Sensing Practices

Jennifer Gabrys and Helen Pritchard, Goldsmiths, University of London

Posthuman Glossary

Edited by Rosi Braidotti and Maria Hlavajova

If you were to outline a diagram of how an air pollution sensor interacts with an environment it would look something like this: Air passing across a chemical membrane or being draw into an optical sensor either forms a chemical reaction in the case of the membrane, or is passed across an infra-red beam and counted for numbers of particles in the case of an optical sensor. These sensory readings and reactions cause voltages in electrical circuits to fluctuate, generating signals that in turn can be converted into digital output to be read as data in the form of parts per million of the particular pollutant being sensed. Yet such a sensor might also be used as part of specific environmental monitoring undertaken by a concerned citizen in order to document potentially harmful levels of pollution from industry or roadways. The unit of sense—the seemingly discrete organ or object through which sensing would occur—becomes entangled as another entity and set of relations in the making through the specific sensing practices underway.

This example of an air pollution sensor deployed for citizen sensing practices is just one of many possible examples of the ways in which sensing and units of sense begin to shift toward what we are calling 'sensing practices' (Gabrys, 2012b; Pritchard, 2013). Sensing practices refer to the ways in which sensing and practice emerge, take hold, and form attachments across environmental, material, political and aesthetic concerns, subjects and milieus (cf. Stengers, 2011b). From sensors used for environmental monitoring to collaborations with lichens to understand air pollution, as well as smart infrastructures that sense and adjust to real-time conditions, the registers and practices of sensing are shifting from an assumed human-centered set of perceiving and decoding practices, to extended entities, technologies and environments of sense. New registers of sense are becoming evident as organisms express different and dynamic ways in which environments are changing. And many of these shifts and extended registers of sense are further captured through ubiquitous computing that distributes sensing capacities across environments. Citizen sensing also constitutes a set of sensing practices that is meant to enable and empower people

to sense for political effect, giving rise to questions about the politics of sense, and how sensing entities transform into agents of provocation and change (Cuff and Hansen, 2008; Goodchild, 2007).

While we focus on citizen sensing in order to develop this notion of sensing practices, many other practices could be drawn together to elaborate this concept, from trans-material and racialized experiences of lead poisoning (Chen, 2012), to digital simulation environments for battlefield preparation (Suchman and Weber, 2016), to insect-plant couplings forming particular ecologies of sense (cf. Braidotti, 2006). With these developments in mind, how might it be possible to rethink and rework the practices, entities and environments of sense within this broader context where the assumed subjects and trajectories of sense are shifting? How might these expanded approaches to sensing practices recast engagements with experience, while reconfiguring explorations of practice-based research (cf. Citizen Sense, 2014-15)?

Rather than take 'the senses' as a fixed starting point, we suggest that sensing-as-practice allows for an attention to these different articulations of sense, particularly in relation to technologies of environmental monitoring, data gathered for evidentiary claims, the formation of citizens, and more-than-human entanglements. Sensing-as-practice also allows for an attention to experience that does not concentrate exclusively on a human subject, but instead accounts for a vast range of sensing subjects, from stones to insects (cf. Whitehead, 1929). William James (1996), a philosopher who influenced Whitehead, suggests that a moment of experience 'proliferates into the next [moment] through transitions which, whether conjunctive or disjunctive, continue the experiential tissue' (87). Sensing practices then shift attention to formations and processes of experience across multiple entities within particular milieus (cf. Gabrys, 2016).

Such an approach to sensing practices clearly links this way of organizing and understanding experience to a posthuman perspective. Within a posthuman context, experience is no longer confined solely to human points of interest or inquiry. Instead, experiences of more-than-humans become critical to rethinking how sensory relations form or are excluded, and the subjects—as well as new subjects—that concresce through these processes (Whitehead, 1929; cf. Åsberg, this volume; Braidotti, 2006). But this is not just a project in attempting to understand how a myriad of pre-existing entities perform their discrete sensing operations. While the specificity of organisms and entities is no doubt important, sensing practices as a concept equally emphasizes

the point that these are also practices that are in transition, as James (1996) suggests, or in process as Whitehead (1929) has elsewhere suggested. The possibilities for one particular type of lichen or moss to incorporate and express registers of urban air pollution in one city could shift in relation to other organisms encountering these processes, the city in which the entities are located, the development or ruination underway, and a whole host of other interconnecting factors (cf. Gabrys, 2012a).

By approaching sensing differently, not as the senses or as a human point of mediation, it is possible to begin to account for the ways in which sensing practices resonate with particular entities and relations. Sensing is not a project of a human mind or organs decoding external substantialist phenomena, as Whitehead would suggest, but rather could be understood as the ways in which experience is expressed through subjects. Yet this is also a collaborative undertaking, and so 'collaborative sensing' (Gabrys, 2016) is always a key aspect of sensing practices. Far removed from the Cartesian brain in a vat, here collaborative sensing refers to the ways in which shared worlds are felt, sustained and even created (cf. TallBear, 2011). If we were to return to the air pollution sensor discussed at the beginning of this entry, we find that the initial delineation of a sensor detecting stimuli and converting those stimuli into data is a rather linear and limited configuration of the sensing work that goes on with this technoscientific device. Sensors do not merely capture environmental data, but rather they are involved in collaborative sensing practices for parsing environments and environmental problems, as well as organizing approaches for how to take action and generate political responses through particular forms of environmental citizenship.

Sensing practices are then differently materialized in relation to the subjects and entities, milieus and environments, processes and situations involved in experiencing. Distinct affective and political capacities are operationalized through sensing practices, where the use of an air pollution sensor by a citizen sets in motion a much different political trajectory than a forest damaged by smog. Sensing practices are ways of articulating what matters, of signaling an expressive register of relevance, and affecting and being affected. In this respect, sensing practices are world-making practices (cf. Stengers, 2011a). They are ways of 'meeting in a world shared in common' (James, 1996: 79). This common world is not so much a place where entities agree to show up, but rather is a milieu among a diversity of milieus that is actively made through shared inhabitations and experiences.

Bibliography

Åsberg, C. 'Feminist Posthumanities', *Posthuman Glossary.*

Braidotti, R. (2006), *Transpositions: On Nomadic Ethics,* Cambridge: Polity.

Braidotti, Rosi. 'World (Becoming)', *Posthuman Glossary.*

Chen, M. 'Animacies', *Posthuman Glossary.*

Chen, M. (2012), *Animacies: Biopolitics, Racial Mattering, and Queer Affect,* Durham, NC: Duke University Press.

Citizen Sense (2014-15), 'Sensing Practices' seminar series, Goldsmiths, University of London, http://www.citizensense.net/sensors/sensing-practices-seminar-series [accessed 13 January 2016].

Cuff, D and Hansen, M. (2008), 'Urban Sensing: Out of the Woods', *Communications of the Association for Computing Machinery* 51(3): 24-33.

Gabrys, J. (2012a), 'Becoming Urban: Sitework from a Moss-Eye View', *Environment and Planning A* 44(12): 2922-2939.

Gabrys, J. (2016), *Program Earth: Environmental Sensing Technology and the Making of a Computational Planet*, Minneapolis: University of Minnesota Press.

Gabrys, J. (2012b), 'Sensing an Experimental Forest', *Computational Culture* 2 <http://computationalculture.net/article/sensing-an-experimental-forest-processingenvironments-and-distributing-relations> [accessed 13 January 2016].

Goodchild, M. F. (2007), 'Citizens as Sensors: The World of Volunteered Geography', Geo-Journal 69: 211-21.

James, W. (1996 [1912]), *Essays in Radical Empiricism*, Lincoln: University of Nebraska Press, 1996.

Pritchard, H. (2013), 'Thinking with the Animal-Hacker: Articulation in Ecologies of Earth Observation', *APRJA* <http://www.aprja.net/?p=990> [accessed 13 January 2016].

Stengers, I. (2011a [1997]), *Cosmopolitics II*, translated by Robert Bononno, Minneapolis: University of Minnesota Press.

Stengers, I. (2011b [2002]), *Thinking with Whitehead: A Free and Wild Creation of Concepts,* translated by Michael Chase, Cambridge: Harvard University Press.

Suchman, L. and Weber., J. (2016), 'Human-Machine Autonomies', in N. Buta, C. Kress, S. Beck, R. Geiss, H.-Y. Liu (eds), *Autonomous Weapon Systems. Law, Ethics, Policy,* Cambridge University Press.

TallBear, K. (2011), 'Why Interspecies Thinking Needs Indigenous Standpoints', Fieldsights--Theorizing the Contemporary, Cultural Anthropology Online, 24 April <http://culanth.org/fieldsights/260-why-interspecies-thinking-needs-indigenous-standpoints> [accessed 13 January 2016].

Whitehead, A. N. (1929), *Process and Reality*, New York: The Free Press.