

More-than-Human Agency: From the Human Economy to Ecological Livelihoods

Ethan Miller

Published in Gibson-Graham, J.K. and Kelly Dombroski (Eds.). 2020. *The Handbook of Diverse Economies*. Northampton, MA: Edward Elgar

Questioning Economic Agency

“Agency,” understood most broadly, refers to an entity’s capacity to make particular things happen or to stop them from happening. Economic agency, in particular, is the power to shape the processes, relationships, and outcomes of economic life. Who or what, then, is the source of dynamism and change in economic relations? Where does economic agency lie and how does it work? This chapter examines these questions in the context of diverse economies theory and its recent and ongoing engagements with ecological and post-humanist thought. What happens to economic agency when “the economy” is expanded to include all livelihood practices? And what happens to agency in general when livelihood is expanded to include all relations of sustenance—economic *and* ecological? It may be that our very notions of the economy, and perhaps even of *ourselves*, must be radically transformed.

In the common formulation of neoclassical economics, agency is exercised by individual consumers and firms maximizing or optimizing their self-interest (as utility or profit). Aggregated via the mechanisms of the market, such individual action is transformed into an external and seemingly-objective force: the “laws” of supply and demand or the necessities and requirements of “economic development” or “the economy.” Multiple versions of Marxist theory challenge the ways that this story obscures social relations of class. Far from efficiently harmonizing the interests of individual agents, economic life is the ongoing outcome of struggles around the production, appropriation, and distribution of surplus value—capitalists on one side, workers on the other. Agency, in this frame, lies in the forms of class mobilization and action that emerge from social conflict. Yet here, too, this agency is aggregated into a set of objective dynamics that confront its subjects (the agents) as an external force of constraint or possibility—

the crisis-ridden tendencies of capitalism, the “objective conditions” under which revolution might successfully unfold, or the totalized “system” which must be overthrown and singularly replaced. Both the neoclassical and conventional Marxist views share a sense that agency arises from a singular or binary source (supply/demand or capital/labor) and is then aggregated into a unified—even if contradictory in its unification—force or system. While Marx (1992) argues that “vulgar economics” (as he would certainly call modern neoclassical theory) obscures possibilities for true revolutionary change, J.K. Gibson-Graham (2006b) proposes that many Marxist theorizations do the very same thing by different means.

Diverse economies theory has profoundly challenged these perspectives on agency by expanding our understanding of the spaces and relations by which life and well-being are enacted. If sustenance unfolds “in multifarious ways” (Gibson-Graham 2006a, 69) of which capitalist relations are only one part, and if these diverse activities involve multiple logics, rationalities, and contextual dynamics, then sites of human economic agency are radically opened and multiplied. A diverse economies perspective “does not presume that the relationships between distinct sites ... are structured in predictable ways, but observes the ways that they are always differently produced according to specific geographies, histories, and ethical practices” (2006a, 71). Seeking to amplify possibilities for transformation, and in a dramatic shift from conventional notions of economic inevitability, Gibson-Graham proposes that “our economy is what we (discursively and practically) make it” (2006a, xxii). Gibson-Graham, Cameron, and Healy take this notion even further: “Our economy is *the outcome of the decisions we make and the actions we take*” (2013, xiii, emphasis added). If this is not to be read in neoclassical terms as the aggregation of individual market choices (and it should not), then it implies a powerful and direct relation between conscious, intentional human choice and the institutional configurations through which livelihoods are produced and provided. It implies a profound and precious sense of possibility regarding the composition of our economies—direct and unmediated human economic agency.

Much can be elaborated and debated in this formulation, including questions about the nature of human consciousness involved in such agency (Massumi 2014), the complex mechanisms of causation (including failures and surprises) linking decisions and outcomes (MacKenzie 2007), and the myriad uneven relations of power involved in any such process of

collective world-making. These are, however, for other discussions. I seek here to affirm the open, transformative emphasis that diverse economy theory places on situated, ethical decisions at the heart of economic life. Why decide, preemptively, that things are otherwise? Why not assume agency and then determine its limits only in practice, in the midst of experimentation with new forms of life and sustenance (Gibson-Graham 2006a, 8)? In Bruno Latour's words, "No power has been given by nature the right to decide on the relative importance and the respective hierarchy of the entities that compose, at any given moment, the common world. But what no one knows, anyone can experiment with" (2004, 197).

And yet it is precisely this openness that suggests another set of questions: who is the "we" from which decisions emerge? Who is the "we" who acts? In its early formulations, diverse economies scholarship tended to assume—if sometimes only by default—a discrete human subject (or a collective of human subjects) at the center of economic action. Whether maximizing, optimizing, making ethical decisions, or just "getting by," rational or quasi-rational humans enact the economy through their work of *making a living*—laboring, producing, transacting, saving, investing, and negotiating various forms of care and access. But what if the human is only one *component* of a collective, more-than-human form of agency? What if it is, in fact, more an *outcome* of such agency than its source? These are questions that recent developments in posthumanist and radical ecological thought have opened, and that diverse economies researchers have also begun to explore.

Destabilizing the Human Agent

Common images of the human as the origin and center of agency have been challenged recently in three key ways. First, it turns out that the "human subject" is itself a collective of beings and processes, many of whom are not themselves human. As microbiological studies of the human organism are teaching us, a human being is not a "discrete, static, genetically-determined individual" (Schneider and Winslow 2014, 218) our bodies are, as a condition of life and health, composed of myriad nonhuman microbes—archean, eukaryotic, bacterial, and viral (Cho and Blaser 2012; Methé et al. 2012). We are hybrid, *chimera*, at least half nonhuman or more-than-human: For every human cell, there is approximately one other nonhuman cell that is

integral to the functional ecology that composes us (Sender, Fuchs, and Milo 2016).¹ The success of human birth itself is contingent on “complex ecologies internal to the human body (including microbial populations in the gut, skin, vagina, mouth), yet not quite human in themselves” (Dombroski, Mckinnon, and Healy 2016, 5). As microbiologist Scott Gilbert emphasizes, we are not individuals, but rather *communities*, or “holobionts”--dynamic, complex “consortiums of organisms that become a functionally-integrated ‘whole’” (2013, 1). This implies that the ethical decisions of diverse economic engagements emerge not from the monospecific brains of humans, singularly and exclusively enacting our celebrated intentionality and agency, but from the *interspecies dynamics of a collective* that include (among other things) the affective and cognitive interventions of the “gut-brain axis” that links intestinal microbiota with brain function (e.g., Foster and McVey Neufeld 2013).

Furthermore, it is clear that even this complex, multispecies “whole” that constitutes a human does not have clear boundaries that end at its skin. “What would a human be,” asks Latour, “without elephants, plants, lions, cereals, oceans, ozone or plankton? A human alone, much more alone even than Robinson Crusoe on his island. Less than a human. Certainly not a human” (1998, 230; see also McKinnon 2016). The key move here, variously enacted by related threads of actor network theory and assemblage theory, is to blur one’s focus on discrete, bounded *things* in favor of attention to the *relational processes* of composition and decomposition from which these things materialize and through which they come undone. Deleuze and Guattari’s (1987) notion of *agencement* (often translated as “assemblage”) is powerful and influential in this regard. Perhaps better described as an “enactment” (Nail 2017) or even an “entanglement” (Ingold 2009), an *agencement* names a particular configuration of forces and relations—a coming-together of various contents and expressions—that is continually stabilized and consolidated (territorialized) in some dimensions and destabilized and unravelled (deterritorialized) in others (Deleuze and Guattari 1987, 88).

The human subject, then, is a (de)composition of multiple elements—bacteria, bones, brain, blood, food, families, companion animals, tools, buildings, oxygen-making photosynthesizers, bureaucratic institutions, means of production and exchange, identities, ideas,

¹ The ratio of human to nonhuman cells depends in large part on the definition of a cell. Commonly-cited estimates of ten microbes to each human cell assume that red blood cells (which lack nuclei) are not proper cells. When included, they bring the ratio close to 1:1 (Sender, Fuchs, and Milo 2016).

desires, climate dynamics, and so on. “It is not” writes Tim Ingold “that organisms are entangled in relations. Rather, every living thing is itself an entanglement, a tissue of knots whose constituent strands, as they become tied up with other strands, in other bundles, comprise the meshwork” (2009, 153). Agency is not centralized in a single (human) subject but is *distributed* throughout a web of somatic and extrasomatic relations and is *emergent* from this web as the outcome of ongoing negotiation. Jane Bennett describes this as an “agentic swarm” (2010, 32). To the extent that human subjects are seen to make decisions and take actions that influence economic life, these acts shift from constituting the *starting points* of agency—the origins of influence and control—and become, rather, *outcomes* of a wider array of more-than-human relations and actions. “Human intentions,” writes Bennett, are “always in competition and confederation with many other strivings” (2010, 32).

A crucial implication of this view is that economic activity cannot be described only in terms of the work of humans “making a living”—producing, transacting, consuming, and distributing surplus. If human agency is, in fact, the result of a more-than-human assemblage, then human sustenance is intimately and inextricably bound up in its interdependent relations with others. “To be one,” reminds Donna Haraway, “is always to *become with many*” (2008, 4). No entity, in fact, sustains itself, and no human or human community simply makes its own living. We are “bodies becoming other bodies” (Sarmiento 2015, 79) and interdependency is “the ontological state in which humans and countless other beings unavoidably live” (Puig de la Bellacasa 2017, 4). Any notion of economic agency then—even a distributed one—must include an acknowledgement of the constitutive limits of this agency, of the ways in which human assemblages make our livings, provide livings, and receive our livings from others (Miller 2019). Agency is contingent on (inter)dependency. A domain of human life-making activity (e.g., “the economic”) cannot, then, be clearly separated from the wider web of constitutive relations that make life, and its agential production, possible.

More-than-Human Agency and Diverse Economies

What does all of this mean, then, for the proposition that “our economy is the outcome of the decisions we make and the actions we take” (Gibson-Graham, Cameron, and Healy 2013,

xiii)? What does economic agency become in the context of the “agential swarm”? What does “the economy” itself become? A number of diverse economies scholars have begun to move in recent years toward what Sarah Whatmore calls “*more-than-human* modes of enquiry,” research practices and foci that “neither presume that socio-material change is an exclusively human achievement nor exclude the ‘human’ from the stuff of fabrication” (2006, 604). Economic relations are, in this view, “a performative outcome of an array of interdependencies, between humans, environments and non-human entities” (Roelvink and Gibson-Graham 2009, 149), and the explicit goal of more-than-human diverse economies research is—as Gibson-Graham articulated in one of the earliest formulations of this new direction—“to enlarge the space of agency of all sorts of actors... non-human as well as human” (2008, 14). How is this accomplished? I will map a series of strategies or “moves,” each offering important perspectives and presenting unique limits, by which diverse economies scholars have explored questions of more-than-human economic agency.²

A first crucial move—what I will call *inclusion*—is made by Roelvink and Gibson-Graham when they apply the “community economy coordinates” of necessity, surplus, consumption, and commons to a more-than-human context, intimately implicating human ethical decision with the lives and livelihoods of nonhumans. This strategy draws nonhuman living beings into visibility through existing frames of human economic agency. Rather than viewing economic *needs* as attributes of humans alone, Roelvink and Gibson-Graham seek to “consider the needs of other entities that are part of the overdetermined process of production in a community economy” (2009, 150)—needs for habitat, sustenance, and ethical relation with human collectives. Expanding the concept of *surplus* beyond that which is produced by and for humans alone, they bring into view the many roles of nonhuman living beings in productive processes and call for us to explore ways in which surplus might be mobilized in ethical relationship with more-than-human forms of labor. Viewing *consumption* as a site of relationship with human and nonhuman others, they call for the “social and environmental implications of individual, enterprise and social consumption to be explored and ethically negotiated” (2009, 152). And finally, they reframe *commons* as sites of *multispecies commoning* rather than as pools

² In pursuing this categorization, I clearly run the risk of oversimplifying the work of any given scholar. Please note that this narrative is intended only to elaborate and illustrate broad patterns, not to argue for the comprehensive classification of particular research projects. Indeed, the work of some authors can be found in multiple categories at once.

of “resources” for humans to (exclusively) share (see also Bresnihan 2016). Elizabeth Barron (2015) takes up this kind of analysis in her research on the gathering of nontimber forest products in the U.S., describing numerous ways in which diverse practices weave humans, fungi, forest ecosystems, and other actors together in webs of interdependence and ethical negotiation over questions of need, surplus, consumption, and commons (2015, 184). On one hand, this approach powerfully acknowledges interdependence and renders ethical responsibility toward more-than-human relations accessible to a wide array of human actors (Barron 2015, 190, fn.4); on the other hand, these human actors remain at the center of action and risk appearing as the only true *agents*.

The strategy of *extension* directly addresses this challenge by extending categories commonly assumed to be exclusively “human” to nonhuman entities. Oona Morrow (2014), for example, makes a compelling argument for the extension of the notion of *labor* to acidophilus bacteria in her study of a neighborhood yogurt production cooperative. Not only do these beings actively work, in alliance with human producers, to transform milk sugars and proteins into yogurt; they also influence and transform the behavior of those they work with—demanding attention, discussion, cultivation of knowledge, and specific forms of material intervention and care (2014, 62–67). Ann Hill, in her study of collective resilience in post-typhoon Manila (2014), extends the notion of *ethical agency* to nonhuman actors such as bamboo, tetra-pack juice cartons, and even the typhoon itself. This is not a simple anthromorphization of these entities, as if they were seen to deliberate and decide, but rather a reconfiguration of the notion of agency itself: bamboo, Hill argues, “is a ... material thing with ethical agency because it has potential in a hybrid collective that acts” (2014, 218). Its agency lies in the particular ways in which it presents its own requirements, possibilities, and relations to other beings as it enters into collective action, and it is “ethical” because this participation matters for how all the beings involved will fare in the process. These strategies of extension are radical and provocative, opening up new pathways for unsettling anthropocentric assumptions. But might they risk accidentally importing human-centered expectations into other modes of being? Might we find ourselves arguing about whether bacteria or bamboo have *this* or *that* similarity to human labor or ethical sensibility rather than seeking out their unique forms of agential expression?

Such questions may arise less frequently amidst strategies of *distribution*, often enacted through the mobilization of some form of actor network theory (ANT) or assemblage theory. Here, categories of human ethical agency are neither expanded nor extended to individual beings, but rather distributed out in diverse forms among myriad actants.³ The work of Robert Snyder and Kevin St. Martin on rethinking fisheries (2015) demonstrates that different assemblages of measurement practices, accounting and mapping techniques, ocean ecologies, fishing gear, market arrangements, and human collectivities can give rise to radically different “worlds” of constraint and possibility. Eric Sarmiento’s engagement with local food systems and urban redevelopment in Oklahoma City challenges conventional images of (human) interest groups vying for control in favor of a much more complex picture: configurations of always-tenuous and partial power produced through the articulation of diverse passions and desires with “the matter of the city itself, including not just the built environment and other ‘concrete’ elements but also ... the energetic exchanges of bodies and food, athletic bodies in motion ...” and more (2018, 344). Agency is a less a property or a starting-point here than it is a result of struggles over the assemblage. In Sarmiento’s words, “the world becomes other not simply as the direct result of conscious ‘wills’ of particular actors, but rather as the profoundly contingent outcome of incalculable forces pulling in all directions” (2015, 79).⁴

Rethinking Economy and Ecology

While all of these strategies make powerful contributions to a more-than-human diverse economies research program, a human actor—or at least a human *world*—often remains at the center of a now multifarious web of actants. As Gerda Roelvink points out, “the human has remained a key point of entry in posthumanist diverse economies research ... while we have opened up what it means to be a human economic subject, we have given less attention to how

³ Ann Hill’s strategy relative to community resilience—even if enacted at times via extension—is, in fact, also one of radical (re)distribution: agency, ethics, and even intelligence are not properties of distinct beings, but rather of “a more-than-subject ... that produces ethical action” (2014, 222). Ethical action and agency are emergent from the multivalent assemblage itself, as one set of possible and provisional outcomes of complex, multi-being negotiation.

⁴ For other examples of work at the intersection of diverse economies and assemblage theory, see Mckinnon (2016), Dombroski, Mckinnon, and Healy (2016), and Dombroski (2018).

other-than-human entities might also be economic subjects in their own right” (2015, 229). This is, indeed, a major frontier for future work. Roelvink suggests pathways that push the strategy of inclusion in directions that more radically decenter the human—acknowledging “that rivers have a pattern of life or self-realization” (2015, 237), and amplifying experiments with eco-synergistic farming practice that are “directed by the agency, capacity and needs of earth others” (Roelvink and Zolkos 2011, 53). Here, it is not so much that nonhumans are included in human ethical accounting, but that *humans are finally included* in the constitutive webs of life that some of them (us) have attempted to deny.

This work, folded together with the other strategies described above, leads to a radical destabilization of the very concept of “economy” itself. This is Elizabeth Barron’s intuition when she extends Gibson-Graham and Roelvink’s theorization of “econo-sociality” (2010) into the more-than-human realm, arguing that “nonhuman biota are integral to ‘social’ networks, which are the basis for ethical decision-making” (Barron 2015, 173). And it is the focus of Gibson-Graham and Miller (2015) when we challenge the notion that humans have an “economy” while other living beings have (only) an “ecology”:

there is no more ground for the construction of a human “economy” separate from its ecological context than there would be for ecologists to consider the provisioning practices of bees as an independent “system”—with its own internal laws and imperatives—wholly separate from their constitutive interrelationships with flowering plants, other pollinators, soil mycorrhizae, nitrogen fixing bacteria, seed dispersing birds and mammals. (Gibson-Graham and Miller 2015, 10)

We call, instead, for a reconfiguration of the meanings of economy and ecology, where the problem would no longer be one of integrating, harmonizing, or balancing tensions between the two. Economy, as its Greek roots *oikos* (habitat) and *nomos* (management or negotiation) imply, would name the active negotiation of livelihoods by a given population or community—human, deer, oak, bee, flower—always in relation with living and nonliving (though animate) others. It does not name a discrete domain or a particular type of action (or actor), but rather the *processes* by which particular collectivities negotiate the multiple biosocial and geosocial dimensions of life in common amidst a mesh of planetary interdependence. Ecology would become the

impossible yet necessary attempt to understand the complex interrelationships among and between all of these co-constituted economies.

To speak of “diverse economies” in this frame, then, would be necessarily to speak of the livelihood practices and relations of myriad human and more-than-human collectivities. Photosynthesis, parasitism, soil formation, compost, pollination, and climate regulation would be no less a part of a diverse economic accounting than would cooperatives, household labor, and gift-giving. Who is an economic agent? All who *act* in relation to their own sustenance and the sustenance of others; all who participate in the active negotiation of livelihoods on a living planet. Such action includes the distributed and emergent agency of the assemblages in which all beings participate, as these too generate their own forms and modes of participation—limiting, enabling, catalyzing, shaping spaces and possibilities for action and transformation. Yet we must be careful not to reaffirm a “system” here within which agency does or does not unfold: while no agent is free to (re)make the world in the manner of their choosing, none of this adds up to a singular “economy” or even “an environment.” If there is an entity called “the economy,” this is but one (perhaps powerful, and certainly problematic) actor added to the network of negotiation and struggle (Miller 2019), and transformative possibility remains something to be experimented with and composed rather than preordained. It is indeed the case that “our economy is *the outcome of the decisions we make and the actions we take*” (2013, xiii, emphasis added); but the “we” is larger than can be accounted for, the economy only one among many, the decisions quite complex in the making, and the actions always emergent from a more-than-human collective that makes us, that we make, and that we *are*.

References

- Barron, Elizabeth. 2015. “Situating Wild Product Gathering in a Diverse Economy: Negotiating Ethical Interactions with Natural Resources.” In *Making Other Worlds Possible: Performing Diverse Economies*, edited by Gerda Roelvink, Kevin St. Martin, and J.K. Gibson-Graham. Minneapolis: University of Minnesota Press.
- Bennett, Jane. 2010. *Vibrant Matter: A Political Ecology of Things*. Durham, NC: Duke University Press.
- Bresnihan, Patrick. 2016. “The More-Than-Human Commons: From Commons to Commoning.” In *Space, Power and the Commons: The Struggle for Alternative Futures*, edited by Samuel Kirwan, Leila Dawney, and Julian Brigstocke. New York: Routledge.

- Cho, Ilseung, and Martin J. Blaser. 2012. "The Human Microbiome: At the Interface of Health and Disease." *Nature Reviews Genetics* 13 (4): 260–70.
- Deleuze, Gilles, and Felix Guattari. 1987. *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Brian Massumi. Minneapolis: University of Minnesota Press.
- Dombroski, Kelly. 2018. "Learning to Be Affected: Maternal Connection, Intuition and 'Elimination Communication.'" *Emotion, Space and Society* 26 (February): 72–79.
- Dombroski, Kelly, Katharine Mckinnon, and Stephen Healy. 2016. "Beyond the Birth Wars: Diverse Assemblages of Care." *New Zealand Geographer* 72 (3): 230–39.
- Foster, Jane A., and Karen-Anne McVey Neufeld. 2013. "Gut–Brain Axis: How the Microbiome Influences Anxiety and Depression." *Trends in Neurosciences* 36 (5): 305–12.
- Gibson-Graham, J.K. 2006a. *A Postcapitalist Politics*. Minneapolis: University Of Minnesota Press.
- . 2006b. *The End of Capitalism (As We Knew It): A Feminist Critique of Political Economy*. 2nd ed. Minneapolis: University of Minnesota Press.
- . 2008. "Diverse Economies: Performative Practices for Other Worlds." *Progress in Human Geography* 32 (5): 1–20.
- Gibson-Graham, J.K., Jenny Cameron, and Stephen Healy. 2013. *Take Back the Economy: An Ethical Guide for Transforming Our Communities*. Minneapolis: University of Minnesota Press.
- Gibson-Graham, J.K., and Ethan Miller. 2015. "Economy as Ecological Livelihood." In *Manifesto for Living in the Anthropocene*, edited by Katherine Gibson, Deborah Bird Rose, and Ruth Fincher. Brooklyn, NY: Punctum Books.
- Gibson-Graham, J.K., and Gerda Roelvink. 2010. "An Economic Ethics for the Anthropocene." *Antipode* 41 (s1): 320–46.
- Gilbert, Scott F. 2013. "Symbiosis as the Way of Eukaryotic Life: The Dependent Co-Origination of the Body." *Journal of Biosciences* 38 (4): 1–9.
- Haraway, Donna. 2008. *When Species Meet*. Minneapolis: University of Minnesota Press.
- Hill, Ann. 2014. "Growing Community Food Economies in the Phillipines." PhD Dissertation, Canberra: Australian National University.
- Ingold, Tim. 2009. "Point, Line and Counterpoint: From Environment to Fluid Space." In *Neurobiology of "Umwelt": How Living Beings Perceive the World*, edited by A. Berthoz and Yves Christen. London: Springer.
- Latour, Bruno. 1998. "To Modernise or Ecologize? That Is the Question." In *Remaking Reality: Nature At the Millenium*, edited by Bruce Braun and Noel Castree, translated by Charis Cussins. New York: Routledge.
- . 2004. *Politics of Nature: How To Bring the Sciences Into Democracy*. Translated by Catherine Porter. Cambridge, MA: Harvard University Press.
- MacKenzie, Donald. 2007. "Is Economics Performative? Option Theory and the Construction of Derivatives Markets." In *Do Economists Make Markets?: On the Performativity of Economics*, edited by Donald MacKenzie, Fabian Muniesa, and Lucia Siu. Princeton, NJ: Princeton University Press.
- Marx, Karl. 1992. *Capital, Volume I: A Critique of Political Economy*. Translated by Ben Fowkes. New York: Penguin Classics.
- Massumi, Brian. 2014. *The Power at the End of the Economy*. Durham, NC: Duke University Press.

- McKinnon, Katharine. 2016. "The Geopolitics of Birth." *Area* 48 (3): 285–91.
- Methé, Barbara A., Karen E. Nelson, Mihai Pop, Heather H. Creasy, Michelle G. Giglio, Curtis Huttenhower, Dirk Gevers, et al. 2012. "A Framework for Human Microbiome Research." *Nature* 486 (7402): 215–21.
- Miller, Ethan. 2019. *Reimagining Livelihoods: Life Beyond Economy, Society, and Environment*. Minneapolis: University of Minnesota Press.
- Morrow, Oona. 2014. "Urban Homesteading: Diverse Economies and Ecologies of Provisioning in Greater Boston." Ph.D. dissertation, Worcester, MA: Clark University.
- Nail, Thomas. 2017. "What Is an Assemblage?" *SubStance* 46 (1): 21–37.
- Puig de la Bellacasa, María. 2017. *Matters of Care: Speculative Ethics in More Than Human Worlds*. Minneapolis: University of Minnesota Press.
- Roelvink, Gerda. 2015. "Performing Posthumanist Economies in the Anthropocene." In *Making Other Worlds Possible: Performing Diverse Economies*, edited by Gerda Roelvink, Kevin St. Martin, and J.K. Gibson-Graham. Minneapolis: University of Minnesota Press.
- Roelvink, Gerda, and J.K. Gibson-Graham. 2009. "A Postcapitalist Politics of Dwelling: Ecological Humanities and Community Economies in Conversation." *Australian Humanities Review* 46: 145–58.
- Roelvink, Gerda, and Magdalena Zolkos. 2011. "Climate Change as Experience of Affect." *Angelaki* 16 (4): 43–57.
- Sarmiento, Eric. 2015. "Umwelt, Food, and the Limits of Control." *Emotion, Space and Society* 14 (February): 74–83.
- . 2018. "The Affirming Affects of Entrepreneurial Redevelopment: Architecture, Sport, and Local Food in Oklahoma City." *Environment and Planning A: Economy and Space* 50 (2): 327–49.
- Schneider, Gregory W., and Russell Winslow. 2014. "Parts and Wholes: The Human Microbiome, Ecological Ontology, and the Challenges of Community." *Perspectives in Biology and Medicine* 57 (2): 208–23.
- Sender, Ron, Shai Fuchs, and Ron Milo. 2016. "Revised Estimates for the Number of Human and Bacteria Cells in the Body." *PLoS Biology* 14 (8).
- Snyder, Robert, and Kevin St. Martin. 2015. "A Fishery for the Future: The Midcoast Fishermen's Association and the Work of Economic Being-in-Common." In *Making Other Worlds Possible: Performing Diverse Economies*, edited by Gerda Roelvink, Kevin St. Martin, and J.K. Gibson-Graham. Minneapolis: University of Minnesota Press.
- Whatmore, Sarah J. 2006. "Materialist Returns: Practising Cultural Geography in and for a More-Than-Human World." *Cultural Geographies* 13 (4): 600–609.