

ECOHUMAN IN NEW  
MATERIALIST HUMANISM:  
“ENERGY AND CHANGE”  
BY CLAYTON CROCKETT

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*Abstract:* This commentary to Clayton Crockett’s *Energy and Change: A New Materialist Cosmology* details his use of systems concepts as it extends his energy framework to conceive of the ecohuman, a new concept that broadens anthropocentric and humanist traditions’ forms of thinking the human being. A review of Crockett’s book gives way to speculations about what the ecohuman is, and how it might be thought across discourses in posthumanism, new materialism, systems theory, and philosophy.

*Keywords:* energy, entropy, new materialism, cosmotheogeny, ecohuman.

In his groundbreaking 2002 volume, *Ecobumanism*, assembled just a decade and a half ago now, Robert Tapp coined the term “ecohumanism”, and its definitional resonances are still being filled out. The blurb for the volume turned book, published by Prometheus Books, notes that “humanists are sometimes accused of being so focused on the human race that they ignore the environment and other species” (Tapp 2002), yet still at the turn of the century, one could ponder if humanists had adequately addressed the charge conceptually. Had truly new concepts, ones capable of meeting human and environmental challenges, been developed or deployed in Tapp’s volume? Had something like a posthuman turn, one that seemed to still put the fate of humans at the forefront of its con-

ISSN 2283-7949  
GLOCALISM: JOURNAL OF CULTURE, POLITICS AND INNOVATION  
2023, 1, DOI: 10.54103/gjcpi.2023.1.22349



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cerns, yet been taken? Just six years later, in 2008, William R. Patterson published an essay that would make it appear as though ecohumanism was a familiar concept in an already an established field. Yet his paper, *Ecobumanism: Principles and Practices*, may just as well have been entitled, “Humanism: Principles and Practices” since the essay did little to define ecohumanism outside of the already prevailing humanist frameworks. Could the field of ecohumanism get the new discourse it deserved without losing the naturalist political orientation (to save the environment!) gestured at by Tapp<sup>1</sup> – was it destined to remain all too human? From another vantage, posthumanists, new materialists, and cyberneticians were heeding the call of technology; was a world beyond the humanist, classically naturalist ken coming into being?

What of human exceptionalism? In our desire to substantially enact the ecological values of a more entangled, inter- and multi-, species being – one that might encourage the now necessarily totalizing resistance to the threats of advanced capitalist civilization – do we not risk forsaking the place from which we might authentically choose at all what we ought, in responsible modes of care and concern, to do with our time on this planet, indeed for the sake of other beings?<sup>2</sup> At the outset of this commentary to Clayton Crockett’s *Energy and Change: A New Materialist Cosmology*, I want to suggest we follow Crockett’s lead and return to the many important questions of humanism, indeed return to this most central, long-standing paradigm, but only after we define the ecohuman as such (Crockett will help us to do this). A new concept of the ecohuman would ideally enable us to reset the philosophical etymology, as it were, of humanism, to give it a new trajectory, even as we return to the etymological origins of the term and think them anew<sup>3</sup>. Eco, from the Greek *oikos*, no longer a reference to the provincial village home and property, but now conceived in a range as wide as the universe itself, or as far as our technologies themselves can see into it, in the literal sense of a prosthesis and a totipotency, these new figures of epistemic vision as developed by thinkers including André Leroi-Gourhan, Ernst Knapp, Marshall McLuhan, Gilles Deleuze, Michel



Serres, Bernard Stiegler, and more recently Daniel W. Smith (Smith 2018: 33-35).

The idea would be to perhaps establish the discipline of a humanism with the properly ecohuman, as starring concept, as its object. By ecohuman, I mean a posthuman concept of agency that does not reduce the human to the neoliberal subject of autonomous, purely self-originated, often voluntaristic, individual choice-making, but would extend the agency of the human to that boundary zone of interaction with the environments that supply it with energy, with its capacity to do work. This is a concept of agency, with its focus on boundary and dynamics, that we are all still coming to terms with, in new and multiple formulations, but Crockett's work gets it right by situating this new agent in a rhetorico-historical space that Başak Ağan Dönmez puts right, thusly: "with the emergence of the new materialisms as an essential companion to its development, the posthuman turn has come to denote a horizontal, rather than a hierarchical alignment of the human and the nonhuman. The human forces are no longer thought to be the only agentic 'matters' that matter" (Dönmez 2020: 105). But why is this space horizontal, and what would that even mean? For instance, can it not be justifiably claimed that our brains, in some hierarchically-oriented sense, control and regulate the operations of our bodies? Is this lingo old hat?

But such anti-hierarchical sentiment is rife in the field – why? What I will say is that the concept of the ecohuman does seem to fit best in a posthuman ecocriticism. Serpil Opperman sketches the genre very nicely here:

post-human ecocriticism is a more engaged, more diffractive mode of reading the coevolution of organisms and inorganic matter in their hybrid configurations. Simply put, ecocriticism becomes post-human, post-natural, and post-green in critiquing the taxonomy of the human and the non-human. In doing so, posthuman ecocriticism expands and enhances material ecocritical visions and includes such material agencies as biophotons, nanoelements, and intelligent machines that are expressly agentic, story-filled, efficacious, and co-emergent with homo sapiens. How do we



read, for example, the blurred boundaries between iCHELLs (carbon-free inorganic chemicals) and cells (organic matter)? How do we interpret synthetic matter that responds to stimuli? What are the cultural implications of these technoscientific agencies that exhibit signs of spontaneous activity? How do we make sense of this new reality in its concrete character, and conceptualize the cultural and ecological layers of “creative becoming” encoded in material agencies? Such questions are pertinent for the apprehension of posthuman ecocriticism that offers immersion in previously uncharted territories as a post-human structure within which to think about human/ nonhuman/ inhuman natures (Opperman 2016: 105).

Maybe this story of our human terrestrial brains as the central executive, sort of vertically doling out orders to the body below is, as it were, stale. As with Opperman, Crockett’s *Energy and Change* project – “we need new ways to think about energy systems and how they are integrated into our lives in a broad sense” (Crockett 2022: 3) – is right: we do need new ways; Crockett’s book carries on the project of a humanism, but for the ecohuman, a concept of the human as a wider, ecological concept, at the boundary zone where energy puts matter to work, and change happens, thus reconfiguring the conceptual space of the human. Crockett is thinking in a newer epistemological configuration and drawing on new fields of study to ask, what happens when we view humans (and the other boundary sites besides) in light of energy systems?

Where is energy? Why not what is energy? Crockett tells us, epistemologically, no one really knows. So, for Crockett, whatever IT is, it is everywhere, it all comes down to how intensely energy is distributed, where it is. Yet there is no distribution without some difference, namely a concentration gradient. In any space, manifold, or assemblage if you like, different concentrations of bits or portions of matter must be found, and work comes about at the boundary where these concentrations of matter meet, where there is motion between. Crockett cites Whitehead affirmatively here, “the displacement of the notion of static stuff by the notion of fluent energy. Such energy has its structure of action and flow, and is inconceivable apart from structure” (Crockett 2022: 4). With this, energy puts work into motion, causes change. Crockett tells this



story admirably, impressively, in his “Introduction: New Materialism and Energy Transformation” and in his second chapter, “Energy and the Dynamics of Nature”. He takes a nod, interestingly, from James K. Feibleman’s 1970, *The New Materialism*, as he tries to connect energy to matter and next to agency, and it is the concept of agency that Crockett, rightly or wrongly but suggestively, connects to “spirit” and thus to his whole endeavor to write a “new cosmotheology”:

matter is no longer considered a simple, inert stuff which resists analysis and has to be reckoned with only in the round but has been acknowledged to be a highly dynamic agent capable of sustaining the most complex activities. This early articulation of new materialism conveys the central thesis of the inherent dynamism of matter, and it argues that what we call spirit is “a property of matter” rather than a separate phenomenon or an unreal proposition (Crockett 2022: 7).

But what about the ecohuman? Do I prefer this notion of spirit to help clarify what I mean by the ecohuman? Well, my first claim is that the ecohuman is the combination of what we’ve been calling the human, plus the energy system it is embedded in, with the things and objects, fields, forces, and folds and so on, also in this energy system. Drawing the boundaries is perhaps the toughest thing. But what we can no longer do, is draw the boundary between what is human and what is not human without including, not so much spirit, but technology – our cell phones and such. I do affirm with Crockett’s recommendation that, in order to conceive of spirit, that “we do not need to posit something in addition to the workings of material reality to get novelty and change” (Crockett 2022: 7). No, what we need is the plane of immanence and some good boundary drawing. Not only is the ecohuman a part of an energy system, but it is a technical or technological being (and this has always been the case, but) humans have entered new, thoroughly cybernetic dimensions within their current energy system boundary. But drawing a strong, inclusive (and just as disruptive) link between us and our machines is anxiety-provoking.



For example, despite his clear worry over the increasing technologisation of the planet, and of the human-being, in Heidegger's *The Age of the World Picture*, he rightly claims "every science is, as research, grounded upon the projection of a certain object-sphere"<sup>4</sup>. So, too, rather than a brashly universal sense of humanness, the ecohuman concept respects the various things and objects, fields, forces, and folds in its energy system, where it finds itself, and it will be constituted differently depending on where it is in space and time, establishing different types and networks of communication (think cybernetically) with other beings in its energy system, and in the boundary zone with other energy systems besides.

The ecohuman is thus willing to draw new boundaries; it is multiple-making in the same way that Deleuze understood Heidegger's *sich-unterscheidende* to be, a differentiator. But linked all the more to technology, this *techne*, for each Heideggerian object-sphere, a different *techne* (a way of being, technologically), we prefer to say. And this IS an ontological difference. As Patrick Damien O'Connor notes in a lecture, "technology as well as technological extensions and protheses not only change our understanding but change what we are". But we don't just count as one being, standing there, we become various assemblages (and indeed Crockett's book borrows heavily from Deleuze and Guattari's assemblage plateau). That's right, another word for the notion of energy system at play here is assemblage. Love or hate him, Elon Musk put it right in his interview with Joe Rogan<sup>5</sup>: as we interact with our cell phones, there's a new, an additionally cybernetic agent there: no longer-human, not the cellphone itself, but a being between the two, autonomously there, doing things. Here, the energy system is defined by a new assemblage: you, your human-all-too-human tapping on your cellphone's keyboard, your cellphone, itself so thing-like, and the communication loop between the two (not the literal text your sending, but the abstract loop, the line we might draw in some imaginary supplemental space that connects you to the phone – that line's communication loop, separable from you and your phone). Here, the agent is the communication, not you, not the cellphone. Here, the boundary is what brings the new assemblage, the new



agent into being. The dynamics, the work that's done, that comes about in the interaction between the different bits or parts: you, cellphone, the communication. Now, what is this thing? Is it spirit? Does it have a name? Should we fear it?

But this brings one back to Heidegger and his concern over technology. O'Connor notes this very well in his "Posthumanism and Technology" Lectures<sup>6</sup>:

how can posthumanism respond to Heidegger's concern that technology severs us from the things which make us most human? Notions such as mind-uploading, gene-manipulation, space exploration, body modification, bioelectronics, necessarily would alter our relationship to the world. Heidegger, albeit in a complicated way, maintains a sort of humanist perspective. Humans are in some sense exceptional in that they are the only beings who pose the question of their own existence and are capable of living lives that can be led. Ultimately, for Heidegger, the only post human is a dead human. Machines cannot have the same relationship with their own mortality. But the question is, if we reach a radical coupling of life and death, and in a sense the machinic is dead not alive, is it still possible to pose existential questions about our mortality? Or ought we refocus our attention on something else? The first thing we need to understand about posthumanism is that the linguistic token "human" is no longer a rigid designator. "Human" is not, nor cannot be, a logically coherent or stable category. As posthumans, we are in a position now to be able to understand how the human is radically entwined with non-human life, whether organic or inorganic. For example, if we take a human being who has been inserted with a microchip this entails a certain seamlessness of both machinic and embodied activity. It is not that such a practice would make humans robotic, rather it is the case that human cognitive abilities are indistinguishable from our mechano-embodied activities. What then do we call subjects who live, and lead lives, with such xenotransplantations? Put clumsily, they are human–non-human assemblages.

Yes, all the language remains a bit awkward (O'Connor's and mine, too) in explaining and describing these new, posthuman assemblages. But I think Crockett is applaudably clear. Certainly, he knows his new materialists. In the new materialism through which Crockett defines his *Energy and Change* project, we might say that,



when humans interact with technology, our gadgets and machines for example, they thus become human-technological objects, we've entered a new object sphere, a la Heidegger (though with a different emphasis than his own). We become highly mediated beings, ontologically, and not just in our various epistemological takes on matters. Things are not just mediated for us, according to how we see them, but what we are will differ as we interact with our cell phones, and differ again in outer space, and again in relation with other beings, like forests, cities, in groups or alone. Likewise, it should be easy to imagine, "we" will see, hear, feel, and even think differently, in our relations with technology versus without. What counts is what energy system is present in whatever surrounds, where it flows, and how it flows between us.

Further, in the new materialist, posthumanist paradigm, and signally in the work of Jane Bennet and Rosi Braidotti (two whom Crockett is keen to quote), for example, what an energy system, what any being, can do is determined not by its form as object, standing alone, as we might see ourselves in a mirror or as we see the more or less stable other, out there; no, everything comes down to relations when we ask what a being can do. It might be said that beings do not stand alone, but are defined relationally, and that this sum of relations is "alive". All Bennet seems to have meant by this is that a being's relationality is constitutive of what it does and that this doing is what it is. If the human is classically defined in the modern epistemological sense as that subject that holds an object in view or in readiness "over there", in this sense, as an exception, for Crockett, the human is not an exception, but, following Bennet, is entangled, enmeshed, just as much and equally with the "objects" in "its" view. The binary opposition is collapsed; what is collapsed is the static sense in which this opposition might be seen as primary; it can still be put into play and there is no sense in throwing out the distinction, were that even possible; but it can no longer be considered, statically, as primary. It must be put in motion.

Crockett makes good use of the concept of movement in *Energy and Change*, and indeed, we might follow him (or Braidotti or Deleuze and Guattari) and try to conceive of the ecohuman not as





static or inert, but as an assemblage or agglomeration of processes undergoing modifications, more and less constantly: new relations, alliances, dissipations, potentially, all the time. The new concept of intelligibility which aligns with the assemblage is the one that puts the pragmatics of doing – what can an energy system do? – when, where, in relation to what? – into focus, and is willing to shift this focus. The ecohuman is cybernetic; its agency derives from the loops of communication it establishes in the energy field in which it is embedded: the doublet or dividual micro- and macro-technological you-your cell phone, me-my dog, he-she, her-car, ant-sky-gene-liberal-protest. For what I am trying to explain, O'Connor expresses Braidotti's understanding of things quite well:

Braidotti prefers a heteronymous theory of subjectivity, where the subject is considered more broadly within a network of relations. Indeed, the idea of the autonomous subject is an impediment to a richer and more affirmative account of the subject as networked, nomadic and deterritorialized. Furthermore, a unitary subject is “transcendental” in the Kantian sense, which is to say there are universal features of all humans prior to their experience. Braidotti firmly rejects such a few and favours instead a form of radical empiricism, where objects are considered as dynamic assemblages. By emphasising this posthumanist monism Braidotti thinks that we have a philosophical set of insights which can be extended to non-human objects and agents. As a philosophical theory, Braidotti's theory aims to provide, in her own words, a post-anthropocentric vision of subjectivity that “[...] extends to a better understanding of the complex interaction of social, psychic, natural, and technological factors in the construction of multiple ecologies of belonging”.

Slightly altering the paradigm, Crockett is not only thinking in the new materialist episteme, but he's consulting the traditions of Darwinian evolutionary theory, epigenetics, non-equilibrium thermodynamics, and bioenergetics (and he is quite strongly influenced by Catherine Malabou). He's also thinking in a flow paradigm via Georgescu-Roegen, Deleuze and Guattari, and Stacy Alaimo, who puts it, “a new materialist and posthumanist sense of the human as perpetually interconnected with the flows of substances and the



agencies of environments”. What does humanism look like when we view the human species in a co-evolution with the environment, as the product of the ever ongoing human-ecology interaction? Well, we think it looks a lot more like an ecohumanism.

Crockett’s book is excellent at explaining the ways in which different energy systems act and interact with each other in various domains and in discussing how concepts of system, flow, and information really do determine how to see what a being can do. But Crockett’s book is not so excellent at meditating on what we should do, and that is ok! He does situate the pragmatic entailment of his project in a section of his book he provocatively entitled, “What Is To Be Done in The Anthropocene?”, and in this very brief section he discusses communism, revolution, righteousness, the final gasps of neoliberalism, dread, fear, optimism, hope, the election of Joe Biden, climate change, corporate gas emissions, the exploitation of cheap energy, capitalism, solidarity, – quite the assemblage indeed!, if rather generic, with its curious cynical realism. A cynical realism that emerges perhaps as a symptom of some lingering humanism, a la Žižek’s critique of new materialism, as expressed by Christopher Harper Till at “This is Not a Sociology Blog”:

New Materialists fail in their attempt to undermine the subject/object distinction by reasserting the pre-eminence of the human by rendering the capacities of all things as (deficient) versions of human subjectivity. Žižek implies that the New Materialist approach makes the mistake of rendering the non-human Other as “someone ‘like us’ someone we can emphatically ‘understand’”. This is because for New Materialists, at least according to Žižek, agency is turned into a social phenomenon because the material world is given subjectivity as a “non-human actor” in a “network” or “assemblage”.

But to conceive a humanist form of some viable subjectivity, some sort of a social subject, may not be the game at all. Surely, a good concept of the subject is not achieved just out of the act of summing up a collective mass of human and non-human individuals that appear to have been responsible for some action (again,



somehow) in network form. We concur with John Doris, “we doesn’t come for free”. The problem of agency runs deep indeed, but Žižek is correct, the odds of a viable concept of agency within the assemblage concept is likely not going to be something we can empirically “understand”. Crockett borrows heavily from Deleuze and Guattari’s assemblage plateau to articulate agency, as when he links assemblages with his recommendations for our learning from indigenous traditions (Crockett 2022: 214), though he often falls back into the mode of quite plainly discussing the human as such. For example, Crockett writes, in a rare tone marked by this cynicism:

What is to be done? What can we do? One thing we can do is to attempt to understand and define the problem, which is both simple and obvious as well as incredibly complex. But what can ultimately be done to solve it? Nothing. There is nothing to be done. Why not? Because it is our nature. We are fulfilling our nature as living beings and we cannot do otherwise. We maximize our resources, we reproduce to fill all available niches, and we emit waste products until our environment is no longer hospitable and we collapse (Crockett 2022: 16-17).

So, we wish to ask Crockett, who is “we” here? What happened to the new materialism, the posthumanism, and theory of assemblages? Why not a statement on new forms of agency – I’m not asking for revolutionary hope here – but could Crockett not speculate a little beyond this conventional assessment of the human? He continues in Beckettian overtones: “we cannot change our nature. It is fixed, immutable, a death sentence; just like life. We have to change our nature, but that is impossible. But what if our nature is change?” (Oh good, we’ll get a deeper thought here on what forms of agency and assemblage might do in collapse conditions..., but we don’t). Instead, we get the following continuation, “in material terms, change and transformation are connected to the flow of energy, but what is energy?” (Crockett 2022: 17). We had hoped for a response to the prior section’s what is to be done? moment, but we get a quick shift (a non-ideal pattern which occurs



at nearly every chapter break in the book, actually) to Crockett’s energy skepticism (here he cites Feynman and Vaclav Smil). He acknowledges we don’t really know what energy is, but he does make the productive suggestion that what matters is what purposes we harness it toward (Crockett 2022: 18).

But what about agency? To my mind, our best hope for grasping operative forms of subjectivity is to look at the system dynamics in every case as we come to determine what happened in what it is we care to understand about the changes we do see. In anything that is more than simple (attributable to some simple system dynamics), there will always be a retroactive positing of the presuppositions going on in our decisions about what “we just saw”, some after the fact determination of “what did it”. Here’s what Crockett will say:

energy flow generates structures and composes systems, and as these structures interact with energy flow they change their nature [...]. I then take up theoretical aspects of thermodynamics, systems theory, and quantum physics to think about how energy works and how it changes systems in profound and important ways. Energy flow through a system organizes that system (Crockett 2022: 20-21).

Right, so, I’m on board with this, as vague as it remains – who has made it clearer? It is a tough problem. Crockett doesn’t satisfy here the question of agency, other than the mentions of energy and system dynamics, flow of energy and information and such. He does soon, however, speak of politics, economics, and larger civilizational questions. He mentions the serious need to tackle the problems of the Anthropocene (which he does define adequately), “including the significance and value of the human” (Crockett 2022: 22). Does this quick return to human subjectivity affirm Zizek’s criticism? Probably. Crockett says, “we cannot simply understand the world, we need to change it, and that means understanding how energy works” (Crockett 2022: 22). And yes, there are definitive alliances drawn to the Marxist political project in the book, but not a new reading of Marx. I think Crockett goes just this



far and no farther on the question of agency. It's energy and system dynamics. So, the valuable thing is that Crockett does a very good job indeed of explaining basic energy, entropy, and system dynamics to his readers, very likely in the humanities. *Energy and Change* is a great introduction to these dynamics. But when Crockett does his work – he writes books and essays, very good ones – he is not a systems analyst, a scientist, or someone making the claim to be one. My point is this, when he is at his most unique in thinking agency, he has already taken a turn to familiar territory: spirit, religion.

Everything is at stake, including spirit. Chapter 4 concerns spirit. Religion is contested, but from this new materialist perspective humans are essentially spiritual beings at the same time as they are material beings. We cannot avoid religious and spiritual questions. Energy understood as fully material and fully spiritual avoids the dualism that often characterizes discussions of materialism and religion, and that is the crucial argument of this book (Crockett will make this kind of claim a lot). There is no opposition between what we call matter and what we call spirit because energy is what cuts across all these phenomena. In order to think about spirit, Crockett engages indigenous and nonmodern peoples.

He draws from a great plethora of non-Western sources on spirit, we could say, in the book – Amerindian, Haitian Vodou, neo-Confucian qi philosophy, radical theology, and especially the work of Eduardo Viveiros de Castro – because he believes these traditions helpfully refuse the distinction between matter and spirit, presumably so that we all don't recede into our trained temptations to be crude materialists? But the question of agency, who is doing the doing of things, is here dropped and, in this reviewer's opinion, does not move to a more interesting place than the assertion that energy and system dynamics are our true agents (again, this is a place it is hard indeed to move beyond, indeed it would even be unnecessary to do so, in a description of a general framework).

The question persists, though, for Crockett. "We need to let go of the idea of a separate realm of nature so that we can help fashion a 'collective' – one that addresses the 'progressive composition of the common world' [quoting Latour]. The problem with



the idea of nature is that it suggests a mute entity rather than a collection of agencies. There is no clear separation of natural and social collectives; they all take place in a common world, which is rife with agency and animation” (Crockett 2022: 180). Crockett pursues this line of thinking implicitly in the summaries and commentaries he gives of the non-Western sources he cites. These presentations are interesting, but again, he does return to the general framework, described on general terms. If we expected an empirical-mathematical analysis of a particular, real system, we would be disappointed, but of course we shouldn’t. Would one give us a clearer picture of agency? But of course. Would it lay to rest all philosophical problems and satisfy all curiosities? Not to be expected. We would be left to wonder if such an empirical description would clue us in to the difficult questions of agency, or, as we ought to expect, would be rather meaningless without the general framing of energy and systems that Crockett does so well. Crockett’s cynicism, now recharged by the non-Western spiritual resources, reemerges in the final pages of the book, but there, it comes along with a hopeful tone:

My argument is that we need to reimagine energy so that we can change our lives, but we know that’s ideological nonsense. Our spiritual practices are so degraded and embedded in neoliberal capitalism that we cannot extricate them, so we say “change” as a mantra and hold our breath and hope for the miracle that never occurs. We need to turn this whole scenario inside out. We need to think about spirit and spiritual practices differently. We need to turn this scenario inside out if we want to envision an actual future society for human beings that is not capitalist. And this is a spiritual work, a work of religion, in Karatani’s terms (Crockett 2022: 190).

I conclude by returning to the ecohuman. A broader concept of the house is indeed required, but Crockett makes those unfamiliar believe that this broader house has long been occupied by the ecohuman. Non-Western traditions contain a thought Crockett draws out nicely, which is rife with possibilities for development, and which he expresses well here: “instead of a social perspectivism



that posits an objective natural world, we need a natural perspectivism that generates an objective social reality”. Rightly, he credits indigenous and Amerindian traditions, as well as Viveiros de Castro with this particular thematization of the agency and larger political issue at hand: the constitution of a spiritual new materialism that would reinvigorate, turn inside out, our political cynicism, energize our praxis, and save the world. Not a social multicultural view, but a multinatural perspectivism. The ecohuman concept would be filled out well indeed with such a view-taking, such a natural perspective.

It sheds the anthro- and bio- centrisms, and gives real, concrete form to spirit conceived as agential, and generative of truly other agents: “Agentialism is a principle of multinaturalism, and it opens onto a differentiated multiverse [which Crockett will call both love and God?] of bodies. Material bodies are not the opposite of spirits; they embody this ‘spiritual’ potential in their individuation” (Crockett 2022: 195). This is, again, part and parcel of the work of energy, for Crockett, a universal potentiating principle that we could not comprehend (an ecohuman) agency without because a multinatural individuation of new bodies “has a value” (Crockett 2022: 202) to and for other beings, including people. An expanded house indeed where agents are both human and non-human, even the manifestly non-human ones, though this has nothing to do with the current Western understanding of human being, for Crockett. There are interesting ideas indeed here. For example, Crockett’s hope here is that once we adopt such a multinatural view of individuation and agency, we would actually be on the way to changing the situation defining the grimmer aspects of capitalism and the anthropocene.

Once the shift to the ecohuman is achieved, what then do we commit to, practically and politically, in our (rejuvenated, multinatural) humanism? Patterson’s 2008 paper did well to speak to these practical commitments of our activism as humans concerned with the environments in which we find ourselves. Yet he applied his article’s insights about humanist principles to the discipline of environmental ethics, and we have no such interest. But this is why



we find Crockett’s project to be so interesting – under the banner of new materialism (etc.), but with the concepts of thermodynamics and dissipative systems at hand – it rethinks the subject/object categories of the human (and indeed of all actualized states of energy), pushing us toward a new metaphysics, even a new spiritualist metaphysics (every bit physical), of the ecohuman. Crockett’s *Energy and Change* livens the following question posed here: what if we look beyond the environmental ethics framework and develop an ethics informed by energy flows and entropy production and which would then allow us to think the ecohuman as a new category in itself? Such a category would be wise to Crockett’s insight, “[w]e can no longer maintain a consistent distinction between human and non-humans”, (Crockett 2022: 206) because what is important is the exchange of forms of action between all manner of beings at the boundary zones where energy shapes new bodies, new assemblages.

But first, what are William Patterson’s (still too humanist) principles? He borrows them quite directly from Paul Kurtz’s Humanist Manifestos (1973, 2000):

the issues of principle to be explored include: the role of human beings in moral decision-making; how human beings should approach nature (whether as a malevolent force to be subdued or as the beneficent root of our being without which we could not survive); how non-human animals should figure into a humanist’s ethical reasoning; the role of religion versus secularism in environmental ethics; and the moral weight that humanists should give to future generations.

*Energy and Change* provides the conceptual tools (via Deleuze and Guattari, Whitehead, Malabou, Barad, Latour, Karatani, thermodynamics, etc.) to help us rethink these questions within a new materialist cosmotheogeny. What roles do humans play in moral decision-making? Without consistent, near constant, inputs, drawn cybernetically from environments, humans can hardly make moral decisions, a reality made all the plainer by the challenges of the Anthropocene. Next, Concerning the question of how humans might approach nature, Crockett hints at a “theological ecology”:





that thinks from the Earth as a locus of what Hegel calls “substance becoming subject” in his *Phenomenology of Spirit*. At the same time, this thinking from Earth would be closer to what Deleuze and Guattari call a “Geology of Morals” in *A Thousand Plateaus*. We need the resources of physical, biological, and environmental sciences, anthropology and sociology, and political economy [...], if we want to survive in an increasingly inhospitable Anthropocene (Crockett 2022: 249).

This is a broader approach indeed. Further, Crockett lays the groundwork to show how an energy humanities framework grounded in analysis of entropy and dissipative systems theory productively helps us to rethink questions of non-human animals altogether, in favor of assemblages including even our machines. Consequently, the religion vs secularism debate must be posed outside of the currently established frontiers of environmental ethics, contra Tapp and Patterson/Kurtz, who affirm, “probably the most consistently and deeply held principle of humanism is the idea that it is human beings who are the arbiters of moral value”. The *Humanist Manifesto II* boldly proclaims:

We affirm that moral values derive their source from human experience. Ethics is autonomous and situational, needing no theological or ideological sanction. Ethics stems from human needs and interests. Humanists believe that ethical values are created by human beings and that those values should be based upon the consequences that they have in the lives of human beings. Humanism essentially embraces a utilitarian basis for ethics. The recognition that human beings are the sole source of moral decision-making leads to the acknowledgement that we should develop a profound sense of empathy and altruism for others, based upon our common humanity [...] humanists should accept an inclusive anthropocentric approach to nature; religious dogmas should not play a role in ethical decision-making; nature should not be elevated to a divine level; humanists should embrace a “cosmic patriotism” for the world (Kurtz 1973).

Replacing these categories, Crockett must acknowledge that, ultimately, no human moral values could derive from human experience, but must be lodged in fuller consideration of the dynamics



of an ecologically-minded analysis of energy, entropy, and a theological ecology, broadly thought. In this sense, ethics does require theological sanction, a cosmic patriotism, so to speak, but validated from the point of view of a theology very much unlike the one intended by Kurtz, Tapp, or later, Patterson. *The Humanist Manifestos* of Kurtz rejected religion and faith outright, in line with humanist, secular enlightenment values because humans must use reason alone to arbitrate over morals. As Robert Tapp puts it, “in the absence of any plausible divinities or forces of cosmic wisdom, judgments can only be made by humans; created and critiqued and remade in the light of future human experiences”. One need only be reminded of the subtitle of Crockett’s book to immediately recall how different his view on such matters is, but ironically, not from any rejection of the Enlightenment, or any return to pre-Enlightened faith. “Cosmotheology”, for Crockett, instead affirms heavy reliance on scientific theory and method, contemporary physics and quantum theory, systems theory, etcetera, to reposition questions of faith such that nature already operates on a divine level.

Crockett offers a full-blooded theory of entropic or dissipative systems that does not reduce the value of moral values to humans as arbiters of this world, but respects the different levels of energy production, one which provides a generative account of the human from an ecological context. Remember, “[e]nergy cuts across multiple thresholds of existence, and it is always dynamic, always changing. Being is energy transformation. This book is a philosophy of energy [...] [e]nergy and change work across multiple levels of existence. These levels are not hierarchical, however, insofar as one level is more valuable or more fundamental compared to others” (Crockett 2022: 2). Here, Crockett breaks with what is at least implicit in Patterson and Kurtz, namely the image of a universe where the human plays the role of arbiter, even of the moral realm of its own moral values. Crockett is quite explicit on this:

[This book] instantiates a vision, whereby energy is how we talk about change, and change is what is ultimately real. This vision is also a spiritual vision, because energy cuts across the opposition between spirit



and matter and offers new ways to think about spirit in physical terms. We should understand levels more like how Gilles Deleuze and Felix Guattari understand plateaus in *A Thousand Plateaus*. They take the word plateau from Gregory Bateson and they offer a perspectival account of various plateaus, including how they are constituted and how they operate (Crockett 2022: 2).

Indeed, the claim is that each plateau, each level, marks not only a unique threshold, but one with its own manner of being constituted out of material, energetic, and entropic constraints (possibilities!); and its own operational dynamics. Similarly, “[i]ts own manner of being constituted”, means not just that these levels come into being in their own ways, but also that they have their own moments of coming into being (existence) at all. While everything, even spirit, is material, the material components of things are not all the same: they are organized differently. Energy is everywhere in all things, but energy changes and as it does, it reorganizes matter so that everything, within each level, has a particular constitution. It’s hard to overstate the importance of paying respect to the unique or signature difference in the different levels here, each with their own thresholds of constitution and dynamics.

Crockett even structures the book’s chapters according to the different levels – “[i]n this book I privilege conceptions of energy and its concomitant change and I examine their interactions across multiple plateaus: physics and thermodynamics; biology and life; political economy and political ecology; and spirit or religion and theology. None of these plateaus necessarily supersedes the others or renders them significant” (Crockett 2022: 3). But why isn’t there a separate level for the human? Is the human not a being in its own right, for Crockett? Is the human to be found at the level of spirit, ethics, or morality? If Crockett wants to tell us “energy and change are at the heart of existence, including but not only our existence” (Crockett 2022: 3), would it not be fair to ask who this “our” is? One wonders why this question isn’t addressed directly, and one muses that perhaps this is because it is really tough to answer. For Niklas Luhmann, we note, humans weren’t a valid system at all, but



operated as a sort of site or locus for the interaction of three separate systems: the biological body itself with its cellular reproduction, the nervous system with its neurons, and the language system with its words and syntax; all of these interacting, again, at the site of the human biological body. But we cannot currently address this for the space of the review. But again, it should be asked of Crockett since he deploys the term human so frequently throughout the book, does the world of the human have its own level, its own threshold of existence, its own logic and forms of self-constitution?; and if so, how do humans come to interact with this level; how do they access it; what is the mechanism by which they are put in communication with it at all? If the human is a sort of misnomer of a category, why the illusion?

It is our opinion that what we call the human has a useful, normative or pragmatic sense, that regardless, what we call our species does reproduce a particular species body. Further, communications within the “human” take place at a properly ecohuman level, in a system-environment relation that is far more cybernetic than “we” have been comfortable with. As for the dynamics of the ecohuman – what brings it in to being – these, in the actual generation of the (ecohuman) reproductive substance – are no more singular or complicated than is the casual use of our cell phones. Our being is taken up in and carried away by our daily activities on our cells, these externalizations constantly pulling us forward into some new cybernetic agency while Google and Facebook enact the headier, more intentional, creepier, and nefarious parts of the surveillance capitalism dynamics. We live in a society where Cayla dolls exist to occupy young children and where we pretty much gleefully give away our privacy rights to mega-corporations that sell our data to the highest bidders so that they can sell more commodities. This is not necessarily a lament, for, as Hegel had it when speaking of the Idea’s free release into nature at the end of his *Science of Logic*, externalizations define us, and the question of how we come to define the recoup or recapture our identity will always be retroactively posited (this is Spirit’s job). But certainly we do not simply, solely, or in any way which could be reduced back down to some “us”



without remainder, arbitrate over our identity, as our own creation, in full possession of our origins, like some birthright, though we might come to.

In the pages just prior to his final chapter, on theology (“Radical Theology and the Nature of God”), Crockett affirms this world of many levels (indeed of many separate systems, operationally), “A “harmonious” new materialism of energy transformation is spiritual, personal, natural, and cosmic at distinct levels of transformation that are neither reducible to not exchangeable with each other” (Crockett 2022: 226). While we may wonder how we get from one level to the next, so to speak, or how these boundaries are drawn, Crockett’s break with the humanism of Patterson/Kurtz is clear; and it is for this reason that Crockett is actually doing a new materialism. Readers are left wondering where humans belong, what levels and thresholds of existence comprise us, and how we know the difference between them. But surely it is on the plain of what Crockett (and Hegel, too) calls “spirit” where these questions are answered for Crockett since, “spirit is how we value and evaluate our energetic material existence, which is always (ex)changing” (Crockett 2022: 256). If Crockett doesn’t answer these questions convincingly in an empirical register (we are not arguing that he should have), we commend him for at least writing in the new space of these questions. What we genuinely can hear is Crockett’s call for radicalizing spirit (he does not shy away from using the word God) along immanent lines (Crockett 2022: 228), in more rhizomatic ways (Crockett 2022: 255), in a newer radical theology that would enable what I have called the ecohuman “to experiment with new practices of spirit”, or for me, externalizations (Crockett 2022: 214) as we “bring something new into being, but not us, not as us” (Crockett 2022: 255).

## NOTES

<sup>1</sup> In this vein, more from the blurb: “The contributors, all humanists in the naturalistic tradition, show that in fact humanism as a worldview has much to offer environmentalism. Since humanists are committed to working for a global community in which all humans can flourish, they are as concerned about ecological degradation as environmentalists. But in regard to what should be done about environmental problems, humanists do not hesitate to use the best scientific information and technology to reclaim the natural world while ensuring the welfare of all human beings”.

<sup>2</sup> Here, the call of Martin Hägglund is a persistent, healthy reminder. Hägglund, in interviews and in his opus, *This Life: Secular Faith and Spiritual Freedom*, is right to note that advocating for non-human starting points in ethical and moral reflection would already count as an inauthentic gesture since it immediately obviates the ground from which one might argue for anything at all: human freedom, the capacity to first decide at all about what we ought to do with our time, i.e., in this case, construct systems of ethics and moral reflection.

<sup>3</sup> Eco is a derivation of the Greek *oikos*, meaning an extended family unit that consists of the house, members of the family, slaves, farmland, and all property. The *oikos* was run by the oldest male of the family, whose role it was to tend to agriculture and to ensure that all components of the family unit were running smoothly. Thus, *eco* now designates a broad, self-sustained unit, as in the terms, ecology and ecosystem. This expanded etymology is taken from Maria Khodorkovsky, 15 October 2008, <https://www.altalang.com/beyond-words/etymology-of-economy/>.

<sup>4</sup> O’Connor, Patrick Damien. Posthumanism and Technology Lectures, Private Correspondence, March 2023, Pdf.

<sup>5</sup> Powerful JRE, “Joe Rogan Experience #1470: “Elon Musk”, YouTube, 7 May 2020, <https://www.youtube.com/watch?v=RcYjXbSJBn8>

<sup>6</sup> O’Connor, Patrick Damien. Posthuman and Technology Lectures, Private Correspondence, March 2023, Pdf.

## REFERENCES

- B. Ağin Dönmez, (2020), *Recent Approaches in the Posthuman Turn: Braidotti, Herbrechter, and Nayar*, in “Relations”, 4, 1, pp. 105-115.
- K. Barad (2007), *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham: Duke University Press).
- J. Bennett (2010), *Vibrant Matter: A Political Ecology of Thing* (Durham: Duke University Press).
- R. Braidotti, (2013), *The Posthuman* (Cambridge: Polity Press).
- C. Crockett (2022), *Energy and Change: A New Materialist Cosmology* (New York: Columbia University Press).
- G. Deleuze, F. Guattari (1987), *A Thousand Plateaus: Capitalism and Schizophrenia*, Trans. Brian Massumi (Minneapolis: University of Minnesota Press).
- J.K. Feibleman (1970), *The New Materialism* (Dordrecht: Springer Link).
- M. Hägglund (2019), *This Life: Secular Faith and Spiritual Freedom* (New York: Pantheon Books).



- G.W.F. Hegel (1969), *The Science of Logic*, Trans. A.V. Miller (Crows Nest: Allen and Unwin).
- M. Heidegger (1977), *The Age of World Picture*, in M. Heidegger, *Science and The Quest for Reality*, (ed.) Alfred I. Tauber (London: Palgrave Macmillan), pp. 70-88.
- P. Kurtz (1973), *The Humanist Manifesto II*. <https://americanhumanist.org/what-is-humanism/manifesto2>.
- N. Luhmann (1996), *Social Systems*, Trans. John Bednarz Jr. with Dirk Baecker (Redwood City: Stanford University Press).
- S. Opperman (2016), *From Posthumanism to Posthuman Ecocriticism*, in "Relations Beyond Anthropocentrism", 4.1, pp. 23-37.
- W.R. Patterson (2008), *Ecobumanism: Principles and Practice*, in "Essays in the Philosophy of Humanism", 16, 2, pp. 93-106.
- D.W. Smith, (2018), *Deleuze, Technology, and Thought*, in "Tamkang Review", 49, 1, pp. 33-52.
- R.B. Tapp (ed.) (2002), *Ecobumanism*, in "Humanism Today", 15.

