Critical Ethology and the Praxis of Relational Becoming: Reconfiguring Ecology, Subjectivity, and Social Transformation

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Abstract

This paper advances the concept of *critical ethology* as a necessary philosophical and methodological orientation for addressing ecological and social crises. Against the dominant narratives of moralistic environmentalism and functionalist or structuralist sociology and their 'post' prefixed versions, we argue that both nature and society must be understood not as fixed, ontologically separate domains but as emergent, relational configurations. Drawing from Simondon's theory of individuation, Guattari's *three ecologies*, Haraway's sympoietic ontology, the bio-cognitive insights of Levin and Fields, and Indian non-dualist metaphysics, we construct a framework that affirms transformation over restoration, co-constitution over moral polarity, and emergence over essential identity. This framework not only dissolves false dichotomies between the human and the ecological but also opens new epistemological and ethical pathways for acting within complex systems.

Keywords: Critical Ethology, Relational Ontology**,** Co-emergence**,** Sympoiesis**,** Individuation**,** Ecological Transformation

1. Introduction: Beyond Ecology as a Moral Problem

The escalating ecological crisis—marked not only by environmental degradation but also by social fragmentation, psychological alienation, and a pervasive sense of existential despair—has increasingly elicited public and institutional responses grounded in guilt, moral outrage, and calls for accountability. These affective responses, while indicative of genuine concern, often translate into reductive narratives that frame ecology as a passive, violated victim of human aggression. Within this moral schema, nature is positioned as an externalized object, wounded by anthropocentric excess, and therefore in need of either redemptive environmentalism—characterized by purity politics and a nostalgic desire to "return" to a lost natural order—or technocratic control, wherein ecological repair is relegated to managerial expertise and algorithmic governance. Both responses, despite their apparent opposition, share a problematic philosophical assumption: they reproduce a dualism that severs the human from the ecological, the moral agent from the natural world, and the ethical imperative from the immanent conditions of becoming.

Such framings are not only theoretically impoverished but also practically counterproductive. They obscure the fundamental fact that human beings are not external to nature, but are emergent expressions of complex ecological systems—biological, affective, technological, and semiotic assemblages continuously constituted through their relations with other entities. If the human is a dynamic node within overlapping ecological networks, then framing ecological crisis as something "we" have done to an "other" misses the co-emergent character of our predicament. Moral outrage,

in this light, becomes a displaced affect—a misdirection of psychic and political energy that upholds the illusion of separateness and reinforces the very structures it purports to critique.

This paper argues that in order to respond meaningfully to the contemporary ecological condition, we must abandon these reactive and essentialist modes of thinking. Instead, we advocate for a framework of *critical ethology*—a mode of inquiry that recognizes both human and nonhuman formations as relationally constituted, habituated, and historically contingent. Critical ethology resists the impulse to isolate entities or behaviors as inherently good or evil, and instead focuses on the patterned dynamics through which forms of life, value, and meaning emerge. It sees ecological and social realities as fundamentally processual: not composed of substances with fixed essences, but of interdependent systems that co-evolve through situated interactions. From this perspective, transformation arises not from guilt or redemption, but from re-patterning the very conditions of relationality that give rise to crises in the first place.

2. Philosophical Foundations: From Essence to Individuation

Gilbert Simondon's philosophy of individuation provides a profound ontological departure from classical substance metaphysics and lays the foundational groundwork for the ethological paradigm advocated in this paper. For Simondon, beings are not autonomous, self-contained entities defined by pre-existing essences; rather, they are *metastable systems*—dynamic configurations in constant tension with their milieu, perpetually undergoing transformation. Individuation, in Simondon's view, is not the realization of an already-given form, but a continuous process of becoming that unfolds within a field of pre-individual potential and relational intensity. Individuality, then, is not a fixed unit or endpoint, but a phase or resolution within a broader process of systemic differentiation and relational modulation. This insight fundamentally challenges the metaphysical presumption of ontological fixity and instead demands a relational and processual mode of thought—one that views existence not as composed of discrete, self-identical entities, but as an open field of becoming as well as unbecoming or subtractive shedding off (Simondon, 2009).

This shift has radical implications for how we conceptualize categories such as "nature," "society," and "self." It dismantles the epistemological scaffolding that underpins dualistic thinking and static taxonomies, which presume the existence of isolated entities that can be cleanly delineated, governed, or redeemed. Instead, Simondon invites us to attend to the *conditions of individuation*—the dynamic interactions, tensions, and relational fields through which entities emerge, stabilize, and transform. It is this attention to ontogenetic processes, rather than ontological states, that undergirds an ethological understanding of ecological and social phenomena (Simondon, 2009; Barad, 2007).

Strikingly, this orientation toward relational becoming is mirrored in Indian non-dualist metaphysical traditions, particularly in Sāṃkhya and Buddhist philosophies. These traditions reject the notion of intrinsic, enduring selfhood (*ātman*) in favor of models of dependent co-arising (*pratītyasamutpāda*), wherein all phenomena are seen as contingent, interdependent, and impermanent. In Buddhist Madhyamaka thought, especially as articulated by Nāgārjuna, even the most fundamental aspects of reality lack inherent essence (*svabhāva*), and are intelligible only in terms of their relational origination. Similarly, Sāṃkhya distinguishes between *prakṛti* (the

dynamic, generative matrix of materiality) and *puruṣa* (pure witnessing intelligence), while emphasizing that all experiential reality emerges from the interplay of these principles—neither of which has independent agency or selfhood outside this interaction (Larson, 1979; Nāgārjuna, 1995).

The Indian ontological schema of *para*, *paśyantī*, *madhyamā*, and *vaikharī* further deepens this relational view by offering a layered model of manifestation. In this schema, *vaikharī*, the gross articulated expression of phenomena, is merely the final crystallization of subtler, inner processes of emergence that originate in the undifferentiated field of *para*. Each level marks a stage in the progressive individuation of thought, speech, and form—underscoring that what appears as stable or substantial at the level of perception is in fact the surface effect of a multi-layered process of relational unfolding. From both Simondon's philosophy and Indian metaphysical thought, we derive a shared affirmation: that identity—whether of self, species, society, or nature—is not a substance but an event, not an essence but an emergent pattern within a field of relations (Pillai,1951).

In this light, the very idea of a fixed nature to be preserved, or a stable society to be restored, becomes philosophically incoherent. What is required instead is a paradigm capable of engaging with the flux of becoming, the contingency of form, and the plasticity of relational structures. Critical ethology, grounded in this processual ontology, offers precisely such a paradigm—capable not only of interpreting but of ethically and practically intervening in the continuous reformation of ecological and social life.

3. From Structures to Ethologies: Rethinking the Social

Traditional sociological paradigms—such as structuralism, functionalism, and even certain strands of post-structuralism—often remain tethered to essentialist and system-centric assumptions. They typically conceptualize society as a structured whole composed of predefined roles, functions, and institutions, with social order arising from the stability and reproduction of these elements. Within such frameworks, individuals are frequently treated as role-bearers situated within macro-level structures whose logic determines action, value, and identity. While these approaches have provided valuable tools for analyzing systemic patterns, they often neglect the more subtle and dynamic substrates through which social life is actually lived—namely, the affective dispositions, embodied habits, and micro-relational dynamics that underpin and continuously reshape collective formations.

In contrast, *critical ethology* shifts the analytic focus away from abstract, systemic structures and toward the lived, embodied patterns of behavior, affect, and relationality that constitute the dynamic fabric of social life. It challenges the assumption that social roles and institutions exist as historically given a priori or as historical ontological categories that merely channel individual behavior. Instead, it understands these configurations as *emergent effects* of ongoing, interactional processes—formed and transformed through recursive engagements, habituated practices, and affective resonances- that can be suspended at will to power, suspending their iterative recurrence. Social formations, from this perspective, are not stable architectures of function and hierarchy but *metastable fields*—zones of potential, intensity, and threshold—where meaning, identity, and structure are continuously negotiated and reconfigured. By emphasizing the contingent, affect-

driven, and relational nature of the social, critical ethology offers a more fluid and responsive framework for understanding how social realities take shape, persist, and evolve.

This perspective opens the door to understanding society not as a mechanical system but as a living, adaptive ecology of interactions. It foregrounds the plasticity of social forms and the generative potential of behavioral and affective shifts, emphasizing that even seemingly stable institutions are always undergoing subtle processes of transformation. The concept of *lines of flight*—borrowed from Deleuze and Guattari—aptly captures this ethological sensibility: these are the pathways through which novel social configurations escape ossified structures, giving rise to new modes of organization, identity, and belonging (Guattari,2000; Deleuze and Guattari, 1992:31)

In reframing the social as ethological, this approach challenges the epistemological reliance on fixed categories such as class, caste, role, or institution, replacing them with a vocabulary attuned to emergence, co-constitution, and process. It thereby invites more sensitive and effective ways of engaging with social transformation—ways that recognize the importance of non-linear change, affective resonance, and the capacity for life to organize itself differently. Critical ethology, then, offers not just an alternative analytical lens, but a fundamentally different way of inhabiting and intervening in the social world.

4. The Three Ecologies and the Collapse of Dualism

Félix Guattari's concept of the *three ecologies*—mental, social, and environmental—offers a profound and necessary expansion of ecological thought, pushing it beyond the narrow confines of environmental policy or conservationist concern. For Guattari, the ecological crisis is not reducible to physical manifestations such as pollution, deforestation, or climate change. Rather, these material symptoms are deeply entangled with psychic and social pathologies: forms of subjectivity marked by alienation, anxiety, and consumption-driven desire, and social systems structured around commodification, technocratic control, and institutional rigidity. In Guattari's framework, these three ecologies are not discrete spheres but co-implicated dimensions of a single, integrated field of life. They are connected through shared *ethologies*—habituated patterns of behavior, affect, and desire that traverse individuals, collectives, and environments (Guattari, 2000).

This ethological continuity is crucial: environmental devastation cannot be meaningfully addressed without simultaneously transforming the affective and semiotic landscapes of subjectivity and social life. The same patterns of extractive desire and instrumental rationality that ravage ecosystems also shape how individuals perceive themselves, relate to others, and imagine the future. Guattari's intervention is thus both ontological and political. He refuses to isolate ecology as an "issue" to be managed, and instead proposes *ecosophy*—a new mode of collective existence that integrates ecological sensibility across all levels of experience. Ecosophy demands the reconfiguration of subjectivity, the creation of alternative social practices, and the cultivation of relational, embodied, and situated forms of knowledge (Madhu, Et al, 2014).

Moralistic approaches to ecological crisis fail, in Guattari's view, precisely because they misdiagnose the problem. By attributing environmental collapse to either individual failings

(greed, ignorance) or purely systemic malfunctions (bad governance, flawed policy), they overlook the more fundamental dysfunction: a collapse of ethological coherence across scales. These approaches attempt to resolve the crisis through guilt, compliance, or technocratic reform, without addressing the deeper affective and behavioral disorders that generate unsustainable patterns of living in the first place. Guattari's ecosophy, by contrast, envisions a politics of *ethological transformation*—not a top-down correction of deviant behavior, but a grassroots reinvention of how we feel, desire, relate, and organize life (Guattari, 2000).

In this light, ecology becomes inseparable from cultural production, pedagogy, urban design, media, and everyday affective life. The political task is not simply to regulate carbon emissions or protect endangered species, but to co-create new assemblages of existence—new ways of being-with the world that dissolve the false separation between self and environment, human and nonhuman, mind and matter. Guattari's vision is not utopian in the sense of idealism; it is utopian in the etymological sense: a *non-place* that must be constructed through experimental modes of living. His three ecologies thus anticipate and inform the ethological perspective advanced in this paper: a framework attuned to emergence, transformation, and the relational invention of worlds (Guattari, 2000).

5. Scientific Resonances: Scale-Free Cognition and Active Inference

Contemporary developments in science, particularly in systems biology and cognitive science, increasingly affirm and extend the philosophical insights of relational and ethological thought. The groundbreaking work of Michael Levin and Chris Fields on *scale-free cognition* and *active inference* challenges long-standing assumptions about the localization of intelligence and the centralization of decision-making (Levin& Fields, 2022). Their research reveals that even biological systems lacking centralized nervous structures—such as cellular assemblies, tissues, and non-neural organisms—exhibit complex, coordinated behaviors through decentralized, distributed processes. These systems engage in bioelectrical signaling, morphogenetic patterning, and dynamic feedback loops that enable them to "sense," interpret, and respond to their environments in adaptive, anticipatory ways. Rather than functioning like passive machinery awaiting top-down commands, these living systems demonstrate agency, plasticity, and inference-based behavior at multiple spatial and temporal scales.

This body of work offers powerful empirical support for the ethological claim that identity, form, and function are not pre-determined by fixed codes or imposed from external authorities, but emerge from within—through recursive, self-organizing, and feedback-rich processes that traverse and connect levels of biological and ecological organization. Cells do not merely execute genetic instructions; they negotiate their developmental trajectories through continuous relational signaling with their environment and with each other. Similarly, organisms do not simply react to stimuli but infer meaningful patterns from complex contexts, adjusting their form and behavior accordingly. These insights profoundly resonate with the ethological view that behavior, meaning, and identity are not static attributes, but enacted and emergent properties arising from a system's embeddedness within a relational matrix (Levin & Fields, 2025).

Extending this framework beyond biology, the implications for fields such as bioengineering, regenerative medicine, and artificial intelligence are significant. These technologies need not be

conceptualized as external interventions that impose control or design from outside, but can be reimagined as *ethological interventions*—participatory engagements with life's inherent capacities for self-organization, inference, and transformation. For example, rather than coercing cells into predefined structures, regenerative medicine can scaffold the conditions for tissues to infer and self-assemble toward desired outcomes. Similarly, AI systems inspired by scale-free cognition may move away from rigid symbolic architectures toward more relational, embodied, and adaptive models of intelligence.

This shift marks a critical ontological and ethical turning point: we are no longer dealing with systems that need to be commanded, repaired, or redeemed from the outside, but with processes that must be understood, guided, and co-evolved from within. The ethological vision, supported by contemporary science, thus redefines our role—not as engineers of fixed outcomes, but as participants in a continuous, open-ended negotiation of meaning, form, and life. In doing so, it invites a more humble, responsive, and generative engagement with the complexities of living systems, whether at the level of cells, ecosystems, or societies.

6. Becoming-With: Haraway and the Ethics of Relation

Donna Haraway's concept of *becoming-with* offers a profound intensification of the relational ontology that underlies critical ethology, embedding it within an ethics and politics of multispecies co-existence. For Haraway, neither "nature" nor "humanity" can be understood as autonomous or pre-existing categories; rather, both emerge through historically situated, materially entangled, and affectively charged practices of *care, co-labor, and co-suffering*. The world is not made by humans alone, nor by nature acting independently, but through intricate webs of interdependence where species, technologies, environments, and imaginaries continuously shape and reshape one another. Her notion of *sympoiesis*—literally, "making-with"—displaces the idea of *autopoiesis*, or self-making, which has dominated many cybernetic and biological models. In rejecting both the illusion of sovereign self-organization and the purity narratives of essentialist environmentalism, Haraway foregrounds the inherently collaborative and open-ended nature of all ecological and social becoming (Haraway, 2016).

In this sympoietic framework, the ecological crisis is no longer seen as a moral deviation from an ideal natural order, nor as a problem that can be fixed through technocratic intervention or redemptive environmentalism. Instead, it is understood as a failure or breakdown in the *capacity to co-emerge*—a disruption in the generative patterns of inter-species and inter-systemic relationality that sustain life. It is not simply that humans have "damaged nature," but that the very infrastructures and ethologies through which co-existence becomes possible have been frayed, exhausted, or rendered uninhabitable. Haraway's vision thus reframes crisis not as punishment or fall, but as a call to recompose the conditions of *becoming-with* (Haraway, 2016).

Within this view, ethological transformation becomes the central ethical and political task. It entails cultivating new patterns of perceiving, responding, and organizing life—ones that are attentive to complexity, capable of staying with trouble, and willing to invent new modes of relation beyond domination, purity, or denial. The affective stance shifts accordingly: from guilt, nostalgia, or moral outrage to *co-responsibility, attentiveness, and speculative invention*.

Importantly, this does not mean relinquishing agency or critique, but rather reframing them within a framework of distributed responsibility and participatory becoming.

Ethology, in Haraway's sense, is not merely a science of behavior; it becomes a *praxis of world-making*. It involves inhabiting the entangled messiness of multispecies life with humility, curiosity, and a readiness to re-pattern our habits of thought and action. It requires attending to how infrastructures shape attention, how affect organizes possibility, and how kinship—broadly conceived—emerges through shared risk and partial connections. In embracing *becoming-with*, we are not looking to save a stable world but to cultivate the fragile, mutable, and situated conditions under which new worlds might still be made together. This is the heart of ethological ecology: an ethics of entanglement, invention, and co-emergence in a world that is never finished, always in the making (Haraway, 2016).

7. Toward a Critical Ethology

Critical ethology reconfigures both ontology and ethics by offering a fundamental departure from frameworks that seek to restore a presumed original order or protect static identities. Instead of aiming to recover a lost ecological or social harmony, it centers transformation as the core imperative—understanding that both nature and society are dynamic, historically contingent, and relationally emergent. It abandons the search for fixed categories of identity—such as "nature," "humanity," or "society"—in favor of recognizing the fluid, co-constitutive processes that continually generate difference and novelty. In doing so, it shifts ethical emphasis from reactive moral outrage—rooted in guilt, blame, or idealized norms—to a cultivated responsiveness that is attuned to the specificity of contexts, relations, and patterns in flux. Furthermore, it rejects the logic of external mastery that has characterized technocratic governance and reductionist science, replacing it with a mode of embedded participation wherein all actors—human and nonhuman, organic and technological—are implicated in the ongoing modulation of shared ecologies.

This paradigm calls for a deeper, more nuanced engagement with the generative conditions through which patterns of life, meaning, and value emerge. It demands sustained attention to habituated behaviors—such as consumption, land use, architectural and infrastructural design, and systems of education—that shape how we live and perceive our environments. It also draws our focus to affective fields, where emotions such as desire, fear, and attachment structure ecological imagination and collective action, often unconsciously. Moreover, critical ethology highlights the role of technical mediations—the tools, platforms, and infrastructures that silently scaffold or constrain our actions and possibilities—revealing the often-overlooked material basis of social and ecological formation. Finally, it foregrounds relational thresholds: the dynamic interfaces where novel assemblages, symbioses, and emergent orders take shape, offering spaces for experimental co-becoming and alternative futures.

In this expanded view, ethology becomes not merely a descriptive science of animal or human behavior, but a generative praxis that operates across ecological, technological, and social domains. It becomes a method of intervention—a means by which we can trace the subtle dynamics of emergence, shift habitual or maladaptive patterns, and co-create new configurations of existence. Through this lens, critical ethology is not just a theoretical orientation, but a transformative strategy for navigating and reshaping the complex realities we inhabit—an ethics

of relational becoming grounded in the recognition that the world is always already in motion, and that we are both shaped by and responsible for its ongoing unfolding.

8. Conclusion: Toward a Praxis of Co-Emergent Transformation

We have argued that critical ethology offers a rigorous, relational, and non-essentialist framework for understanding and transforming both ecological and social realities. By drawing on insights from Simondon, Guattari, Haraway, Levin, Fields, and non-dualist Indian traditions, we reconfigure reality not as composed of fixed essences or structures, but as dynamically constituted through continuous processes of individuation, affect, and relation. In doing so, we move beyond the moralism of traditional environmentalism and the rigidity of structural sociologies, embracing instead an ontology of co-emergence and transformation. The usefulness of this approach lies in its capacity to reorient both thought and action: it provides not only a conceptual lens for diagnosing ecological and social crises, but also a methodological orientation for cultivating new patterns of behavior, affect, and institutional design. Critical ethology is not merely descriptive; it is generative and emancipatory. It invites scholars, practitioners, and communities to engage reality as a living, co-constituted field of possibilities—open to conscious intervention, iterative reshaping, and transformative becoming. In this sense, critical ethology is both an ethical commitment and a practical tool: a dharma of responsiveness that affirms the world's radical potential to be made—and remade—otherwise.

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