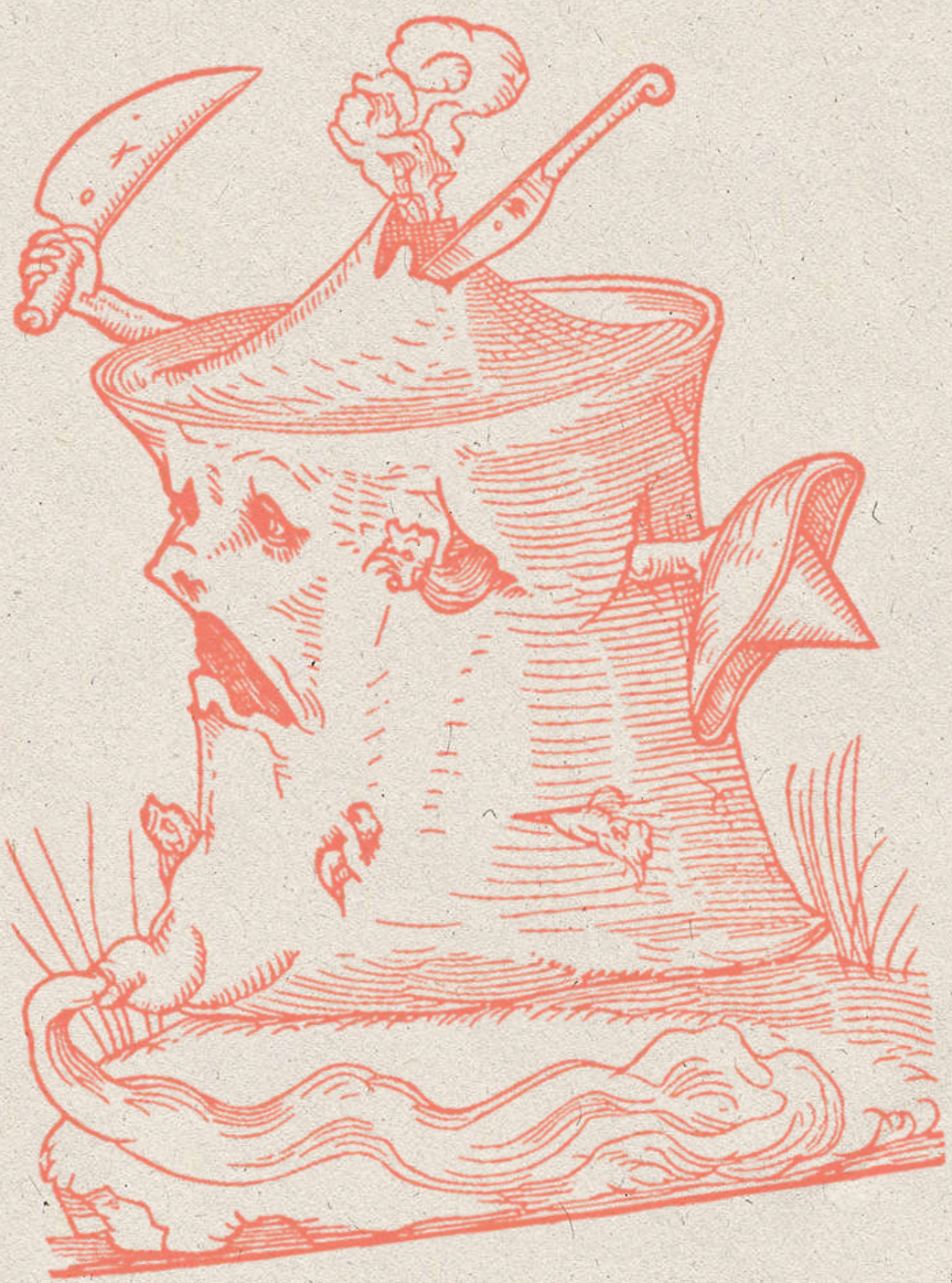




Xilogravura do livro *Les songes drolatiques de Pantagruel* (1565), de autoria presumida de François Desprez. Obra em domínio público. Composição visual remixada.

DOSSIÊ ESPECIAL

ENTANGLEMENTS OF NEW MATERIALIST RESPONSE-ABILITY AND INTRA-ACTIONS IN THE PRAXIS OF VEGAN EDUCATION

ENREDOS DE LA RESPONS(H)ABILIDAD E INTRA-ACCIONES DEL NUEVO MATERIALISMO EN LA PRAXIS DE LA EDUCACIÓN VEGANA

EMARANHAMENTOS DA RESPONS(H)ABILIDADE E INTRA-AÇÕES DO NOVO MATERIALISMO NA PRÁXIS DA EDUCAÇÃO VEGANA

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Abstract
This paper engages with new materialist theories to examine vegan education as an ethical and political response to more-than-human animal exploitation. The objective is to explore how educators implement teaching praxis using the concepts of ethico-onto-epistemology, response-ability, and intra-action, drawn from the works of new materialist scholars Karen Barad and Bronwyn Davies. The methodological approach is theoretical and conceptual analysis, focusing on the praxis of vegan educators. The paper identifies two key gaps: the ethics of new materialism often overlook veganism, and critical animal pedagogies tend to critique existing speciesist educational systems without sufficiently exploring effective pedagogical practices. In response, this study highlights educational methods that resist students' moral disengagement and educators' self-censorship – such as non-neutrality, direct interactions with animals, the reunification of discourse and bodily knowledge, creative-relationality, affective dimensions, and love. The results suggest that integrating new materialist concepts with vegan education can support creative, embodied, and relational pedagogies. The conclusion emphasizes that critical animal pedagogy and vegan education, when grounded in response-ability and direct intra-actions with more-than-human animals, offer transformative potential for ethical, anti-speciesist teaching and learning.

Keywords
Response-ability; intra-actions; ethico-onto-epistemology; vegan education; critical animal pedagogy.

Resumen
Este artículo se basa en teorías del nuevo materialismo para examinar la educación vegana como una respuesta ética y política a la explotación de animales más-que-humanos. El objetivo es explorar cómo los educadores implementan una praxis pedagógica utilizando los conceptos de ético-onto-epistemología, responsabilidad (response-ability) e intra-acción, basados en los trabajos de las teóricas del nuevo materialismo Karen Barad y Bronwyn Davies. El enfoque metodológico es de análisis teórico y conceptual, centrado en la praxis de educadores veganos. El artículo identifica dos vacíos clave: la ética del nuevo materialismo a menudo pasa por alto el veganismo, y las pedagogías críticas animales tienden a criticar los sistemas educativos especistas existentes sin explorar suficientemente prácticas pedagógicas eficaces. En respuesta, este estudio destaca métodos educativos que resisten al desapego moral del estudiantado y a la autocensura del profesorado – como la no neutralidad, las interacciones directas con animales, la reunificación del discurso con el conocimiento corporal, la relacionalidad creativa, las dimensiones afectivas y el amor. Los resultados sugieren que integrar conceptos del nuevo materialismo con la educación vegana puede favorecer pedagogías creativas, corporizadas y relacionales. La conclusión enfatiza que la pedagogía crítica animal y la educación vegana, cuando se fundamentan en la responsabilidad y en intra-acciones directas con animales más-que-humanos, ofrecen un potencial transformador para una enseñanza y un aprendizaje éticos y antiespecistas.

Palavras clave
Respons(h)abilidad; intra-acciones; ético-onto-epistemología; educación vegana; pedagogía crítica animal.

Resumo
Este artigo dialoga com teorias do novo materialismo para examinar a educação vegana como uma resposta ética e política à exploração de animais mais-que-humanos. O objetivo é explorar como educadores implementam uma práxis pedagógica utilizando os conceitos de ético-onto-epistemologia, respons(h)abilidade e intra-ação, baseados nos trabalhos das estudiosas do novo materialismo Karen Barad e Bronwyn Davies. A abordagem metodológica é de análise teórica e conceitual, com foco na práxis de educadores veganos. O artigo identifica duas lacunas principais: a ética do novo materialismo frequentemente ignora o veganismo, e as pedagogias críticas animais tendem a criticar os sistemas educacionais especistas existentes sem explorar suficientemente práticas pedagógicas eficazes. Em resposta, este estudo destaca métodos educacionais que resistem ao distanciamento moral dos estudantes e à autocensura dos educadores – como a não neutralidade, interações diretas com animais, a reunificação entre discurso e conhecimento corporal, relacionalidade criativa, dimensões afetivas e o amor. Os resultados sugerem que integrar conceitos do novo materialismo com a educação vegana pode sustentar pedagogias criativas, corporificadas e relacionais. A conclusão enfatiza que a pedagogia crítica animal e a educação vegana, quando fundamentadas na respons(h)abilidade e em intra-ações diretas com animais mais-que-humanos, oferecem um potencial transformador para um ensino e aprendizagem éticos e antiespecistas.

Palavras-chave
Respons(h)abilidade; intra-ações; ético-onto-epistemologia; educação vegana; pedagogia crítica animal.

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Introduction

The ways in which formal and informal educational spaces represent the exploitation of more-than-human animals[1] are shaped by the animal-industrial complex[2] and the academic-industrial complex.[3] Both of them are based on capitalist and state interests in exploiting more-than-human animals and using knowledge and research to further these ends with the biopolitical control and surveillance through pedagogy and curriculum.[4]Although education is inherently unpredictable,[5] it holds a transformative potential to challenge anthropocentric and speciesist ideologies. However, difficult knowledge and disturbing education[6] about the realities of more-than-human animal suffering often perpetuate students' moral disengagement,[7] leading to uncertainty, resistance, and anxiety. Additionally, vegan education is often considered to be indoctrinating,[8] and educators are silenced and censored by institutions and self-censorship.[9]

The frameworks of pedagogies that include critical perspectives on animal exploitation, such as critical animal pedagogy, vegan education, humane education, ecopedagogy, and critical environmental education propose alternative, non-anthropocentric, and anti-speciesist pedagogies that foster ethical awareness, with veganism and animal liberation at the core of their goals.[10] The scholars analyse anthropocentric and discriminatory roots in educational institutions and "speaking silences"[11] about veganism and animal exploitation that are hidden in education, "anthropocentric blind spots within critical pedagogy",[12] and explore the relationship between education and the domination of nature.

There has been growing research on new materialisms that align with the posthumanist, more-than-human, or nonhuman turn.[13] New materialisms developed at the crossroads of ethical and political issues, grounded in an ontology that emphasizes more positive and constructive approaches.[14] They aim to redefine understandings of matter as inherently vital and connect these ideas to concerns

[1] The concept the "more-than-human," introduced by David Abram in *The spell of the sensuous*, emphasizes that other species should not be understood merely as nonhuman in contrast to human qualities, but rather as entities that extend beyond and enrich the human world and its perspectives. In this paper, I use the term "more-than-human animals" to express these ideas, and simply "animals" in set expressions and for the sake of brevity.
[2] Noske, *Humans and other animals*.
[3] Bowley, *The academic-industrial complex*.
[4] Bourassa, *Rethinking the curricular imagination*.
[5] Biesta, *Beyond learning*.
[6] Britzman, *Between psychoanalysis and pedagogy*.
[7] Mitchell, *Moral disengagement and support for nonhuman animal farming*.
[8] Weber *et al.*, *Vegan teachers make students feel really bad*.
[9] Dinker; Pedersen, *Critical animal pedagogy*.
[10] E.g., Banschbach; Lloro-Bidart, *Animals in environmental education*; Bell; Russel, *Beyond human, beyond words*; Corman; Vandrovcová, *Radical humility*; Dinker; Pedersen, *Critical animal pedagogies*; Horsthemke, *Animal rights education*; Kahn, *Critical pedagogy, ecoliteracy, & planetary crisis*; Pedersen, *Schools, speciesism, and hidden curricula*; Pedersen, *Release the moths*.
[11] Dinker; Pedersen, *Critical animal pedagogy*, p. 51.
[12] Bell; Russel, *Beyond human, beyond words*, p. 189.
[13] E.g., Braidotti, *The posthuman*; Chen, *Animacies*; Chen; Luciano, *Queer inhumanisms*; Grusin, *The nonhuman turn*; Hayles, *How we became posthuman*.
[14] Coole; Frost, *New materialisms*.

about social justice for embodied beings.[15] The researchers in critical animal studies and pedagogy employ new materialist and posthumanist frameworks to critique both the educational systems of knowledge production and the frameworks themselves.[16] By acknowledging that a radical shift in consumption practices toward veganism can materialize ethical entanglements with more-than-human bodies, they frame this transformation as a meaningful enactment of posthumanist and new materialist ethics.[17] Researcher in critical animal pedagogy Helena Pedersen argues that a critical posthumanist approach is needed that will not just imagine a posthumanist future without violence and exploitation, but will critically examine and change the already established relationship between humans and other animals.[18]

However, what I find lacking in the new materialist research is direct engagement with vegan ethics, and what I see predominant in critical animal studies and pedagogy is criticism of not working systems, education, practices, and little research of what works instead, what vegan researches and educators can do in teaching about veganism and critical perspectives on more-than-human exploitation. With a focus on new materialisms specifically the works of Karen Barad and Bronwyn Davies, teaching practices in critical animal pedagogy and vegan education, I analyze the praxis[19] of the education through the concepts of ethico-onto-epistemology, which emphasizes the inseparability of ethics, ontology, and epistemology; response-ability, which describes our entangled commitments and ethical responses to all matter; and intra-actions, which highlight that all engagements between entities are not separate or individual.[20] This paper presents an investigation on how vegan educators implement practices that are based on ethico-onto-epistemology and prioritize response-ability with intra-active entanglements, affective co-existence, and mutual engagement with the more-than-human world. This work contributes to the research on new materialisms and critical animal pedagogy by exploring how such inquiry and teaching create spaces for creativity and reflexivity that include more-than-human animals with the possibility of resisting students' moral disengagement and educators' self-censorship and promoting veganism and critical perspectives on animal exploitation. The idea of my approach is to connect new materialist concepts with vegan education and analyze the methods of education and pedagogy that help vegan educators implement new materialist perspectives in their practice and research. I am going to explore the entanglements between new materialist concepts, veganism, and several crucial parts of critical animal pedagogies and vegan education: educators' non-neutrality, direct interactions with animals, the reunification of discourse and bodily knowledge, creative-relationality, affective dimensions, and love.

[15] Coole; Frost, *New materialisms*.
[16] E.g., Pedersen, *Release the moths*; Weisberg, *The broken bond*; Wolfe, *Before the law*.
[17] Pedersen, *Release the moths*.
[18] Pedersen, *Release the moths*.
[19] Freire, *Pedagogy of the oppressed*.
[20] Barad, *Meeting the universe halfway*.

New materialisms and Veganism

The discourse of new materialisms challenges human and more-than-human, material and discursive, natural and cultural dualisms, and questions the human-centered ontology with the turn to matter, which cannot be separated from meaning.[21] New materialist research positions itself as a non-anthropocentric conceptualization of materialization where it does not favor human bodies, as all human and more-than-human entities exhibit agency.[22] The capacities of self-reflection, self-awareness, and rationality, which are often used to privilege humans over other bodies, are "contingent and provisional forms or processes within a broader evolutionary or cosmic productivity".[23] The new materialist conceptualization of matter, materiality, politics, and ethics is against constructivist social analysis; it engages with the bioethical questions of social justice for embodied individuals in biopolitics and global political economy, and strives to conduct critical and nondogmatic research of everyday human and more-than-human lives as well as the analysis of geopolitical and socioeconomic systems.[24]

In *Meeting the universe halfway: quantum physics and the entanglement of matter and meaning*, Karen Barad proposes *agential realism* as an epistemological, ontological, and ethical framework with posthumanist performative account that explains how human and more-than-human elements, along with material, discursive, natural, and cultural dimensions, are all actively involved in scientific and other forms of socio-material practices.[25] The framework of agential realism is *ethico-onto-epistemology*, which emphasizes the fundamental inseparability of ethics, ontology, and epistemology as being, knowing, and valuing in research and different practices. Barad introduces this concept to critique the conventional Western view that ethics, ontology, and epistemology are distinct fields. She argues instead that these aspects are deeply interconnected and come into being through relational processes she terms *intra-actions*. This concept highlights that knowing, being, and acting are inseparable – we understand the world, what exists, and how we engage with it are all fundamentally linked. Intra-action is separate from "interaction"; the latter consists of distinct elements, whereas "intra-action" consists of a "*mutual constitution of entangled agencies*"[26] that "emerge through their intra-action"[27] and, as Barad argues, "individually determinate entities do not exist":[28]

> If we hold on to the belief that the world is made of individual entities, it is hard to see how even our best, most well-intentioned calculations for right action can avoid tearing holes in the delicate tissue structure of entanglements that the lifeblood of the world runs through.[29]

[21] Barad, *Meeting the universe halfway*.
[22] Barad, *Meeting the universe halfway*.
[23] Barad, *Meeting the universe halfway*, p. 20.
[24] Coole; Frost, *New materialisms*, pp. 6-7, p. 32.
[25] Barad, *Meeting the universe halfway*, p. 26, p. 32.
[26] Barad, *Meeting the universe halfway*, p. 33.
[27] Barad, *Meeting the universe halfway*, p. 33.
[28] Barad, *Meeting the universe halfway*, p. 128.
[29] Barad, *Meeting the universe halfway*, p. 396.

Ethico-onto-epistemology and intra-actions emphasize the importance of our responsibility and accountability for different entanglements and help us realize our commitments to others, ourselves, and our possible becomings.

Scholar Bronwyn Davies builds on Barad's concepts by elaborating on the notion of response-ability in her book *Entanglement in the world's becoming and the doing of new materialist inquiry*, developing Barad's notion of *response-ability* in research and its practices. The response-ability highlights the importance of the response with our actions and choices towards the world. Davies understands life as our capacity to respond in its response-ability, when all beings affect and are affected by each other, and "[h]ow we touch others, and are touched, lies at the heart of responsibility".[30] For Barad, "matter is condensations of response-ability"[31] when no one and nothing is free of discourse, ethics, and matter, and she writes:

> All life forms (including inanimate forms of liveliness) do theory. The idea is to do collaborative research, to be in touch, in ways that enable response-ability.[32]

Ethico-onto-epistemology based on response-ability requires both the practice of thinking differently with "mutual engagement", "affective co-existence with the more-than-human world",[33] and the praxis of non-participation and non-consumption of violence. New materialist research is challenged with the questions that philosopher Elizabeth Grosz asks in her book *Becoming undone: Darwinian reflections on life, politics, and art*:

> How can we produce knowledges, techniques, methods, practices that bring out the best in ourselves, that enable us to overcome ourselves, that open us up to the embrace of an unknown and open-ended future, that bring into existence new kinds of beings, new kinds of subjects, and new relations to objects?[34]

Veganism and vegan ethics work as a practical reminder and implementation of the ethical and political position through everyday actions and choices which also functions as a self-empowerment.[35] Researcher in vegan theory Laura Wright argues that veganism has a rich history for thousands of years in different cultures; however, it has never represented the dominant moral or dietary orientation within any culture at any point in time due to the dominance of 'flesh-eating hegemony',[36] deeply ingrained anthropocentric and speciesist beliefs at all levels of society, and the animal-industrial complex, which actively obstructs both animal liberation and the broader adoption of veganism.[37] Moreover, different psychological mechanisms function to prevent individuals from ethical changes in believes and behaviour. For example, "simple ignorance" narrows individuals'

[30] Davies, *Entanglement in the world's becoming and the doing of new materialist inquiry*, p. 136.
[31] Barad, *On touching the inhuman that therefore I am*, p. 161.
[32] Barad, *On touching the inhuman that therefore I am*, p. 155.
[33] Davies, *Entanglement in the world's becoming and the doing of new materialist inquiry*, p.15.
[34] Grosz, *Becoming undone*, p. 75.
[35] Feltrin, *Advocating for a political vegan feminism*.
[36] Morgan; Cole, *The discursive representation of non-human animals in a culture of denial*, p. 122.
[37] Wright, *The Routledge handbook of vegan studies*.

possibilities for exploration and self-understanding, and "willful ignorance" works to avoid, dismiss, or twist evidence that poses some form of threat.[38]

What I find promising in the new-materialist framework for my research is its positive and constructive ontology with new concepts and vision that not only criticize and negate different anthropocentric considerations of matter, politics, and ethics, but also suggest new ways of thinking and imagining a just future for all embodied entities. Barad argues that "there is no getting away from ethics — mattering is an integral part of the ontology of the world in its dynamic presencing".[39] New materialist responses and intra-actions should always be ethical and never free from response-ability to more-than-human lives. I argue that new materialisms have to question human dominance and exploitation of more-than-human others with veganism as one of the embodiments of response-ability and intra-action to and with the more-than-human world. A vegan ethics functions against the biopower of symbolical and material species divide and takes a form of an *affirmative biopolitics* that includes more-than-human animals as biopolitical subjects, deconstructs epistemological categories of their exploitation and meat consumption.[40] Veganism has the capacity to "bring out the best in ourselves", "overcome ourselves", "embrace of an unknown", and create "new kinds of beings", subjects, and relations.[41] Becoming-vegan makes a new form of life, creating an individual as a new subject and a new relation to consumption, more-than-human animals, and our place in their lives. Veganism can be perceived as a constant "[i]ntra-acting responsibility" and "possibilities that might help us and it flourish"[42] with the entanglement between us and more-than-human animals. It can be the way of becoming-life to form an alliance with the more-than-human world by creating changes not only in the system of beliefs, but in the human body, materiality, and the whole embodiment of existence. This is where new materialisms can come into play by bringing the entanglements of matter and discourse into the core of veganism, which can be understood as a becoming-Other through the practice of the non-consumption of the Other and an active way of opposing violence, oppression, and disconnection from the more-than-human world. It is significant to include new materialist concepts in the analysis of vegan theory and critical animal pedagogical practices due to new materialist ethical and political concerns of living matter and complex issues such as climate change, the systems of consumption and food, and the reconsideration of the concepts of agency and causation in ethical and political dimensions. Ethico-onto-epistemology opens up new possibilities for doing research on teaching methods, especially in ethically charged disciplines such as critical animal pedagogies and vegan education. It defines the ontology of 'what we learn and teach', the epistemology of 'how we learn and teach', and the ethics of 'why we learn and teach'. Response-ability and intra-actions realize the possibility of connecting discourse and materiality, making them key components of critical animal pedagogies and vegan education. Drawing on Heinz and Lee's argument that

[38] Rice, *What's meat got to do with it?*, pp. 471-489.
[39] Barad, *Meeting the universe halfway*, p. 396.
[40] Giraud, *Veganism as affirmative biopolitics*, p. 47.
[41] Grosz, *Becoming undone*, p. 75.
[42] Barad, *Meeting the universe halfway*, p. 396.

"[w]e do not so much eat meat as we consume socially produced meaning",[43] I suggest that bringing new materialist perspectives into teaching research can open more transformative possibilities for vegan education and its practices.

Response-ability and Intra-actions in Vegan Education

Modern knowledge can be described as an instrument of rationality that is used to conquer and colonize human and more-than-human beings[44] when educational practices are used for objectification and "thingification"[45] of more-than-human entities. In response to it, new materialisms develop the reconsideration of human and more-than-human rationality[46] when we learn how to see all beings with our ethical and political attention. Knowing becomes "a direct material engagement" with the intra-active becoming of the world that is "a deeply ethical matter".[47] Moreover, education can be considered as a liberating action with a critical focus and ethico-onto-epistemological reconsiderations on existing relations of human and more-than-human entities,[48] which make education work as an action that develops students' intellectual and moral capacities. To this, I argue that response-ability and intra-active becomings are realized not only through learning how to see someone or something with our ethical and political attention, but also how to behave and what direct actions to do or not to do towards more-than-human beings. The concept of intra-action represents the teacher-student dynamic and system in terms of ethical knowledge production, where there are no distinct teachers and students; they are all entangled agencies in teaching and learning, which makes this knowledge acquisition more effective with ethical behavioral changes. With this turn to behavioral changes, veganism and vegan education as affirmative biopolitics and pedagogy help new materialist ethico-onto-epistemological conceptions create new embodied forms and practically realize themselves. Another element of new materialist pedagogy is that its focus is not on the final aims of education but on the process and encounter with the unknown.[49] Indeed, unpredictability of education hinders it from achieving specific pedagogical goals; still, I would claim that intra-active responses of educators and students towards more-than-human animals cannot be ethically floating without any direction or purpose, as it has the aim to teach about the necessity and importance of becoming vegan to stop more-than-human animal exploitation.

Vegan education as an ethical discipline might be considered as a form of indoctrination by educators, students, and institutions.[50] Indeed, the position of ethical regulator can be seen as harmful in its rigidity; therefore, ethical stances should be moved towards creativity, invention, openness, and attentiveness.[51] Researcher and educator in critical animal studies and critical environmental

[43] Heinz; Lee, *Getting down to the meat*, p. 98.
[44] Quijano, *Coloniality of power and classification of power*.
[45] Césaire, *Discourse on colonialism*.
[46] Charteris *et al.*, *Innovative learning environments and new materialism*.
[47] Barad, *Meeting the universe halfway*, p. 185.
[48] Vázquez; Durán, *Relationship between biopolitics, education and environmental policies today*.
[49] Snaza *et al.*, *Introduction*.
[50] Weber *et al.*, *Vegan teachers make students feel really bad*.
[51] Deleuze, *Pure immanence*.

education, Constance Russel suggests that "educators need to start where students *are*, not where we might wish them to be"[52] when they critically approach the topic of more-than-human animals and the discussion is held about veganism. Therefore, educators are in the process of their own emergent listening and becoming more-than-themselves by mastering creative sympathetic imagination toward their students with a focus on their individual position and learning journey. However, to meet students where they are does not mean that vegan educators must be neutral or compliant and position themselves in the space of self-censorship. Non-neutrality is a component of ethico-onto-epistemology, and a new materialist researcher, as well as a critical animal vegan educator, is "never free of questions of responsibility and response-ability".[53] Traditional education is never neutral, always political, and structured to benefit the ruling and advantaged classes.[54] Critical pedagogues challenge it and offer praxis as an integration of theory and practice,[55] situate students in their own historicity,[56] develop context-specific curricula, methods, and empower students with their knowledge and experience. In critical animal pedagogy and vegan education, non-neutrality surpasses and transcends students' passivity and helps them to practically internalize the material.[57] Therefore, critical animal vegan educators' response-ability is activated through non-neutral positioning, when self-censorship and silences are broken to meet students where they are in the mutual sympathetic, creative entanglement and intra-actions with knowledge and skills that educators and students can intra-actively exchange with each other and more-than-human animals.

Educational institutions teach students what it is to be human and how to preserve these human identities[58] in many ways through the anthropocentric position of our species towards others. New materialisms invite us to challenge the instrumental view of natural and technical entities and shift the focus from using them as resources, production, and consumption to acknowledging their agency and power. Moreover, attention can be paid to more-than-human powers "circulating around and within human bodies".[59] One of the possible intra-actions of students with more-than-human animals can become visiting spaces,[60] "place-based education",[61] direct interaction with animals in sanctuaries, and other places where more-than-human animals are free in their agency and subjectivity. Critical animal researcher Karin Gunnarsson Dinker argues that this facilitation promotes "reconnection, non-exploitative ways of living and where engagement, a critical stand and constant reflectivity may be cultivated".[62] Students and teachers practice these intra-active becomings and mutual engagement with the more-than-human world with their bodies and knowledge, either by careful observation or with active

[52] Russel, *An intersectional approach to teaching and learning about humans and other animals in educational contexts*, p. 38.
[53] Davies, *Entanglement in the world's becoming and the doing of new materialist inquiry*, p. 1.
[54] Apple, *Knowledge, power, and education.*
[55] Freire, *Pedagogy of the oppressed.*
[56] Rossatto, *Freire's understanding of history, current reality, and future aspirations.*
[57] Schatz, *Activist education for animal ethics.*
[58] Snaza *et al.*, *Introduction.*
[59] Bennett, *Vibrant matter*, p. ix.
[60] Dinker, *Critical creatures.*
[61] Hensley, *Cultivating biophilia*, pp. 5-9.
[62] Dinker, *Critical creatures*, p. 404.

participation of feeding, playing, creating, and other ways of close and respectful intra-actions with animals. Students' physical responses to the lives outside of human ones can create the bonds that connect knowledge, emotions, and bodily sensations with the changes in behaviour.

Critical animal pedagogy scholars and vegan educators maintain that students can comprehend the discourse and the criticism of speciesism, animal exploitation, and suffering, learn this material, and be excellent in the understanding of the work of the animal-industrial complex, intersections between animal oppression, capitalism, sexism, racism, and other forms of "matrix of domination".[63] However, this difficult knowledge and disturbing education do not normally make habitual and behavioral changes as the majority of students do not become vegan or vegetarian, and researchers and educators explore this gap between students' knowledge and their lack of changes in the treatment of animals.[64] Researchers and educators Valerie Banschbach and Marwood Larson-Harris share their experience of teaching the course that they developed for students to explore the moral standing of animals based on scientific findings that demonstrate their advanced cognitive and emotional abilities, and they conclude that discussions around vegetarianism and factory farming received little response, with most students reluctant to participate.[65] What is then the purpose of this education if discourse and matter are not entangled, when discourse does not affect body and matter, and knowledge stays in a theoretical form? This is also part of my experience as a vegan educator when I was teaching an elementary course "Animals and ethics" at a private community school in Switzerland. The children were active in acquiring knowledge on animal exploitation and speciesism, the conditions of farmed animals, and the importance of rejecting the consumption of animal exploitation products. However, after the course, most of them were eating sandwiches with ham at the school's canteen. In vegan education, there is a crucial element of the reunification of food production and food consumption, and this reunification must be done as the reunification of discourse and bodily knowledge.[66]

Thus, in this type of teaching and learning, Anne Bell and Constance Russel suggest paying closer attention to bodily knowledge as we learn about the world through our bodies.[67] New materialist perspectives call for the materialization of all bodies and forces: human, more-than-human, social and natural.[68] They invite us to perceive bodies as always related and never unmediated in a symbolic and material entanglement with social relations of power. Through being-in-the world, we acquire knowledge and skills with the understanding that appears through experience rather than analysis and cognition.[69] The importance of moving from rationalism in education to embodied methods of knowing,[70] somatic learning,[71] and

[63] Collins, *Black feminist thought*.
[64] E.g., Banschbach; Larson-Harris, *Animals in environmental education*; Kollmuss; Agyeman, *Mind the gap*; Russell, *Problematizing nature experience in environmental education*; Stevenson, *Schooling and environmental education*.
[65] Banschbach; Larson-Harris, *Animals in environmental education*.
[66] Martin, *This image cannot be displayed*.
[67] Bell and Russel, *Beyond human, beyond words*.
[68] Barad, *Meeting the universe halfway*.
[69] Merleau-Ponty, *Phenomenology of perception*.
[70] Crossley, *Social networks and student activism*.
[71] Morris; Beckett, *Performing identities*.

nonverbal discourse[72] becomes the mediation of knowledge and behavioural changes. Critical animal researchers argue that knowledge about animal exploitation is not enough because people continue participating in non-vegan ways of life even knowing about the horrifying conditions of exploited animals, animal consciousness, and moral debates of animal rights theory.[73] When discourse is not enough, then matter can be implemented by teaching students to experiment with vegan and vegetarian diets, and stop going to places where more-than-human animals are exploited.[74] Another way of including bodily knowledge is close to what human-animal researcher Kenneth Shapiro calls "kinesthetic empathy," when we expand our empathy to more-than-human animals by understanding their bodily experiences.[75] I would elaborate it to kinesthetic imagination and imitation when we try to envision how to be more-than-humans by imitating their postures, bodily experiences, communication, and other embodied practices with our own human bodies. For example, my students at school were practicing bee dances as a form of communication and presented them with expanded empathy for bees' subjectivity and agency. This experiential learning with trying a vegan diet, refusing to participate in animal exploitation, and practices of kinesthetic empathy are direct response-ability and intra-action. They are present only in active ethical responses to knowledge, the world, and more-than-human life.

The ethics of new materialisms uses different modes of creativity to be open to the not-yet-known.[76] Davies explores creative-relationality, which is openness to the different and to the new, and "a break from normative assemblages through encounters in which the unexpected and the new becomes recognizable and worthy of being valued".[77] She writes that creative-relationality depends on sympathy which "reaches *through* intuition towards a reality outside itself";[78] through sympathy we "become more-than-ourselves – we exceed ourselves – we go beyond habituated knowing in being",[79] and "sympathy depends on *emergent listening*, a listening that is open to realities that are not yet known".[80] In her book, Davies opens the research to creative observations of human and more-than-human entanglements outside herself – a pond, a boy, his mother, and the intra-actions between all of them – and the entanglements inside herself – her memories about a distressing past. Creative-relationality, which is a powerful component of research and teaching, is also inherently "*more-than* human",[81] and similarly, critical animal and vegan educators connect creativity, storytelling, fiction, journaling, songs, dances, plays, games, art, media, and other forms of creative observation and production in their research and practices to cultivate sympathetic identification with more-than-human animals.[82] Emotional response-ability and intra-action can take the form of "the process of

[72] Lewis; Simon, *A discourse not intended for her*, p. 465.
[73] Salih, *Vegans on the verge of a nervous breakdown*.
[74] Joseph, *Exploring the animal-human bond through a sociological lens*, p. 316.
[75] Shapiro, *Understanding dogs through kinesthetic empathy, social construction, and history*.
[76] Davies, *Entanglement in the world's becoming and the doing of new materialist inquiry*.
[77] Davies, *Entanglement in the world's becoming and the doing of new materialist inquiry*, p. 89.
[78] Davies, *Entanglement in the world's becoming and the doing of new materialist inquiry*, p. 90.
[79] Davies, *Entanglement in the world's becoming and the doing of new materialist inquiry*, p. 90.
[80] Davies, *Entanglement in the world's becoming and the doing of new materialist inquiry*, p. 23.
[81] Massumi, *The supernormal animal*, p. 14.
[82] E.g. Horsthemke, *Animal rights education*; Lukasik and Bear, *The call of wild stories*.

identification with animals"[83] as sharing intersubjectivity with more-than-human animals and developing sympathetic imagination with them, which can make a person "be knocked over by the injunction to change".[84] Art is a powerful tool for vegan education as it "produces sensations, affects, intensities as its mode of addressing problems".[85] Creative-relationality in vegan education is entangled with fostering identification with other animals, cultivating sympathetic imagination, and engaging in emergent listening to the voices of more-than-human animals, along with an awareness of our response-ability to those voices.

The corporality of the body's time and space with somatic responses is at the core of affective pedagogy, where there are always entanglements of spaces, bodies, and affect,[86] and where affect is "the cutting edge of change".[87] It has been shown how emotions become an important part of political forces,[88] and how they can shift directions of social movements.[89] There is also an intrinsic link between emotion and learning that makes a significant impact on learners' experience.[90] In critical environmental education research, scholars focus on affective dimensions of this pedagogy with emotions such as anxiety, grief, empathy, hope, and love.[91] Therefore, apart from bodily knowledge, it is important to integrate emotions into the learning process that can help learners comprehend difficult knowledge and reject the "well-worn tracks of the already known".[92] The researchers in critical animal pedagogy and vegan education emphasize that teachers' and learners' emotions are especially crucial in working with moral disengagement, uncertainty, resistance, and anxiety, and that all emotions whether positive, negative, or contradictory can have a significant effect on students' learning process.[93] For example, anger as a political emotion has the potential to inspire students' transformation in the issues of social justice, and more positive emotions such as empathy and compassion can shift anger into more productive and creative forms.[94] Another example is humor that helps educators to nurture reflective and transformative learning and makes students "perceive and then resolve the incongruity" of the material and their knowledge of it.[95] There is an educational potential of humor in vegan education,

[83] Dinker; Pedersen, *Critical animal pedagogy*.
[84] Salih, *Vegans on the verge of a nervous breakdown*, p. 64.
[85] Grosz, *Becoming Undone*, pp. 1-2
[86] Ellsworth, *Places of learning*.
[87] Massumi, *Politics of affect*, p. ix.
[88] E.g., Ahmed, *The cultural politics of emotion*; Clarke *et al.*, *Emotion, politics and society*; Goodwin *et al.*, *Passionate politics*; Staiger *et al.*, *Political emotions*.
[89] E.g., Aminzade; McAdam, *Emotions and contentious politics*; Brown; Pickerill, *Editorial*; Flam; King, *Emotions and social movements*.
[90] E.g., Freire; Freire, *Pedagogy of the heart*; Beckett; Hager, *Life, work, and learning*; Hunter, *Bringing the body back into education?* Morris; Beckett, *Performing identities*.
[91] E.g., Ojala, *Climate-change education and critical emotional awareness (CEA)*; Pihkala, *Eco-anxiety and environmental education*; Russell; Oakley, *Engaging the emotional dimensions of environmental education*.
[92] Davies, *Entanglement in the world's becoming and the doing of new materialist inquiry*, p. 7.
[93] E.g., Dinker; Pedersen, *Critical animal pedagogy*; Russel, *An intersectional approach to teaching and learning about humans and other animals in educational contexts*.
[94] E.g., Holmes, *Introduction*; Lorde, *Sister outsider*; Lyman, *The domestication of anger*; Lanas; Zembylas, *Towards a transformational political concept of love in critical education*.
[95] Banas *et al.*, *A review of humor in educational settings*, p. 119.

which can function as a self-care technique to cope with stress, grief, and the trauma of witnessing or learning about animal exploitation.[96]

The concept of love can become an affective and transformational power in vegan education in a form of our response-ability as educators, students, researchers, and humans, who wish the world to be more-than-human. From the perspective of critical pedagogy, it has been shown that love as a political concept is a significant component of transforming power dynamics in education.[97] It has revolutionary potential by serving "as a moral and strategic compass for concrete individual and collective actions" and works in different dimensions as emotion, choice, response, and praxis.[98] It can take the form of 'armed love', to critically and lovingly bring into education and teaching "deep social awareness of injustice".[99] Paulo Freire writes about love as one of the most crucial components that we must learn how to practice. For him, love is brave, hopeful, patient, committed, and exists as an important component for dialogue:

> It is impossible to teach without the courage to try a thousand times before giving up. In short, it is impossible to teach without a forged, invented, and well-thought-out capacity to love.[100]

Feminist critical researcher and educator bell hooks presents love as a fundamental principle and essential condition for effective learning. She characterizes love as an integration of care, commitment, knowledge, responsibility, respect, and trust, emphasizing that this approach enables a direct engagement with core issues:

> Love will always move us away from domination in all its forms. Love will always challenge and change us. This is the heart of the matter.[101]

Love for students who obliviously or consciously choose non-vegan consumption or other actions that harm more-than-human animals can be especially challenging for a vegan educator. However, I contend that love has an intrinsic capacity to create more possibilities for transformations in this type of teaching and learning and will be able to break the walls of resistance to change, through loving response-ability and intra-actions between educators and students, human and more-than-human beings.

Conclusion

The ability to ethically respond to difficult knowledge and exploitation of more-than-human animals has potential applications in vegan education, if teachers present veganism as response-ability for "new possibilities for living justly" with all

[96] E.g., Russel, *An intersectional approach to teaching and learning about humans and other animals in educational contexts*; Hee *et al.*, *Communicating Urgency through Humor*.
[97] Lanas; Zembylas, *Towards a transformational political concept of love in critical education*.
[98] Lanas; Zembylas, *Towards a transformational political concept of love in critical education*, p. 33.
[99] Daniels, *Fighting, loving, teaching*, p. 10.
[100] Freire; Freire; Macedo, *The Paulo Freire reader*, p. 3.
[101] hooks, *Teaching community*, p. 137.

more-than-human beings.[102] If new materialist considerations declare to be non-anthropocentric with ethical and political domains of agency and causation, then the form of non-exploitative practices of engagement with more-than-human matter and bodies is shaped by veganism. Response-ability entangled with ethical research and teaching shows the ability and capacity to respond in learning, teaching, and creating, to make decisions based on non-violence and expand empathy, sympathy, and compassion. It brings together the methods, theory, and praxis of teachers' and students' responses, who produce together not only knowledge or information but the possibility of a nonviolent life by being engaged in the intra-action of learning and teaching about veganism. Critical animal pedagogies and vegan education represent an active praxis of response-ability to more-than-human animals and the world, when educators teach how to choose life and empathy over violence and exploitation. This paper demonstrates how vegan education, entangled with new materialist conceptions, has the capacity to transform students' choices, teaching praxis, and research through direct intra-actions with more-than-human animals, embodied and affective ways of knowing, sympathetic and kinesthetic imagination, creativity, and an ethic of non-neutrality, with a core ingredient of love to all beings.

[102] Barad, *Meeting the universe halfway*, p. x.

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