

# “Enwebbed Complexities”: The Posthumanities, Digital Media and New Feminist Materialism

Birgit Van Puymbroeck in conversation with N. Katherine Hayles

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How to present N. Katherine Hayles, Kate to her friends and colleagues and “Kaye” in her book *Writing Machines*? Hayles is professor of English at Duke University. A specialist in digital humanities, electronic literature, science and technology, science fiction and critical theory, she is the author of *How We Became Posthuman* (1999), *Writing Machines* (2002), *My Mother Was a Computer* (2005), and *How We Think: Digital Media and Contemporary Technogenesis* (2012). What prompted this interview – which ironically had a technological breakdown – was an interest in intersectionality not only between gender and diversity studies but also between the sciences and the humanities. The interview builds on Rosi Braidotti’s article “Yes, There Is No Crisis: Working Towards the Posthumanities” and discusses the impact of digital media on research and teaching in the humanities, as well as the influences of feminism and philosophy on Hayles’s work.

**Birgit Van Puymbroeck:** *In other interviews as well as in your book Writing Machines, you talk about your trajectory in life. You grew up in a small town in Saint Louis, Missouri, studied chemistry, worked for Xerox and then switched to English. This trajectory clearly underpins your work that bridges the gap between the “two cultures”: the sciences and the humanities. To what extent is this distinction between the two cultures anno 2014 still firmly in place or is it becoming increasingly obsolete?*

**Kate Hayles:** I think it is still firmly in place. This has to do with the very different missions of the sciences and the humanities. Scientists are concerned to get theories that work, perform experiments to confirm or falsify these theories, and use them to

construct a more comprehensive picture of the universe. The humanities on the other hand are heavily invested in practices of critique, especially around cultural, political, and ethical issues. Concern with these issues plays little role in the sciences. So when the sciences and the humanities approach a common question, they are apt to tackle it using completely different methodologies. And, of course, as a result of the wonderful work of people in science studies, a lot of the old ideas about science are now obsolete. Nevertheless, most scientists still deeply believe that they are discovering the nature of physical reality. That mission is more or less foreign to the humanities.

**BVP:** *Would you consider yourself an interdisciplinary mediator between the two cultures?*

**KH:** In a certain way, technology provides a middle ground in which the sciences and the humanities can interact. Since technology must be concerned with social practices, it provides an opening for cultural critique of the kind that the humanities specialize in. At the same time, technology has to work as a technology. To work as a technology means that it has to proceed on a sound scientific basis. If I were to say that there is a middle ground between the sciences and the humanities, it would fall in the area of technics.

**BVP:** *This also explains your interest in digital media. What is the impact of digital media on the humanities?*

**KH:** Digital media are changing so many aspects of contemporary life that it is almost impossible to span the full range of the kinds of changes digital media are implementing. In *How We Think*, I was especially concerned with how digital media are impacting traditional humanistic practices, along with how digital media are impacting human neural structures. As I explained in the book, there is quite a lot of convincing evidence now that our interactions with digital media are having significant neurological consequences. By interacting with digital media, we are in a real sense re-engineering our brains. One of the questions that we need to think about is in what direction we want that re-engineering to proceed and what it implies about the way in which we engage with digital media.

**BVP:** *What about the use of "big data" and "hyper-reading" in the humanities?*

**KH:** In terms of humanistic practices, traditionally description has implied a lower run than interpretation. It is considered that description requires less critical insight

and provides less leverage than interpretation. This comes to the fore because a lot of digital humanities are concerned with description. Text-analytic algorithms provide a description of corpora either too large to be read by humans or else, on a smaller corpus or even on a single book, they provide a schematic of patterns in the text that may have eluded human comprehension. So whether it is large corpora or a single text, digital media can answer a descriptive type of questions.

Scholars trained in print literature often see the digital humanities as “donkey-work” because it requires an enormous amount of painstaking work: in digitizing the text that one wants to study, in carrying out the text analysis and then in analyzing what those results might mean. The point that I want to make builds on an argument that Sharon Marcus made in a recent presentation (“Description and Critique”, 2013). There is a longstanding argument that you cannot have pure description. As put in science studies, description is theory-latent. As put in the humanities, description already implies an interpretive perspective. To describe something is already to interpret it, to interpret is already to necessitate a description. Understanding that feedback loop places the digital humanities much closer to the traditional humanities.

**BVP:** *Your observation about description also reminds me of actor-network theory, related to science and technology studies, that presupposes a “slowciology”: one traces every actor, human and non-human, in the network and describes its mediating functions.*

**KH:** Bruno Latour’s actor-network theory has been important in drawing attention to the potential role and agency of technical devices. But I also think that it has resulted in a flattening by not making a distinction between human and non-human actors. In my view, we should make a distinction and ask in what ways human actors differ from non-human actors.

Karen Barad’s work is interesting in this regard. In her book *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (2007), Barad introduces the notion of “intra-action” as different from interaction. Intra-action posits that there is no prior existence of determinate objects and things. Instead, the properties and boundaries of things are enacted in intra-active processes. What this implies is that the distinction between the human and the non-human is not pre-existing, nor does it emerge from interaction between the two. Instead, the distinction is emergent within the phenomena themselves: properties and boundaries are enacted by certain constellations that give meaning to the phenomena to the exclusion of others.

Barad illustrates this point by referring to Niels Bohr’s example that electrons can appear as both particles and waves. This is not contradictory, according to Bohr, but shows the emergent qualities of elementary particles that vary depending on the way

in which meaning is constructed. Barad's contribution takes this epistemological argument and extends it to ontology. Intra-action is not one kind of event within a larger universe; rather, the universe itself exists in and through intra-actions.

This may appear to reinforce the idea that actors and agents are all intra-acting and defining their very existences as such through intra-actions. Yet Barad is very precise about the specific dynamics involved in various kinds of intra-actions. When both humans and non-humans are regarded as actors within a network, we gain insight into the various kinds of agencies they embody, but this must in my view be complemented by rigorous explications of the differences between agents, especially their different sensory, actuator, and cognitive capabilities.

**BVP:** *For Rosi Braidotti, one way to define the posthumanities is through the use of digital media. Another is to pose questions of geopolitical development. How does the rise of digital media reveal or install new systems of power?*

**KH:** Multiple levels are involved here. First, there is the level of material resources. Minerals such as columbite and tantalite, which are used in mobile phones and other electronic equipment, are mined in Africa, where workers often labor in appalling circumstances reminiscent of slavery. Connected to this is the problem of electronic waste. Defective or outmoded electronics are exported to third world countries, where they are dumped or disassembled. This is often done in poor circumstances that pose serious risks to health and environment.

Second, there is a reconfiguration of capitalism in the form of immaterial labor. Digital media changes the way we think about work. This includes how our attention is being claimed and manipulated by digital media, a subject that Bernard Stiegler (2010) has discussed. For example, when I open my email, I get ads that are impossible to delete or to remove as they flip among different servers. They are meant to be there and to be permanently there. In a way, these ads are stealing immaterial labor from me.

Finally, there is the fact that digital media can bring people together to exchange ideas and to create new kinds of social networks. People find each other on the web. Whether you have a passion for cooking with avocados or – one of the more bizarre things I recently came across on the web – an avocation for cutting off body parts, you can find other, like-minded people. These are people who most likely would not have found each other without the web. So digital media are also instrumental in creating new communities.

**BVP:** *In How We Think, you write: "In my view the humanities, far from being in crisis, have never seemed so vital". Similarly, Braidotti notes: "there is no crisis". You*

*seem to share with Braidotti optimism about the future of the humanities but also a desire to reconfigure them.*

**KH:** As long as I have been in the profession, there has been talk of crisis in the humanities; one could argue, as John Guillory has, that a situation lasting half a century is not a crisis but a systemic condition, so in that way there is nothing new. What is new, however, is that there is a change or a transformation in our human condition to which the humanities need to respond. I think Braidotti is right in enlarging the scope of the humanities. The same goes for digital media. These changes require accurate mapping for which one needs more than just superficial skills. Once this is done, the traditional strengths of the humanities, those of critique, can resurface.

**BVP:** *A more skeptical view perhaps is that the reconfiguration of the humanities into the posthumanities is driven by a desire to demonstrate the relevance of the humanities through their "function" in society, often defined in utilitarian terms. How would you respond to this?*

**KH:** It is true that the humanities feel that they need to justify themselves. Yet their relevance lies precisely in their strong strain of critique. This seems to me one of the most valuable functions the humanities can have in society and one in which it is worthwhile investing. It would make little sense for businesses to invest in critique as businesses have other interests. The relevance of the humanities lies precisely in their oppositional role. They open up new ways of thinking, new directions in which a society can move and manifest itself.

The same goes for literature. Literature imagines new roles and uses the powerful tool of narrative. Recent research in neurology suggests that our brain architectures are uniquely adapted to narrative, and literary narratives can often reinforce or ignite social movements by vivid depictions of alternative futures. Stories help us to make sense of the world by giving shape to experiences that often seem chaotic, incoherent, or meaningless. Even narratives that subvert causality or deny meaning still create frameworks that orient us to a world in which the quest for meaning is itself part of the human condition, even if the quest is ultimately fruitless.

**BVP:** *A question that is less addressed by Braidotti is how the posthumanities should be reflected in education. In How We Think, you talk about a reformation of English departments and curricula to form an education that is problem-based instead of content-based, and project-based, that is, joining theory and practice. How do you see the development of education in the future?*

**KH:** The question of education has to do with a shift in communication structures. The traditional classroom is very much predicated on the "one-to-many" model, where the teacher stands in front of the classroom and lectures. Yet the structure of authority that this model presupposes has been deconstructed, especially in science and technology studies. Young people already know so much about technology and bring this knowledge into the classroom.

Now of course one can forbid students to bring their laptops into the classroom, to message each other during class, or to google things as you speak so as to hold on to the traditional model of authority. Another approach, however, is to optimize the collaborative setting of the classroom. With modern technology, lectures can be posted on the web. This opens up classroom time for more collaborative work.

This is the model of the flipped classroom in which lectures become homework and homework is treated in class. A teacher walks around and addresses problems as they emerge. It is a more dynamic setting in which knowledge is co-constructed by constant feedback.

One thing is clear: higher education is undergoing rapid changes that will make the future look very different from the past. The possibility of giving away knowledge for free or at very low cost, as with MOOCs (Massive Open Online Courses), has the potential to revolutionize the role of the university and of creating new kinds of empowerment, especially in developing countries and poorer nations.

**BVP:** *When I think of your work in relation to others, I think not only of Rosi Braidotti but also of Donna Haraway. All three of you write about a posthuman condition but from different angles. I link Haraway's work with biology, Braidotti's with philosophy and yours with science and technology. How would you say your projects are similar/dissimilar?*

**KH:** Haraway seems to have moved away from technology since the publication of her cyborg manifesto. She now focuses on companion species. Braidotti approaches the posthuman from a philosophical background, in particular Deleuze. My interest lies in science and technology, and especially in technical devices as cognitive partners. I am interested in developing a theoretical framework in which cognition is recognized as a much broader process than thinking, identifying a spectrum of nonconscious cognitions that are embodied in humans, animals, and technical devices.

**BVP:** *Whereas Haraway's and Braidotti's work is often characterized as feminist, this label seems to have been less applied to your work.*

**KH:** It is true that my work may be less overtly feminist or feminist theoretical, yet feminism is always there at the edges. I certainly identify as a feminist. In my career,

I had to battle a lot of machismo in the patriarchal organization of universities, so feminism is very important to my work both on an institutional level and on the level of content. In *How We Became Posthuman*, for example, I argued strongly for the importance of embodiment, which I hoped would effectively counteract masculinist fantasies of disembodiment.

**BVP:** *Perhaps one of the reasons why the label has been less applied to your work is that science and technology still remains gendered as a field.*

**KH:** Yes, I think you are right. Science and technology as fields are still very much masculine-inspired. Commercial video games, for example, are mostly violent shooters. More feminist versions exist, but these are exceptions.

**BVP:** *If Braidotti approaches the posthuman from a Deleuzian perspective, I wonder how philosophy enters your work. It seems to me that your work may participate in a tradition of object-oriented philosophy.*

**KH:** When I first discovered object-oriented philosophy about three or four years ago, I had high hopes for it. But then I found, upon further reading, that object-oriented ontology (OOO) is a misnomer. Graham Harman's version, for example, asserts that objects withdraw infinitely from any attempt to know them. If this were the case, it would eviscerate almost all scientific knowledge. Fortunately, knowledge practices continue to be quite robust regardless of what OOO asserts. I recently wrote an article ("Speculative Aesthetics and Object-Oriented Inquiry (OOI)", 2014), in which I argue for a practice that takes the kernel of truth in OOO and contextualizes it in a way that empowers empirical practices as well as speculative inquiry.

**BVP:** *This brings me to my next question on materiality. You have stated that materiality does not just mean physicality but that it is an emergent quality. Could you explain?*

**KH:** The idea is that the physical attributes that constitute an artifact are potentially endless, a point relevant to OOO and the kernel of insight that I accept as valid. Materiality then emerges in the interaction between a physical robust world and human intelligence that interacts with physicality to create meaning. Materiality is not physicality in itself, but physicality that is made to matter through intra-actions with empirical practices. Physicality in total can never be known completely, a position rather different from the OOO stance that it can never be known at all.

This comes back to Barad's idea of intra-action but it also has strong implications

for the way we think about subjectivity and agency: we are never only conscious subjects and objects are never just physical artifacts. Instead, we are connected in processes of meaning-making. These processes help to determine our behavior, as our behavior helps to configure these processes. If we never act with complete agency, we are never completely without it either. Andrew Pickering (1995) calls this the "mangle of practice" in which complex recursions between material resistances and disciplined practices constantly interact with and modify each other.

**BVP:** *Where does that leave us with regard to ethics?*

**KH:** For Barad, ethics is located in the individual actions of scientists. She discusses how ethics basically enters at every step of the way: how experiments are organized, how scientific discourses are constructed, etc. The point she makes is that content is never separated from the practice of science, and vice versa.

Many of the theorists writing under the banner of feminist materialisms – Rosi Braidotti, Elizabeth Grosz, Donna Haraway, Jane Bennett, Luciana Parisi and others – discuss ethics in terms of decentering the human and opening the stable rational subject of traditional humanism to flows of intensities and processes of transformation that bring into question the boundaries between self and world, human and nonhuman, biological life and inorganic processes. The ethical project here is to contest anthropocentrism and relocate humans not as exceptional beings entitled to dominate the planet but as one kind of actors, along with many other nonhuman actors and agents that together create the enwebbed complexities in which we all exist. The politics and policies that emerge from such ethical considerations would be far more conducive to sustainable futures than our present courses, which – wittingly or not – are recklessly endangering the health of the planet and all that it sustains and nourishes.

**BVP:** *Thank you for this conversation.*

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