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RESEARCH ARTICLE

Artful sustainability governance—Foundational considerations on sensory-informed policymaking for sustainable development

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Abstract

(Un)sustainable developments are a significant challenge for state and nonstate actors from global to local level. Within the framework of the United Nations Transformation Agenda 2030 and the global Sustainable Development Goals, state institutions have a particular responsibility in guiding the process. In order to secure acceptance, this article claims that sustainability governance should aim to bring about well-being-oriented transformations. In this regard, besides cognitive insight into the need for change, the multisensorial dimensions of human existence in general as well as in everyday social practices in particular should be more systematically taken into account. Foundational conceptual and methodological considerations on sensory-informed policymaking for sustainable development are discussed.

KEYWORDS

artful sustainability governance, arts-based methods, policymaking, sensory studies, sustainable development, well-being

1 | INTRODUCTION

The adoption of the resolution “Transforming Our World: The 2030 Agenda for Sustainable Development” by the General Assembly of the United Nations (UN) on September 25, 2015, reflects recognition by the international community that unsustainable developments are both massive and ongoing and that profound changes will be necessary to impact global sustainability (UN, 2015). The magnitude of the challenge can be seen especially in the universal and indivisible Sustainable Development Goals (SDGs). These 17 goals with their 169 targets address a broad range of interconnected social, economic, and ecological problem areas.¹ Member states are called upon to lead the process by developing national strategies as key instruments for implementing and monitoring the SDGs according to country-specific conditions and challenges.² The preeminent role of state institutions

is emphasized with the establishment of an intergovernmental review and coordination mechanism, the High-level Political Forum.³ Given the social and factual complexity of (un)sustainable development—with multiple and varied actors facing a range of interdisciplinary topics—and the presumed need for deep transformations, creating and safeguarding acceptance and support for national and subnational sustainability policies is a crucial issue.

A key aspect in this regard, despite some still problematic aspects such as power inequality or lack of effectiveness, is the inclusion of nonstate actors in participatory approaches of multistakeholder governance (Glasbergen, Biermann, & Mol, 2007). Collaborative sustainability governance is widely acknowledged as an appropriate means of dealing with the pluralism in values, interests, and knowledge claims

¹<https://sustainabledevelopment.un.org/?menu=1300> (accessed 22.03.2019).

²<https://sustainabledevelopment.un.org/topics/nationalsustainabledevelopmentstrategies>.

³<https://sustainabledevelopment.un.org/hlpf>.

inherently bound up with sustainability transformations. More promising, however, seem to be mixed-governance approaches composed of the targeted use of hierarchical, economic, and participatory approaches (Meulemann, 2019; Zeijl-Rozema, Cörvers, Kemp, & Martens, 2008). Although sustainability governance has undoubtedly evolved and is now a more sophisticated approach, the present article argues that a crucial dimension has been undervalued and thus largely ignored: the multisensorial, embodied reality of human existence (Heinrichs, 2019).

The line of argumentation in this article begins with a discussion of the relation between policymaking on sustainable development and on well-being, demonstrating the relevance of multisensoriality and embodiedness in social practices. This is followed by an elaboration on the theoretical and methodological considerations concerning the sensorial, embodied, and aesthetic aspects of human life, before deriving reflections, requirements, and challenges of sensory-informed policymaking for sustainable development. The article ends with an outlook on the potential role this perspective can play in sustainability policy and the implementation of SDGs.

2 | (UN)SUSTAINABLE DEVELOPMENT, POLICYMAKING, AND WELL-BEING

Over the past 50 years, the international scientific community of interdisciplinary environmental sciences and—at a later date—sustainability sciences has generated an impressive body of knowledge providing convincing evidence of critical unsustainable developments (e.g., Steffen, 2015). The spectrum ranges from environmental unsustainability, reflected in alarming analyses of challenges such as climate change, biodiversity loss, soil degradation, and marine pollution, through social unsustainability caused by unjust social inequality, to economic unsustainability, driven by issues such as the depletion of nonrenewable resources or unsustainable financial (debt) regimes (Heinrichs, Martens, Michelsen, & Wiek, 2016). Especially, research on the unsustainable development of the natural life-supporting earth system as the basis for socioeconomic activities has gained attention beyond academic discourses by employing catchy concepts and terminologies such as “planetary boundaries” or the “Anthropocene” (Rockström et al., 2009; Steffen, 2011). Over the years, scientific insights into these challenges have catalyzed myriad governmental, business, and civil society activities around the world and—vice versa—practical action has stimulated new research about these topics.⁴

It can thus be stated that over the past half century, a multiactor, multisector, and multilevel “movement” has successfully put the issue of environmental degradation and sustainable development on the public, political, and private agenda and initiated innumerable measures (McNeill, 2000; Pinker, 2018). However, given the weight of scientific evidence and in light of the science-based campaigns initiated

by nongovernmental organizations, there is little reason to be optimistic and none to underestimate the magnitude of the transformations needed to prevent unsustainability from dramatically increasing in the future. The more critical, sometimes even pessimistic, views of unsustainability describe government policies on sustainability as mere symbolic acts, fitting the mechanisms of liberal consumer democracies but lacking the effectiveness needed to substantially transform unsustainable developments (Blühdorn, 2016). These critical views foresee a relentless buildup in pressure on the environment accompanied by an inherent growth in social inequality leading to repeated crises in capitalism. Researchers and activists following this perspective call for a deep transformation of society and the economy involving radical conceptual perspectives on postgrowth and degrowth (Blühdorn, 2017; D'Alisa, Demaria, & Kallis, 2014).

Because there can be, per definition, no empirical evidence of future conditions, there is significant cognitive uncertainty and normative ambivalence regarding potential future developments, making it impossible to decide whether sustainable growth or degrowth or—more realistically—some middle way is both necessary and feasible. However, the UN 2030 Agenda is a testimony by the overwhelming majority of the international community that “business as usual” is not an option, with calls for transformation ranging from “light” to “deep.” If profound changes are indeed necessary and unavoidable to secure a livable and sustainable future, then policymaking will be even more challenged to find broad acceptance for such long-term goals and the governance needed to reach them.

Assuming that people are mostly interested in their own lives and in the near future—which does not imply that they are indifferent towards the lives of other humans, whether living now or in future generations, and nonhuman life—policymakers would be well advised to pay close attention to present well-being in shaping challenging long-term sustainability policies (Cloutier & Pfeiffer, 2015; Rauschmayer, Omann, & Fröhmann, 2012). The role of well-being is receiving increased attention in both academia and politics. The discourses on sustainable development and on well-being are partly overlapping but not interchangeable (Helne & Hirvilammi, 2015). The difference is that well-being is less oriented towards the long term and more towards the present and how the life quality of people can be measured and improved. Conceptual proposals such as “beyond GDP” or “global happiness,” along with their policy-oriented indexes, emphasize the need to go beyond economic indicators to measure and shape human well-being more holistically (Helliwell, Layard, & Sachs, 2012; Kubiszewski et al., 2013). Despite their differences, the two approaches share the goal of representing more comprehensively the multidimensional reality of humans, highlighting especially its social and environmental aspects. Despite this tension between the welfare of present and future generations, the well-being discourse sensitizes policymaking to the crucial importance of accounting for human needs beyond materialistic economic values, such as high-quality social relations and a healthy and stimulating physical environment. This perspective on well-being is, we argue, a challenge for policymakers to consider more systematically the multisensorial, emotional, and

⁴<https://sustainabledevelopment.un.org/>; <https://unfccc.int/>; <https://www.cbd.int/>; <https://www.unglobalcompact.org/>; https://www.panda.org/knowledge_hub/all_publications/ecological_footprint2/; <https://www.oxfam.org/en/tags/inequality>.

corporeal well-being of citizens in their concrete sociomaterial life conditions. In order to develop a more nuanced understanding of a well-being-oriented, transformative sustainability governance, we discuss basic insights into the multisensoriality of human existence in the following section.

3 | THE MULTISENSORIALITY OF HUMAN EXISTENCE: BASIC INSIGHTS⁵

That humans are not cognitive machines for the processing of information but beings perceiving the world with all of their senses shaped by complex and interrelated cognitive, affective, and corporal conditions is hardly news. Indeed, it was Aristotle who first systematically speculated about the five senses of taste, smell, touch, hearing, and sight (Welsch, 1987). Despite this early recognition of the multisensoriality of human nature and reality, beginning with Descartes in the first half of the 17th century modern (social) science has focused on rationalism and cognitivism and overwhelmingly viewed the senses in a critical manner or ignored them; it was about civilization (mind) against nature (body; Göbel & Prinz, 2015, pp. 14f.). It was not until the 19th and 20th century that scholars showed a renewed interest in the fundamental role of sensory experiences, corporality, affect, and emotions for human existence. Key thinkers in this regard include Karl Marx's (1989) studies in the 19th century of how the instrumentalization of factory wageworkers in the capitalist system resulted in adversarial corporal-sensorial experiences contributing to their alienation. Sigmund Freud (2009) investigated at the turn of the 20th century how the unconscious mind shapes individual behavior. At the same time, Georg Simmel (1907) developed insights into how reciprocal sensory perception influences societal life through corporal-sensorial copresence and how sensory-based interactions are key to a comprehensive understanding of society. In the first half of the 20th century, Maurice Merleau-Ponty (1965) described corporeality as "sensing flesh," a mediating entity between mind and body and one that is constitutive for experiencing material and social worlds. Humans do not (only) have bodies, he claims, they are bodies. This conception of being-in-the-world as body-subjects discounts the relevance of a cognitivist perspective and puts the corporeal-sensory dimension at the center of human life. Finally, in the mid-20th century, Helmuth Plessner (1980) elaborated a cognitive and corporal coconstruction of sense-making, making the distinction between sensing and interpreting, intuition and conception, and his anesthesiology of mind and corporal senses in which he shows how the diversity of senses and their interplay is a call to address the multisensorial reality of humans as bodily subjects in a material world.

Building on these pioneering thinkers, over the past two decades, the interdisciplinary field of sensory studies has generated an impressive body of knowledge on the role of the senses in human life and the multisensorial reality of social practices. In line with more recent

neurobiological and neuropsychological insights from the natural sciences, which provide an ever more detailed understanding of the complex interrelated physiological, emotional, and mental dynamics of humans (Dimasio, 2017), sensory studies, based in the social sciences and humanities, are now revealing how the everyday life of humans is shaped by culturally mediated multisensorial conditions and experiences (Howes, 2013, 2018). There is now abundant empirical evidence to ground theoretical understandings of how social construction and sensory construction interrelate in the production of sociomaterial reality. The spectrum of insights includes cultural variation in visual and social order; the identification and problematization of sensory scapes such as visual scapes, auditory scapes, smell scapes, or kinesthetic scapes; the social and sensory differentiation and sensory specialization in subcultures and professions; and the finding that—despite the neurobiological basis of senses—sensory perception is always socially and culturally mediated and shaped by political forces and power relationships.

A concept of special interest for the natural and built environment, and hence for (environmental) sustainable development, is "atmosphere" (Böhme, 2013; Schmitz, 2014), which has been developed over the past 50 years in an effort to supersede the traditional philosophical separation of physics as the domain of the material world of objects and psyche as the domain of the inner world of subjects. Atmospheres are conceptualized as coconstructed phenomena emerging between material carriers of moods and corporal-sensorial affectivity. By preforming emotional conditions and cognitive interpretations, they shape human perception and action. Human reality is precognitively influenced by the spontaneous life experience of humans as bodily beings moving through atmospheres. The positioning of atmospheres as something coprocessed between sensing (human) subjects and mood-carrying material and social worlds is underpinned by the concepts of synesthetic characters and movement suggestions. Synesthetic characters are experiences of the thick sensory scapes provided by material and social worlds. They are spatially preframed by movement offerings as movement suggestions, which are (primarily) corporally sensed by humans in concrete sociomaterial environments.

This theoretical-conceptual line of thought has been exemplified by reflections on a broad range of atmospheres. The spectrum ranges from nature-related atmospheres coshaped by weather and landscapes through the architecture and interior furnishing of lower middle-class homes to the bodily synchronization of fans in a football stadium. In all of these theoretical considerations and exemplifications, the key insight is, following Merleau-Ponty, that human reality is physical and the corporeal is decisive. The limiting concept of humans as rational beings must be replaced by a view of human life as a spontaneous experience characterized by sensing beings in sensory sociomaterial environments, that is, in atmospheres.

The relevance of corporality and materiality for social action in these (neo-)phenomenological and sensory approaches is also shared by sociological theories of practice (Reckwitz, 2002). In contrast to norm-oriented, mentalist, textualist, rational choice and other perspectives in social theory positing human exceptionalism in abstract-

⁵For a more detailed discussion of the theoretical dimension of the multisensoriality of humans in the context of sustainable development, see Heinrichs (2018). The present section is based on this article.

cognitive thinking, rational decision-making, symbolic information processing, and intentionality, sociological theories of practice have shown how the implicit informal logic of social life is driven by routinized social practices based on embodied knowledge. These perspectives look beyond the precedence given to abstract-cognitive thinking and its derived actions and point to the central role of concrete-practical corporal doing in concrete sociomaterial situations. Bourdieu's (1977) habitus approach, Latour's (1998) actor-network theory, and Haraway's (1995) conceptualization of hybrids and cyborgs provide a better understanding of the powerful, and too often overlooked, undercurrents of social action, especially the influence of unreflected embodied knowledge as well as the action capacity of nonhuman entities. The major difference to the (neo-)phenomenological and sensory approaches is that implicit embodied knowledge and practical ability are foregrounded, and not sensory-affective dimensions.

A fruitful impulse for conceptual considerations on a sensory sustainability science is the theory of resonance recently introduced by the sociologist Hartmut Rosa (2016). He employs the corporal, sensory, material perspectives in this theory to argue that humans are anthropologically oriented towards resonance, which he defines as the specific relationship between human subjects and their (human and nonhuman) worlds. This relationship is realized in the emotional and corporal-affective sensed forms of reverberations of lived experiences that go beyond those available to cognitive-interpretative perception. Relationships are characterized by reciprocal affect, in which neither subject nor world is predominant.

There are two theoretically distinct types of world relationships. Mute world relationships are objectified and instrumental, whereas resonant relationships are characterized by the capacity of being touched, of appropriation and reciprocal transformation. Instrumentalized alienating workplace situations in which workers are viewed only in terms of their functional capacities or humans caught up in unreflected (status) consumerism are examples of mute relationships. Resonant world relationships can be found where humans actively engage as mental-corporal beings, driven by intrinsic interest and self-efficacy expectations with an openness to being touched by the world's own voice: whether in gardening, playing sports or an instrument, interacting reciprocally with family, friends, or colleagues, or fulfilling a sense-making occupational task. Rosa's theory differentiates three key axes of resonance: Horizontal resonance is found in resonant social relationships between family and friends and in democratic participation; diagonal resonance in those material or object relationships at work, in consumerism, or sports; and vertical resonance in the more encompassing, time-related contexts in which the human subject is embedded such as religion, nature, the arts, and history. With this theoretical equipment, the dynamic of instrumental enhancement in late capitalist modernity is conceptualized as a pathway leading to mute world relationships and away from spheres of resonance. The theory of resonance goes beyond the (neo-)phenomenological approaches and sociological theories of practice to reconstruct the quality of relationships between subjects and their (human and nonhuman) world as resonance, revealing the double-sidedness of

the evaluative-cognitive and the corporal-affective existence of always materially, culturally, and socially embedded and shaped humans.

The anthropological and sociological theories discussed so far all challenge mentalist, textualist, and rationalist conceptualizations of human exceptionalism. They provide strong arguments to take into account more explicitly the irreducible corporal-affective, multisensorial, and aesthetic reality of life as well as the capacity of the nonhuman world of biological and physical objects not only to "act" but also to serve as carriers of "affection," coconstructing atmospheres and resonance together with sensing humans. This line of social theoretical thought means nothing less than proposing an idea of humankind and society founded on noncognitive dimensions of sociomaterial interaction. Humans are conceptualized neither as cognitive information-processing machines nor as psychological beings equipped with an array of specific emotions; they are multisensorial by nature, and their multisensorial experience and perception are inevitably immersed into an always given social, cultural, and material web of life.

4 | SENSORY-INFORMED POLICYMAKING FOR SUSTAINABLE DEVELOPMENT: REQUIREMENTS AND CHALLENGES

The past two decades has seen the creation of a vast body of knowledge on sustainability policy and governance, with much attention paid to institutional and instrumental issues. Regarding institutional aspects, there has been a strong focus on (collaborative) governance beyond the state (Dingwerth & Pattberg, 2006; Rosenau & Czempel, 1992). In the historic context of the Brundtland Report and the first sustainable development summit in Rio de Janeiro in 1992—namely, the perceived "victory" of liberal democracy and market economy coined as the "end of history" by Francis Fukuyama (1992) and the dynamics of globalization—many advanced an analytical and normative perspective of cooperative state and multistakeholder governance. This widely shared view was and still is that sustainable development is best reached when state and nonstate actors join together to engage in (rational) deliberation and generate sustainable solutions (Meulemann, 2019).

Collaborative governance is criticized for distortions through power inequalities and access inequalities (Purdy, 2012), for a lack of a common solution orientation, and for deliberative processes characterized by arguing versus bargaining (Saretzki, 2009). However, the central issue here is that the multisensoriality of human existence is largely disregarded in concepts of sustainability governance. Multistakeholder governance consisting of organized actors and citizen participants is generally conceived of as a cognitive task involving verbal interaction with text-based output. Even though (verbalized) emotions and visual material are sometimes part of governance arrangements, a more systematic access to sensory experiences and embodied cognition is neither theoretically reflected nor procedurally integrated.

A similar observation can be made for the institutionalization of sustainability policy in government agencies. Although there are

conceptual proposals and empirical analysis on how sustainable development as a crosscutting and long-term issue might be sectorally implemented in state bureaucracies (Heinrichs & Laws, 2014), they focus on the adaption of administrative and process organizational structures to improve policy integration and coordination. In this (neo-)Weberian model of bureaucracy, proposed organizational innovations for government agencies responsible for sustainability so far do not question the essentially administrative-technocratic, nonsensory logic, and documentary mode of operation and so lack dedicated structures and mechanisms that could accommodate a multisensorial perspective.

This deficit in sensory-informed policymaking in (collaborative) governance and administrative processes on sustainable development is confirmed if one looks at two key instruments of sustainability policy and governance: sustainability strategy and sustainability assessment. A strategy orientation is perhaps the most prevalent policy instrument in sustainable development (Meadowcroft, 2007). From the UN Agenda 21 to the Transformation Agenda 2030, national and subnational sustainability strategies play a central role. Sustainability strategies have been widely employed in the international multilevel systems engaged in sustainable development along with such elements as goals, monitoring and evaluation measures, and indicators as well as participatory structures (Dalal-Clayton & Bass, 2002). Sustainability strategy fits well into the tradition of policy planning tools and evidence-based policymaking. However, despite the multidimensional character of goals and indicators, sustainability strategies in general are not well equipped to capture the multisensoriality of concrete social practices. The same can be stated for the tool of sustainability assessment (Pope, Annandale, & Morrison-Saunders, 2004). Similar to neighboring approaches such as environmental assessment and technology assessment, this instrument uses *ex ante* measurements to determine the potential and risk of policies for sustainable development. Even though some variants of sustainability assessment make use of participatory elements to account for different knowledge claims, interests, and values, they do not explicitly include sensory perspectives in their assessment.

Key institutional mechanisms as well as the instruments of sustainability policy and governance that have helped to bring forward sustainable development over the past two decades have their limits. As they are firmly rooted in a cognitivist model of policymaking, they are unable to provide a comprehensive account of multisensoriality, corporality, and embodied cognition and imagination as essential dimensions of well-being and transformative sustainable development.

If one looks beyond these (state-led) sustainability governance approaches, one can find a broad spectrum of considerations, proposals, perspectives, and practical examples that do address the anthropological constant of multisensoriality. Fundamental philosophical works reflect on sensory perception not only in an aesthetics of arts but also in a social aesthetics that reveals the inherent value of the sensory-aesthetic dimension *vis-à-vis* cognitive rationality. The societal, political, and ethical relevance of the sensory-aesthetic features of life have been explored by thinkers such as Aristotle (Welsch,

1987), Baumgarten (2007), Kant (1994), and Schiller (1993) and from a more critical standpoint towards aesthetization processes in modern capitalist societies by Adorno (1995) and Reckwitz (2012).

Two opposing variants of sensory-aesthetic political engagement are of interest here. On the one hand, one finds an instrumentalizing, manipulative usage of affect-oriented political orchestration designed to overwhelm its audience with sensory overload, in a spectrum ranging from set piece speeches in dictatorships to stump speeches in democracies. On the other hand, there is the employment of sensory-aesthetic approaches with an emancipatory intention that focuses on strengthening civil society and opposing power (Mouffe, 2014). In this perspective, human multisensoriality is employed to make political challenges more wholly perceivable, motivating resistance and opening up alternative options. Examples can be found in sustainability-related research as well as in practical experiments, ranging from urban gardening to creative sustainability communications (Kagan, Hauerwaas, Holz, & Wedler, 2018).

However, our focus is on understanding the potential of sensory-informed policymaking in the service of sustainable development. Thus, it is not about innovation in sustainability communication for the "good cause" but about incorporating multisensorial insights into governance processes and policies. Without doubt, sustainable development requires political decision-making based on the best available scientific evidence and expert assessments and—as well as possible—using deliberative processes to connect scientific insights with other knowledge claims and plural interests and values. The question, however, remains as to how sensory dimensions (beyond those cognitively represented and expressed) can be better integrated into sustainability governance and policymaking aiming at improving concrete, experienced, and sensed life quality. The answer is that sensory-informed policymaking will require conceptual, methodological, and operational innovations.

Conceptually, sustainability governance and policymaking is challenged to open up its predominant cognitivist paradigm to a multisensorial perspective. The insights on the relevance of sensory experiences in social practices and sensed resonance reveal an often-overlooked dimension of human existence. Systematically addressing this blind spot could lead to a more comprehensive and differentiated understanding of the underlying features of well-being and transformative sustainability governance.

The perspective on multisensoriality requires an appropriate methodology in order to generate systematic insights for a sensory-informed policymaking. Two partly overlapping methodological pathways are relevant here: sensory ethnography and arts-based methods.⁶

The ethnographic way of doing research—an explorative, observant, participatory, interpretative, and qualitative portrayal of humans in their social and physical environment based on narrative interviews, photography, and audiovisual recording—has spread beyond its origins in ethnology, and the analysis of "exotic" cultures and since the

⁶For a more detailed discussion on these methodological approaches, see Heinrichs (2018). The next section is based on this article.

beginning of the 20th century has turned to the sociological analysis of societal practices and their particular (sub)cultural meanings and institutional settings (Goffman, 1973). Over the past two decades, ethnography has begun to pay greater attention to the corporal-sensory dimensions of human action. The methodological approach of sensory ethnography shows the relevance of multisensoriality for human life (Pink, 2015) by showing how the different senses—smell, taste, visual, audio, touch, and kinesthetic—are interconnected and putting at the center of ethnographic inquiry their relation with key aspects of human existence such as perception, place, knowing, memory, and imagination. By drawing attention to the often little or unnoticed sensory and affective aspects in sociomaterial practices, this approach goes beyond the cognitive reconstruction and interpretation of social action. Addressing corporal-sensorial life experience has stimulated a new level of ethnographic (self-)reflection and methodological innovation (Elliott & Culhane, 2017), with a spectrum ranging from greater sensitivity towards autoethnography, gendered ethnography, and interventionist ethnography to the creative use of digital media technologies such as eye-tracking or smartphones in participatory audiovisual recording.

The production, representation, and communication of sensory ethnographic insights proactively transgress traditional forms of positivist, number- and text-based, scientifically styled knowledge creation through distant researchers. Through creative methodologies and imaginative practices, from walking as an ethnographic strategy through fictional or poetic writing to performances and (experimental) recording and editing, interpretative horizons are opened up, and the potentiality of societal practices is explored in collaborative processes between researchers and research subjects.

This way of performing sensory ethnography overlaps with the second methodological perspective considered here, specifically the promise of arts-based research to contribute to a fuller understanding of multisensorial human realities.

Arts-based research is a relatively new methodological paradigm in the social and cultural sciences. Based on arts therapy and the boundary-crossing work of scientists seeking to gain more holistic insights into human experience and practice, arts-based research has developed since the 1990s into its own branch of qualitative social

science (Barone & Eisner, 2011; MacNiff, 1998). It is now considered a creative research practice that provides an alternative way of knowledge production and communication alongside traditional quantitative and qualitative scientific methodologies.

Arts-based research provides a methodology in which scientific and artistic ways of sense-making converge (Leavy, 2015). It is about scientific-aesthetic knowing and scientific-aesthetic practice. Aesthetics, understood here in its basic meaning of sensory perception and intuition, enriches scientific inquiry by artistic ways of knowing. Narrative inquiry, fiction-based research, poetry, music, dance, theatre, film, and visual art complement scientific procedures that are generally abstract, reductive, cognitive, and verbalized (Leavy, 2015, p. 20). Arts-based research

- recognizes that art has always been able to convey truth(s),
- recognizes that the use of the arts is critical in achieving self-other knowledge,
- values preverbal ways of knowing, and
- includes multiple ways of knowing, such as sensory and imaginary.

Thus, arts-based methods allow for a more encompassing knowledge as they open up alternative ways of understanding and interpreting reality, reveal multiple meanings of phenomena, and raise empathetic awareness. As in every good research practice, an arts-based method should be carefully selected with regard to the object of investigation. By creatively employing artistic methods in social scientific inquiry, an alternative form of the production of knowledge and communication has been developed over the past two decades. As Leavy (2015) points out, despite some overlaps with the logic of traditional quantitative and qualitative methodologies, arts-based research now provides a distinct methodological approach (Table 1).

Sustainability-related studies employing sensory ethnography or arts-based methods demonstrate, as discussed in the previous section, the value of this methodological perspective to reflect on the role of multisensorial, affective, atmospheric dimensions and embodied cognition in sociomaterial practices. They show, for example, how ethnographers understand the multisensoriality of human practices of place-making through embodied experiences on urban tours based on

TABLE 1 Specificities of arts-based methods compared with quantitative and qualitative methods (Leavy, 2015, p. 294)

Quantitative	Qualitative	Arts based
Numbers	Words	Stories, images, sounds, scenes, other sensory inputs
Data discovery	Data collection	Data or content generation
Measurement	Meaning	Evocation
Tabulating	Writing	(Re)presentation
Value neutrality	Value non-neutrality	Political/emancipatory consciousness
Reliability	Process	Authenticity
Validity	Interpretation	Truthfulness
Proof	Persuasion	Compelling/moving/aesthetic power
Generalizability	Transferability	Resonance
Disciplinarity	Interdisciplinarity	Transdisciplinarity

“shared’ walking, eating, drinking, imagining, photographing, and audio- and video-recording” (Pink, 2008) or how sensory ethnography can help to excavate the “inner lifeworld—consisting of inner speech, inchoate trajectories of thought, unarticulated moods, random urges, unsymbolised thinking, imagination, sensation, memory” (Irving, 2017). Beyond (sensory) ethnographic case studies, one can find design-oriented literature about (un)sustainable “sensecapes” as well as publications arguing for the imaginary and transformative power of arts-based research (Galafassi, 2018). This research demonstrates the potential of sensory-aesthetic approaches to generate new insights and open up new perspectives.

Looking at this strand of research through the lens of sustainability governance and policy, we can conclude that a more sensory-informed policymaking for sustainable development has the potential to lead to qualitatively better decisions—meaning that they reflect human multisensoriality. The key point for this claim is that, alongside cognitive-rational, verbally expressed insights, sensory-aesthetic experiences provide complementary insights, which have their own quality and require different forms of representation as provided by sensory ethnography and arts-based methods. In this perspective, sensory-informed policymaking strives to overcome the blind spots in both ways of perceiving and understanding the world. It is not about overwhelming human rationality by sensory-aesthetic manipulation or about reducing human beings to mental subjects by ignoring their spontaneous everyday experience of corporally “being-in-the-world.” It is about enriching policymaking by systematically adding sensory insights, with their own specific qualities, in an appropriate sensory-aesthetic way. Given the dominating modes of sustainability governance and policymaking sketched out at the beginning of this section, it is clear that innovation in governance is necessary. A conceptual opening of policymaking towards the explicit reflection and consideration of the sensory dimensions of human existence beyond its cognitive mode of information processing is required. Before specific methods for sensory-informed policymaking can be employed, political-administrative institutions need to develop a clear understanding of the purpose as well as the institutional mechanisms needed to add multisensorial insights into decision-making processes. Just as organizational learning is a prerequisite for participatory policymaking, sensory-informed policymaking needs to be approached systematically. A conceptual and methodological differentiation will be necessary to supplement quantitative and—to a lesser extent—qualitative data with arts-based and sensory ethnographic insights to support policymaking. Because policymaking and especially bureaucratic administration are fundamentally based on data- and text-based information processing, the complementary inclusion of multisensorial arts-based and ethnographic insights—characterized by qualitative, participatory, audiovisual, corporal, and other forms of expression—demands new competences, organizational cultures, and procedures. Therefore, in concrete decision-making processes on sustainable development issues, established routines for handling cognitive-rational, text- and data-based information should be complemented by new routines for sensory-aesthetic insights in their specific representational forms. Of key importance is that both types of information

and insight are related to each other. In the context of deliberative policymaking, this requires carefully designed institutional mechanisms and tailored instruments in order to handle in a professional, systematic, and transparent manner the sensory-aesthetic knowledge production and communication. For example, in order to integrate the aspects of atmosphere and multisensorial experience in the shaping of a resonant public space, policymakers should be aware of the potential of such methods as participatory visual ethnography to complement expert information on issues such as noise levels, air quality, or land use. Furthermore, alongside technical information on potential measures, the transformative-imaginative power of arts-based methods may be used to raise awareness and stimulate new social practices regarding climate change adaptation. In deprived areas, participatory theatre or participatory visual arts might serve to stimulate people to reflect on and potentially expand policy options that had been developed in established routines within the political-administrative system.

Looking at (un)sustainable developments through this lens, a wide range of topics arise, for example, corporal-sensorial manifestations in mobility options; atmospheres in naturescapes, landscapes, and cityscapes; resonance in human-nonhuman interactions; multisensorial dimensions in varying sustainability-relevant occupational and consumption practices; sensory scapes of places: smell, taste, touch, sight, hearing, and kinesthetic; the relationship between virtual (mediated) and real (unmediated) multisensorial phenomena; sociocultural diversity of corporal-sensorial experience, embodied cognition, and imagination; multisensoriality in social and environmental inequality; and the quest for just and sustainable sensory well-being. These prime examples indicate that the perspective of the multisensoriality of human life in general and of specific social practices in particular has implications for transformative, well-being-oriented policymaking for sustainable development.

Sensory-informed policymaking in this “sense” should not be conflated with the emotionalization of policymaking, which may open the door to populism. In contrast, if sensory policymaking is grounded in the conceptual and methodological approaches presented in this article and if it is operationalized by appropriate institutional mechanisms and instruments, it will not undermine but by adding multisensorial insights enrich evidence-based policymaking (Sanderson, 2002). Thus, sensory-informed policymaking has the potential to generate better transformative policies for well-being and sustainable development.

5 | OUTLOOK: ARTFUL SUSTAINABILITY GOVERNANCE FOR SENSORY-INFORMED POLICYMAKING ON SUSTAINABLE DEVELOPMENT

(Un)sustainable developments are perhaps the greatest challenge ever faced by state and nonstate actors from the local to the global level. Within the framework of the UN Transformation Agenda 2030 and the global SDGs, state institutions have a particular responsibility in

guiding the process. In order to secure acceptance, sustainability governance should aim at well-being-oriented transformations. Beyond cognitive insights into the need for change, the multisensorial dimensions of human existence in general as well as everyday social practices in particular need to be taken into account more systematically. Both practical experiments and scientific studies show that arts-based methods and sensory ethnography have the ability to capture multisensorial aspects such as atmosphere, corporal perception and affection, embodied cognition, and imagination. Employing this conceptual and methodological perspective more consciously in well-being-oriented policymaking for sustainable development by tailored institutional mechanisms and instruments could strengthen sensory-informed policymaking and allow for solutions that would better satisfy the sensory and rational sides of humans. Democratic and deliberative sustainability governance has always been an ambitious and demanding craft due to its social and factual complexity and the resulting pluralism in values, interests, and knowledge claims. The sensory-aesthetic perspective presented here adds a new tool to the toolbox, which may lead in the future to an artful sustainability governance.

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