

Learning to Make Sense: Interdisciplinary Perspectives on Sensory Education and Embodied Enculturation

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In this article we examine through a ‘temporally inflected lens’ some of the complex entanglements of learning, senses, and sensemaking; bodies and sense organs; body-sensory experience and practice; and culture and society. We thereby aim to bring into dialogue inter-/multisensorial approaches to education as a project and praxis central to processes of ‘enculturation’, which have always, in one way or the other, involved ‘embodied’ learning (and imaginaries thereof), rather than mere ‘mental processing’. We first situate the ‘turn’ to the senses, across a range of disciplinary fields, within a growing interest displayed in ‘modes of meaning making’, among which visual, aural, audio-visual, material, bodily, and spatial ones. Secondly, we investigate the explanatory potential of enculturation and embodiment as seemingly entangled notions. From this, we advance the concept of ‘embodied enculturation’ for the study of situated, historical entanglements of sensory learning and education. We link this proposed research paradigm to incisive scholarship on ‘cultural learning’ adopting sensorial lenses, after which we tease out six key questions or concerns emerging from a review of relevant, recent research. These key concerns help to contextualize state-of-the-art ‘sensuous education scholarship’ introduced in the final section of the article and included further in this special issue.

Keywords: embodiment; sensorial cultural learning; embodied enculturation; temporally inflected research; sensuous education scholarship; history of education

Wisdom to re-entangle

Precisely two decades ago, in an article entitled “Other Ways to Wisdom: Learning through the Senses across Cultures”, the cultural historian Constance Classen (1999: 278-279) wrote:

we in the modern West need to be reminded that we are not just creatures of the eye, we are full-bodied beings with the capacity to learn about the world through all of our senses. In an era of ‘virtual reality’, where life often seems to be limited to what takes place on a screen, ... other [more] sensorially-aware cultures offer a timely lesson about the importance of recovering the multiplicity of sensory experience in our lives.

More recently the anthropologist Rupert Cox noted “our senses are specific to their historical conditions and subject to change,” or in other words, there are “historical and cultural dimensions ... [to] sensory experience” (Cox, 2018: 5411). Read through each other, the articles in this special issue offer a window onto the complex entanglements of learning, senses, and sensemaking; bodies and sense organs; body-sensory experience and practice; and culture and history – to highlight just some of the tangles to be unraveled and re-enmeshed here.

In what follows, we aim to bring into dialogue inter-/multisensorial approaches to education as a project and praxis central to processes of ‘enculturation’, which have always involved ‘embodied’ learning and imaginaries thereof, rather than mere ‘mental processing’.¹ While studies in neuro- and biosciences and cognitive psychology have, of late, become more attentive to ‘bodily’ and ‘relational’ dimensions at the heart of sensemaking, they still tend to reduce sensory learning to information processing, and focus on neuronal networks (Sullivan, Wilson, Ravel and Moury 2015). More complex processes and more broadly embedded practices implicating the senses are often factored out, so their analyses remain disembodied, a-cultural and ahistorical. Insofar, moreover, as studies in psychology and natural sciences include historical overviews of work on sensory learning and sensemaking, they tend to look inwards at similarly insular strands of literature (e.g., Wilson and Stevenson 2006). Here, we expressly advocate historically informed, interdisciplinary perspectives on sensory learning and education, embodied enculturation, and sensemaking.

Turning to the senses

In the history of education, among other fields, scholars have increasingly come to focus on analyzing the visual, aural, audiovisual, bodily, material, spatial, edible, and multimodal world(s) of education (e.g., Grosvenor, Lawn and Rousmaniere 1999; Grosvenor and Lawn 2001; Burke 2005; Lawn and Grosvenor 2005; Mietzner et al. 2005; Burke, 2007; Burke, Cunningham and Grosvenor 2010; Van Gorp and Warmington 2011; Priem, König and Casale

2012; Thyssen and Priem 2013; Goodman 2017a; Rousmaniere and Sobe 2018). Yet, while senses have always played a role in education, if in different forms depending on place, time and sociocultural context, and historical examples of sense-based educationalization² and ensuing pedagogical interventions abound, not least in relation to disabilities (e.g. Devlieger et al. 2008; Verstraete 2009; Tijsseling 2010; Verstraete and Söderfeldt 2014; Verstraete and Hoegaerts 2017), historians of education have only recently started to explore educational pasts and presents explicitly through ‘sensory history’ lenses (e.g., Burke 2010; Burke and Grosvenor 2011; Landahl 2011; McCulloch 2011; Grosvenor 2012; Priem 2016; Priem and Herman 2017; Goodman 2017b,c; Verstraete and Hoegaerts 2017; Burke 2018; Hoegaerts 2019). Some have thereby approached the senses as “mediating between mind and body, idea and object, and self and environment” (Grosvenor 2012: 686), mindful “that the sensorium of the West is a ‘historical formation’” and that the ““number and order of the senses are fixed by custom and tradition, not by nature’” (Id.: 676).³ Others, such as Priem (2014), with reference to the work of Hans Ulrich Gumbrecht, have used the notion of ‘presence’ to suggest sensory experiences in education may be of a premediated nature, subject to *a posteriori* processing, interpretation, and transformation (in relation to ‘affect’ in this context, see also Goodman and Anderson-Faithful 2019). These positions reflect wider, ongoing debates on senses and sensemaking and body-sensory and cultural learning.

Embodied enculturation

Our interest here is in the explanatory potential of ‘enculturation’ and ‘embodiment’, two seemingly entangled notions. To begin with the latter, for Strahern and Stewart (2011, 389), embodiment “refers to patterns of behavior inscribed on the body or enacted by people that find their expression in bodily forms”. Understood thus – as an end result of ‘enfolding into’ the body (Ingold 2011) rather than the process of being immersed in sensory practice itself – embodiment emerges as the mirror concept of sensory enculturation, if conceptualized as

“collective forms of sense experience” subject to what Salter (2018: 95, 87), with reference to Bernhard Siegert’s concept of ‘cultural technics’, has termed “the processes by which signs, technologies, modes of communication, and practices solidify and stabilize into specific cultural forms”. Here, we rather espouse an unequivocally dynamic concept of embodied enculturation as an iterative emerging and morphing of forms and senses of belonging through body-sensory experiences and practices and *vice versa*.

The concept of ‘embodied enculturation’ (or ‘enculturated embodiment’) is well suited for the study of situated, historical entanglements of sensory learning and education. It complements and extends the paradigm of ‘embodiment’ proposed by Thomas J. Csordas in the 1990s. Tracing back early concepts of embodiment to the French sociologists Marcel Mauss ([1936] 1973) and Pierre Bourdieu (e.g. 1977) and their compatriot, phenomenological philosopher Maurice Merleau-Ponty ([1945] 1962), Csordas (1990: 5) argued that the embodiment paradigm could be “elaborated for the study of culture and the self”, if one saw the situated body not as “an *object* to be studied in relation to culture” but as “the *subject* of culture, or (...) the existential ground of culture [and self]”. His work exemplifies the kind of scholarship that, according to Cox (2018: 5412) “has recognized the need to look ‘beyond the body proper’, by making (...) corporeality a condition of human existence”, based on “the notion that the act of knowing is embodied”. Historians of education like Mona Gleason have likewise pointed to the benefits of embodiment as metaphor, matter and method alike, “associated” as it is “with bodies as they are made, re-made, and experienced through and within social relations” (2018: 8). Drawn partly from the work of Judith Butler, Gleason’s definition echoes that of the feminist physics theorist Karen Barad (2007, 158) who has con/figured embodiment as “co-constituted through ... boundary-making practices.” Barad’s approach, in turn, builds on the work of Donna Haraway, for whom embodiment “‘is about significant prosthesis’ ... bodies in the making (...) never separate from their apparatuses of bodily

production”. Barad understands both these (human/non-human) bodies and apparatuses to be co-emerging as natural-cultural. Such co-emerging, then, is implied in our conception of embodied enculturation, to which ‘sensorial cultural learning’ is key.

Sensorial cultural learning

In a programmatic article on ‘cultural learning’, Myers and Grosvenor (2014, 5) citing Ken Jones, have teased out ‘inward-’ and ‘outward’-directed dimensions to this concept and the agendas grafted on it, comprising “language, rituals, discourses, ideologies, myths and all kinds of systems of signification”, as well as the “states of subjectivity that these practices embody”. From Myers and Grosvenor’s analysis, cultural learning emerges as a phenomenon that “pertains to processes of meaning making and to the manner[s] in which individuals and groups use available resources for the purposes of establishing identity and social being” (Id.). Grosvenor and Pataki (2017: 248, 249) have further explored the “fundamental connection” between children’s learning and culture as an “experience of learning through and about culture” based on a number of entangled “critical case studies of possibilities” which, as they show, center on “a belief in the transformative power of education through art and the education of the senses”. While bodies and senses do feature in some of the studies cited, the latter’s distinct historical configurations, roles, and workings as part and parcel of cultural learning have hitherto escaped sustained scholarly attention. Nor has the issue of the ways in which – through sensorial cultural learning – people of various ages, walks of life and provenance have come to be “embodied as gendered, classed, raced and sexualized subjects” (Rousmaniere and Sobe, 2018: 1) received the attention it deserves.

Six questions have informed ‘temporally inflected’ research in sensory education and embodied enculturation to date; reviewing the relevant literature will help contextualize the arguments in the articles that comprise this special issue, on which more presently.

First, what value has been attached over time in different contexts to particular senses and their command, separately or together? Thus far, Ian Grosvenor (2012) has perhaps most explicitly addressed this question while reflecting on a sensory historiography of the future. This imagined historiography explores how sensory taxonomies coagulated in the Modern West (which qualitatively differentiate between higher and lower senses as part of a symbolically balanced body with five extremities) did not map smoothly onto non-Western sensory systems. Educational scholarship adopting historical perspectives has only begun to explore how non-Western, pre-Modern, and alternative conceptualizations of the sensorium and children's experiences have made for specific sensory learning and sensemaking. Von Hoffmann's and Thyssen's research presented here offer modest contributions in this respect.

Secondly, what roles have specific senses come to play in processes of enculturation and what functions has 'education' fulfilled in sense-making processes accompanying such trajectories of sensorial cultural belonging? Joakim Landahl's (2011) research on changing sensory regimes of formal schooling and gradual shifts in the importance attached to vision and audition in this context exemplifies how historians of education have so far engaged with such issues. Catherine Burke's work on light as metaphor and materiality (included in Lawn and Grosvenor 2005), school canteens and uniforms as part of embodied education (Burke 2005, 2007), and various body parts involved in pointing, gesturing, self-comforting, walking, kicking, dancing, etc. (included in Van Gorp and Warmington 2011; Burke 2018) as central to regular, progressive as well as anarchist projects of schooling has likewise gone some way towards revealing the disciplinary as well as subversive roles such senses as 'sight', 'taste' and 'touch' have come to play. Josephine Hoegaerts, having explored, together with Pieter Verstraete, sound as bound up with silence, just recently has leant her ear to a deeper analysis of the cultural work implicated in gendered 'ensounding' and vocalization as embodied in nineteenth-century pedagogies (Hoegaerts 2019; see also Goodman 2017b).

Thirdly, what reductionary and/or comprehensive shapes has sensemaking concretely assumed in educative practices of embodied enculturation and to what effect? Among those having investigated how ‘attention’ has come to be universalized and directed in whole-bodily ways in the modern school, if at times uni-sensorially framed (for instance through the lens of ‘touch’ in Montessori’s theory and pedagogy) is Noah Sobe (2004), who has shown that such education of attention helped produce the ‘absorbed’ child as ‘a whole’ commanding her/his own ‘attraction’ to sensory objects. Others (e.g. Thyssen and Priem 2013) have showcased a range of projects (from murals to traveling exhibitions) that were educative and emotive due to converging modes of meaning-making (engaging, however, above all sight and touch and only ‘by association’ other senses).

Fourthly, to what extent and in what ways have ‘others’ and ‘selves’ been imagined or produced along sensorial lines? In response to such questions, several history of education scholars have ventured into processes of ‘othering’ relating to different disabilities (Devlieger et al. 2008; Verstraete and Hoegaerts 2017), and/or along the lines of gender (e.g. Goodman 2017b,c; Hoegaerts 2019), class (e.g. McCulloch 2011), and race/ethnicity (e.g. Grosvenor 2012). Such work has added significantly to our knowledge of how various regional, national, imperial and colonial subjects became intelligible (‘sensible’) in multi-directional and -sensorial ways.

Fifthly, to what degree and in what ways has scholarship operated along particular, singular sensorial lines or shown itself to be truly sensuous (Stoller 1997), recognizing that sensing, sensemaking, and related education including learning are multi-/intersensorial and multimodal/multimedia? Grosvenor (2012) has suggested that historians of education’s work, mirroring scholarship more widely, instead of allowing alternative sensory paradigms to break through the dominant Western sensorium, has proceeded to explore one by one, from ‘higher’ to ‘lower’, the supposed five senses. At the same time, he has pointed to increased awareness

even among historians of education of the refracted nature of each of these as they ‘dissolve’ into a ‘panoply’ of ‘senses’ of their own, including for instance pain, balance, and kinesthesia. Burke’s research trajectory from exploration of the ‘everyday’ beyond visual disembodiment (Burke 2001) to analysis of food consumption, involvement of hands in teaching and learning (see Van Gorp and Warmington 2011) and educative work around feet in, out and towards school (Burke 2018) exemplifies to some extent increasingly sensuous scholarship conducted whether or not through the prism of separate senses.

Finally, how should scholars proceed to unveil traces of the senses and their uses in historical and contemporary sources or research data? Also in this area, much work has been done, for instance based on images partly from auto- and classroom-biographical perspectives (Grosvenor, Lawn and Rousmaniere 1999), ‘materialities’ of schooling (Lawn and Grosvenor 2005; Priem, König, and Casale, 2012), preserved objects and recordings of commemoration and lived sensory memory making entangling materials, places and times (Goodman 2017b), with concern for digital aspects of sensemaking as well as the importance of remaining ‘in touch’ with the physicality of archives and other remnants of pasts present (Grosvenor 2012).

We hold that these questions and issues are topical, not only for historians of education like ourselves but anyone working in the broad interdisciplinary field of ‘sensory studies’. Indeed, learning – and education more generally – have typically been subsumed under ‘socialization’, ‘enculturation’, ‘appropriation’ and ‘incorporation’. Yet ‘education’,⁴ as a project and practice adopting the most diverse forms across infinitely varied sites of learning (formal and informal ones) historically has not just aimed at ‘introducing into’ but at least as much at ‘leading out of’. While some sensory studies scholars (e.g. Classen 1999) have shown a propensity towards ‘tuning into’ temporal variations of concepts of body-sensory education and learning materialized across different sociocultural contexts, more remains to be done. New ‘sensuous education scholarship’ featured in this special issue thus contributes to filling a gap

in terms of the fine-grained accounts they offer of changed (and changing) entanglements of place, time, material, people (of various ages and provenance) and goals, methods, processes of culturally meaningful sensory education and embodied learning.

Sensuous education scholarship

Viktoria von Hoffmann (e.g. 2016) adds to the existing scholarship on sensory education by venturing into ‘taste’ in contexts of formal as well as informal education in the early modern period. Commonly associated with gluttony, taste is revealed as ambiguous – for instance, connected in Antiquity to tactility, lower body functions and regions, intemperance, and animality, and in later Christian and (gendered) medical and lay thought to pleasure, sensuality, and lust. Analyzing emblem and conduct books she traces the profound impact of these constructions on educational practice, beyond notions of incremental civilization. The education of ‘taste’, moral as much as physical, came to involve kinaesthetic, olfactory and visual aspects alongside gustatory ones over which children and adults, each in distinct ways had to acquire control. Learning to make sense thereby entailed command of the ‘unwritten’, recourse to the ‘spoken’, display of a ‘feel’ for taste, and masking of the ‘learnt’ itself.

Like von Hoffmann, Silvy Chakkalakal explores the early modern period based on textual-visual sources. From an ethnological perspective (see also Chakkalakal 2014), she entangles concepts of ‘the’ child, experience, education, and ‘anthropologization’ of the senses, particularly through an analysis of Friedrich Justin Bertuch’s *Picture Book for Children*. She shows how the latter work embodied a shift towards thinking about making experience through images wherein cognition was imagined to require body-sensory imprinting. ‘The’ child, then, represented ‘others’ generally, symbolizing ‘primitive’, sensualistic comprehension that required consolidation of perceptions for ‘mature’ reason viewed as embodied by a male, white middle-class European ‘self’ to unfold. Chakkalakal

links sensory methods used by Bertuch to debates on vitalism and epigenesis and re/figures his *Picture Book* materials as social agents performing life and vitalization.

Visual materials treated as multisensory also feature centrally in Geert Thyssen's work on late nineteenth to twentieth-century health and outdoor education initiatives (e.g., Thyssen 2018). As in von Hoffmann's and Chakkalakal's analyses of 'taste' and 'experience', from his research 'smell' emerges as physical-symbolical. Thyssen analyzes scent 'diffractively' as belonging to '(a) sensed world(s)' in which it has come to work educationally through 'situated, embodied movements and practices'. In the Belgian and Luxembourg contexts explored here, smell proved to 'matter' atmospherically, initially still being linked to children's very physiologies, but also through hygiene practices, object lessons and non-formal nutrition education aimed, in class-, gender- and ethnicity-inflected ways, at developing (white middle class) senses of morality, aesthetics, and 'belonging' more generally. Thyssen advances the concept of 'sensuous childhoods' to illuminate how particular target groups, along the lines of physical or mental ability, age, class, and/or ethnicity have come to be imagined as in need of explicitly sensorial education (and 'infantilized' in the process). The concept may have broader purchase as, for instance, it is mainly in 'early childhood education' that, with reference to historical figure from Erasmus to Comenius, Rousseau to Pestalozzi, and from Fröbel to Montessori and Steiner, it is centered on the benefits of 'learning through all the senses' (cf. Cousins and Cunnah 2018). Sometimes this seems based on long-criticized Montessorian or Piagetian notions of 'planes' or 'stages' of development of which 'sensorimotor' ones are situated in a universalized early childhood. 'Neurorelational' evidence (Lebedeva 2015), then, is increasingly invoked to point to 'sensitive' periods amenable to intervention, as if body-sensory learning were less important in later years. Herein lies one of the dangers of nurturing 'sensuous childhoods'.

With Joakim Landahl's study, the focus of attention shifts to formal contexts of schooling, particularly changing 'teaching technologies' in classrooms in Sweden throughout the nineteenth century. Having previously analyzed 'sound' and 'silence' (Landahl 2011) in the transition from monitorial to teacher-led education, here Landahl adds 'sight' to the mix. He studies teaching manuals and school memoirs to understand educational change in sensorial terms, for example new instruction methods creating new conditions for how senses work in a classroom. Landahl points to movement, gesture, and positioning as key to changed 'visual-aural' regimes of power effectuating new 'synoptical' relations between pupils and teachers (relations of authority, but equally of resistance and affinity) beyond the 'panoptical.'. "[N]ew norms for how to look and listen in the classroom" thus inform even "current attempts at restoring the active teacher".

Like Landahl, Catherine Burke centers on formal contexts of schooling and examines imagined 'movement' and positioning but also 'touch' and 'reach', particularly on the part of children from a postwar British (and to some extent North American) design education perspective. Having recently explored feet, footwear and 'footwork' as aspects of 'being alive' in the modern school (Burke 2018), here she uses Ministry of Education (later Department of Education) official 'Building Bulletins', written and illustrated mainly by David and Mary Medd (née Crowley) to reveal shared progressive lexicons and planning choices. Making, doing, decision-making, self-expression, and sensory experience (cf. Chakkalakal) are here linked to 'senses of belonging and engagement' envisaged for 'communities of learners'. School could thus be seen as a human body attuned to the bodies of children in processes of 'de-institutionalization'. In interweaving matter, feeling and affect in postwar contexts like this (see also Navaro-Yashin 2012), Burke raises important questions about participation and democratization in present-day schooling internationally.

More still than Burke, Carey Jewitt and Sara Price, focus on ‘touch’ and do so in a contemporary informal education context. Their ‘multimodal’ and ‘multisensory’ (cf. Jewitt and Leder Mackley 2019; Price and Jewitt 2013) approach to a case study of seven families visiting the current Treasures exhibit at the Cadogan Gallery of the London Natural History Museum includes analysis of digital touch and interactional, family learning. Such collective sensemaking is contextualized historically as part of ‘exhibitionary complexes’ having come to shape museum interaction and, with it, the value ascribed to haptic and other “situated embodied pathways” to knowing. Beyond seemingly inclusive present-day framings of both, Jewitt and Price analyze precisely how families are able to use touch in a museum for learning experiences. They observe instances of ‘active, purposeful’ shaping of learning experience by family members in dialogue with each other and an exhibit. Yet, they also find that learning through touch needs ‘framing’, always subject to appropriation.

Finally, Verstraete’s analysis of HIV/AIDS education also touches on informal contexts of collective learning and sensemaking, and to some extent touch, but it is based on different data sources altogether, namely: television adverts and a talk show aired in the early 1990s. His interests are shaped by research on affect and disability (see, e.g. Verstraete and Söderfeldt 2014) and ‘sight, sound and silence’ (Verstraete and Hoegaerts 2017) as he advocates, and develops, a multi-/intersensorial approach to the history of HIV/AIDS education. Explicitly educational, his concern is with countering dominant discourse regarding HIV/AIDS as a resident alien gradually consuming body_minds/souls. His writings, like Chakkalakal’s and Thyssen’s, directs attention to educationalization of the senses shaping conditions of possibility for body-sensory experience. Even more explicitly than Jewitt and Price, he likewise points to implications of informal education (here: HIV/AIDS campaigns) not engaging multiple senses for groups of people thus potentially further ‘disabled’.

A challenge to conclude

To return to Constance Classen's article published twenty years ago, it is undoubtedly so that "the senses are brought into play in the learning process" (1999: 274). Just how this happens, however, as will be clear by now, is far from straightforward. What does it mean to state that "[t]he senses are educated through cultural entities that attribute discursive weight to sensory signs, and how these signs should properly be sensed" (Kettler 2015, 6)? What do such static conceptions reveal in terms of the complex practices and experiences from which the senses, body-sensory learning, and sensemaking emerge across times and places? As the articles in this special issue illustrate, the senses, body-sensory education, and 'embodied enculturation' are movements and practices not bound by place or arrested in time any more than culture or society. The challenge is to remain attuned to their changed and changing entanglement.

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Notes

¹ The distinction between bodies and minds is, of course, entirely artificial (e.g., Thyssen and Herman 2019; see also Ingold 2011b).

² Educationalization/pedagogization, among other things denotes increasing relegation of social issues to the realm of education as requiring pedagogical intervention (e.g. Smeyers and Depaepe 2009

³ See also Howes 2019. Likewise, awareness of how sensory modalities and sense organs need not align in any straightforward fashion not just with reference to perception but to learning as well has been acknowledged (cf. Pink; 2011; Casini 2017).

⁴ Of course, it should be recognized that Western notions of 'education' may differ from non-Western and particularly indigenous conceptions of situated learning, teaching, training, (child)rearing etc.