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SITUATED EMPATHY IN ARCHITECTURAL DESIGN AND RESEARCH AS ATTENTIVENESS TO ECOLOGICAL RELATIONALITY

ABSTRACT: In the early 2000s, empathy emerged as a central concept in architectural discourse through human-centred design, participatory practice, and social-impact frameworks. However, in many contexts, this approach remains narrowly defined as affective identification with users and is often operationalised through brief consultations and extractive participatory exercises. This article argues that affective identification is insufficient for architectural research and practice committed to equity, decolonisation, gender inclusivity, social justice, and ecosystem resilience. It proposes reframing architectural empathy as attentiveness to human–non-human assemblages rather than as emotional projection towards human subjects alone. The paper tests this proposition through empirical insights from a participatory research-by-design study of learning environments in seven long-term refugee camps in Rwanda, Uganda, and Kenya—sites characterised by climatic precarity, ecological stress, material improvisation, and continuous negotiation. Drawing on assemblage theory, actor-network theory, and relational theories of learning environments, it develops a model of empathy that is relational, procedural, reflexive, collective, and incremental, grounded in radical incrementalism and participatory action research. The article concludes that the future of empathy in architectural practice and research lies not in deeper emotional identification but in sustained ecological attentiveness,

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methodological reflexivity, and long-term accountability to human and more-than-human actors.

KEYWORDS: situated empathy, relationality, assemblage thinking, ecological attentiveness, architectural design and research

FROM HUMAN-CENTRED EMPATHY TO MORE-THAN-HUMAN ATTENTIVENESS

The Resurgence and Exhaustion of Empathy

Over the past two decades, empathy has become a widely invoked value in architectural and urban design discourse.¹ It features prominently in human-centred design, design thinking, participatory planning, and social-impact architecture, where it is typically framed as the designer's capacity to understand users' lived experiences and translate them into spatial solutions.²

An empathic approach to design has long been integral to participatory design and advocacy planning, particularly since the 1960s and 1970s, with their emphasis on redistributing decision-making power and involving communities in shaping their environments.³ This perspective has informed contemporary understandings of empathy as a form of implicit understanding and a means of enhancing collective creativity,⁴ embedded in practices of dialogue, facilitation, and mediation. Yet empathy was not always explicitly theorised within these traditions.

In architecture and urbanism, empathic design has increasingly sought to bridge the gap between designers and inhabitants, especially in low-resource or socially complex contexts, often positioning the architect

¹ E. B.-N. Sanders, P. J. Stappers, "Co-Creation and the New Landscapes of Design," *CoDesign*, 4, 1, 2008, pp. 5–18.

² D. A. Norman, *The Design of Everyday Things*, Basic Books, New York, 2013; T. Brown and B. Katz, "Change by Design," *Journal of Product Innovation Management*, 28, 3, 2011, pp. 381–383; M. Kouprie and F. Sleeswijk Visser, "A Framework for Empathy in Design: Stepping into and out of the User's Life," *Journal of Engineering Design*, 20, 5, 2009, pp. 437–448.

³ H. Sanoff, *Creating Environments for Young Children*, School of Design, North Carolina State University, Raleigh, 1995; S. A. Arnstein, "A Ladder of Citizen Participation," *Journal of the American Institute of Planners*, 35, 4, 1969, pp. 216–224.

⁴ T. French, G. Teal, "Design for Empathy within Participatory Design Approaches," in C. Kung, E. Lam, Y. Lee (eds.), *Cumulus Working Papers 33/16: Open Design for E-very-thing*, Hong Kong Design Institute/Cumulus Association, Hong Kong, 2016, pp. 233–236.

as a mediator who designs with users rather than for them⁵ and identifies latent needs that users may not easily articulate.⁶ Methodologies like empathy mapping, user personas, cultural probes, and immersive observation have become standard in design education and practice, especially through the global spread of design thinking.⁷ Across these strands, empathy functions both as a methodological entry point and an ethical stance in design practice.

In practice, however, time and resource constraints, underlying assumptions, biases, and political agendas often reduce empathy in these settings to representational or performative devices. It tends to operate through simplified user personas, short-term field engagements, and extractive research encounters, while participation is frequently limited to consultation that does not substantially redistribute decision-making power.⁸ Empirical studies of participatory processes in urbanism and architecture further show that relational qualities such as empathy require trust and communication, yet are difficult to sustain within institutional constraints and project timelines. Consequently, tools intended to instil and operationalise empathy in architectural practice and research may instead legitimise non-empathic—and sometimes harmful—power relations or design rhetoric. They also tend to overlook more-than-human actors, temporality, and the wider contextual conditions within which design takes place.

Critical scholarship across several disciplines has expanded the scope of empathy in ways that are useful for architecture and related built-environment disciplines. Several attempts have been made to formalise empathy as a structured process, distinguishing among empathic understanding, empathic design research, and empathic action,⁹ or framing it as

⁵ H. Sandman, *Empathy Matters: Architecture for the World's Majority*, doctoral dissertation, Aalto University Publication Series Doctoral Dissertations 50/2021, Aalto University, Helsinki, 2021.

⁶ D. Leonard, J. F. Rayport, "Spark Innovation through Empathic Design," *Harvard Business Review*, 75, 6, 1997, pp. 102–113.

⁷ T. Mattelmäki, K. Battarbee, "Empathy Probes," in T. Binder, J. Gregory, and I. Wagner (eds.), *Proceedings of the Participatory Design Conference 2002*, CPSR, Palo Alto, CA, 2002, pp. 266–271.

⁸ B. Cooke, U. Kothari, "The Case for Participation as Tyranny," in B. Cooke and U. Kothari (eds.), *Participation: The New Tyranny?*, Zed Books, London, 2001, pp. 1–15; A. Cornwall, "Unpacking 'Participation': Models, Meanings and Practices," *Community Development Journal*, 43, 3, 2008, pp. 269–283.

⁹ A. Surma-aho, K. Hölttä-Otto, "Conceptualization and Operationalization of Empathy in Design Research," *Design Studies*, 78, 2022, article 101075.

a complex relationship among designers, users, and contextual conditions rather than as an individual skill.¹⁰ Within architectural theory, Juhani Pallasmaa similarly critiques reductive understandings of empathy based on psychological projection.¹¹ He argues that architectural understanding emerges through embodied simulation, sensory engagement, and imaginative participation in the world. Architectural experience is grounded in the body's capacity to resonate with spatial atmospheres, materials, rhythms, and situations. Empathy therefore operates less as identification with another subject than as an embodied mode of attentiveness to relations among self, environment, and others. This perspective expands empathy beyond human-centred interaction and opens the possibility of understanding architecture as a field of ecological and relational engagement.

Others link empathy to care, further deepening its reframing as a situated and relational practice shaped by power, responsibility, and interdependence.¹² María Puig de la Bellacasa defines care as maintenance, repair, and ongoing commitment rather than episodic intervention.¹³ Cassini Nazir and Meah Lin argue that while empathy is a crucial design tool, it has limitations that can lead to bias, superficial understanding, or empathic failure when dealing with dissimilar others. Their work¹⁴ advocates for supplementing empathy with curiosity and care to achieve more responsible, ethical, and rigorous design research.¹⁵ Félix Guattari's three ecologies (mental, social, and environmental) are inseparable and co-evolving.¹⁶ Urban political ecology research uses this relational understanding of empathy, which includes non-human actors, to connect

¹⁰ A. Escobar, *Designs for the Pluriverse: Radical Interdependence, Autonomy, and the Making of Worlds*, Duke University Press, Durham, 2018.

¹¹ J. Pallasmaa, "Empathic and Embodied Imagination: Intuiting Experience and Life in Architecture," in P. Tidwell (ed.), *Architecture and Empathy*, Tapio Wirkkala–Rut Bryk Foundation, Helsinki, 2015, pp. 4–18.

¹² S. Ahmed, "Collective Feelings: Or, the Impressions Left by Others," *Theory, Culture & Society*, 21, 2, 2004, pp. 25–42; J. C. Tronto, "Creating Caring Institutions: Politics, Plurality, and Purpose," *Ethics and Social Welfare*, 4, 2, 2010, pp. 158–171.

¹³ M. Puig de la Bellacasa, "Ethical Doings in Naturecultures," *Ethics, Place and Environment*, 13, 2, 2010, pp. 151–169.

¹⁴ C. Nazir, M. Lin, "Beyond Empathy: How Curiosity Promotes Greater Care," in K. Vaes, J. Verlinden (eds.), *Connectivity and Creativity in Times of Conflict*, Academia Press, Ghent, 2023, pp. 1–5.

¹⁵ C. Nazir, "Beyond Human-Centered Empathy: Tools and Techniques to Engage Curiosity," in C. M. Gray et al. (eds.), *DRS2024: Boston*, 23–28 June, Boston, USA, 2024, <https://doi.org/10.21606/drs.2024.1124>.

¹⁶ F. Guattari, *The Three Ecologies*, Athlone Press, London, 2000.

environmental justice, inequality, and ecological transformation.¹⁷ In parallel, urban theory in contexts of informality, inequality, and displacement shows that spatial practices cannot be reduced to user-centred narratives but are embedded in complex socio-political and material conditions.¹⁸

Empathy has also been framed as a political and epistemic practice. Paulo Freire's dialogical ethics positions knowledge as co-produced through mutual learning rather than extracted from subjects; empathy thus becomes a reciprocal relation between researcher and participant.¹⁹ Boaventura de Sousa Santos goes further by arguing for the recognition of plural epistemic traditions in which non-human actors, contexts, cultures, and histories participate in the co-production of knowledge.²⁰ Scholarship in science and technology studies and the environmental humanities likewise challenges anthropocentric framings of empathy by showing that built environments are co-produced through interactions among human and non-human actors, including infrastructures, materials, and ecologies.²¹ Architectural empathy can therefore be understood as an ethics of care across intertwined social, material, and environmental ecologies, extending beyond emotional projection towards human users to include dialogical openness and epistemic humility.²² Such an approach recognises the plurality of knowledge sources that co-construct spatial understanding.

Reframing empathy from feeling for other humans to attentiveness to humans, more-than-human actors, and their contexts resonates with multiple strands of relational and ecological thought. Donna Haraway's

¹⁷ I. Anguelovski *et al.*, "Equity Impacts of Urban Land Use Planning for Climate Adaptation: Critical Perspectives from the Global North and South," *Journal of Planning Education and Research*, 36, 3, 2016, pp. 333–348.

¹⁸ A. Simone, "Introduction: Remaking African Cities," in *For the City Yet to Come: Changing African Life in Our Cities*, Duke University Press, Durham, 2004, pp. 1–19; A. Roy, "The 21st-Century Metropolis: New Geographies of Theory," *Regional Studies*, 43, 6, 2009, pp. 819–830.

¹⁹ P. Freire, *Education for Critical Consciousness*, Continuum, London, 1973.

²⁰ B. de Sousa Santos, *Epistemologies of the South: Justice against Epistemicide*, Routledge, London, 2016.

²¹ B. Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory*, Oxford University Press, Oxford, 2005; D. Haraway, "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin," *Environmental Humanities*, 6, 1, 2015, pp. 159–165; M. Puig de la Bellacasa, "Ethical Doings in Naturecultures."

²² J. C. Tronto, "Creating Caring Institutions"; V. Reyes, "Ethnographic Toolkit: Strategic Positionality and Researchers' Visible and Invisible Tools in Field Research," *Ethnography*, 21, 2, 2020, pp. 220–240.

call to “make-with, become-with, compose-with, the earth-bound”²³ emphasises cohabitation without mastery and responsibility without simplification. Jane Bennett’s account of thing-power foregrounds the liveliness of materials and their participatory role in events.²⁴ Tim Ingold’s work on the weather-world and on materials frames learning and inhabitation as movement through living environments rather than interaction with static objects.²⁵ Anna Tsing’s work on precarious assemblages shows how survival emerges from interspecies and intermaterial collaborations beyond centralised control.²⁶ My work on learning environments in displacement contexts in East Africa demonstrates that built and environmental elements actively structure learning trajectories and behavioural adaptation, thereby supporting a shift from sentiment-based empathy towards relational attentiveness.²⁷ Together, these perspectives reposition empathy in architecture and built environment research as relational attentiveness to more-than-human agents.

Pallasmaa’s conception of embodied imagination offers a useful intermediary position between phenomenological and relational approaches.²⁸ While phenomenology foregrounds lived experience and assemblage theory emphasises distributed agency, Pallasmaa suggests that meaningful architectural understanding emerges through bodily attunement to the world. Empathy is not simply directed towards other people but towards situations, atmospheres, materials, and ecological conditions. Architectural imagination becomes an act of entering into relations rather than representing them from a distance. This emphasis on attentiveness and embodied participation aligns closely with the notion of relational empathy proposed in this article.

These relational and communal perspectives of empathy resonate with emerging critiques within design research, where scholars argue that empathy, when framed primarily as an individual psychological capacity,

²³ D. Haraway, “Anthropocene, Capitalocene, Plantationocene, Chthulucene” p. 161.

²⁴ J. Bennett, “The Force of Things: Steps toward an Ecology of Matter,” *Political Theory*, 32, 3, 2004, pp. 347–372.

²⁵ T. Ingold, “Toward an Ecology of Materials,” *Annual Review of Anthropology*, 41, 1, 2012, pp. 427–442.

²⁶ A. Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*, Princeton University Press, Princeton, 2015.

²⁷ N. Amorós Elorduy, “Young Children’s Learning Environments in East African Refugee Camps,” in B. Gornik, Z. Medarić, M. Sedmak (eds.), *The Oxford Handbook of Child-Centered Approaches to Migrant Children*, Oxford University Press, Oxford, 2025, pp. 399–418.

²⁸ J. Pallasmaa, “Empathic and Embodied Imagination,” pp. 4–18.

risks overlooking structural conditions and collective processes. Calls to extend ethical concern beyond humans have also appeared in architectural thought, including arguments that designers and researchers should regard nature, materials, and the environment as worthy of ethical consideration.²⁹ Moreover, empathy towards nature, framed as reverence, can remain abstract unless it is operationalised through relational analysis and design methods.³⁰ Such positions are important in challenging anthropocentrism, yet the expansion of empathy alone is insufficient.³¹

Taken together, these positions suggest that empathy in architecture is a heterogeneous and contested concept rather than a stable methodological tool and point towards the need for a broader epistemological reframing. The challenge for architectural practitioners and researchers is to move from empathy as a moral stance to empathy as a spatial and epistemic practice.³²

First, empathy in architecture must be understood not only as an individual psychological capacity but importantly as a collective and institutional condition, shaped by governance structures, organisational practices, and distributions of responsibility.³³

Second, it must extend beyond its predominantly human-centred framing towards a more-than-human and spatially attuned practice, capable of engaging with the material, ecological, historical, cultural, and infrastructural processes through which environments are produced and experienced.³⁴

Third, empathy must be reconceived as a temporal and processual practice, sustained over time and attentive to processes of transformation, maintenance, and decay that shape built environments, particularly in contexts of historical marginalisation and structural vulnerability.³⁵ This temporal dimension is also implicit in design research that understands empathy not as a moment of insight but as a cyclical process of engagement, reflection, and re-engagement with users' lives, moving

²⁹ J. Bennett, "The Force of Things"; D. Haraway, "Anthropocene, Capitalocene, Plantationocene, Chthulucene"

³⁰ T. Ingold, "Bringing Things to Life: Creative Entanglements in a World of Materials," *Realities Working Paper 15*, University of Manchester, Manchester, 2010.

³¹ M. Puig de la Bellacasa, "Ethical Doings in Naturecultures."

³² B. de Sousa Santos, *Epistemologies of the South*.

³³ S. Ahmed, "Collective Feelings"; J. C. Tronto, "Creating Caring Institutions."

³⁴ B. Latour, *Reassembling the Social*; D. Haraway, "Anthropocene, Capitalocene, Plantationocene, Chthulucene"; M. Puig de la Bellacasa, "Ethical Doings in Naturecultures."

³⁵ A. Simone, "Cities and Change," in *For the City Yet to Come*, pp. 213–243.

beyond the do-no-harm principle towards processes that also benefit participants.³⁶

Empathy in architecture can therefore be redefined as an ongoing practice of attunement to socio-spatial assemblages: a distributed and relational capacity that emerges through interactions between human and non-human actors. This reframing opens a pathway towards approaches capable of engaging with complexity, uncertainty, and change. I explore its potential, risks, and limitations through a three-year research-by-design investigation of seven long-term refugee camps in Rwanda, Uganda, and Kenya, examining how their built environments function as additional educators for young children.

At a time when human interventions intensify climate change, social and political instability, cultural erasure, and conflict, assemblage thinking and actor-network theory³⁷ offer architecture and urbanism a set of conceptual tools for incorporating complexity into the study of context. They allow space to be conceived as composed of heterogeneous actors—human, material, ecological, cultural, political, and infrastructural—that mediate, enable, constrain, and transform social and material processes.³⁸ Environmental and contextual conditions are not stable backdrops but dynamic forces that reshape settlements, infrastructures, and everyday life.³⁹ New materialist thought challenges the divisions between active human subjects and passive matter, and between human and more-than-human actors, by treating matter as capable of affecting and being affected within dynamic relations.⁴⁰ Agency is thus distributed rather than located solely in human action and intention: materials, climates, infrastructures, and organisms participate in shaping outcomes.⁴¹ This principle is central to assemblage thinking⁴² and is operationalised

³⁶ M. Kouprie, F. Sleeswijk Visser, “A Framework for Empathy in Design.”

³⁷ G. Deleuze, F. Guattari, *A Thousand Plateaus*, University of Minnesota Press, Minneapolis, 1987; M. Müller, C. Schurr, “Assemblage Thinking and Actor-Network Theory: Conjunctions, Disjunctions, Cross-Fertilisations,” *Transactions of the Institute of British Geographers*, 41, 3, 2016, pp. 217–229.

³⁸ B. Latour, *Reassembling the Social*.

³⁹ A. Lowenhaupt Tsing, *The Mushroom at the End of the World*.

⁴⁰ J. Bennett, “The Agency of Assemblages and the North American Blackout,” *Public Culture*, 17, 3, 2005, pp. 445–465.

⁴¹ M. Müller, C. Schurr, “Assemblage Thinking and Actor-Network Theory”; H. Kamalipour, N. Peimani, “Assemblage Thinking and the City: Implications for Urban Studies,” *Current Urban Studies*, 3, 4, 2015, pp. 402–408.

⁴² G. Deleuze, F. Guattari, *A Thousand Plateaus*.

in actor-network theory,⁴³ which understands socio-spatial reality as a set of changing relations among heterogeneous human and non-human actors across contexts and over time. Applied to architectural practice and research, these perspectives decentre the human and suggest that architectural empathy must extend beyond users to broader socio-material assemblages. Moreover, assemblage thinking affords a temporal dimension, with ever-becoming and ever-changing being key aspects of socio-material assemblages. If spatial environments are produced through dynamic interactions among human and non-human actors, then architectural understanding cannot rely on static representations of user needs. Instead, designers and researchers must develop the capacity to perceive evolving relations within these assemblages. Empathy requires time; it requires longer-term engagement with the context and the changing assemblage, and it must also be cultivated as an institutional and organisational practice of attentiveness to relational dynamics.

While Pallasmaa locates empathy in embodied architectural imagination and phenomenological participation, this article extends that conception through care ethics, epistemic humility, and assemblage thinking to propose a form of situated empathy attentive to the evolving socio-material and ecological relations through which environments are continuously produced.

This article explores the outcomes and difficulties of operationalising empathy as a relational and attuned approach to broad socio-material assemblages. It applies assemblage thinking and actor-network theory to bring this reconceptualisation into architectural practice and research. It draws on a study of seven refugee camps in Rwanda, Uganda, and Kenya from 2015 to 2020, focusing on the design and analysis of learning environments for young children. This research offers a valuable perspective for redefining empathy within architecture.

Testing the Theory: Research by Design in Long-Term Refugee-Camp Learning Environments

In 2015, when this study began, much scholarship on refugee camps still framed them as non-places or spaces of exception and exclusion, while treating refugees as objects of research rather than as holders and

⁴³ B. Latour, "From the World of Science to the World of Research?," *Science*, 280, 5361, 1998, pp. 208–209.

producers of situated knowledge. Similarly, architectural and urban interventions led by camp managers and administrators usually excluded refugees and local hosts from design and construction processes. Where they were included, participation often took the form of consultation, with empathy functioning primarily as a legitimising device. Refugee settlements and refugees were consequently flattened into the uniform and universal categories of “camp” and “refugee.”

In this context, a small body of work—mostly concerned with urban refugees in the Middle East—had begun to use assemblage theory to recognise refugees’ agency in making and remaking spaces of refuge.⁴⁴ Some architects working in these extensively studied camps also pursued genuinely participatory interventions.⁴⁵ At the same time, scholars such as Bram Jansen,⁴⁶ Michel Agier,⁴⁷ and Manuel Herz⁴⁸ approached camps in other regions as cosmopolitan and changing urban formations, opening the way for relational analysis and the use of assemblage thinking in these contexts.

At the outset of this research in 2015, long-term refugee camps in Uganda and Rwanda remained largely invisible within academic research, particularly in built environment studies; many still do. The cases examined here include highly visible and extensively studied camps, such as Kakuma in Kenya and, to a lesser extent, Nakivale in south-western Uganda, as well as understudied settlements such as Kyangwali, Kyaka II, Kiziba, Kigeme, and Mugombwa. Comparing seven camps in East Africa allows me to test the proposed reframing of empathy against their complexity, diversity, and continuous evolution; their decades-long designation as non-places; and the marginalisation of refugee voices—particularly those

⁴⁴ L. Oesch, “An Improvised Dispositif: Invisible Urban Planning in the Refugee Camp,” *International Journal of Urban and Regional Research*, 44, 2, 2020, pp. 349–365; N. Abourahme, “Assembling and Spilling-Over: Towards an ‘Ethnography of Cement’ in a Palestinian Refugee Camp,” *International Journal of Urban and Regional Research*, 39, 2, 2015, pp. 200–217.

⁴⁵ A. Petti, S. Hilal, “Campus in Camps (2012–2015),” DAAR, <https://www.decolonizing.ps/site/campus-in-camps-2012-2015>, (accessed 15 July 2026).

⁴⁶ B. J. Jansen, “Cities in the Making: Contours of the Urbanizing Refugee Camp,” *Bundeszentrale für politische Bildung*, <https://www.bpb.de/themen/migration-integration/kurzdossiers/307980/cities-in-the-making-Contours-of-the-urbanizing-refugee-camp>, (accessed 15 July 2026).

⁴⁷ M. Agier, “Between War and City: Towards an Urban Anthropology of Refugee Camps,” *Ethnography*, 3, 3, 2002, pp. 317–341.

⁴⁸ M. Herz (ed.), *From Camp to City: Refugee Camps of the Western Sahara*, Lars Müller Publishers, Zürich, 2013.

of children and their predominantly female caregivers—within refugee studies.

Long-term refugee camps in Rwanda, Uganda, and Kenya, though planned as temporary, have evolved into proto-urban settlements over decades.⁴⁹ They are typically located in countries with limited resources and in settings that are climatically exposed, politically marginalised, materially impoverished, ecologically stressed, and socially complex.⁵⁰ Biodiversity is frequently degraded through deforestation, soil depletion, and water stress, even as residents develop adaptive ecological practices.⁵¹

As of early 2020, nearly seventy long-term refugee camps existed, understood here as settlements that had lasted for more than three years and hosted more than 5,000 refugees displaced by protracted situations.⁵² Some had been established as early as 1958 along the East African Rift.⁵³ Together, they accommodated approximately five million refugees from East Africa and the Horn of Africa, including about one million children under the age of six.⁵⁴ Long-term refugee camps are complex, multifaceted, heterogeneous, and continuously evolving proto-urban conglomerates. They emerge through interactions among numerous human and non-human actors. None of the seven camps studied remained static; each changed continuously and had distinct demographics, population densities, spatial extents, and socio-political contexts. Heterogeneity is their defining characteristic.

My research focused on East Africa, specifically Rwanda, south-western Uganda, and north-western Kenya. I concentrated on seven long-term refugee camps spanning three countries, twelve refugee origins, six decades of encampment history, and diverse physical characteristics. These camps

⁴⁹ B. J. Jansen, “The Camp beyond the City: Kakuma and the Development of a Camp Ecology,” *AMMODI*, <https://ammodi.com/2017/12/14/the-camp-beyond-the-city-kakuma-and-the-development-of-a-camp-ecology/>, (accessed 15 July 2026); B. J. Jansen, “Cities in the Making: Contours of the Urbanizing Refugee Camp”; M. Herz (ed.), *From Camp to City*.

⁵⁰ N. Amorós Elorduy, *Architecture as a Way of Seeing and Learning: The Built Environment as an Added Educator in East African Refugee Camps*, UCL Press, London, 2021.

⁵¹ F. Hossain, M. Moniruzzaman, “Environmental Change Detection through Remote Sensing Technique: A Study of Rohingya Refugee Camp Area, Ukhia and Teknaf Sub-District, Cox’s Bazar, Bangladesh,” *Environmental Challenges*, 2, 2021, article 100024.

⁵² UNHCR, “Operational Data Portal: People of Concern Dataset,” <https://data.unhcr.org/en/geoservices/>, (accessed 17 July 2026). The category “long-term refugee camps” and the figures reported here are the author’s calculations based on the dataset.

⁵³ *Ibid.*

⁵⁴ *Ibid.*

vary in age, size, population density, regional climate, geography, and host country policies. The case studies include Nakivale (established 1958), Kyangwali (1964), and Kyaka II (1983) in south-western Uganda; Kakuma (1992) in north-western Kenya; and Kiziba (1997), Kigeme (2005), and Mugombwa (2013) in Rwanda. My professional experience revealed a scarcity of academic research on the built environments of refugee camps in Uganda and Rwanda, particularly studies examining learning environments and the built environment through a socio-political lens.

My previous work as an architect on three case studies in Rwanda—advocating meaningful participatory processes in the design and implementation of educational and health facilities—together with my experience teaching architecture at the National University of Rwanda, highlighted the need to move beyond Eurocentric conceptions of the refugee camp. Doing so is necessary to understand local contextual differences, incorporate the perspectives of affected populations, and engage a wider range of local and regional architects and researchers. I therefore sought an ethical and empathic research methodology capable of engaging not only human actors but the entire assemblage of human and non-human participants. This assemblage includes natural environments, political and economic policies, institutions, and humanitarian organisations, as well as the relations among them. Attunement to broader socio-material assemblages became essential. I drew on work within and beyond refugee studies by Liisa Malkki⁵⁵, Simon Turner⁵⁶, Victoria Reyes⁵⁷, Tim Ingold⁵⁸, and Donna Haraway⁵⁹; pedagogical thinkers such as Maria Montessori⁶⁰, Loris Malaguzzi⁶¹, Urie Bronfenbrenner⁶², and Jean Piaget⁶³; and authors addressing participation with younger

⁵⁵ L. H. Malkki, "The Rooting of Peoples and the Territorialization of National Identity among Scholars and Refugees," *Cultural Anthropology*, 7, 1, 1992, pp. 24–44.

⁵⁶ S. Turner, *The Barriers of Innocence: Humanitarian Intervention and Political Imagination in a Refugee Camp for Burundians in Tanzania*, PhD dissertation, Roskilde University, Roskilde, 2001.

⁵⁷ V. Reyes, "Ethnographic Toolkit."

⁵⁸ T. Ingold, *Being Alive: Essays on Movement, Knowledge and Description*, Routledge, New York, 2011.

⁵⁹ D. Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Feminist Studies*, 14, 3, 1988, pp. 575–599.

⁶⁰ M. Montessori, *The Absorbent Mind*, Dell Publishing, New York, 1984.

⁶¹ P. Cagliari et al. (eds.), *Loris Malaguzzi and the Schools of Reggio Emilia: A Selection of His Writings and Speeches, 1945–1993*, New York, 2016.

⁶² U. Bronfenbrenner, *The Ecology of Human Development*, Harvard University Press, Cambridge, Mass., 1979.

⁶³ J. Piaget, *The Child's Conception of the World*, Routledge & Kegan Paul, London, 1951.

populations, including Doina Petrescu⁶⁴ and Louise Chawla⁶⁵. I focused particularly on young children because they learn primarily through experience and through their relations with other people and their surroundings.⁶⁶ Their learning environments in these camps range from homes, streets, courtyards, and informal gathering spaces to formal and non-formal structures such as schools, religious facilities, and civic centres. These environments are especially significant to children's everyday lives and development. Through social and environmental engagement, children learn social behaviour and acquire habits, cultural knowledge, spatial navigation skills, modes of thermal adaptation and water management, practices of cooperation, and awareness of risk. Built and natural elements therefore function as active educators rather than passive backdrops.⁶⁷ Reframing empathy as relational attunement to socio-material assemblages was an ethical necessity and the most appropriate means of incorporating the voices of refugees and other actors while remaining attentive to the political and historical processes that have shaped—and continue to shape—these places.

These contexts challenge sentimental or projection-based empathy and require the kind of attunement to shared environments and flows of life emphasised by Ingold. The political and historical processes that produced refugee camps also shape the imaginaries, assumptions, and projected personas through which architects and researchers understand settlements and their inhabitants. East African refugee camps, for example, emerged from modernist and Eurocentric conceptions of the world during the period of nation-state independence, the establishment of the United Nations and UNHCR, and the adoption of the Refugee Convention. They are entangled with both humanitarian assistance and neocolonialism, while their architectural and urban forms are linked to broader practices of demographic engineering. Research on camps has

⁶⁴ D. Petrescu, "Relationscapes: Mapping Agencies of Relational Practice in Architecture," *City, Culture and Society*, 3, 2, 2012, pp. 135–140.

⁶⁵ L. Chawla, K. Malone, "Neighbourhood Quality in Children's Eyes," in P. Christensen, M. O'Brien (eds.), *Children in the City: Home, Neighbourhood and Community*, Routledge-Falmer, New York, 2003, pp. 118–142.

⁶⁶ N. Amorós Elorduy, "Learning in and through the Long-Term Refugee Camps in the East African Rift," in E. Fiddian-Qasmieh (ed.), *Refuge in a Moving World: Tracing Refugee and Migrant Journeys across Disciplines*, UCL Press, London, 2020, pp. 362–381.

⁶⁷ L. Chawla, "Childhood Experiences Associated with Care for the Natural World: A Theoretical Framework for Empirical Results," *Children, Youth and Environments*, 17, 4, 2007, pp. 144–170; N. Amorós Elorduy, "The Impact of Humanitarian Shelter and Settlements on Child Protection," *Forced Migration Review*, 55, 2017, pp. 41–43.

likewise been marked by cycles of paternalism and victimisation and by the dismissal of Indigenous, vernacular, local, and migrant perspectives. Breaking with the ideas and external discourses that produced these settlements requires accounting for their diversity, context-specific characteristics, and continuous evolution. Refugees and local hosts must therefore be central to knowledge production, while non-human actors must also be included in the analysis.

Reflexive Methodology and Epistemic Humility

Relational empathy demands methodological reflexivity. Researchers and practitioners are not neutral observers but participants in the networks they study. Their positionality influences what knowledge is produced, how it is interpreted, and who ultimately benefits from it.

Victoria Reyes' work on ethnographic methodology emphasises the importance of strategic positionality and reflexive awareness in field research.⁶⁸ Similarly, Boaventura de Sousa Santos argues that epistemic justice requires the recognition of diverse knowledge systems and a challenge to the dominance of singular epistemological frameworks.⁶⁹ In architectural research, these perspectives underscore the need to acknowledge the limits of one's own expertise and of external expertise more broadly. Populations possess situated knowledge developed through long-term engagement with their environments. Architects and researchers must therefore approach these contexts with epistemic humility and practise reflexivity, recognising the partiality of their own perspectives and remaining open to alternative forms of knowledge. This methodological stance reinforces the relational understanding of empathy proposed in this article.

Pallasmaa further argues that empathy in design cannot be separated from care. Design action requires a balance between technical knowledge, intuition, and ethical responsibility.⁷⁰ He proposes that architects cultivate an attitude of attentive concern towards the situations in which they intervene, recognising the limits of expert knowledge and the importance

⁶⁸ V. Reyes, "Ethnographic Toolkit: Strategic Positionality and Researchers' Visible and Invisible Tools in Field Research."

⁶⁹ B. de Sousa Santos, *Epistemologies of the South*.

⁷⁰ J. Pallasmaa, "Empathy, Design and Care—Intention, Knowledge and Intuition: The Example of Alvar Aalto," in C. Bates, R. Imrie, K. Kullman (eds.), *Care and Design: Bodies, Buildings, Cities*, John Wiley & Sons, Chichester, 2016, pp. 138–154.

of intuitive and experiential forms of understanding. Such a position resonates with calls for epistemic humility in participatory and decolonial research traditions, where the architect or researcher becomes a learner and collaborator rather than an external expert.

Reflexive practice requires diverse and intersectional research teams, methodologies tailored to specific contexts, and the use of design as a means of knowledge production, communication, and translation through which the perspectives of human and non-human actors can be included. Our research team comprised researchers, technicians, and assistants from several fields—architects, photographers, educators, artists, recent graduates, and students from Spain, the United Kingdom, Rwanda, Uganda, Kenya, and South Sudan—as well as NGO members and artists’ cooperatives. Such diversity was necessary to foreground empathy not as a claim to feel with others but, in Haraway’s terms, as a practice of staying with complexity.

Empathic research must avoid harm and extraction, involve participants meaningfully, and, wherever possible, produce benefits for them or their communities. Our project involved hundreds of refugees, members of surrounding populations, and relevant stakeholders, including camp managers, refugee leaders, parents, guardians, school staff, religious figures, social workers, young people, and children aged four to six. In line with actor-network theory, we also investigated the built environment, policies and management structures, climates, and geographies, treating them as active agents in children’s learning and development and examining their effects on everyday life. We combined quantitative and qualitative methods, including ethnography (interviews, questionnaires, focus groups, and observation), spatial analysis (mapping, sketching, and measuring), and participatory research-by-design (walks, drawing games, mental maps, mural-making, public-interest design studios, three-dimensional models, and photomontages). Empathy was expressed not through claims of understanding but through listening, iterative revision, and the adaptation of methods and interventions to evolving conditions.

However, we were only able to deliver tangible benefits to refugee participants in our Rwandan cases, such as feedback loops, school-based interventions, improved housing conditions, and design guides to improve their early childhood initiatives. Participatory action research and co-design processes, such as those we applied in Rwanda, offer methodological pathways for a relational and empathic engagement attentive to contextual ecologies. Public-interest design studios, like the one we

developed in Kigeme to create guides for the incremental improvement of home-based early childhood initiatives in several Rwandan camps, and community-based research platforms, can function as sites of mutual learning when engagement is sustained over time. In such settings, architects and residents co-produce spatial knowledge through iterative experimentation. However, participatory initiatives risk becoming extractive when they collect local knowledge without establishing durable relationships or institutional commitments. We made an effort to create an institutional relationship between the academic community and the camp, but due to time and funding constraints, as well as COVID-19, we were only able to sustain that mutual learning until 2020. Relational empathy requires sustained collaboration and accountability to ensure that knowledge exchange benefits the communities involved.⁷¹

EMPATHY AS RELATIONAL ATTENTIVENESS TO HUMAN–NON-HUMAN ECOLOGIES

Camps as Polyrythmic Human–Non-Human Assemblages

Long-term refugee camps in East Africa can be understood as polyrythmic assemblages in which spatial organisation emerges from multiple temporal and material processes rather than from a single planning intention. Humanitarian camp-planning policies—or their absence before 2005—interact with the materials, technical knowledge, and resources available when each camp was established. Geographic and climatic factors—seasonal rainfall, heat patterns, and vegetation growth—coalesce with aid-delivery schedules, governance structures, demographic composition, and everyday social practices to produce continuously shifting spatial environments. Built form in long-term camps evolves through population influxes and departures, repair, extension, shading, enclosure, and material substitution as residents respond to climatic stressors, institutional regulations, and resource constraints.⁷²

Understanding camps as changing socio-material assemblages makes ecologically attuned relational empathy necessary. If spatial environments

⁷¹ N. Antaki, “A Learning Architecture: Developing a Collective Design Pedagogy in Mumbai with Muktangan School Children and the Mariamma Nagar Community,” *Research for All*, 5, 1, 2021, pp. 101–107; N. Amorós Elorduy, “Young Children’s Learning Environments in East African Refugee Camps.”

⁷² N. Amorós Elorduy, *Architecture as a Way of Seeing and Learning*.

are produced through dynamic interactions among human and non-human actors, architectural understanding cannot rely solely on static representations of user needs. Designers and researchers must instead develop the capacity to perceive evolving relations within these assemblages. Porosity channels movement; climate and urban fabric shape thermal patterns; soil and topography affect foundation stability; vegetation contributes to microclimates; and policies structure settlement patterns.⁷³ Non-human actors are therefore not passive conditions but active participants.

Empathy, reframed as relational attentiveness, emerges as a practical and epistemic response to these conditions. Rather than projecting imagined experiences onto users, architects must learn to interpret the rhythms of climate, materials, infrastructures, and social practices that co-produce spatial environments. The study sought to do this by gathering participants' perceptions of camp spaces as learning environments, together with their ideas for improving living conditions and young children's learning experiences. The research team translated these ideas into photomontages, returned them to the camps for discussion, and gathered feedback on the initial findings. The resulting proposals were not devised solely by architects and researchers, nor were they uniform across the camps—even within the same country—because each assemblage of people, environment, and time was different.

A further example is provided by the feedback loop and dissemination exercises conducted in Kiziba, Rwanda. Established in 1997, Kiziba is Rwanda's oldest refugee camp and occupies a relatively compact settlement on hilly terrain. As part of our effort to avoid extractive research and to ensure that participants could use the findings, we constructed a physical model of the camp and returned it to the community as a tool for management and planning. The model proved particularly effective in Kiziba because its elevated, compact topography allowed residents to relate the model directly to views from a nearby hill. We lacked the time and resources to test this method in the Ugandan and Kenyan cases, and it may not work equally well in camps located on flat terrain or dispersed across a larger area. This example demonstrates both the time and material resources required by genuinely empathic research and design and the need for a longer-term commitment to a specific context.

⁷³ *Ibid.*

*Informal Learning Environments and
Non-Human Agency*

The relational character of camp environments becomes especially evident in the informal learning spaces through which children experience and interpret their surroundings. In the long-term refugee camps I have studied, learning does not occur exclusively in formal classrooms but across a distributed network of spaces, including homes, courtyards, paths, water points, religious facilities, and informal gathering areas.⁷⁴ These environments function as pedagogical landscapes in which social behaviours, environmental knowledge, and spatial competencies are acquired through daily interactions.

The significance of non-human agency is particularly visible in children's learning processes. Thermal gradients influence where children gather, play, or study. Dust levels shape patterns of mobility and comfort. Seasonal mud and flooding alter access routes and reconfigure movement across settlements. Cultural and social norms structure who is permitted to play, as well as when, where, and how play occurs. Host-government policies and international systems of refugee assistance determine the materials and dimensions of shelters, streets, educational and health facilities. Water points organise both daily routines and social interaction. Children learn through relations among themselves, other people, and non-human actors, illustrating why built and environmental elements can be understood as co-educators in camp environments. Rather than serving as passive backdrops, materials and ecological conditions actively shape behaviour and knowledge formation. As the work of Nicola Antaki in Mumbai and Doina Petrescu on relational practice suggests,⁷⁵ empathy in architectural practice and research requires attentiveness to the pedagogical role of spatial and environmental conditions. Architectural research must therefore account for how learning emerges through relations among bodies, materials, climates, policies, management structures, and infrastructures.

Recognising refugees, climate, and culture as active remakers of camp environments and as sources of knowledge—rather than as deviations from the original intent of humanitarian camp planning—is one of the central insights produced by a research-by-design methodology guided

⁷⁴ N. Amorós Elorduy, "Learning in and through the Long-Term Refugee Camps in the East African Rift."

⁷⁵ N. Antaki, "A Learning Architecture"; D. Petrescu, "Relationscapes."

by ecologically attuned relational empathy. Architectural empathy thus becomes the capacity to recognise the intelligence, purpose, and potential embedded in everyday spatial adaptation and to incorporate that knowledge into design and research processes.⁷⁶

*Beyond Universal Standards: Empathy
as Contextual Judgement*

Humanitarian architecture, particularly in the establishment of refugee camps, often relies on universal design standards intended to guarantee minimum levels of safety, dignity, and functionality. Although such standards are important for safeguarding rights, their spatial translation can become rigid when applied without sensitivity to contextual variation. Climatic conditions, cultural practices, material availability, and ecological constraints frequently challenge the one-size-fits-all solutions of humanitarian camp planning. As James Scott demonstrated, high-modernist planning traditions often fail because they prioritise abstract order over situated knowledge.⁷⁷ Similar dynamics arise when global humanitarian standards are implemented without adequate understanding of local spatial and ecological conditions.⁷⁸ The failure of rigid planning models in long-term camps, together with their continuous transformation by refugees and local hosts, shows why relational empathy is vital to architectural judgement in humanitarian contexts. Reframed as ecological attentiveness, empathy enables practitioners to recognise contextual complexity and adapt planning accordingly. Rather than requiring standards to be abandoned, relational empathy guides their reinterpretation in relation to local ecological and social conditions. Mugombwa refugee camp's initial gridded plan, for example, was revised before construction following site visits and consultations with Rwandan officials. The process nevertheless remained limited: refugees and local residents were not included because of time, organisational, and political constraints. Even so, UNHCR's planning and establishment of Mugombwa represented a step towards a more relationally attentive approach. Architectural judgement

⁷⁶ A. Bayat, "The Quiet Encroachment of the Ordinary," *The Chimurenga Chronic*, 3, 3, 2007, pp. 1–8; E. Pieterse, "Introduction: Rogue Urbanisms," *Social Dynamics*, 37, 1, 2011, pp. 1–4.

⁷⁷ J. C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*, Yale University Press, New Haven, 1998.

⁷⁸ M. Herz (ed.), *From Camp to City*; N. Amorós Elorduy, *Architecture as a Way of Seeing and Learning*.

rooted in relational empathy mediates between normative rules and lived realities, allowing architects to uphold rights and safety while responding to dynamic environments.

Attentiveness to Relational Ecologies of Human and Non-Human Actors

This article has argued that prevailing understandings of empathy in architectural discourse are inadequate to address the challenges of the twenty-first century. While human-centred design approaches have successfully redirected attention towards user experience and social context, their emphasis on emotional identification and short-term engagement limits their capacity to account for environments shaped by complex human–non-human interactions.

Drawing on assemblage theory, actor-network theory, ecological thought, and participatory research traditions, this paper has proposed a reframing of empathy as relational attentiveness. Within this framework, empathy is not defined by the capacity to feel what others feel, but by the ability to recognise and engage with the networks of relations through which spatial environments are produced.

Empirical insights from learning environments in long-term refugee camps illustrate the relevance of this approach. These contexts show how built form, ecological conditions, and social practices interact to produce dynamic environments in which learning, adaptation, and survival unfold. Recognising these environments as relational ecologies demands that architectural research and practice adopt methodologies capable of engaging with complexity over time.

The theory of relational empathy proposed here extends existing debates on empathy in architectural practice by reframing how empathy is understood and operationalised. Several implications emerge from this theoretical reframing.

First, it shifts the focus from empathy as an individual psychological capacity to empathy as a collective epistemic practice embedded within research and design processes. This reconceptualisation aligns with actor-network theory's understanding of distributed agency and foregrounds institutional responsibility within architectural practice.

Second, it positions empathy as a methodological principle embedded within architectural research and design processes, rather than a set of standardised tools. Longitudinal engagement, relational mapping,

ecological analysis, and iterative prototyping should become central tools for understanding and shaping spatial environments.

Third, it moves beyond an individual virtue to a collective capacity. Institutions, research teams, communities, and policy frameworks all participate in the production of empathic architectural practice. Collective empathy emerges through collaboration, shared knowledge production, and long-term accountability.

Fourth, it expands empathy beyond human actors to include the ecological, material, and historical conditions that shape spatial life. Rather than anthropomorphising non-human actors, relational empathy calls for attentiveness to their behaviours, affordances, and effects. Climate, materials, infrastructures, historical and ecological processes are not passive contexts but active participants in shaping spatial outcomes. Designing responsibly within these systems requires sustained attentiveness to their rhythms and interactions.

Finally, the theory foregrounds temporality. While conventional empathy frameworks typically operate at early design stages, relational empathy insists that meaningful understanding emerges through sustained, long-term engagement with evolving spatial systems. Empathy as attentiveness to ecological relationality thus entails a commitment to remain responsive to the evolving relations through which human and more-than-human worlds are continuously made and remade.

This theoretical approach also has limitations. Its commitment to contextual attentiveness can make it difficult to formulate generalisable design guidelines or standardised research methods and tools. It requires sustained engagement and continuity from researchers and, at times, from participants; diverse and complex teams; and command of methods that demand training and rigour. Time and sustained attention are particularly scarce within the accelerated pace of contemporary practice. In fragile and uncertain humanitarian settings, assembling interdisciplinary teams and securing material and financial resources is especially difficult. Institutional pressures for rapid deployment and standardisation, compounded by shrinking budgets, may further constrain relational approaches.

Nonetheless, relational empathy offers a framework better equipped to address the ecological and social complexities that increasingly shape architectural practice and research. It provides a conceptual bridge between critical social theory, ecological thought, and architectural methodology and warrants further exploration across other contexts and cases.

Future research can extend this framework in several directions. Comparative studies across different forms of settlement and architectural interventions could examine how relational empathy operates in diverse ecological and political contexts. Methodological innovation in socio-spatial mapping and participatory research may further develop tools to apprehend human–non-human relations. Finally, architectural education can play a crucial role in cultivating the reflexive and ecological awareness required for relational practice.

Ultimately, the significance of relational empathy lies in its capacity to situate architecture within broader ecological and social relations. In an era characterised by climate instability, biodiversity decline, growing inequality, and displacement, architecture must move beyond the boundaries of human experience alone and attend to more-than-human actors. Such a situated and relational approach requires empathic and curious attentiveness to the entire ecology of assemblages within which architectural research and intervention take place.

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