



Ecopoiesis in Design: Redefining Habitability

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ABSTRACT

This article examines the relationship between form, habitability, and relational sustainability in architecture through the lens of ecopoiesis. It argues that form is not an isolated object but a configurative act emerging from living relationships between space, inhabitants, and the entorno (relational surround). Drawing from the relational theory of Lavanderos and Malpartida (2023) and Varela's (1990) cognitive sciences, this perspective contrasts with autopoietic approaches, such as Schumacher's (2011), which prioritize closed, self-referential systems, disconnecting architecture from its relational and systemic foundations.

Key structural issues are identified, including disconnection from users, the entorno (relational surround), and resource sustainability, where visual impact takes precedence over functionality and ethics. The article proposes reclaiming form as a relational act to create spaces that are not only resource-efficient but also meaningful and ethical, positioning ecopoiesis as the theoretical and practical framework for transforming architectural paradigms.

INTRODUCTION

In architecture and design, form is not a simple aesthetic or functional component. It is a configuration that establishes space-inhabitants-entorno (relational surround) links, acting as a relational emergent that sustains life in its culture-nature context (Rapoport, 1969). However, when the sense of the commission is lost, this relationship weakens, generating ethical and disciplinary disconnections that compromise the

habitability and sustainability of the design (Alexander, 1977).

In this context, cognitive and symbolic schools have profoundly influenced the way of conceptualizing form in architecture. Lavanderos and Malpartida argue that the act of knowing is intrinsically relational, that is, it does not occur in a vacuum, but depends on the observer-entorno (relational surround) relationship (Lavanderos & Malpartida, 2023). This approach has profound implications for architecture, as it positions form not only as an aesthetic or functional object but as a configurative system that co-creates meaning with its users.

However, this relational framework contrasts with the autopoietic approach promoted by Patrik Schumacher, who has adapted the theory of autopoiesis, originally developed by Varela and Maturana, to the field of architecture. Schumacher interprets autopoiesis as a closed system of internal interactions, which reduces the relational complexity between form, inhabitant, and entorno (relational surround). This approach can be seen as a "first-order" architecture, which emphasizes the self-reference of form over its capacity to generate meaningful connections beyond its system (Schumacher, 2011).

From the perspective of cognitive and symbolic sciences, this stance aligns with the symbolic school that understands architecture as a language of representations. However, by focusing on representation rather than configuration, symbolic architecture loses sight of its potential to articulate culture-nature relationships. This approach contrasts with a relational or third-order architecture, which recognizes that form emerges from the user-entorno (relational surround) link, allowing for sustained co-creation (Lavanderos & Malpartida, 2023).

The lack of a clear sense of the commission in the architectural design process exacerbates these disconnections. This structural problem affects various areas: from the consideration of the needs of the inhabitant to the integration of the context in the proposed solutions (Speaks, 2005). It manifests itself in recurring problems such as neglect of consumption and its cost, the absence of anticipation of extensions, design limited to aesthetic or photographic purposes, and the lack of ethics in the configuration of the form. These aspects not only reflect a dissociation between design and its users but also a disciplinary disconnection with

the entorno (relational surround) and the purposes that architecture should fulfill.

Contemporary architecture faces a crucial challenge: to recover form as a configurative act that recognizes and makes viable the culture-nature relationships, conceived not as separate entities but as an intrinsic relationship (Frampton, 1983). In this context, the *ecopoiesis* paradigm, proposed by Lavanderos and Malpartida (2023), provides a new perspective. This approach proposes that form should be a co-creative act, aimed at weaving sustainable relationships that allow for ethical and viable habitability.

In this article, the most common barriers that prevent the recovery of form will be explored, highlighting the importance of *ecopoiesis* as a theoretical and practical framework to address these challenges. The research focuses on identifying the underlying relationships between key problems, such as lack of consideration for the inhabitant, lack of context, and disciplinary disengagement, to propose solutions that allow reconfiguring architecture as a relational configurative act. This approach not only seeks to solve specific problems but also to transform the architectural paradigm, returning form to its original meaning: being means to build meaningful and sustainable links in a shared world.

FUNDAMENTAL PROBLEMS

Contemporary architecture often prioritizes interests external to the end user, such as commercialization or simple visual innovation. This results in spaces that do not respond to the physical, psychological, and cultural needs of those who inhabit them (Rapoport, 1969). As a result, architectural designs do not foster a sense of belonging or facilitate quality of life. Furthermore, visually oriented architectural design often prioritizes “photographic impact” to the detriment of functionality. Form becomes an end, disconnected from its ability to solve spatial and social problems (Speaks, 2005). This perpetuates a disconnect between architecture and everyday realities.

Architectural ethics implies a responsibility toward the entorno (relational surround) and future generations. However, many practices ignore sustainability considerations and generate spaces with high environmental costs (Guy & Farmer, 2001). This neglect reflects a reductionist vision that prioritizes the short term. Likewise, building without recognizing the cultural, social, and climatic entorno (relational surround) leads to spaces that lack identity and specific functionality. This is particularly evident in globalized projects that replicate aesthetic patterns without adapting to the place where they are developed (Frampton, 1983). The absence of context dehumanizes architecture and alienates its users.

Finally, when the purpose of a project is not clearly defined, architectural decisions become inconsistent and difficult to justify. This generates an architecture that responds neither to the needs of the client nor to the demands of the entorno (relational surround) (Alexander, 1977). Without a clear sense of the assignment, architecture loses its relevance.

Form and relationship are concepts that, in a relational approach, cannot be understood separately. Form is neither an isolated object nor an autonomous structure; it is a configurative manifestation of relationships that are woven in life. From this perspective, form is not the result of purely aesthetic or functional decisions but an emerging link indivisible from its living context.

FORM AND RELATION: A RELATIONAL APPROACH

Relational Theory, grounded in the concepts of *triference* and *entorno* (relational surround) (Lavanderos & Malpartida, 2023), offers a framework for understanding configurations of existence as an integrated whole. *Triference* is not simply the distinction between three elements but a configurative process where differences emerge as indivisible aspects of a totality. On the other hand, *entorno* (relational surround) does not refer to a pre-existing external environment but to the continuous act of generating the conditions of existence as an inseparable relational flow. According to Lavanderos and Malpartida (2023), “differences are not separations, but rather configurative acts that organize the viability of existence within a whole.”

Triference posits that relationships are not based on the interaction of pre-existing entities but rather that the entities themselves emerge from a relational process. In this sense, what we call differences are not opposites or divisions but simultaneously distinct and unified configurations. This approach eliminates the notion of separation, emphasizing that “to know is to organize differences” (Lavanderos & Malpartida, 2023), and that these differences are acts that configure meaning within an integrated whole.

The concept of *entorno* (relational surround) deepens this view by rejecting the idea of an external and independent “environment.” Instead, *entorno* (relational surround) is the configurative act by which the relational conditions that make existence viable are manifested. This implies that there is no separation between the internal and the external, as both are aspects of the same configurative flow. According to Varela (1990), “there are no independent entities; the organism and its entorno (relational surround) co-emerge in a continuous relational process.”

These concepts have significant implications for understanding relationships as indivisible processes that overcome traditional dualities. Relational theory

eliminates dichotomies such as subject-object or culture-nature, stating that these divisions are artificial and that everything that exists must be understood as a totality in constant configuration. From this approach, "culture and nature are not separate entities, but inseparable aspects of the same living configuration" (Lavanderos & Malpartida, 2023).

Triference and entorno (relational surround) also have an inherent ethical dimension since each relational configuration affects the sustainability and viability of the relationships that constitute what exists. This implies that ethics is not something external that is added to relationships but rather arises from the configurations themselves. According to Bateson (1972), "relationships are not neutral; they shape the conditions of life and therefore carry with them an ethical responsibility."

In this framework, the applications of relational theory are broad. In architecture, for example, form is not an autonomous object, but a configurative act that emerges from the relational flow between inhabitant, space, and entorno (relational surround). In ecology, entorno (relational surround) underlines that there is no natural environment separate from the human; both are inseparable configurations of life. In sociology, identities and actions are neither individual nor social in isolation but configurations that emerge in relational networks. In economics, value is not an intrinsic property of objects, but a configurative act that emerges from the relational dynamics of exchange.

In conclusion, Relational Theory, based on triference and entorno (relational surround), redefines our understanding of what exists as a continuous flow of relational configurations. Differences do not separate but rather enable the viability of what exists as an integrated whole. This approach not only transforms our perception of the world but also offers an ethical perspective deeply rooted in relationships themselves, where each relational act configures the conditions for sustaining life in its indivisible wholeness.

Form and relationship, in a relational framework, cannot be understood as separate entities. Form is neither an autonomous object nor a fixed structure; it is a configurative manifestation of relationships. As Francisco Varela (1990) points out, "cognition is an action embodied in an entorno (relational surround), inseparable from the entorno (relational surround) where it is configured." From this perspective, form does not emerge from isolated decisions but as the dynamic emergence of living relationships.

FORM AS A RELATIONSHIP

Form is not a container or a symbol; it is an act that makes visible and sustainable the relationships that sustain life. This concept is based on the idea that "to

know is to organize differences" (Lavanderos and Malpartida, 2023), and architectural form is an expression of those differences organized into habitable and sustainable configurations.

FORM AS AN EXPRESSION OF THE INDIVISIBLE

It is not possible to separate the elements that configure it because form is the totality of living relationships. As Alexander (1977) states, "good architecture is not the sum of parts, but the integration of all the relationships that configure it."

FORM AS A LIVING DYNAMIC

Form is not static or a final result. It is a process in constant transformation, reflecting the interactions that configure it. In the words of Rapoport (1969), "the form of spaces must evolve along with the cultural and natural systems that generate it." For accepted full and exploratory papers, authors should reintroduce all anonymised names and references.

THE RELATIONSHIP AS THE FOUNDATION OF FORM

The relationship is not a connection point between elements, but the very condition of their existence. In a relational approach, the relationship:

Configures Habitability: As Guy and Farmer (2001) mention, "sustainability is achieved when living systems find a configurative balance, not when elements are separated to analyze their impact."

Manifests Unity: Frampton (1983) points out that "critical architecture is not about individual elements, but about how they find their meaning in a context that cannot be divided." print papers with a black-and-white printer. You can ensure that your paper works on black and white by doing a test-print.

RELATIONSHIP AND RELATIONAL-ABILITY

From ecopoiesis, sustainability means sustaining living relationships in an ethical and viable way. As Lavanderos and Malpartida op.cit explain, "Relational sustainability is not a management of resources, but the act of configuring links that preserve the viability of life."

FORM AND RELATIONSHIP IN ARCHITECTURE

In architectural design, understanding that form is relationship implies:

Designing from the Living: It is not about imposing preconceived forms but allowing the relationships of the entorno (relational surround) to configure the form. This is aligned with Varela's proposal (1990), which highlights the importance of "situated action."

Integrating the Indivisible: Form does not separate or connect; it simply manifests the indivisible unity of life.

This challenges the modern paradigm of architectural fragmentation.

Fostering Habitable Relationships: Form must configure spaces that enable meaningful and sustainable links, respecting the complexity of living relationships.

Form is relationship, not an object or a final product, but a configurative act that reflects and sustains the living dynamics of the whole. As Frampton (1983) emphasizes, "architecture has no meaning if it does not respond to the context as a whole." This approach transforms our understanding of architecture, elevating it to an ethical and relational level that prioritizes relational sustainability and the viability of life.

FROM INTERACTION TO RELATIONSHIP: A RELATIONAL CRITIQUE OF ENACTIVISM

Architecture should not be understood as a set of static forms but as a system that interacts with the perceptions, emotions, and movements of the human body. This is based on the concept of affordances, or possibilities of action that architectural entornos (relational surrounds) offer to those who experience them (Gibson, 1979). According to this perspective, the relationship between body and space is conceived as a "scenography of atmospheres" that activates physical, emotional, and cognitive responses in users (Pallasmaa, 2012). Thus, architectural form is perceived as a "living configuration" that articulates relationships between space, memory, and collective meaning, not as a fixed entity but as an emergent condition dependent on how it is inhabited and perceived (Mallgrave, 2013).

In the field of cultural heritage, architectural form should also not be reduced to the static or purely visual but rather understood as a continuous interaction between body, space, and historical context. Architectural atmospheres influence how people remember and give meaning to spaces, underlining the relationship between the physical body and the built entorno (relational surround) (Robinson and Pallasmaa, 2015). In this sense, architecture is presented as a "memory of the future," where past and present coexist to shape future possibilities (Pérez-Gómez, 2016).

It is also emphasized that architecture must be aware of the ethical and political implications that come with designing forms that deeply impact human experience. Architectural forms can reinforce narratives of power or subvert them, depending on how they are designed and experienced (Frampton, 1983). Architects therefore have a responsibility to design forms that are not only functional but also sustainable and respectful of social and cultural dynamics (Guy and Farmer, 2001).

From the perspective of relational theory, this view can be considered limited. Although it values the relationship between body and space, this is presented as an interaction between separate entities, ignoring that

body and space are an indivisible unit (Lavanderos and Malpartida, 2023). Form, from relational theory, is not a pre-existing object that affects users but a configurative act that emerges from a network of living relationships. In addition, the entorno (relational surround) is fragmented into categories such as culture and nature, ignoring its condition as a dynamic and indivisible totality. Finally, although ethics and politics are mentioned, there is no discussion of how architecture can transform power relations and foster sustainable and fair configurations (Bateson, 1972).

A constructive critique would involve reconceptualizing form as an emergent of the relationships that configure it, abandoning any duality between body and space, and approaching culture and nature as a living totality that generates the conditions of habitability (Varela, 1990). Architecture must be understood as a relational act that, beyond functionality, configures meaningful and sustainable links in the shared world. This approach transforms architectural practice towards a more comprehensive, inclusive, and ethical understanding of the relationship between people and the spaces they inhabit.

CONCLUSION

Contemporary architecture stands at a critical crossroads. The reliance on autopoietic approaches, centered on self-reference, has resulted in ethical, functional, and cultural disconnections that undermine both habitability and sustainability. In contrast, the relational paradigm of ecopoiesis provides a pathway toward an architecture that goes beyond designing spaces to configuring living and sustainable relationships.

Recovering form as a configurative act requires abandoning disciplinary fragmentation and extractivist logics to prioritize the co-creation of meaningful connections. This shift demands an ethical commitment to the indivisible totality of life, recognizing that culture and nature are not opposites but simultaneous expressions of the same relational flow. As Lavanderos and Malpartida (2023) affirm, "sustainability is not a technique, but a configurative act that sustains life in its entirety."

Form is not an object; it is an act. It is a living manifestation of the relationships that make the world habitable. Redefining architecture through this paradigm is not optional but an urgent imperative to ensure a future where spatial configurations are not only sustainable but also deeply meaningful and ethical. Ecopoiesis is not a utopia—it is the essential condition for architecture to reclaim its role as a shaper of life.

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