedback form could have captured: not against our intentions, but against the assumptions embedded in our setting. Her departure stayed with us: not as a failure, but as a call to listen differently. She did not ask for anything. She simply reminded us that inclusion is not just a matter of who is invited, but of who is able to remain.

What we have come to understand is that method cannot expect participants to adjust to its presuppositions, rhythm, language, or logic. It is the method that must adjust—slow down, shift focus, recalibrate—until it can hold the expressions, silences, and temporalities of those it claims to include. This adaptive capacity calls for what we might term an *epistemic elasticity* in our approach: a willingness to stretch our methodological frames around the unexpected, rather than forcing closure. This is not an issue of ethics (alone), but of epistemic integrity. If we claim to study relational practices, then our methods must be relational, too: responsive not only to what is said, but to *how*, and whether it can be said at all. This leads to a more difficult question: *What do we do with*

what is not said? What do we do with the unspeakable, the deferred, the withheld? In conventional qualitative research, we record, transcribe, and analyze. But what if the most meaningful parts of the encounter do not survive this process, not because we failed to hear them, but because they were never meant to be fixed in language? Perhaps these are not gaps to be filled, but silences to be honored: as affective residues, as ethical limits, as invitations to remain uncertain.

Our commitment to hesitation, attunement, and epistemic friction stands in contrast to increasingly procedural framings of qualitative research. In many disciplines, methodological quality is now measured through standardized checklists and rigid criteria, such as those outlined in COREQ (Tong et al., 2007). While such frameworks aim to ensure transparency and rigor, they often privilege structure over substance, process over presence. As Braun and Clarke (2021, 2024) have argued, this emphasis on proceduralism risks marginalizing forms of qualitative inquiry that are iterative, reflexive, and grounded in relation. We align with those scholars who view qualitative research not as a sequence of reproducible steps, but as a situated, ethically entangled process, where method must remain open to affect, contradiction, and silence. What we offer here is not a deviation from rigor, but a different account of it: one that centers responsiveness over reporting, and resonance over replicability. This is not a provocation, but an invitation: to join us in thinking from what remains unspoken, to stay with what escapes the method, the transcript. To ask not only what our methods reveal, but what they miss. And how we might learn to listen *there*.

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### Author contributions

Dana Mahr: Conceptualization, Writing—Original draft preparation, and Writing—Reviewing and Editing. Nora Weinberger: Writing—Original draft preparation and Writing—Reviewing and Editing.

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### Ethical considerations

This article builds on data from previous research projects in the care sector. All cited participant statements are drawn from studies that received ethical approval from institutional ethics review boards. The reuse and interpretation of these materials in the present article remain within the scope of the originally approved consent.

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### Note

1. By resonance, we do not mean agreement, but a subtle attunement between different positions. It allows for asymmetry and acknowledges; it registers affective or epistemic proximity without requiring closure. In our co-writing, resonance marks the point where dissonance becomes productive: Not through resolution, but through recognition.

### References

- Blackman L and Venn C (2010) Affect. *Body & Society* 16(1): 7–28.
- Bogner A and Torgersen H (2015) Different ways of problematising biotechnology – and what it means for technology governance. *Public Understanding of Science* 24(5): 516–532.
- Braun V and Clarke V (2021) One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology* 18(3): 328–352.
- Braun V and Clarke V (2024) How do you solve a problem like COREQ? A critique of Tong et al.’s (2007) consolidated criteria for reporting qualitative research. *Methods in Psychology* 11: 100155.
- Grunwald A (2019) *Technology Assessment in Practice and Theory*. Oxford: Routledge.
- Haraway D (2016) *Staying With the Trouble: Making Kin in the Chthulucene*. Durham, NC: Duke University Press.
- Haraway D (1988) Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist Studies* 14(3): 575–599.
- Harding S (1986) *The Science Question in Feminism*. New York: Cornell University Press.
- Jackson AY and Mazzei LA (2012) *Thinking With Theory in Qualitative Research: Viewing Data Across Multiple Perspectives*. New York, NY: Routledge.
- Jasanoff S (2003) Technologies of humility: Citizen participation in governing science. *Minerva* 41: 223–244.
- Mazzei L (2007) *Inhabited Silence in Qualitative Research. Putting Poststructural Theory to Work*. New York, USA: Peter Lang Verlag.
- Mol A (2008) *The Logic of Care: Health and the Problem of Patient Choice*. Abingdon, Oxon: Routledge.

- Pols J (2014) Knowing patients: Turning patient knowledge into science. *Science, Technology, & Human Values* 39(1): 73–97.
- Puig de la Bellacasa M (2017) *Matters of Care: Speculative Ethics in More Than Human Worlds*. Minneapolis: University of Minnesota Press.
- Smith LT (2012) *Decolonizing Methodologies: Research and Indigenous Peoples*, 2nd edn. London: Zed Books.
- Tong A, Sainsbury P and Craig J (2007) Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care* 19(6): 349–357.
- Tuck E and Yang KW (2014) R-words: Refusing research. In: Paris D and Winn MT (eds) *Humanizing Research: Decolonizing Qualitative Inquiry With Youth and Communities*. Thousand Oaks, CA: Sage, pp.223–248.

- van Est R and Brom F (2012). Technology assessment: Analytic and democratic practice. In: Chadwick R (ed.) *Encyclopedia of Applied Ethics*, Vol. 4. San Diego: Academic Press, pp.306–320.

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