More than visual: the apprenticeship of skilled visions

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More than visual: The apprenticeship of skilled visions

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Abstract

Skilled vision is more-than-visual because the enskilment of vision happens in intersensorial contexts and because it pertains to the broader formation of aesthetic and ethical sensibilities. Sensory and social apprenticeship coexist in practice. I dwell on the intersensoriality of learning to see in an analytical way and on the sociality and morality of skilled visions, using ethnographic examples from my fieldwork with food gardeners in the Netherlands and from other scholars who use a skilled-visions approach, notably Judith Willkomm on skilled listening in bioacoustic field research in Germany, Tom Martin on craft learning as perceptual transformation in maritime carpentry in the United States, and Jonathan Hankins on the apprenticeship of traditional upholstery in the United Kingdom. Each example shows how the realignment of visual perception in one's learning environment (with other senses, with technical apparatuses, and with human and non-human others) mediate the acquisition of perspicuity, namely the perceptual and aesthetic realization of each detail in their proper function and as appropriate to their context.

KEYWORDS
vision, apprenticeship, skill, skilled visions, perspicuity, learning to see

INTRODUCTION: SKILLED VISIONS

When the concept of *skilled visions* was first introduced (Grasseni, 2004), anthropological theory and ethnographic practice were busy distancing themselves from vision, as a concept and method that both metaphorically and literally was allegedly distancing and quintessentially oppressive. In other words, vision was being analyzed as "ocularcentric," "Cartesian," and "anachronistic" gaze (Fabian, 1983; Jay, 1993), thus reifying, disembodied, and abstracting. The skilled-visions approach claims that vision—just like the

other senses—is the result of plural, embodied, and socially embedded processes of enskilment. Thus, multiple skilled visions exist, as they are "the result of concrete processes of education of attention, within situated practices and ecologies of culture" (Grasseni, 2007, 7).

Within an expansive scholarship on sensory studies (Howes, 1991, 2003) and building on sensory ethnography (Stoller, 1997), the phenomenology of the senses (Casey, 1996), linguistic anthropology (Goodwin, 1994), and cultural-historical analysis (Classen, 1993), vision is revalued as a legitimate object of ethnographic study. This is evident in medical anthropology (Saunders, 2008), history and anthropology of science (Bleichmar 2012), and ethnomethodology (Mondada 2021). The initial blanket critique of visualism has slowly transitioned from outward aversion to anything "visual" (often mistaken as equivalent to "textual" or to "represented through visual media") to a fertile methodological reflection on how multimodal media and ethnographic embodiment can deliver nuanced anthropological insights (Cox, Irving, and Wright, 2016; Pink, 2011).

Skilled visions (in the plural) are dynamic, transient, apprenticeship-learned, and context-dependent. In short, "skilled" vision is "learned" vision. My analysis of skilled visions so far has emphasized the plurality and diversity of modes of visual perception. With the following ethnographic examples, I add that the apprenticeship of skilled vision intrinsically exceeds visual perception in the strict sense of the term. It is more-than-visual.

First, "enskilment" (Pálsson, 1994) happens in contexts where a complex process of embodiment "mediates" skilled vision (Grasseni and Gieser, 2019), often using the interaction of two or more senses, proprioception, and purposeful action to achieve perceptual acuity, with or without the intervening mediation of high-tech tools, such as recording media, but also with low-tech tools for specific practices such as carpentry. For example, Thorsten Gieser and I explain how learning to aim with a rifle requires a concurrent enskilled proprioception of the body, the weight of the rifle, and muscular alignment (Grasseni and Gieser, 2019, 11–12). In the first part of this article, I investigate ethnographic examples of similar proprioceptive and cross-sensorial triangulations to show that in what I call the "perspicuity" of context, evidence and learning result from purposeful realignments of one's senses with those of others over time. I analyze this with ethnographic examples from gardening, bioacoustic sensing, maritime carpentry, and upholstery apprenticeship.

Second, "learning to see" requires being initiated to a community of practice (Lave and Wenger, 1991). Using the gardening and upholstery examples, in the second part of the article I focus on how learning to see means adapting one's perception to social rules, coming to embody more-than-perceptual sensibilities by literally aligning oneself with the point of view of more expert practitioners. This contributes an analytics of visual enskilment as more-than-visual to the anthropological theory of vision. Over stages of apprenticeship that coincide with a process of enskilment (Ingold, 1993, 221), one aligns one's posture and field of vision as well as one's aesthetic and ethical sensitivities.

My overall argument is that seeing is collective and learned, mediated by other senses and materials, and a crucial part of co-constituting people as skilled practitioners. Apprenticeship is a particularly useful moment to consider the more-than-visual nature of this complex and multifaceted enskilment, because of its relational and sensory intensity and because it is often analyzed and made overt by masters and peers when they try to explicitly guide their pupils through particularly significant learning moments. Additionally, it works as a usefully "thick" metaphor, because visual enskilment is in essence an apprenticeship—in both sensory and social terms.

Taking seriously Tim Ingold's (2005, 97) invitation to "take the study of eyesight back where it belongs, out of doors," I start from my own apprenticeship as a food gardener in Utrecht, the Netherlands, during 2020, while also drawing from additional case studies from ethnographers whose work exemplifies a skilled-visions approach. Within this ethnographic context, I analyze the sensory experience of "learning to see" in a food garden, showing how visual enskilment is achieved by mimetically aligning one's gestures of looking with the suggestions and ostensive demonstrations of peers and seniors. I call perspicuity the resulting, learned capacity to recognize at a glance what is relevant or merits further attention in a field of vision, and which course of action this realization should lead to. This in turn will help rearrange the field to make manifest further evidence, inviting further action (as in the example I cite of recursively

weeding the same garden patch). I then extend this consideration to Judith Willkomm's (2016) work on "skilled listening," which further demonstrates that bodily arrangement in space, proprioception, and an inter- and cross-sensorial complex result in relevant realizations of perspicuity also in bioacoustics. Two additional examples from Tom Martin's (2021) craft ethnography in maritime carpentry and Jonathan Hankins's (2020) autoethnography on upholstery apprenticeship support my point that "learning to see" is *more-than-visual*, namely, involving not only more than one sense but also the morality and sociality of skilled vision.

PART 1: LEARNING TO SEE

In the garden

From April through November 2020, I joined a food gardening course with other curious beginners. It was hosted by an association sponsored by the municipal government of Utrecht, the Netherlands, to manage public urban farms and to encourage environmental education among its residents. Our training was delayed by the COVID-19 lockdown, but we managed to exchange seeds and instructions by post, grow seedlings at home, and finally meet in the field in May 2020, rather delayed on the planting calendar. I use pseudonyms for everyone mentioned. On a Saturday in June, I stood with a group of six people around the instructor, Corinne, feeling in many ways out of place and untimely. Having started late, our apprentice gardens looked bare compared to those of the experienced gardeners on the other side of the field, who were already beginning to harvest. Finally allowed to assemble in small groups, we transplanted our home-nursed maize, courgettes, pumpkin, kale, cabbage and seeded rocket salad, carrots, parsnips, and bee-friendly and edible flowers. After many weeks of splendid sunshine, during which we could not leave our homes except for short strolls, the clay ground was hard as stone. Then, heavy rains made the soil—crumbled by our handiwork—the perfect bed for weeds, which were springing up quicker than our seedlings. Trying to adhere to the prescribed one-and-a-half-meter social distancing, Corinne instructed us how to weed our beds.

We crouched down in the hopeless realization that "they all looked the same": delicate seedlings and encroaching long-rooted weeds. Some of us groaned, realizing that we had just weeded out our own seedlings. Corinne picked up two leaves, placed them side by side in her palm, and asked us to detect the difference between them. I volunteered the impression that the one had no grain running down the length of the elongated leaves, while the other did. It felt a bit like a "hot seat" routine as used in medical schools (Saunders 2008). To discern this difference required observing the contents of Corinne's palm from up close. Drawing closer, we startled when our heads got too close together, because we were not wearing face masks. I realized, however, that those standing apart at the prescribed distance had no chance of seeing the difference in the leaves from there. Then Corinne dropped a pearl of wisdom:

> When you are weeding a plot and you don't know quite which is which, start by weeding out the ones that you are absolutely sure are weeds—all of one sort. Then take a fresh look, and you will notice more differences among the leaves remaining. Take out another sort you are sure of. Then take another fresh look. In the end you should only have the plants you want. Weeds are what you don't want in your plot. If in doubt, ask an experienced gardener.

Those of us who were already stretching up or had moved on to look at another crop were no longer within hearing range and missed this moment of learning. Marija had heard and listened but shook her head, finding the task too daunting. Jonny and Ineke nodded attentively and exchanged a knowing look: "This is excellent advice."

Then we moved into the "lab," that is, our individually allocated gardens, where we uncertainly tried out our theory in practice. In my plot of overseeded lettuce, I had made the mistake of sowing too tightly, casting seeds single-handedly instead of depositing them in thin rows. Now the advice was to "pull up a

clod at a time and thin out the individual seedlings to replant them nearby." As I tried to do so, I noticed how much better I could pick out the pale-green slender leaves from the much thicker weed with dark-green rounded leaves that I wished to sieve out. Within an all-lettuce handful, the clover-type weeds stood out. If, on the other hand, I just looked down on the uneven bed, spotted with choked lettuce in one area and with thriving greenery in another, I found it difficult to tell where the lettuce ended and the weed started. I looked but could not see. As Corinne had advised, telling one from the other was a question of taking a fresh look in progressive stages, comparing only manageable portions of my field of vision.

Perspicuity eventually develops if one manages to frame the right environment to be able to see: taking things in stages, not staring blankly at a whole plot but sieving through only a manageable handful recursively. But it is not just that. It is also a question of following procedure, of asking for and listening to advice, of learning to appreciate the telling details that the instructor points to. For example, it was necessary to physically align my act of looking with Corinne to appreciate the difference between the two leaves in her palm. This required proactive bodily repositioning on my part, coming close to her, with the unease that this caused, to change my experience of seeing. Only then could I apply this strategy to my own plot and appreciate that taking a fresh look meant recreating the juxtaposition of the two different leaves—lettuce seedling and clover-type weed—that I learned to see into Corinne's hand.

An aha moment came with the sensory realization of having achieved an enhanced form of perspicuity—something that we may refer to simply as *learning to see*. I learned to see the differences between plants that previously looked indistinguishable to my untrained eye. But this was the result of a complex interaction and sequence. First, the instructor provided comments and advice with words. Second, she physically gestured and pointed. Third, she demonstrated how she can distinguish between two plants that looked identical by crouching in the field, pointing from up close with her fingertip to one type of leaf as opposed to another. Finally, she picked up a handful of leaves, placed them in her palm, stood up, and held out her hand. This sequence of ostensions progressively rearranged my field of vision. My attention was first drawn to having to compare specific plants, then applied to a couple of concrete items, then practically oriented toward how to frame that comparison. Only then could I finally notice what had by then become perspicuous features in a manageable frame, namely, two distinct plant forms in Corinne's palm. Consequently, I was able to transfer that realization in my own plot, reproducing in my own palm the manageable form of juxtaposition that Corinne had brought me to see, step-by-step.

What kind of knowledge does one acquire through such sensory training? To begin with, we can appreciate that successful teaching of it means putting others in a state of repeating a similar process of realization—the aha moment described before. But to learn from Corinne, the apprentice gardeners had to be proactive—getting in close, keeping within earshot, positioning themselves in the right spot to follow the direction and angle of the teacher's pointing and other gestures. The synching and resonating between teacher and peers are crucial, not only to see what they are supposed to but to confirm that it has "worked." In my field example, this was the moment at which some of the peer learners exchanged knowing looks, as if to remark, "Now I get it," and got confirmation from one another that they had reached the same moment of realization.

Corinne's instruction for weeding reiterated the following procedure: focus on one known weed at a time, and clear a patch of it first. Then reassess what becomes visible in the same patch as a result. Ideally, identify a second type of weed and clear the patch of that one too. Then take a fresh look again, and so on. To apply this instruction concretely required practicing these steps in sequence. First, coming in close and positioning ourselves comfortably, for example, crouching, ready to engage with the patch. Second, marking the boundaries of a given area, either mentally (with one's eyesight and points of reference in the ground) or physically (with sticks). This would become the frame for our field of vision, at once constraining and enabling our attention to pick out the relevant details in a manageable portion of land. Bodily, this meant using not only our eyes but also our hands, picking up leaves and comparing them. It also meant proceeding sequentially and methodically, scanning the ground with eyes and hands with regularity. As a result, our visual perception of the garden changed. What initially looked like a messy overgrowth of many varieties, initially barely differing from one another, was reconfigured through sequential and recursive action, over time.

As apprentices, we learn to create the right frame around a given "scene," manipulating our visual field, slicing analytically through it. Skilled vision is about getting at this right framing of vision, parsing out crowded details and tuning into the relevant features in the blinding cacophony of the visual field. David Howes's (2006) study on scent, sound, and synesthesia illustrates that this process has to do with "those qualities which cannot be reproduced in photographs" (169). We have here the result of what Howes terms "intersensoriality" (164)—when vision becomes enskilled through collaboration with attention, proprioception, purposeful and repetitive movement, as well as the communicative "gestures of looking" that connect instructor and learners. Yet, Howes maintains that "those qualities" are not reducible to "the feel, the weight, the smell, the sound" (164) either; they remain eminently connected with the visual. But they are more-than-visual and have to do with the constructed, grounded, and engaged nature of context, evidence, and learning—as I argue next.

PERSPICUITY AS A RESULT OF PURPOSEFUL (RE)ALIGNMENTS

Context and evidence

This section draws on the seminal work of Ludwick Fleck, the Polish immunologist and philosopher of science who pointed out that "the art of observation is not a general one" ([1935] 1986a, 60). In other words, being able to see something is the result of learning where to look and how to look for specific features. Further, the need to see-in-context *informs* the context itself—it shapes the context and what features in it. Consequently, unlike procedural and instructional learning, which is supposed to work in any context, apprenticeship inculcates a specific orientation and a style of engaging with a specific (portion of) reality, shaping it to enable "the form [to] stand out against a background" (Fleck [1935], 1986a, 60). We saw an example of this with Corinne's apprentice gardeners, who were encouraged to single out a portion of land to weed and learned to look out for one type of weed at a time.

Fleck's foundational work examines in depth how one has "first to learn to look in order to be able to see that which forms the basis of the given discipline" ([1935] 1986a, 60). In another study, he maintains that this applies not only in a science laboratory but also in a street, a museum, social life, the field, or at the craftsman's bench ([1947] 1986b, 130). For Fleck, context is inextricable from observation and includes both the material surroundings of the observational event and its relational field. Against positivist assumptions, scientific knowledge is not founded on context-independent observation. In fact, all knowledge requires orderly forms of exposure to specific methods and styles of reasoning, which constitute apprenticeship. The training, cultural background, and expectations of the "observer" concur to constitute facts (Fleck, [1935] 1979). Fleck referred to "thoughts collectives" and "thought style" to express what were only later developed as theories about the social construction of scientific knowledge (see, for example, Hacking, 1982 on "styles of reasoning").

In our ethnographic case, what matters is not the correctness of evidence per se (what is a weed) but its relevance to the context (which plants one wants to grow and how one recognizes unwanted plants). In other words, the determination of what is the weed is context-defined.

Ethnography has a lot in common with the epistemology of the Polish immunologist, because both find knowledge in practice rather than in definitions. An empirical attitude to visual knowledge takes practice as a starting point for progressively pinpointing and circumscribing what is taken as a given, as self-explanatory, and as "for all to see" (in other words, as evident). Crucial to this process is the need to clarify how evidence becomes evident. This happens in specific circles of practitioners, characterized by their own social institutions, historical processes, learning styles, shared procedures, etiquette, hierarchies, and training. In these localized contexts, the form of ostension of "relevant evidence" allows others to reproduce it. Perspicuous vision presents itself only to the initiated as a result of attentively and recursively arranging oneself in complex interactions with others and with relevant tools and materials.

Fleck noted that this is not accidental to (visual) knowledge but is intrinsically constitutive of it (Löwy, 1988). Moreover, Fleck underlined the importance of training for the adoption of a given "thought style"

(Löwy, 1988, 141) and explained how different thought styles may well coexist in principle, but *in practice* they do not, at least not in the same "thought collective" and about the same object. Thus, learning to see something also means losing the capacity to see it as something else. As Fleck ([1935] 1986a, 60) explains, in principle the same data is available to the semeiotic eye of a general clinician or of a tissue specialist. However, the two will look for different details and will have developed a habit of being receptive to particular configurations of cues and clues, and not to others.

Learning and alignment

The training of perception—in particular of visual skills—has been amply investigated in the history and philosophy of science. In the cases investigated by ethnographers of the field sciences—e.g., Charles Goodwin (1994) observing archeology students in field schools or Bruno Latour (1999) working with soil analysts—these interactions entail rearranging and preparing the ground, involving materials, tools, and techniques of sampling and gazing. For example, soil sampling may entail gathering dirt in a dustpan and peeking at it through the holes prepared in Munsell standard color charts, to match exactly and thus detect the hue of the terrain in that particular spot. For Corinne and her apprentices, preparing the ground entailed a number of purposeful and recursive acts that would orient and direct their gestures of looking: placing a handful of picked seedlings in one's palm, then proceeding to weed them out of a tiny parcel of land, one type at a time.

As Ingold (2000, 5) established, skills are "incorporated into the *modus operandi* of the developing human organism through training and experience in the performance of particular tasks." Hence, they cannot be transmitted as a set of procedural steps *only*. Between Corinne and her apprentices, there was no direct procedural transmission of knowledge in abstract terms but rather the demonstrative ostension of skilled practice, while the apprentices attentively observed and imitated: "To observe is actively to attend to the movements of others; to imitate is to align that attention to the movement of one's own practical orientation towards the environment" (Ingold, 2000, 37). To be sure, Corinne provided us with a set of instructions: start with weeding one sort of greenery from a minuscule patch of dirt, then another, then another, beginning with what we were absolutely certain was a weed; then move to shapes and colors distinctly different from the planted seedling, until only two or three types of leaf shape and pattern are left—and at that point the relevant differences from the desired seedling will be easier to detect. However, this propositional knowledge by itself was insufficient to enact learning on our part. First, Corinne gave the advice in the context of a garden round and of a specific series of practical demonstrations, gesturing, commenting, and holding items in her hand. Second, we were required to embody this sequence of actions, and the perception it ensues, in our own experience, to "realize" it. Only the act of following that sequential procedure caused certain details to stand out over others.

What happens in this act of following? Thorsten Gieser (2008, 300) proposes "empathy" to pinpoint this in-between space between observation and imitation: "Something that connects the movements of two people." "Practical mimesis" is necessary to "bringing into relief a reciprocity of viewpoints" (Jackson, 1989, 130, quoted in Gieser, 2008, 300). In the case of Sarah Pink's "walking ethnography" in a community garden, one's "own sensory embodied experience" becomes "a basis from which to empathize with others" (2007, 243). Both suggestions are relevant for our analysis, as the apprenticeship of gardening perspicuity depends on the purposeful (re)alignment of moving bodies in space, so that their fields of vision allow them to recognize the same features. As a result of this alignment, different people come to share the same perspective, as well as the bodily practice and the reciprocal communication that informs perception. Furthermore, in our case, "the process of entering the perceptual world of another person" (Gieser, 2008, 301) is the phenomenological result of imitating and following, moving and watching, intentionally rehearsing, and purposefully reliving a first-person singular experience of the aha moment, when recognizing for oneself "the evidence" of how weed differs from seedlings.

Michael Herzfeld (2009) underscores that bodily alignment accompanies learning a new language in a new culture, specifically mentioning mimicry and bodily posture. This "discovery of cultural knowledge"

(Gieser, 2008, 301) is not just something that happens to a generally sensing-sentient subject but is an intentional infusion of meaning and purpose that realigns, rearranges, and reshapes the (visual) field in a certain way. While agreeing with Ingold (2005) that vision "unfolds in circuits of action and perception, without beginning or end, that are set up through the placement of the perceiver from the outset as a being *in* the world" (99, emphasis in original), I focus analytically on the proactive (re)positioning of the perceiver. The dynamic rearrangement of perceiver(s), context, and what is evidenced in the context goes beyond mere "resonance," and "commingling of the perceiver with the world" (100) and requires a purposeful and disciplined training of attention. In the following section I draw on in-depth ethnographic examples from other scholars to show how this more-than-visual field of engagement is honed by purposefully aligning vision with other senses, sometimes through the mediation of bespoke technology.

THE SKILLS OF VISION ARE MORE THAN OCULAR

What the previous field example has hopefully shown is that visual engagement is not a "spectacle," which by definition is "a mode of seeing predicated on notions of transparency and immediacy" (Bleichmar, 2012, 47). On the contrary, my analysis of skilled visions shows how enskilment involves training and concerted effort. Contrary to naive expectations of finding evidence "out there," evidence is produced in doing, and not in discovering. Furthermore, as alluded to above, the skills of vision are not only laboriously honed, they are more than ocular. The following examples from Judith Willkomm's (2021) research with bioacoustics field scientists and Tom Martin's (2021) work on the apprenticeship of maritime carpentry provide apt illustrations of that. In Willkomm's (2021) work, visual and auditory competence align with mediating apparatuses such as spectrometers and field recorders, allowing the viewer-listener to pick up and react to a complex range of factors, only partially perceivable with each of the two senses, within the surrounding animal and material environment. Martin (2021) elaborates on the complex process of alignment of sensory attention and further dwells on the meaning-making process that accompanies craft learning in maritime carpentry.

In the dark

Bioacoustics is the study of animal communication. Willkomm (2021) draws on the epistemic cultures of bioacoustics, as formulated by Karin Knorr Cetina and Werner Reichman (2015, 873): "When you study epistemic cultures you . . . investigate how practitioners distinguish signal from noise." Distinguishing signal from noise in bioacoustics research on bats is a complex field endeavor, dependent on the interrelationship of technical media with human perception. "Listening" to bat calls involves this process: in the dark of night, fieldworkers stare at the backlit screens of their laptops. An ultrasound microphone traces and codes inaudible sound in a live spectrogram. Visually recognizable patterns signal specific clusters of calls, answers, or refrains to the trained eye of a professional "bat listener." At the same time, the audible parts of the song elements can be captured with one's ears. Fieldworkers then combine looking at their screens, which code a complex acoustic situation, with listening and sensing the flittering in the dark. The female bats attracted to the males' songs come closer, which helps the researchers orient their ultrasound microphones in a cross-sensorial proprioceptive probing. As Willkomm explains:

> The microphone only captures ultrasounds in the immediate vicinity and is only partly receptive to the audible elements of the bat calls and songs. However, the live spectrogram helps to perceive this complex acoustic situation because it leads [researchers] to identify and differentiate among bat calls, and therefore distinguish more closely between the song elements and species. It not only shows things that one couldn't hear, but the eye also trains the ear to listen more carefully to the audible parts of the bat calls and songs. (personal communication, July 8, 2020)

Her point is not about synesthesia (it is not that bioacoustics scientists "see" the bat calls they cannot hear). Rather, the epistemic culture of bioacoustics researchers includes collaboration among the senses—seeing tracks guides the hearing of what *can* be heard and the orientation of the ultrasound microphone to pick up what cannot be heard with human ears. The researchers also consider the mediation of the senses—via the microphone, spectrometer, and software translating ultrasound frequencies into visual tracks. Skillful listening to bats is mediated by skillful observation of the spectrometer, combined with skillful (re)orientation of the microphone in the dark according to both spectrometer and audiovisual perception. One sense aids the other through a complex visualizing apparatus (Willkomm, 2018). As Wilkomm puts it,

> Especially in this case, recording media are very relevant as they transform sound into spectrographic images. Field researchers "listen" to the ultrasound bats' calls by learning to navigate their visual and experiential field in relation to the recordings in the spectrogram. That is to say, they correlate what they actually see on a screen with what they cannot or only partly can hear, by following the very specific traces created by their recording instruments. (personal communication, July 8, 2020)

Willkomm not only proposes to take mediation into account in sensory perception, she underscores that in this triangulation, researchers become aware of the limits of their media, and of their own senses, as they learn to surf those boundaries while probing in the dark.

Willkomm's work confirms my argument so far that the sensory apprenticeship of skilled vision is more-than-visual. Side by side, our ethnographic examples show that several senses need to collaborate and be purposefully calibrated to achieve perspicuity: that is, the experience of perceiving a given item (or arrangement of items) as conspicuous to perception, relevant to context, and evident to expert scrutiny. In other words, relevance and evidence can be brought into relief within a cacophony of opaque features, populating what is otherwise perceived in my case as an overcrowded visual field (the messy garden) or in her case as an empty sensory field (the dark and apparently silent night). This entails physically (re)aligning one's body with that of others (instructors or peers) to "frame the scene" of one's field of vision and, as a result, come to notice the same features or arrangement of features as the others, in a relevant way. Evidence is mediated, channeled, and shaped through these purposeful acts of realignment. Sometimes these involve the mediation of technical apparatuses, as in the case of bioacoustics, or of low-tech tools, as in the next example from carpentry. In all cases, the extension of visual enskilment to other senses and media makes skilled vision more-than-visual. So far, my gardening ethnography illustrated how learning to see involves shaping context, constructing evidence, and learning as a result of the purposeful realignment of body and senses. The bioacoustics example makes a further case for the "distributed" nature of seeing (see Hutchins, 1995). The next section focuses on the multimodal "worlding" of maritime crafting.

On the ship

Tom Martin (2021) studied how wooden boat builders and restorers "get the feel" for their tools and materials through the development of practical forms of understanding. Inspired by Martin Heidegger's philosophy, Martin (2019, 13) maintains that their craft learning "realizes" specific "tools and materials" within their phenomenal world, with which they interact in specific ways. For example, scratches on polished hinges can be read by an expert eye as indicating the result of "the gradual accumulation of layers of meaning" left by the expert interventions of hands who have successively applied themselves to it (Martin, 2019, 148, 178). This "realization" is the result of having gone through an education of perception. The expert craftsperson's ability to read such minutiae in the world around themself is different, not just "more" than that of the layperson. Recognizing the meaning of minute details in craft can only be appreciated through what Martin, borrowing Heidegger's ([1927] 1962, 93) term, calls *Umsicht* (circumspection or looking around): "Through circumspection, one sees, feels, hears, or otherwise perceives objects in

ways that are defined by the meaningful interrelationships in which they exist" (Martin, 2019, 55). The result of "the gradual accumulation of layers of meaning" is thus qualitative, not quantitative. It produces what I earlier called aha moments, "starting to 'see as,' recognizing objects in terms of the roles they play" (Martin, 2019, 187). Like the garden experience, bodily knowledge and "circumspective perception" are defined in context, through pedagogical processes that are instructed, incited and monitored by more experienced peers, including their approval after noticing that one indeed "got the feel" (Martin, 2019, 203).

Crucially, then, these are neither solitary nor simply incremental explorations. The apprentice will not learn on their own by "trying harder" or for a longer time. As Geoffrey Gowlland (2019, 511) explains in his work on the sociality of enskilment, the time it takes to sediment this recursive process is not linear but granular. Periods of repetition, acquiescence, and boredom are interspersed with moments of realization, during which "suddenly things click into place, and we 'get it'" (2019, 508). We can describe process and result as a dynamic movement of "alignment" that brings about "perspicuity" or, in Martin's (2019, 57) words, creates "compatibilities in ways of perceiving practical objects."

Once shared across communities of practice, this understanding encompasses a "we-world" (Heidegger, [1927] 1962, 93), meaning that "multiple individuals experience meaningful objects in the same way" (Martin, 2019, 54). Ultimately, these communities of woodworkers understand each other across multiple naval carpentry workshops—more than they would understand sailors on the very ship they have restored. This means that when they apply their expert eye to their working environment, craftspeople perform not only technical but cultural competence. Focusing on the subjective experience of learning to "look around" or "see as," Martin insists on the quality of circumspective perception as a form of "understanding," as if through sensory apprenticeship we could better appreciate a more profound "meaning" of the material and relational world around us.

"Getting the feel" also includes learning a certain type of aesthetics (Martin, 2019, 229): "Learning is experienced as a transformation of the learner's phenomenal world" (273). As the Heideggerian word "circumspection" suggests, learning to see is also learning to look around—an experience of personal reconfiguration, not just of mimesis. The initial focus on function (getting things right) gives way to "seeing objects as historically accurate, culturally viable, or even aesthetically pleasing" (275). The use of the word "fair" (203) by research participants is telling of this aesthetic achievement, which is "pleasing," as naval carpenter "Mitch" says (202), and not just functional.

This brings me to the second part of my argument, about the morality and sociality of visual apprenticeship. So far, I have argued that the extension of visual enskilment to other senses and media makes skilled vision more-than-visual. However, this extension resonates with aesthetic and ethical appreciation of professional accomplishment. This is evident in the early work of Gísli Pálsson (1994) on skippers "getting their legs" at sea, but also in Tom Martin's (2019, 2021) work on maritime carpentry. Perspicuity is also pertinent to the collective moral knowledge of practitioners. To show that, I next return to the social enskilment of vision during my own apprenticeship as a food grower.

PART 2: THE SOCIALITY AND MORALITY OF SKILLED VISIONS

The literature has eloquently documented that apprenticeship entails not merely a learning curve but a relevant sociality, procedural knowledge, and routines *about* learning (see, for example, Downey, Dalidowicz, and Mason, 2015; Lave, 2019). Apprenticeship concomitantly "carv[es] a social position within a community of practitioners" (Gowlland, 2019, 509) and shapes worldviews through this positioning. In addition, my argument here makes an explicit connection among the sensory and the social aspects of more-than-visual learning. Perceptual apprenticeship is socialized and thus shapes and articulates not only how we sense the world but how we *orient* ourselves in it, in sensory, aesthetic, and ethical terms—how we *belong*. This means that embodied forms of social knowledge are learned through situated experience in bodily practice while immersed in (human and nonhuman) relationships.

Seeing is not just a matter of using our eyes. We see in collaboration with the other senses and through the mediation of materials and apparatuses. Furthermore, embedded dispositions co-constitute skilled visions. There is a moral and social tint to this, partially expressed by Heidegger's concept of "circumspection," as noted by Martin (2019) above. This is even more germane to the notion of habitus, which Pierre Bourdieu ([1980] 1990, 214) compared to the French semantic meaning of disposition:

> The word disposition seems particularly suited to express what is covered by the concept of habitus (defined as a system of dispositions). It expresses first the result of an organizing action, with a meaning close to that of words such as structure; it also designates a way of being, a habitual state (especially of the body) and, in particular, a predisposition, tendency, propensity, or inclination.

But how does one learn an inclination? As opposed to just following instructions, relevant forms of learning include active engagement in lessons on-the-go (as in our tours of each other's vegetable patches with the gardening instructor), extemporaneous interactions (such as the occasional piece of advice reaped from senior gardeners), and even the painful hearsay "through the grapevine" that *your* vegetable bed is unacceptably ridden by too many weeds—as I illustrate next.

Back in the garden

By the end of June 2020, we heard from our teacher that the master gardeners had been complaining about the sloppy maintenance of our collective plot. We each had an individual learner's plot, and together (a group of eight) we managed two collective plots where we had planted the biggest growers, including pumpkins, courgettes, and peppers. Apparently, we had been too cavalier with weeding. The expert gardeners monitoring us from the other side of the field feared that this might bring disorder to the community (see Figure 1). However, this fear did not seem to have a practical reason, as "our" weeds were too far from their lots to be encroaching. It was an aesthetic and moral issue of cleanliness. Our plots clearly did not look good. As is typical of an apprentice, I sulked. After all, what functional purpose was this criticism serving, if not that of putting us in our place? I voiced my ambivalence with a moral counter-argument by observing, polemically, that the master gardeners were, after all, letting their salad bolt (see Figure 2)—what a shame to see such a waste! At the same time, though, I sensed how this lecturing was part and parcel of masters' and learners' reciprocal adjustments and (re)alignment in the field. This includes the seniors' active claim to superior experience as well as hierarchy and prestige.

A few days before, I had felt most grateful to the eldest gardener, who came over and advised us to remove the baskets we used to protect the greens from preying birds and instead to cover the cabbage shoots, as they are tasty to local crows. Once grown, the best way to protect cabbage, sprouts, and beans, is *not* to cover them (the baskets prevent plant growth) but to create a barrier of cone-shaped baskets all around them, like a battlement encircling a fortress. Pigeons and crows do not land on the plants they want to feed on, and they do not like landing on the plastic baskets either. If there is no exposed ground, the birds will leave the plants in peace (see Figure 3).

Observing animal behavior and inferring predators' perceptual preferences is an important part of the gardeners' expertise. Their daily ecologies extend to nonhuman actants—the senior gardener being a human actant whose enskilment allows her to make appropriate adjustments to the material disposition of the garden, to consider nonhuman agency (the birds eating the cabbage sprouts). Mark Anthony Arceño's (2020, 38) recent work similarly describes how "winegrowers' sensory perceptions may be indicative of a range of changes they are experiencing." This is a clear reference to the effects of climate change from the early ripeness and excessive sugar content of the grapes, connected to the fluttering noise and juicy wafts from the fermenting grapes attracting fruit flies, mosquitoes, and bees. In both cases, the "ecologies of production" (Paxson, 2013, 32) of winegrowers and food gardeners include attending to each other and to nonhuman actants, proactively intervening (when possible) in the layout of the garden, reconfiguring it

FIGURE 1 Food gardens at an urban farm, Utrecht, the Netherlands, May 2020. *Source*: Photograph by Cristina Grasseni. [This figure appears in color in the online issue]

as we reconfigured our visual field following the instructor's advice to only weed one plant at a time. Both reconfigurations are routes to becoming "experienced," in terms of enhanced perception—the capacity to anticipate what the birds may or may not do to the crops according to their affordances. Furthermore, they enhance seniority, that is, the public recognition of expertise, in a community of practice.

It is evident that 'this gardening community's' common-sensing encompasses not only perceptual sensing (which is more-than-visual) but also aesthetic appreciation and ethical inclinations about, for example, what the garden should look like and how weeds should be removed from sight. Appreciating perspicuous evidence as a member of a community of practice can mean clearly distinguishing differences that went previously unnoticed or observing objects in greater detail than usual. But it also includes the familiar

FIGURE 2 Salad overgrowth in wet weather, Utrecht, the Netherlands, July 2020. Source: Photograph by Cristina Grasseni. Courtesy of Jonathan Hankins. [This figure appears in color in the online issue]

sensation of noticing something that stands out like a sore thumb, with inevitable aesthetic and moral connotations, like how this is usually contrasted with a job well done. This was inculcated in the gardening apprentices by criticizing their sloppy garden beds while at the same time sharing tips about birds. Sociality in all its facets is fully implicated in these interactions: the ostensive demonstration of senior experience, the review of peers' results, the proactive garnering of additional tips, and the individual or collective self-chastising and soul-searching when subjected to the scrutiny of seniors.

The apprenticeship of skilled visions delivers not only what I describe as perspicuity but also what Gowland (2019, 510) terms the "co-becoming of persons" and what Trevor Marchand (2008, 245) calls "personal formation." In fact, the two concepts are co-implicated—perspicuous looking is not just functional, it is also moral. Ethnographic literature on apprenticeship has highlighted the importance of peer learning, peer emulation, as well as master–apprentice relations. As noted by Michael Herzfeld (2003) in his

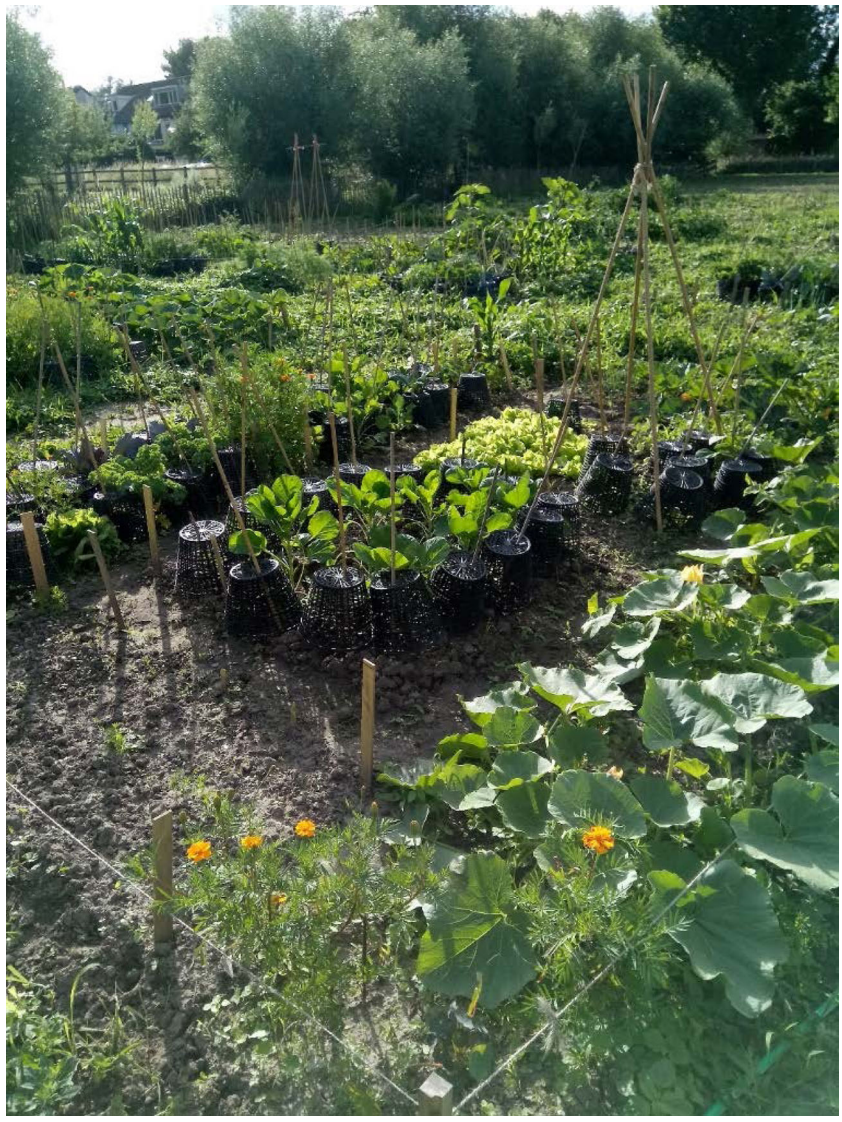

FIGURE 3 Detail of food patch demonstrating the technique of encircling plants with cone-shaped plastic baskets to prevent birds preying on them, Utrecht, the Netherlands, June 2020. Source: Photograph by Cristina Grasseni. [This figure appears in color in the online issue]

ethnography of artisanal apprenticeship in Crete, the transmission of skill is not a benign and incremental succession of observation and imitation but can be a highly ambivalent and uneven process of boredom, emulation, and peer competition, and even active discouragement from learning! Notably, Herzfeld (2003, 107, 132) asserts that learning happens sometimes not thanks to but despite the master, as one must "steal the trade with one's eyes." In fact, a successful apprentice ultimately replaces the master (or becomes a competitor). This scholarship on the complex and ambivalent social dimension of enskilment is key for expanding a strictly phenomenological reading of skilled vision and coming to appreciate its social and cultural dimensions, precisely as these, too, become embedded in the daily gestures, manipulations, and orientation in space of skilled practitioners. If we focus not only on the intersensorial and technical mediation but also on the social mediation of sensory apprenticeship, we can observe how silently pervasive

aesthetic preferences and tacit assumptions eventually become integral parts of the phenomenological reconfiguration that perspicuity entails, as the following final ethnographic example shows.

In the upholstery workshop

Jonathan Hankins's (2020) self-ethnographic study of learning traditional upholstery in Manchester focuses specifically on the moral undertones of peer recognition as a result of enskilment. Upholsterers learn to recognize their peers' skill in the final artifacts, to the point of being able to tell, even years later, which pieces of furniture were covered by one individual rather than another, because of the very personal styles and technical solutions that one practitioner uses and the very small number of workshops existing in one particular area. For example, some prefer to use cotton wadding over horsehair padding; others use shortcuts such as Dacron synthetic wadding to camouflage sagged or uneven spots due to worn springs or compressed wadding in the middle of a settee. These choices remain detectable at first glance by an expert, even without seeing what lies under the surface of the final cover. Hankins (2020, 133) bases his ethnographic case study on his personal experience of a four-year apprenticeship as a furniture restorer, hence his claim: "I can see, and share with my fellow workers, an understanding of the choices that were made during the restoration process and the reasoning behind them."

Crucially, "skilled vision" is also about the capacity to detect aspects or phases of the work that have become invisible, as articulated by Hankins:

> I can look at a finished piece and understand how it has been technically constructed under the top cover, hidden from a non-skilled viewers' perspective. I can understand the choice of materials, not only in economic terms [Dacron is cheaper than cotton, and foam is much cheaper than horsehair], but also in terms of what should or should not be used in different contexts and more importantly, why. I can see if the job has been done right according to my own particular workplace narrative. (133)

He further argues that through "workshop narratives," aesthetics is appreciated as a form of moral accomplishment (16). In these narratives, the work of furniture restoration is not entirely evaluated in terms of functionality or durability but more broadly described as a form of responsibility, dependability, and fairness.

Furthermore, Hankins notes that this particular "skilled vision" can be applied to physical spaces, in particular manual restoration workshops:

> I am able to see the organization of the working process through the physical organization of the workshops in question. A skilled vision regarding workshop organization allows me to look for and see patterns found in other situations, home-made tools, the placing of artifacts on the walls, the use of several generations of technology side by side.' (Hankins, 2020, 133)

He concludes that this understanding is not dependent on explicit narratives exclusively, nor is it inscribed in the artifact per se, but emerges in a complex relationship between attention, habit, representation, distributed cognition, and a broad resonance with context: "I can also make judgement upon the ability of the restorer and the quality of his or her work by looking at the organization of the workshop, the materials present and their layout" (133).

As I mentioned above, the "seeing" of all these things is collectively co-constituted, not a given personal capacity nor an objective piece of "evidence" but a perspicuity that is shared within a community of practitioners. Hankins's approach regards the upholsterer's inner-circle knowledge as a form of competence developing through a material and relational context (a "practice of knowledge") and sees learning as a fluid and dynamic process that embodies and sediments the community's canon for responsibility, "seeking beauty within a process."

FIGURE 4 Tidiness on display in an upholsterer's workshop, Manchester, England, 2014. Source: Photograph by Jonathan Hankins [This figure appears in color in the online issue]

> Learning is brought about through the participation in routine activities that are often difficult to describe in verbal terms, but involve important material and bodily aspects . . . through the knowledge of and functional use of objects and instruments and spaces which guide actions, relationships and communication in a certain direction (and away from others). (129)

Moreover, he posits that "the sharing of a work space and the practices described above lead to the construction and sharing of a perspective on correct procedure" (130).

Apprenticeship becomes all-round aesthetic coaching, a situated experience of learning shaped by the workshop's boss as a living model and articulated daily in the decisions taken about individual pieces of furniture, which extends to the rest of the apprentice's "worlding" (Heidegger, [1927] 1962). Value judgments absorbed through apprenticeship become part of embodied routines and practical choices that are only visible to other skilled practitioners (Hankins, 2020, 155). Training into this skilled vision leads participants to share moral judgments through aesthetics, including an appreciation of the process and preferences that underpin it. In Hankins's words:

> [Apprenticeship] not only allows one to learn to see quality in a finished product in relation to its production process, but also allows a shared understanding of the decision-making that underlies the process, and more importantly the reasoning behind how decisions were actually made, and finally *why*—according to the workplace narrative.' (2020, 132)

The capacity to see this is not photographic but grows with the person in a relational and material environment, which has its history, narratives, and style. For example, commenting on Figures 4 and 5, Hankins states:

> The appearance of a highly ordered workspace and the quality that such an orderly approach afforded to the finished work led to a successful small business that was well known and appreciated in the surrounding towns. The orderly presentation and approach was also

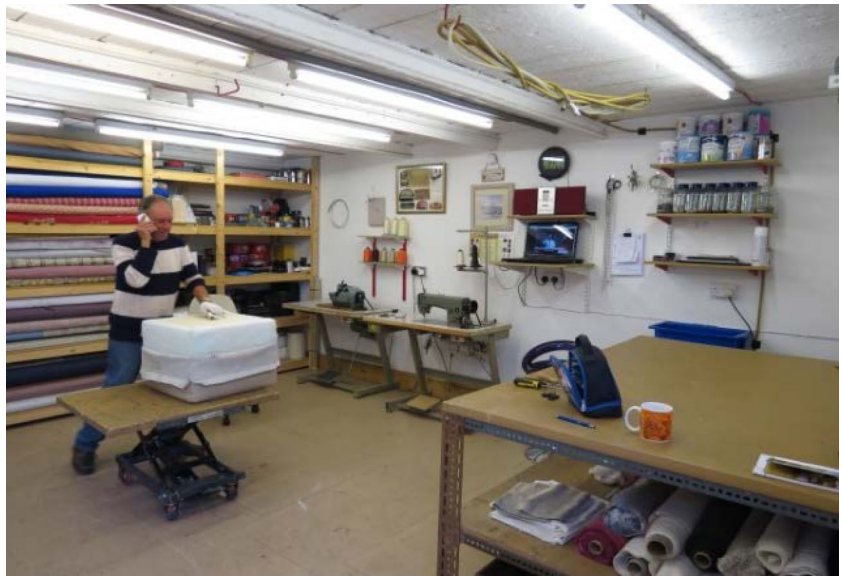

FIGURE 5 The master upholsterer taking orders on the phone, Manchester, England, 2014. Source: Photograph by Jonathan Hankins. [This figure appears in color in the online issue]

> reflected in the style that the workshop produced, a recognizable stylistic choice of straight lines with sharply defined borders, the use of high quality textiles and combinations of traditional skills with modern manufacturing techniques. I argue that this represents an aesthetics that reflected the organization as a whole, a representation of its working practices and narrative through its style.' (2020, 151)

It is evident that in an upholsterer's workshop, the apprentice learns to "see" the "narrative" of the workplace by learning reasoning and values behind the step-by-step decision-making process of production. This skilled vision allows master and apprentices to share and acclaim the beauty of the finished product, including its appropriateness. In sum, a skilled practitioner can "see" and understand the final product—for example, a re-covered settee—as the codification of a certain workplace style that is distinctive of its ethos.

CONCLUSION

Through an analytics of skilled visions in food gardening, bioacoustics, maritime carpentry, and upholstery, I offered an anthropological analysis of perspicuity. I argued that skilled visions emerge in the interaction with other senses and proprioception through purposeful routines of bodily and social alignment. This learning process of (re)alignment is mediated and framed, not only through technical apparatuses, as highlighted by Willkomm (2016) in her study of bioacoustics research on bats, but also through proprioception and the social capacity to resonate with others. In my ethnography the "others" are senior and peer gardeners, and learning to look around in the garden means learning to align oneself with one's preferences for an orderly space but also with the reality of birds preying on crops and of the birds' own perception of available landing space. Using my own and other scholars' ethnographies, I showed in stages how this reorganizes the visual, sensory, and social fields of gardening apprentices and apprentice maritime carpenters (Martin, 2021). This occasionally involved additional media, as in the case of bioacoustics field research (Willkomm, 2021), and ultimately peer recognition, as with peer and master upholsterers (Hankins, 2020).

In the first part of the article, starting from my fieldwork with food gardeners and drawing on the work of Willkomm (2016, 2018, 2021) and Martin (2019, 2021), I focused on the collaboration among senses and bodily disposition in space to achieve visual perspicuity by purposefully rearranging the visual field. This happens both in space (getting close, choosing the right visual angle, aligning with others' perceptions and gesturing) and in time (through repetition, sequential and recursive gestures, and by getting, time and again, a "fresh look" every time one rearranges the visual field).

In the second part of the article, both my garden fieldwork and Hankins's study of traditional upholstery showed how values embedded in apprenticeship are locally defined, and thus locally define visual enskilment. I underscored how peer recognition—a result of enskilment—forms a distinctive and tight connection between the apprenticeship of "skilled visions" and of those aesthetic and ethical sensibilities that embody the ethos of a community of practice (as shown by Hankins [2020] in his work with upholsterers). In earlier works, I called this connection "ecologies of belonging," identifying it as a potentially problematic and ambivalent aspect of skilled visions, requiring critical investigation. One learns to belong not only by absorbing canons of beauty and proper function but also by acquiring stereotypes, for example expecting to "see" race performing politically nostalgic cultural repertoires.[1]

Here I limited my argument to reviewing ethnographies that directly contribute to an anthropological theorization of vision, empirically highlighting the connections between the socialization of the senses and the embodiment of cultural perception. I conceptualized the acquisition of perspicuity as a form of apprenticeship, namely, as a learning process of proactively detecting and co-constructing "evidence" that becomes apparent when training succeeds. What people recognize as evident through skilled visions is thus more-than-visual, as more-than-visual is the process of enskilment leading to perspicuity.

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ENDNOTE

[1] The 2011–2012 Harvard Radcliffe Institute fellowship project *Skilled Visions: Critical Ecologies of Belonging* conceptualized "ecologies of belonging" for my audiovisual ethnography of a religious festival in Boston's Italian American neighborhood (De Musso and Grasseni 2016; Grasseni 2014), and contextualized it more broadly in the social history and aesthetics of facial recognition (Grasseni 2017). Poe et al. (2014) also elaborate on a notion of "relational ecologies of belonging" in their study of food foraging in Seattle, within a different theoretical framework (political ecology).

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