A Narrative Overview Towards More-Than-Human Principles for Embracing the Relational Dimension in Decision-Making Processes

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Abstract. The contemporary debate on territorial transformation highlights the limitations of anthropocentric paradigms in assessment and evaluation processes. Traditional frameworks primarily measure performance, efficiency, and functional outcomes, often neglecting the relational consequences that territorial projects generate between human and non-human entities. Against this backdrop, this research explores how More-Than-Human (MTH) principles can inform the reformulation of decision-making processes, with particular attention to the evaluation of the relational dimension between actors – human and non-human – and the distribution of agency. To address this question, a critical narrative overview method is adopted, suited to mapping heterogeneous and evolving theoretical fields where the goal is synthesis and interpretation rather than aggregation of quantitative evidence. A selected corpus of texts by key authors in the MTH and posthuman debates was analysed through an in-depth qualitative reading. The results show that these principles do not constitute predefined theoretical categories but emerge inductively from the comparative reading of the corpus. They establish relational orientations through which central categories of decision-making can be reconsidered from a More-Than-Human perspective, supporting the development of relational evaluation criteria capable of recognising non-human agency. The transition to operative relational principles represents a first step toward decision-making processes that are more adaptive, accountable, and ecologically responsive.

Keywords: More-Than-Human · Relationality · Spatial Justice

1 Introduction

In recent years, the limitations of anthropocentric approaches to territorial design and evaluation have become increasingly evident [1, 2]. Traditional models fail to capture the complexity that characterises current environmental, social, and economic crises and the limits of their underlying ethical assumptions [3]. The underlying theme of these models is primarily focused on human needs, performance indicators, and the

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sustainability of choices aimed at responding to fundamentally human demands. Ethics tends to operate within major frameworks such as utilitarianism [4], according to which decisions are based on cost-benefit analysis and the maximisation of utility, with the necessity of confronting standardised value systems and, often, without managing to grasp the complexity of the relational systems that underpin life in places and the agents of change and resilience that remain invisible to mainstream paradigms.

An alternative tradition is represented by deontological theories [5], based on the centrality of rules, duties, and rights, which prove too rigid when applied to complex contexts. Both frameworks, however, share a fundamentally anthropo-centric orientation, and this ethical limitation is implicitly projected onto economic models. Within this framework, some main strands can be identified that attempt to reposition a multidimensional value system [6], such as neoclassical economics [7, 8], which ignores ecological relationships and material limits, and behavioural economics [9], which attempts to correct the classical model by demonstrating that human choices are often influenced by factors that are not purely economic [10]. Although the latter is more innovative, it remains centred on humans [11], considering nature and non-human entities merely as resources.

In turn, economic models shape decision-making processes that, despite having evolved beyond the synoptic-rational approach toward more adaptive frameworks such as bounded rationality [12, 13] and incrementalism [14], continue to operate within fundamentally anthropocentric boundaries. Among existing evaluative approaches, Multi-Criteria Decision Analysis (MCDA) [15, 16] represents one of the most inclusive frameworks, precisely because it attempts to compare values and criteria belonging to different domains – monetary and non-monetary, qualitative and quantitative – yet this very plurality too often subordinates the intangible dimension, favouring quantitative proxies that are more directly verifiable.

This anthropocentric boundary is not merely a technical limitation: it reflects a deeper ontological assumption – the implicit attribution of agency exclusively to human actors and the recognition of only human interests as legitimate grounds for evaluation and choice – whose systematic embedding in decision-making processes represents one of the most persistent structural constraints of contemporary evaluation frameworks.

This structural limitation extends across several disciplines, where a central challenge concerns the integration of ecological interdependencies and the agency of non-human entities [17, 18] within decision-making processes. The subordination of complex phenomena to human-centred theoretical frameworks contributes to ecological unsustainability, producing forms of economic growth that systematically disregard environmental relationships and limits. This reductive orientation is further reinforced by apparently neutral terminology: compound terms such as “natural resources”, “sustainable development”, “environmental management”, “wilderness areas”, and “natural disaster” [19] reproduce extractive and managerial assumptions, framing non-human entities primarily through their usefulness, controllability, or risk for human systems. Against this backdrop, rethinking the ontological and epistemological foundations of evaluation becomes necessary – not merely to broaden the range of actors considered, but to fundamentally reconceive the relational complexity of territories and the role of non-human beings within them.

Two distinct theoretical fields have progressively emerged in response to this need: post-humanism [20] and More-Than-Human theories [21]. While post-humanism primarily criticises the humanist conception of the autonomous and exceptional human subject [22], More-Than-Human approaches focus more directly on the relational entanglements between humans, nonhumans, technologies, and environments [23]. Despite their diverse disciplinary origins, both perspectives criticise anthropocentrism, reject classical dualisms, recognise non-human agency, and see reality as relational and interdependent [24]. For this reason, this research considers these perspectives as interconnected theoretical contributions. This conceptual shift has been embraced across many disciplines, and numerous authors have developed related theories, including Donna Haraway, Bruno Latour, Karen Barad, Jane Bennett, and Sarah Whatmore.

Yet translating these frameworks into evaluative and design practices remains particularly challenging. Despite their growing theoretical influence, More-Than-Human perspectives have so far struggled to achieve operational traction: existing evaluation processes continue to fall short in accounting for non-human agency, in tracing the reciprocal effects generated by multispecies interactions, and in developing criteria and tools capable of making these dynamics legible within structured decision-making procedures. Adopting More-Than-Human theories as a fundamental perspective implies a radical transformation of decision-making processes: from linear, optimisation-oriented procedures, they become relational practices that include both human and non-human entities as actors, grounding every evaluative choice in ecological interdependence and distributed agency rather than in predefined human goals.

This research aims to explore how More-Than-Human principles can inform the reformulation of decision-making and evaluation processes, with particular attention to the relational dimension between human and non-human actors, the distribution of agency, and the role of the evaluator as an embedded part of the local relational system rather than an external observer. The research question guiding this study is: how can More-Than-Human principles be translated into operational criteria and approaches for decision-making processes that incorporate non-human agency? To address this question, a narrative overview method is adopted, suited to mapping heterogeneous and still evolving theoretical fields where the goal is synthesis and interpretation rather than aggregation of quantitative evidence [25].

The paper is structured as follows: Sect. 2 defines the research field and the main topics that delimit the scope of the narrative overview, identifying the theoretical coordinates within which the review is conducted. Section 3 presents the methodological approach, describing the phases, tools, and strategies adopted for the construction and analysis of the corpus. Section 4 reports the results, articulating four conceptual nuclei and ten operative relational principles for More-Than-Human decision-making. Section 5 discusses the implications of these findings for the operationalisation of relational evaluation processes and outlines directions for future research.

2 Research Field and Main Topics

2.1 Including Multi-Agency in Territorial Governance

When decision-making processes are understood through a More-Than-Human lens, the distribution of agency across human and non-human actors becomes a constitutive – rather than merely instrumental – dimension of territorial governance. This reframing has implications for three interconnected dimensions: (i) the epistemological foundations of participation; (ii) the quality of de-liberative encounters; and (iii) the representation of non-human actors.

Participatory decision-making processes are premised on the idea that legitimate outcomes emerge not from the aggregation of pre-formed preferences but from the quality of interactions among actors [26, 27]. Central to this view is the recognition that knowledge is always situated: produced from a specific position, by specific actors, in relation to specific places and conditions [28]. If participation is understood as a process of collective knowledge production rather than mere preference aggregation, then the quality of the encounters through which that knowledge is generated – their openness, their attentiveness to difference, their capacity to hold heterogeneous voices – becomes itself a central design and evaluative concern.

This understanding resonates with Ivan Illich's concept of conviviality [29], which proposes a relational model of social life grounded in reciprocity, autonomy, and mutual limitation. Transposed into the planning domain, conviviality implies designing processes that are genuinely open to the knowledge, values, and rhythms of those who inhabit a territory – resisting the tendency of professional and institutional frameworks to reduce participation to tokenism [30]. The convivial dimension of decision-making thus calls for modes of encounter that are temporally attentive – resistant to the acceleration that institutional frameworks tend to impose – embodied, and genuinely open to difference [31], foregrounding the quality of relations over the efficiency of outcomes. Crucially, conviviality should not be conflated with harmony. Relational processes must also be capable of holding conflict and sustaining productive disagreement, recognising that genuine plurality is not a condition to be resolved but a permanent feature of democratic life [32, 33]. From this perspective, conflict is not a failure of participation but its most honest expression – and the capacity to make it legible, rather than dissolving it through aggregation, is itself a mark of evaluative rigour.

When the category of relevant actors is extended beyond the human – as the MTH approach demands – both participation and conviviality are pushed toward their limits. Non-human entities such as rivers, soils, forests, animals, or microbial communities do not participate in conventional deliberative arenas. Nevertheless, they are deeply implicated in the outcomes of territorial decisions, and their responses – flooding, soil degradation, species migration, ecological disruption – can be read as forms of agency that exceed human intention and control [23, 34]. The challenge, then, is not simply to add non-humans as stakeholders in an otherwise unchanged process, but to reconfigure what counts as a relevant signal, a meaningful response, or a legitimate claim – and, consequently, to develop evaluation approaches capable of making these signals legible within structured decision-making procedures.

This reconfiguration makes representation structurally unavoidable: deciding which ecological signals are amplified, which temporal scales are considered relevant, and which thresholds of response are deemed significant are inherently political choices that embed assumptions about what and who matters in a territory [35, 36]. Acknowledging this political dimension is not a concession to relativism but a precondition for designing governance processes that are genuinely responsive to the plural, human and non-human actors that constitute a living territory.

2.2 Embracing the Relational Dimension for just Decision-Making Processes

The most widely adopted evaluation frameworks – whether applied to spatial processes, programmes, or projects at different scales – share a foundational epistemological assumption: values pre-exist the evaluative act and are typically conceptualised as a property belonging to the evaluand – the subject, place, or process under assessment – identifiable through criteria and indicators, and ac-accessible to the evaluator through sufficiently refined and scientifically grounded instruments, including approaches capable of capturing intrinsic values and complex social dimensions [37]. The evaluator's task, within this paradigm, is one of progressive approximation: accumulating evidence to produce a description that is as complete as possible, commensurate with the scale and stakes of the decision.

The More-Than-Human paradigm offers evaluation theory and practice something more fundamental than an expanded inventory of actors and multidimensional variables: an alternative epistemological orientation grounded in recognition [38, 39] as a principle of spatial justice [40]. Within this framework, diversity and plurality are not intrinsic properties of places or subjects but relational achievements – values that emerge from the system of relations established within a specific context, and that therefore cannot be identified before the process that generates them. This perspective draws on a broader confluence of ecological, feminist, critical, and decolonial traditions [40], which share with More-Than-Human theories a common emphasis on relationality as the foundation of collective meaning-making, shared goods, and democratic futures grounded in inclusion rather than exclusion. In this sense, the relational dimension is not a measurable, pre-existing output of territorial processes: it is a value whose very uncertainty is constitutive, generated and regenerated through the relations that subjects – human and non-human, individual and collective, material and symbolic – establish within places, territories, and environments characterised by multiple and heterogeneous levels of agency.

Within this research field, applying a More-Than-Human perspective to evaluation in complex, multi-actor and multi-agency decision-making contexts implies a fundamental repositioning of the evaluator's role. Evaluation is not a neutral instrument applied to a pre-existing reality: it is itself a situated practice that participates in the construction of that reality, capable of reproducing or, conversely, of challenging the power asymmetries and technocratic dynamics that structure decision-making processes [41]. The evaluative act carries, in this sense, a transformative agency of its own – what Mertens [42] has theorised as the capacity of evaluation to function not merely as an accountability mechanism but as an enabler of recognition: a process through which marginalised voices, conflicting knowledge systems, and invisible power relations are made legible

and brought into dialogue. This transformative potential, however, is not automatic: it requires a deliberate reconceptualisation of how evaluation is designed and practised, shifting from frameworks oriented toward prediction and control toward approaches capable of embracing uncertainty, holding conflict, and supporting epistemically just decision-making processes [40].

This repositioning implies a shift from evaluation as measurement to evaluation as relational practice. Drawing on Guba and Lincoln's fourth-generation framework [43], and on Latour's understanding of the social as inherently relational [18], this approach recognises the reality under evaluation not as a pre-existing datum awaiting measurement but as an intersubjective construction that is produced and transformed within the very process of interaction among the evaluator, the programme, and the plural assemblage of human and non-human actors involved. Adopting a More-Than-Human orientation in evaluation means, in this sense, embracing Geertz's thick description [44] as an epistemological commitment in the service of more just decision-making processes: not abandoning methodological rigour, but redefining it as interpretive and situated rigour – oriented toward restoring the quality and depth of relational experience in its specific territorial and social context, rather than extracting comparable and generalisable data, and toward making visible who and what is excluded from decisions, and who bears the costs and invisible disvalues that those decisions produce.

Addressing this gap requires returning to the theoretical foundations of More-Than-Human thought and identifying, from within that body of work, the principles capable of guiding the construction of evaluation criteria and deliberative architectures that are genuinely responsive to relational complexity. It is precisely this operation – the translation of MTH theoretical perspectives into operative orientations for evaluation and decision-making – that the following methodological section sets out to develop.

3 Methodology

This research adopts a narrative overview to investigate the More-Than-Human theoretical field, with the scope of translating its conceptual contributions into operational relational principles, which are oriented toward decision-making processes [45], (Fig. 1). More-Than-Human theories constitute an interdisciplinary and continuously evolving field, characterised by multiple languages and perspectives; for this reason, the research focuses on detecting a series of convergent concepts, rather than comparing isolated theoretical positions.

Building on the thematic and operational contexts outlined in the preceding section, the methodology is designed to identify recurrent conceptual structures across different theoretical contributions within the More-Than-Human debate, with the specific aim of deriving from that body of work a set of principles capable of orienting the evaluation of projects and processes toward a perspective that genuinely accounts for the relational dimension.

The first phase consists of selecting key authors within the More-Than-Human and posthuman debates for this research, including Donna Haraway, Bruno Latour, Karen Barad, Anna Tsing, and Rosi Braidotti, who are figures central to the contemporary debate and aligned with the topics addressed in this research. On this basis, a corpus

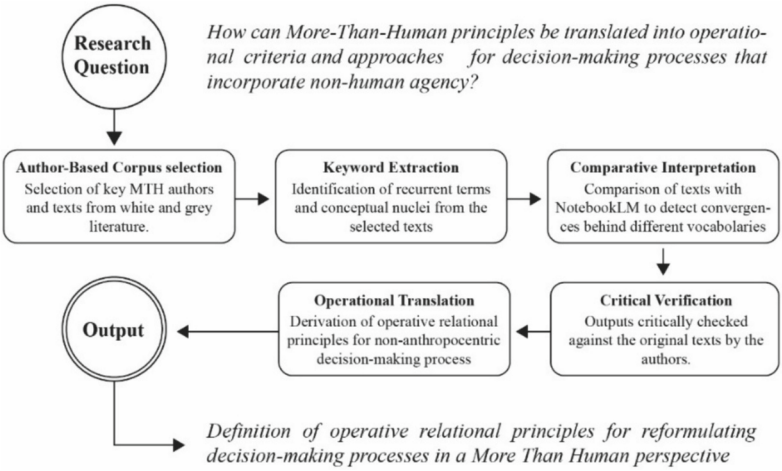

Fig. 1. The methodological steps for a narrative overview

of eight texts [17, 18, 20, 46–49] was established, selected to represent the variety of theoretical positions in the field.

The texts were analysed qualitatively through an in-depth reading, following a document-based and thematic interpretative approach [50], to locate keywords recurrent across More-Than-Human theories. Subsequently, the extracted terms were compared with the corpus using NotebookLM [51], a tool that supports the comparison of sources and facilitates the identification of recurring definitions and conceptual overlaps. Its outputs were critically verified against the original texts, with interpretive responsibility remaining with the authors. This cross-source comparison made it possible to recognise how different authors articulate, through varying terminology, a shared conceptual core. Through an interpretative analysis of recurrent concepts and their relations, a set of operative relational principles was identified and consolidated. These principles offer a basis for reinterpreting central categories of decision-making processes, such as actor, value, impact, benefit, and responsibility, from a More-Than-Human perspective.

4 Results

4.1 From Corpus Selection to the Emergence of More-Than-Human Semantic Field

The first result concerns the construction of the theoretical corpus. The selection was based on five authors, who occupy a central position in the More-Than-Human, posthuman and relational debates: Donna Haraway, Bruno Latour, Karen Barad, Anna Tsing, and Rosi Braidotti. The selection follows three explicit criteria. First, each author contributes a critical perspective on anthropocentric models that is directly relevant to the research question. Second, their interdisciplinary positioning, spanning science and technology studies, feminist theory, anthropology, political ecology, and posthuman philosophy, produces concepts that are transferable and applicable across different fields. Third,

despite adopting different vocabularies, their theories address shared challenges, and the concepts they develop carry operational potential for decision-making processes. The qualitative analysis of the corpus, comprising the most significant texts by the selected authors, identified recurrent keywords that made it possible to identify the conceptual convergences across their different theoretical languages.

4.2 Keyword Extraction and Identification of Recurrent Conceptual Nuclei

The keyword extraction phase enables a transition from isolated terms to broader conceptual nuclei, in which keywords function as indicators of underlying conceptual structures rather than as descriptive labels. The first result of this process is the construction of an initial conceptual vocabulary, which constitutes the semantic field from which the operative relational principles are subsequently derived. Terms belonging to different theoretical traditions, such as "actant", "distributed agency", and "intra-action", were interpreted as distinct formulations of a shared theoretical concern: the recognition of non-human agency. Through this interpretive process, four recurring conceptual nuclei emerged: Agency, Subjectivity, Mutual Response, and Response-Ability.

Table 1. Identification of recurrent conceptual nuclei.

Recurrent terms	Selected authors	Conceptual interpretation	Emerging conceptual nucleus
Agency, actant, material agency, distributed agency	Latour, Barad	Action is not limited to human intentionality	Agency
Subject, situated knowledge, becoming-with, posthuman subject	Haraway, Braidotti, Barad	Subjectivity emerges through situated relations	Subjectivity
Response, interaction, intra-action, reciprocity	Haraway, Barad, Tsing	Entities mutually affect, respond to, and transform one another	Mutual Response
Responsibility, response-ability, care, situated ethics	Haraway, Tsing	Ethical action depends on the situated capacity to respond within relations	Response-Ability

As Table 1 illustrates, each nucleus condenses a cluster of recurring terms drawn from multiple authors into a shared conceptual interpretation. Keyword extraction identifies recurrent conceptual nuclei that enable a transition from the plurality of More-Than-Human theoretical approaches toward the construction of operational principles.

4.3 Comparative Interpretation of Conceptual Nuclei

Following the identification of the four recurrent conceptual nuclei, the analysis examined how each selected author articulates those concepts through specific terms, definitions and theoretical orientations. The corpus of eight key texts was analysed through a comparative reading supported by NotebookLM, used as an analytical instrument to organise recurrent definitions and facilitate the identification of conceptual overlaps. The four conceptual nuclei are examined in turn below, tracing the theoretical convergences and tensions that emerge from the comparative reading of the selected corpus.

4.3.1 Agency

The comparative analysis reveals that all selected authors share a commitment to recognising non-human activity, but they diverge significantly in how they conceptualise the attribution of agency. A first tension concerns whether agency is understood as an enactment, a doing, a capacity or a power. Barad defines agency as a dynamic process rather than a property possessed by individual entities. Through intra-action, subjects and objects do not pre-exist relations but emerge through material-discursive processes. [47]. For Braidotti, by contrast, agency is grounded in potentia, the affirmative power to affect and be affected, which entities possess as a structural relational capacity [46]. A second tension concerns the "flatness" of agency within networks. Latour advocates a generalised symmetry between humans and non-humans, treating any entity that makes a difference as an actant [18]. Braidotti criticises this position, arguing that flattening all actors onto a single plane risk losing the subject function entirely, along with the political and ethical analyses of power relations that depend on it [46]. Haraway and Tsing both insist on the relational and multispecies dimension of agency. Haraway frames it through "becoming-with", emphasising the reciprocal capacity of entities to transform one another through encounter [17], while Tsing conceives agency as a world-making practice emerging from non-intentional assemblages [49]. These tensions do not weaken the conceptual nucleus; on the contrary, they clarify its operative importance. Agency can be understood as a distributed, relational, and transformative process through which human and non-human entities participate in the production of effects, meanings, and territorial transformations (Table 2).

Table 2. Theoretical formulations of the conceptual nucleus of Agency across the selected authors.

Selected authors	Quotations	References
K. Barad	"Agency is not an attribute but the ongoing reconfigurings of the world. The universe is agential intra-activity in its becoming"	Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning (2007, p. 141)

(*continued*)

Table 2. (*continued*)

Selected authors	Quotations	References
R. Braidotti	"Zoe embraces geologically and techno-logically bound egalitarianism, acknowledging that thinking and the capacity to produce knowledge are not the exclusive prerogative of humans alone, but are distributed across all living matter."	Posthuman Knowledge (2019, p. 58)
B. Latour	"Anything that does modify a state of affairs by making a difference is an actor—or, if it has no figuration yet, an actant."	Reassembling the Social: An Introduction to Actor-Network-Theory (2005, p. 71)
D. Haraway	"Pigeons are competent agents—in the double sense of both delegates and actors—who render each other and human beings capable of situated social, ecological, behavioural, and cognitive practices."	Staying with the Trouble: Making Kin in the Chthulucene (2016, p. 16)
A. Tsing	"Landscapes more generally are products of unintentional design, that is, the overlapping world-making activities of many agents, human and not human."	The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins. (2015, p. 152)

4.3.2 Subjectivity

The comparative analysis reveals a shared rejection of subjectivity as an intrinsic individual property, but significant divergence in how constitutive relations are characterised. A first tension concerns the ontological status of the subject. For Barad, subject and object are co-constituted through agential cuts and do not pre-exist their intra-action [47], while for Braidotti, subjectivity is a structural relational capacity, defined as "potential", that extends transversally beyond the human to include biological "zoe" (non-human life) and technological networks, always remaining grounded and accountable [46]. A second tension concerns the scale of relationality. Latour distributes subjectivity across actor-networks, treating it as an "other-taken" effect of attachments and mediators [18], while Haraway and Tsing extend this understanding explicitly to multispecies encounters, through the "ontological choreography" of "becoming-with" [17] and historically shifting "ways of being" emerging from contamination and world-making practices [49] respectively. Subjectivity implies that decision-making processes cannot treat entities as equivalent and interchangeable actors: the situated positions from which human and non-human subjects enter relations and produce knowledge are not incidental but constitutive of the process itself (Table 3).

Table 3. Theoretical formulations of the conceptual nucleus of Subjectivity across the selected authors.

Selected authors	Quotations	References
K. Barad	"Subjects and objects do not preexist as such but are constituted through, within, and as part of particular practices"	Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning (2007, p. 208)
R. Braidotti	"I define the critical posthuman subject… as a relational subject constituted in and by multiplicity, that is to say a subject that works across differences and is also internally differentiated, but still grounded and accountable"	The Posthuman (2013, p. 49)
B. Latour	"Action is not done under the full control of consciousness; action should rather be felt as a node, a knot, and a conglomerate of many surprising sets of agencies that have to be slowly disentangled"	Reassembling the Social: An Introduction to Actor-Network-Theory (2005, p. 44)
D. Haraway	"The partners do not precede the meeting; species of all kinds, living and not, are consequent on a subject- and object-shaping dance of encounters"	When Species Meet (2008, p. 4)
A. Tsing	"Nonhuman ways of being, like human ones, shift historically… Ways of being are emergent effects of encounters"	The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins. (2015, p. 23)

4.3.3 Mutual Response

The comparative analysis reveals a shared understanding of relations as transformative and co-constitutive processes, but significant divergence in how transformation and dependency are theorised across the selected authors. The first concerns the nature of transformation. For Barad, entities are ontologically reconfigured through intra-action and do not pre-exist their entangled relating, since "individuals do not preexist their interactions" [47]; for Latour, transformation occurs through translation, where mediators modify and redirect action rather than simply transmitting it [18]; for Haraway and Tsing, transformation is embodied and collaborative, through the "dance of encounters" [17] and multispecies contamination [49]. The second tension concerns dependency. For Braidotti, it is grounded in potentia and expressed as a "vital reliance on others" and a "shared sense of belonging to the common world", coupled with subjectivity as a

structural relational capacity to extend toward others [46]; for Latour, autonomy is redefined as attachment; for Haraway and Tsing, dependency implies vulnerability, precarity, and the obligations generated by encounter. Mutual Response implies that in decision-making processes, relations cannot be evaluated as unidirectional impacts but should be understood as reciprocal processes of transformation and co-constitution among human and non-human, material, and ecological entities (Table 4).

Table 4. Theoretical formulations of the conceptual nucleus of Mutual Response across the selected authors.

Selected authors	Quotations	References
K. Barad	"The neologism 'intra-action' signifies the mutual constitution of entangled agencies"	Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning (2007, p. 33)
R. Braidotti	"We are relational beings, defined by the capacity to affect and be affected"	Posthuman Knowledge (2019, p. 52)
B. Latour	"When a force manipulates another, it does not mean that it is a cause generating effects; it can also be an occasion for other things to start acting"	Reassembling the Social: An Introduction to Actor-Network-Theory (2005, p. 60)
D. Haraway	"Both, human and horse, are cause and effect of each other's movements. Both induce and are induced, affect and are affected. Both embody each other's mind"	When Species Meet (2008, p. 229)
A. Tsing	"We change through our collaborations both within and across species"	The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins. (2015, p. 29)

4.3.4 Response-Ability

Across the selected authors, responsibility is reframed as relational and situated, emerging from encounters and world-making processes rather than from abstract universal principles, but they diverge significantly in how that responsibility is operationalised. Two main tensions emerge from the comparative analysis. The first concerns the ontological basis of responsibility. For Barad, it is inherent in entanglement itself, inseparable from knowing and being – "a matter of the ethical call that is embodied in the very worlding of the world" [47] – while for Latour it is constructed as traceability within actor-networks, requiring actors to account for every connection made and its material consequences [18]. The second tension concerns the scope and orientation of responsibility. Braidotti extends it transversally across species as an "embodied and embedded" accountability for planetary consequences, modelled on Spinoza's ethics of joy and oriented toward the generation of affirmative relations [20]; Tsing frames it as a commitment

to ongoingness within conditions of precarity, grounded in the recognition that survival depends on collaborative, multispecies encounter – "with or without intent" [48]. Haraway's notion of response-ability bridges both dimensions, defining it as the cultivated capacity to respond to the "unasked-for obligations of having met" [17], an ethics that is simultaneously ontological, embodied, and situated. These differences underline the importance of recognising response-ability as the primary ethical driver that orients a decision-making process toward a genuinely More-Than-Human perspective (Table 5).

Table 5. Theoretical formulations of the conceptual nucleus of Response-Ability across the selected authors.

Selected authors	Quotations	References
K. Barad	"Objectivity means being accountable for marks on bodies, that is, specific materializations in their differential mattering. We are responsible for the cuts that we help enact, not because we do the choosing… but because we are an agential part of the material becoming of the universe"	Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning (2007, p. 178)
R. Braidotti	"Accountability is both epistemic and ethical. Epistemologically, it is a matter of producing adequate knowledge in and for the world. Ethically, it involves generating affirmative relations"	Posthuman Knowledge (2019, p. 57)
B. Latour	"The full cost of every connection is now entirely payable. If a site wants to influence another site, it has to leverage the means. The tyranny of distance has been underlined again. Actors have become accountable"	Reassembling the Social: An Introduction to Actor-Network-Theory (2005, p. 174)
D. Haraway	"Human beings are not uniquely obligated to and gifted with responsibility; animals as workers in labs, animals in all their worlds, are response-able in the same sense as people are; that is, responsibility is a relationship crafted in intra-action"	When Species Meet (2008, p. 71)
A. Tsing	"Precarity is the condition of being vulnerable to others. Unpredictable encounters transform us; we are not in control, even of ourselves… Thinking through precarity makes it evident that indeterminacy also makes life possible"	The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins. (2015, p. 29)

4.4 From Conceptual Nuclei to Operative Relational Principles

Starting from the four conceptual nuclei identified through the comparative analysis, ten operative relational principles were derived. These principles do not mechanically correspond to individual authors, nor do they emerge from a single theoretical tradition: they represent a synthetic translation of the recurrent tensions and convergences identified across the corpus into evaluative orientations applicable to decision-making processes. Each principle is formulated as a relational orientation, neither a procedural rule nor a normative prescription, that can guide the reconceptualisation of central categories of decision-making, such as actor, value, impact, benefit, and responsibility, from a More-Than-Human perspective. Table 6 summarises the ten operative relational principles, organising them by conceptual nucleus and providing a synthetic definition for each.

Table 6. Operative relational principles derived from the four conceptual nuclei, with corresponding definitions for their application in More-Than-Human decision-making processes.

Conceptual Nucleus	Principles	Definition
Agency	A.1 Distributed Agency	Every entity, human and non-human, participates in the production of material, territorial and relational reality
Agency	A.2 Relational Value	The effects produced by entities must be assessed not only based on their usefulness to man, but also in relation to the intrinsic and relational value they express
Agency	A.3 Non-human Representation	If non-human entities produce effects on reality, decision-making processes must include forms of representation capable of also considering their interests, needs, and responses
Subjectivity	S.1 Situated Subjectivity	Subjectivity is not an isolated property but emerges from the situated relationships that constitute each entity
Subjectivity	S.2 Relational Embeddedness	Every relationship must be considered within the broader network of material, ecological, and social connections, which is why every relationship takes on value
Subjectivity	S.3 Relational Quality	Decision-making processes must evaluate not only individual entities, but also the quality of the relationships that connect them

(*continued*)

Table 6. (*continued*)

Conceptual Nucleus	Principles	Definition
Mutual Response	M.R.1 Recognition of Response	Each entity manifests responses through effects, signals, transformations, or resistances that must be recognised as relevant elements of the decision-making process
Mutual Response	M.R.2 Mutual Transformation	Every interaction produces mutual transformations: the entities involved modify each other and redefine the conditions of the relationship
Response- Ability	R.A.1 Distributed Responsibility	Human beings, as actors capable of producing profound transformations, must assume concrete responsibility towards the entities and relationships they are involved in decision-making processes
Response- Ability	R.A.2 Asymmetry Acknowledgement	Recognising the asymmetric and often extractive position of humans with respect to ecological systems is the first step in building decision-making tools capable of reducing harm and generating more responsible relationships

5 Discussion and Conclusion

The ten operative relational principles identified in this research provide a first operational translation of More-Than-Human theories into orientations applicable to decision-making processes. Their relevance does not lie in adding non-human entities as new participants within otherwise unchanged deliberative arenas; they challenge the foundational categories through which decision-making defines actors, values, impacts, benefits, and responsibilities. From this perspective, decision-making is no longer understood as a linear process of optimisation but as a relational practice through which human and non-human entities participate in the co-production of territorial transformations.

The principles derived from Agency and Subjectivity expand the notion of actor beyond institutional, social, or economic stakeholders, recognising that non-human entities produce effects, occupy situated positions and participate in relational networks that cannot be reduced to human interest. The principles derived from Mutual Response reframe impact as a reciprocal and ongoing process, in which human actions and non-human responses continuously transform one another over time. The principles derived from Response-Ability redefine responsibility as a situated and distributed capacity to respond to the consequences generated by relations. This implies that decision-making processes should become more attentive to ecological feedback, uncertainty and the asymmetrical role of human actors in transforming territories.

The main contribution of this paper lies in bridging theoretical debates on More-Than-Human relationality with the operational needs of evaluation processes. The proposed narrative overview proved effective in mapping a heterogeneous theoretical field inductively, allowing conceptual convergences to emerge across diverse disciplinary traditions. Furthermore, the resulting principles provide a conceptual basis from which criteria, indicators, and participatory devices capable of recognising non-human agency and evaluating the relational consequences of territorial transformations could be developed in future work. Further research should therefore apply these principles to concrete territorial decision-making processes, assessing their capacity to support more adaptive, accountable, and ecologically responsive forms of evaluation.

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