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From Projecting Futures to Projecting Otherwise: An Anticipatory Archaeology of Emerging Design Epistemologies[1]

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How to overcome design 'defuturing' effects? Design scholarship argues that design's adverse contributions stem from its limited projective capacities to reflect about what design designs and the inherent power structures it conceals. Several design approaches emerged to equip designers with philosophical and social science frameworks and overcome design's 'defuturing' effects. Yet, the ability of these theoretical frameworks to fundamentally change design remains debated. This paper contributes to this discussion by exploring the epistemological underpinnings of five approaches – Transition Design, Mission-Oriented Design, Speculative Design, Pluriversal Design, and More-Than-Human Design. We develop an 'anticipatory archaeology' of these theoretical formations to study how the epistemic discontinuities introduced to overcome prevailing modes of doing and knowing in design reconfigure the design's object, agency, and process altering the world. We argue that overcoming defuturing effects by design depends not only on new projective capacities for designer, but on rethinking what projecting means within design practice itself.

Keywords: design futuring, design epistemology, transition design, speculative design, more-than-human design, design project.

Introduction

Design scholars argue that design's historical adverse contributions to societal and ecological contexts arise from insufficient critical anticipation on what design designs and limited examination of inherent power structures (Abdulla et al., 2019; Fry, 2020; Valtonen, 2020). Design practitioners, researchers, and educators concerned with these 'defuturing' effects of design mobilize theoretical frameworks from adjacent disciplines such as transition studies, post-humanities, sociology of science and technology, or decoloniality to figure out 'new design philosophies' that foster ways of futuring (Escobar, 2018; Fry, 2020; Giaccardi et al., 2025; Kossoff et al., 2015; Manzini, 2015; Mitrović et al.,

[1] A related paper by the same author is forthcoming in *The Design Journal*. The current version develops the argument further and substantially revises the introduction, methodology, synthesis of findings, and discussion to articulate the contribution to the Futuring Track and detail practical implications for design practitioners.

2021). The emerging consensus that "design cannot change anything before it changes itself" (Buckley, 2020, p. 19) represents a call for emancipating the discipline from ongoing complicity in 'capitalistic disasters' (Mitrović et al., 2021). While the mental models design seeks to leave behind are relatively clear, defining how design could be done remains a challenge, especially given capitalism's ability to reappropriate and commodify its critiques (Boltanski & Chiapello, 2005).

This research explores *How do the theoretical frameworks leveraged by emerging design approaches affect design's ability to change itself and the world?* Better understanding the effects of the conceptual ruptures and intended discontinuities in meaning introduced by emerging design approaches will contribute to the discussion on what direction and type of change do emerging design approaches bring about in ways of futuring. We focus on design by professionals informed by theoretical discussions, distinct from mundane activities of making that occur without necessary reflexivity or direct input from a theoretical framework.

This paper presents an investigation of theoretical framings mobilized by five emerging design approaches: Transition Design, Mission-Oriented Design, Speculative Design, Pluriversal Design, and More-Than-Human Design. The analysis exposes how different theoretical framings foster design's potential to transform itself and society. The purpose is not to compare or rank these approaches. Rather, we seek to identify key epistemological discontinuities that each mobilizes, clarifying possible avenues through which they reconceptualize the object of design, design process, and design agency. To this end, we propose an 'anticipatory archaeology', inspired by Foucault (1970) and Dilnot (in Fry, 2020), as an analytical lens to surface new grounds of knowledge and action articulated by these emerging design approaches. The anticipatory archaeology allows to locate epistemic ruptures—shifts in how design is done or can be done—that these frameworks employ to foster change. Eventually, the findings highlight how emerging design approaches alter the meaning of 'projecting' in design, from planning solution-oriented futures towards forming ethical and reflexive subjectivities.

The paper opens on a review of literature on theoretical drivers of change in design before outlining key epistemological dimensions of how design is done. The remainder of the manuscript details the analysis of the five emerging design approaches, presents the findings before discussing implications, and suggesting future research directions.

Changing design

Design continually evolves as it embraces technical and theoretical transformations. Historically, design fashioned itself through new production tools (e.g. mechanized looms, computers, generative AI, 3D printing), organizational forms (e.g. assembly lines, global supply chains, platforms), and institutions (e.g. intellectual property, efficiency labels, internet). These socio-technological innovations expand design's potential while simultaneously questioning its ethics. Technologies are never neutral (Geiger, 2022); they prompt debates on overconsumption, environmental depletion, algorithmic bias, or social inequities (Papanek, 1971; Buchanan, 1992; Manzini, 2015; Valtonen, 2020; Folkmann, 2023). Socio-technical change is thus both an enabler and a challenge for design.

To address this paradox, contemporary design turns to theoretical frameworks. While pragmatic ones like systems thinking or behavioral economics guide designers through complexity, broader social science and philosophical frameworks reconfigure design's ontology (what it *is*) and epistemology

(what is knows, how, and how it explicates how design is done) (Fry, 2020; Geiger, 2022; Giaccardi et al., 2025; Wilkie & Michael, 2025).

Theories shape design practices because they authorize or constrain modes of thinking and acting. They frame what counts as a beginning or end of a project, who is the 'us' that designs, and what ethical stance grounds it (Carey et al., 2022). Designers use transition studies, for instance, to reorient design practice from product innovation toward systemic change (Kossoff et al., 2015), or leverage science fiction and critical theories to challenge dominant ideologies and provoke alternative imaginaries (Dunne & Raby, 2013). Theories serve not only as analytical tools but as creative tools 'to make things less certain' (Redström, 2020, p. 84) and resist the tendency to imagine only what is known as 'possible' (Marenko 2018). Practice, in turns, reshapes theory by introducing contextual elements that challenge and enrich it.

Attending to theory therefore matters, as it implicitly guides practice. For instance, theories about change and innovation "shape the work of designers, whether those theories are made explicit or not" (Connolly & Seymour, 2015, p.10). Enacting change through theory requires designers to make these frameworks explicit, examine their embedded assumptions, and challenge institutional rationalities (Kezar et al., 2015). Theoretical frameworks also have retroactive effects, enabling designers to reinterpret the past, surface assumptions, and reassess missed opportunities (Tonkinwise, 2019, in Mitrović et al., 2021). Only by making visible the otherwise opaque assumptions shaping their thinking in practice can designers navigate the ethical and practical dilemmas of change.

This research specifically investigates such theoretical frameworks mobilized by emerging design approaches to understand how they orient how design could be done. To assess their impact, we first review how design has historically explained how it is done.

About design

Identifying what makes design distinct is difficult when it constantly evolves, branches out, and 'eludes reduction' (Buchanan, 1992), when it is a mundane practice before being a profession (Manzini, 2015; Simon, 2008), and when its English definition remains ambiguous (Dilnot, 1982). Design history, however, points to a set of enduring epistemic commitments.

First, professional designers cultivate expertise beyond everyday making. Considering design as a 'set of routines that emerge in context' (Kimbell, 2012) shifts attention from individual cognition to a question of collective practices. Like athletes refining their skills, design professionals explore and refine methods to enhance human capacities for creating better living conditions (Krippendorff, 2005) and helping ordinary people shape their worlds (Ansari, 2024; Manzini, 2015). Over time, designers' focus expanded from objects (1950s) to processes (1970s) to actors (1990s) to ecologies (Dilnot, 1982; Valtonen, 2020; Vial, 2014), while developing an ethical reflexivity about enacted hierarchies and inequalities *by* design (Irani, 2019; Julier & Kimbell, 2019).

Second, the core sport of design is a "discipline of the project" (Krippendorff, 1989; Vial, 2014): the art of anticipating desirable outcomes before their realization. This discipline made itself necessary during the Renaissance, when problems to solve gained in complexity while the modernist mindset required a rationalized planning of resources and time (Galle, 1999; Vial, 2014). Everywhere, people devise complex structures in resource-constrained contexts too; but they may not *necessarily* separate

out a formal project time to rationalize risks and benefits. Over centuries, this art of projecting evolved from managing technical complexities to envisioning sustainable or alternative futures (Candy, 2010; Findeli, 2010, in Vial, 2014). Design functions as 'discipline of the project' before being part of the contemporary 'culture of the project' (Vial, 2014), referring to how people in market societies manage their lives by hopping on/off projects, professional or personal, paid or pro-bono, in a continuous learning-working-leisure stream (see for e.g. Boltanski & Chiapello, 2005; Boutinet, 1990).

Third, design projects unfold as a catalytic process. Unlike adjacent disciplines of the project like architecture or engineering, design embraces *uncertainty* of first attempts (Jensen, 2023; Marenko, 2018) to open possibilities to make a difference. Design developed its own creative mode of knowing, fleshing out what is *possible* in the conception, distinct from adjacent disciplines like engineering focused on what is *necessary* in the realization, or marketing concerned with what is *contingent* in attitudes (Buchanan, 1992; Krippendorff, 1989; Vial, 2014). If laboratories are 'centers of calculation' according to sociologists Latour and Callon, 'design studios are 'centers of synthesis' (Wilkie & Michael, 2025) where participatory processes invite publics to co-create futures instead of being represented by experts (McCarthy & Wright, 2023).

Finally, design operates within, and upon, a context. The designed object always exists within broader narratives and ideological frameworks (Krippendorff, 2005). For instance, Arts & Crafts objects embody a moral response *against* mechanization whereas Bauhaus objects promote usability and accessibility for all *through* mechanization. Design outcomes actualize worldviews contextually, through tangible artifacts and their associated cultural meaning. The knowledge design produces is 'sited', grounded in a given real world situation, and 'situated', located in bodies of research and disciplinary knowledge (Kaszynska & Kimbell, 2025). If design actualizes 'that-which-does-not-yet-exist' (Nelson and Stolterman 2012, in Marenko, 2018), it does so in context with an intent to change the world, starting from that context.

To analyze how theoretical frameworks impact design epistemologies, we adopt Fry's (2020[1999]) three interrelated epistemological dimensions after Willis (2015):

- the 'Object of Design' is the *inconceivable* (Marenko, 2018), that which remains unimaginable until design brings it forth (Fry, 2020). This object exceeds what is eventually produced, as it comprises the resistances and excesses making it inconceivable until design brought it forward.
- the 'Design Agency', that brings about this inconceivable, is a *catalytic project*. The 'Design Agency' is not a designer per se; what designs emerges in relation to what is being designed, composing and assembling potentials in context and in action.
- the 'Design Process', altering the world through the designed object, is a *plane of operative reason*. It surfaces the rationale to change the world that actualizes the Designed Object and Design Agency as much as it is transformed by them.

The following sections examine how emerging design approaches reshape these three dimensions of how design is (could be) done.

Studying emerging design epistemologies

How to analyze the effects of emerging design epistemologies on the Design Object, Agency and Process? One way is to identify changes in regimes of justification that saturate thinking in action. For instance, Patrício, Grenha Teixeira, and Vink (2019) engage with such institutional logic approach to generate evolutions in design practices. Yet, this approach infers that epistemic assumptions permeate practice unconsciously (see for e.g. Connolly & Seymour, 2015). Instead, emerging design approaches explicitly mobilize theory to enact mindful change. Since designers can not enact meaningful change without consciously invoking theory, this institutional-logic lens would obscure the working of epistemic shifts we aim to surface.

This research therefore adopts a second strategy; identifying discontinuities in meanings that emerging design approaches consciously introduce to open alternative ways of designing. Dilnot (in Fry, 2020) notes that design history, what design has made, can be studied *archaeologically* to expose what design takes away, namely the "ground of the negation of the future" (p. xx). Such archaeology does not add to design history. Instead, it allows not to repeat patterns and locate the grounds for alternative futures. We propose an *anticipatory archaeology* of emerging design approaches and their theoretical frameworks to trace the epistemic ruptures they introduce to make futures possible.

Anticipatory archaeology

The method draws on Foucault's (1970) archaeology of knowledge, which views the history of thought not as a linear accumulation of knowledge from individuals, but as constituted by shifts in institutions, rules, and practices that once made new knowledge impossible. Archaeology proceeds in two steps. First, it identifies accepted ways of thinking encapsulated in 'statements', i.e. the product of the rules giving meaning to an expression. For instance, a medical diagnosis is a statement, not as a doctor's speech, but as a medical discourse categorizing conditions and patients within a set of possibilities held true by the medical profession at a given moment in time. Such statement allows to surface the hidden rules and institutions. Second, an archaeology examines discontinuities in statements, i.e. the shifts in meaning and assumptions that bring about new regimes of knowledge.

An *anticipatory archaeology* inverts this retrospective gaze: rather than excavating established regimes, it identifies ruptures that contemporary discourses intentionally introduce to found alternative rules and practices for knowing and doing. It attends to discontinuities in statements: the discursive units exposing how design approaches challenge dominant assumptions, normative truths, or inherited power structures while claiming new ways of designing.

Because archaeological analysis relies on documented discourses, it cannot account for tacit practices or informal rules. Nor does it examine the social and power structures shaping knowledge production itself. Foucault later introduced genealogy to address these concerns and illuminate struggles and alliances shaping practices (e.g. sexuality, medicine) and explicate how certain truths become 'naturalized' (e.g. normative sexuality, medication of mental illness). This research focusses only how emerging design approaches create the possibility for new design epistemologies to emerge.

Aim and Scope

The aim is not to list all differences among emerging design approaches. Each one positions itself distinctly while contributing to a shared effort to change design. Our focus is on the points of departure leveraged from different theoretical frameworks to inform new ways of doing design. By

focusing on intended discontinuities rather than a chronological evolution, *anticipatory archaeology* does not predict which approach will prevail. Instead, it reveals which epistemological dimensions of design is most affected and by what shift in meaning. Following Fry (2020), we analyzed how these epistemic discontinuities affect the three interrelated dimensions of the Designed Object (the until-now-inconceivable outcome), the Design Agency (the catalyzing vector actualizing this inconceivable), and the Operative Reason structuring the Design Process (the underlying logic or worldview allowing design to affect the world).

Research Design

This *anticipatory archaeology* followed three steps. First, a corpus of foundational texts for each approach (seminal articles and books) alongside critiques and recent evolutions was assembled to capture their origin stories and current debates. Second, passages articulating breaks from conventional design assumptions (e.g., redefining the Object of Design, repositioning the designer's role, or reframing the temporal logic of projects) were extracted and coded according to their referenced scholarship and affected epistemological dimension (the Object of Design, the Design Agency, Operative Reason situating the Design Process). Third, we mapped how each approach's statements intend to displace established ones, identifying what regularity was discarded or retained. This mapping highlights convergences (e.g. shared interest for systemic thinking or shared critique of capitalism, for instance) and divergences (e.g., Speculative Design's critical awareness-building vs. Transition Design's system-level consensus-building).

The study examines five design approaches fostering interest at major design conferences (DRS 2004-2024, IASDR 2009-2023): Transition Design, Mission-Oriented Design, Speculative Design, Pluriversal Design, More-Than-Human Design. These are 'approaches' rather than defined 'methods' (Nova 2019 in Mitrović et al. 2020), as they rethink design with philosophy or social science theory rather than simply applying or testing them (Marenko 2018).

These design approaches are not the most 'applied' today but are discussed and exist through published texts rather than only practices. One may argue design is never fully captured in discourse. Making artefacts, spaces, policies, or experiences, involve forms of expression beyond texts. Yet, these emerging design approaches purposely lean on textual scholarship to foster reflexivity and enroll new practitioners. Locating discontinuities of statements in this corpus reveals the differences in practice and meaning intended by these approaches. Table 1 lists the corpus analyzed.

INSERT TABLE 1

These approaches are neither monolithic nor entirely distinct. Authors often contribute to each other's work by highlighting differences and complementarities. All five approaches share several epistemic assumptions. First, they are goal-oriented, aiming to improve social, ecological, or public value outcomes. None intend to remain neutral. Second, they critique contemporary capitalism, though they propose varied ways to counter or go beyond it: public value, social justice, or post-Enlightenment perspectives. They conceive design as an agent of change rather than a mere actor of capitalism. Third, they acknowledge the complexity of contemporary design challenges, underlining the interwoven social, technical, or ecological networks and requiring non-linear thinking. Fourth, they demand interdisciplinary and collaborative engagements, welcoming insights from multiple fields and

stakeholders. Multi-disciplinary inquiries are not necessarily undisciplined. They reinstall the notion of each discipline.

Findings: Locating Epistemic Grounds for Design in Five Emerging Approaches

The findings present for each design approach how discontinuities in theoretical statement affect the field of operative reason, the object of design, and the design agency. The findings underline the regularities and discontinuities in statements that these emerging design approaches draw on.

1. Transition Design

> *"Designers must help societies transition out of unsolvable 'wicked' problems toward more sustainable futures." (Kossoff, Irwin & Willis, 2015, p.5)*

Transition Design introduces a first epistemic shift by reframing design's Operative Reason, from discrete market-based interventions to systemic reconfigurations of socio-technical regimes. Such regimes encompass interlocked technologies, policies, infrastructures, and user practices. Transition Design's projective goal is the enduring, systemic redirection out of unjust and unsustainable lifestyles.

This framing reintroduces a regularity: society is organized through institutional lens and needs a change agent to 'fix' its dysfunctions. Design retains a privileged role to envision 'exits' from unsustainable conditions that policymakers and industrial actors cannot resolve alone. While Transition Design departs from solutionism, it maintains an imperative of change as something valuable and presupposes a creative mediation guiding change from a position of meta-knowledge.

A second discontinuity concerns the Designed Object. Beyond artefacts or services, Transition Design creates 'new ways of living and working' (Kossoff et al., 2015) situated within a long-term, multi-scalar horizons. As designers engage in processes of reconfiguration rather than resolution, design projects become open-ended trajectories rather than timebound interventions (Carey et al., 2022), "open up subsequent opportunities (…) not an end-unto-itself" (Tonkinwise, 2015, p. 11). Nevertheless, this Object remains a matter of producing 'fulfilling societal functions' (Geels, 2004, 2019), which reinstalls a regularity from design's historic concern with collective living (Buchanan, 1992; Dilnot, 1982). The unit of analysis remains the end-user's practice; the context of action, the everyday lifestyle (Geels, 2004; Irwin et al., 2015).

A third discontinuity relates to the modes of knowing grounded in systems literacy as much as in ecological entanglement (Boehnert, in Coops et al., 2024). Transition Design Agency relies on methods such as collective systems mapping and visioning support to cultivate a 'feel' for system dynamics beyond complexity reduced to parts (Irwin & Kossoff, 2021). These practices blend analytical modelling with situated, affective engagement to help Design Agency actors 'suspend disbelief' and envision change.

Yet, these methods reintroduce a consensual and causal worldview. Mapping explicates a given situation not as chaotic nor anarchic, but as unintentionally caused by the series of documented interactions. Moreover, futuring activities serves to 'transcend current differences' (Kossoff & Irwin, 2021) even if transitions are not consensus projects (they wouldn't be problematic otherwise). Divergences are mere transitional hurdles rather than constitutive political conditions. Backcasting

offers to rationalize transitions into pathways towards an agreed-upon end-state, further limiting the agonistic potential of designing within 'wickedness'.

While Transition Design integrates participatory foresight and draws on social movements like Transition Towns, its alignment with frameworks such as the Multi-Level Perspective (Geels, 2019) reveals a bias toward techno-institutional change. These frameworks often marginalize power asymmetries and subaltern epistemologies under the guise of scalability, as Geels (2019) acknowledges. Irwin and Kossoff (2024) concede that the approach remains vulnerable to epistemic injustice: Who participates in visioning? Whose voices are absented? Ultimately, Transition Design normative consensus orientation and socio-technocratic legacy can stabilize the very imaginaries it seeks to transform.

2. Mission-Oriented Design

> *"[Mission-Oriented Design] attempts to produce transformational systemic change, by defining ambitious 'North Stars' (Missions) to motivate change, and building diverse fleets for navigating and sailing towards them." (Hill, 2022)*

Mission-Oriented Design draws on mission-oriented innovation theory to reframe design's Operative Reason around 'public value' generation. Rather than maximizing economic growth, it emphasizes the orchestration of institutional and societal capacities to act on complex public challenges (Mazzucato & Dibb, 2019), similarly to Transition Design. Design here functions as strategic statecraft: a means to direct innovation towards collectively beneficial outcomes, not simply accelerate it (Kattel & Mazzucato, 2018).

This reframing also redefines the Design Object. As in Transition Design, the Object shifts from discrete deliverables to a constellation of open-ended and coordinated interventions designed to produce valuable systemic reconfigurations. Mission-Oriented Design does not create a singular artefact nor a system trajectory, but an evolving portfolio coalesced through negotiation, prototyping, iteration, and institutional co-creation. Design becomes a steward of inter-institutional learning and adaptive governance. On the other hand, Mission-Oriented Design reinstates assumptions: design produces societal utility, stakeholders have agency over/with institutions, and change is both necessary and creative of value.

A key epistemic shift emerges in the understanding of Design Agency. Where Transition Design aims for consensus, Mission-Oriented Design thrives with uncertainties. It adopts an effectual logic; the goal is less to predict or plan futures than to act within indeterminacy, shaping emergent problem spaces through situated experimentation. The missions are crafted not to reduce uncertainty, but to 'feel' reachable and catalyze a 'coalition of the willing' (Mazzucato & Dibb, 2019). Where futuring serves to 'transcend differences' in Transition Design, missions serve to 'transcend uncertainties' (Hill 2022). This draws from Sarasvathy's (2001) notion of entrepreneurial effectuation: working with available means to co-create new ends. This shift offers a pragmatic alternative to deterministic backcasting. Instead of aligning stakeholders to one agreed vision, it constructs productive tensions as engines of mobilization.

Yet, epistemic regularities are carried over. The approach presumes institutional capacity, civic trust, and shared legitimacy that may not hold in fragmented or unjust contexts (Sabel & Zeitlin, 2012). The

approach emphasizes experimentation but downplays antagonism or deeper conflicts: Who initiates the mission? Whose problem is framed? Which publics are rendered visible, and which excluded? On one hand, Mission-Oriented Design inherits a managerial optimism about state-led innovation, risking depoliticization. On the other hand, its entrepreneurial framing risks concealing structural inequalities or epistemic asymmetries. The narrative of volition emphasizes agency while downplaying resistance and contestation. In contexts marked by historical disenfranchisement or epistemic violence, the very idea of a unifying 'mission' may appear exclusionary.

3. Speculative Design

> *"At its worst product design simply reinforces global capitalist values. Design needs to see this for what it is, just one possibility, and to develop alternative roles for itself" (Dunne & Raby, 2013, p. 59).*

This statement denies the inevitability of socio-technical regimes and claims their contingency. Here, the present is not only caused by past actions, but enacted by our interpretation of the future infused by dominant ideologies (Mitrovic et al. 2021). Design's task, then, is not to resolve problems, but provoke dissonance to 'unsettle the present' and its dominant realities (Auger, 2012; Geiger, 2022), and "give forms to the multiverse of worlds our world could be" (Dunne & Raby, 2013, 160). Its Operative Reason rejects design as a service to progress or productivity. Instead, it affirms design's role in igniting imagination and critical awareness by crafting situations of undecidability.

Thus, the Object of Speculative Design leaves behind solutions, be it products or portfolio of interventions. The Object is critique of the solution mindset itself. Speculative Design's props, lure, experiences displaying discomfort, wit, or satire are critical in that they help suspending shared belief and foster interpretative gaps (Zhang, 2022). Creating such holes in the knowledge underlying the power of the official reality opens avenues to changing oneself, through what Geiger (2022, p. 35) calls "the art of not being governed quite so much".

Design Agency here lies not in problem-solving but in staging critical encounters. Dunne and Raby (2013) recommend 'telling worlds rather than stories' to help people participate more actively and present the 'interest of the powerful minority'. This projective logic exaggerating, defamiliarizing, or fictionalising plausible worlds serve a 'mirror-holding' function (Auger, 2012). It surfaces situations of undecidability where no dominant knowledge rules. These affective experiences prompt publics to question unquestioned assumptions and rehearse otherwise-living. Malpass (2013) and Zhang (2022) describe this as an aesthetic politics, where audiences carry the burden of interpretation and transformation.

Yet, this orientation reintroduces epistemic regularities. It presumes cognitively free, reflexive audiences, particularly those with the time, education, or inclination to reflect. While claiming emancipation, Speculative Design often positions itself above mainstream practices, sustaining an oppositional, potentially patronising posture (Malpass, 2013). It also reinstalls the trope of an inactive public awaiting activation through design, a logic Rancière (2009) critiques for presupposing inequality under the guise of emancipation.

Ultimately, Speculative Design operates at the people, with the people, but rarely about the people and their 'real issue'. As Mitrović et al. (2021) warn, it may offer critique without consequence: Buying

time with fiction while leaving underlying structures intact equates to a 'deferment of responsibility'. The political efficacy of Speculative Design, therefore, hinges less on its ability to provoke reflexivity, and more on whether those provocations are situated in, and accountable to, 'real' struggles.

4. Pluriversal Design

> *"[The] 'abstract reasoning' account of knowledge leaves out of the picture a hugely important feature of knowledge production that design thinking does not: the fact that creation is always emergent (...), self-organized and other-organized, (...)" (Escobar, 2018, p. xv)*

Pluriversal Design introduces a profound epistemic discontinuity; it challenges the universalizing worldview of Western modernity prizing separation and abstraction by affirming the coexistence of multiple ontologies, or 'worlds that world themselves' (Escobar, 2018; Leitao et al., 2024). Its Operational Reason, the 'pluriverse', is not growth through optimization or efficiency, but the sustenance of interconnected lifeways rooted in relationality, care, and reciprocity (Kothari et al., 2019; Van Zeeland, 2024). Design, here, becomes a practice of nourishing autonomous worlds rather than shaping universal futures.

The Design Object refocuses on the enactment of autonomous worlds as autopoietic systems: selfproducing and self-sustaining collectives, open to interaction yet preserving coherence (Maturana & Varela, 1987). Pluriversal Design does not create choices of solutions or interventions but situated ecologies of practice "transforming the kind of beings we desire to be" (Escobar, 2018, p.133). Design is post-subject/object divide; it no longer produces from outside but supports processes of worlding from within.

The Pluriversal Design Agency is radically decentered. It arises through 'communals'; These are not communities, but collectives formed through resistance, care, and situated knowledge challenging ongoing dispossessions. Designers act as facilitators of self-determination, to contribute to reflexive inquiries into what traditions to preserve, transform, or unlearn 'traditionally' (Escobar, 2018). Projecting, here, entails attuning to emerging desires and co-shaping languages of possibility. This requires deep reflexivity; designers must trace their positionality, colonial complicities, and institutional embeddedness (van Zeeland, 2024). It also calls for aesthetic literacy to co-design from within rather than about or for others. As Leitão (2022) argues, such design is performative, ontological, and transformative. It makes visible what already exists and enables it to thrive.

This epistemic reorientation is not without tensions. One recurring epistemic regularity is the emphasis on 'authentic' autopoiesis, which can romanticize niches and obscure power dynamics within markets (Büsse, 2022). It also assumes that interacting entities are self-contained. Additionally, framing autonomy against universal reason risks falling into a dualistic logic it seeks to overcome as Escobar (2018, p.120) acknowledges (see also Fry, 2016; Julier, 2017). The challenge lies in holding onto difference without categorizing or fixing it. Moreover, in seeking to empower the pluriverse, designers may inadvertently instrumentalize indigenous or subaltern knowledges within Western frameworks of design. The proximity to design anthropology and the politics of translation raises questions: Who translates, for whom, and under what conditions?

5. More-Than-Human Design

> *"Humans and nonhumans are symmetrically entangled; design must account for all agents" (Wakkary, 2021, p.5).*

More-Than-Human Design introduces an epistemological shift rooted in the posthumanism critique of modernity. While Pluriversal Design challenges coloniality, More-Than-Human Design confronts what Whitehead (Sehgal, 2018; Stengers, 2010) identifies as the Gordian knot of modern knowledge production: the 'bifurcation of nature'. To produce matters of fact, modern science distinguishes a bare nature, cleaned of any social or cultural elements, from a dreamed nature, with values, expressions, emotions layered onto bare nature (Sehgal & Wilkie, 2023).

Situated beyond the bifurcation of nature, More-Than-Human Design posits agency stemming from entanglement of humans, nonhumans, and material-semiotic assemblages (Giaccardi et al., 2016; Wilkie, 2016). This entangling entails that entities lack an independent, self-contained existence. Entities do not preexist their interactions but emerge through, and as part of, their material-discursive intra-relating (Barad 2007; Gherardi, 2021). This Operative Reason grounds participation within flat, relational ecologies where all beings affect and are affected by the world (Sehgal & Wilkie, 2023).

Here, the Design Object is not a discrete intervention but 'collective life'. This is an affirmative 'politics of life' (Braidotti et al., 2013), a multispecies entanglement of organic, technical, material, and discursive forces against postmodern societies of control ways of governing the livings. This collective life overcomes hierarchical distinctions between subjects and objects; it emerges through mutual responsiveness. The object becomes a distributed ecology of becoming, not a goal-oriented artefact.

More-Than-Human Design Agency is likewise redistributed. It is not the property of the designer, but a shared, evolving capacity among humans, animals, plants, technologies, and artefacts. Designers act as diplomats between worlds, engaging through what Sehgal and Wilkie (2023) call an 'athletics of attention'. Aesthetic practice becomes central. As the capacity to be affected and to affect, aesthetics pertains to all beings. It is a pre-cognitive mode of knowing, as a mode of sensing and being sensed, shaping subjectivity through affect. More-Than-Human Design Agency extends through diverse methods: thing ethnographies, parliaments of things, speculative rituals, and more-than-human infrastructures (Giaccardi et al., 2016; Nicenboim et al., 2024).

Yet, More-Than-Human Design reintroduces epistemic regularities. A strictly flat ontology may obscure structural power asymmetries (e.g. capitalist, colonial, or gendered) that continue objectifying across species boundaries (Schleusener, 2021). Moreover, operationalizing multi-species or multi-agential perspectives remains an unresolved practical challenge. Translating ontological commitments into actionable design methods often requires situated improvisation and aesthetic literacy not yet widely institutionalized.

Synthesis of findings

By introducing epistemic discontinuities to overcome design's 'defuturing effects' (cf. Fry, 2020), emerging epistemologies confer to design new ways to knowing and projecting futures. For instance, Transition Design projects the possibility of agreeable system-level reconfigurations to foster 'effects of transition' out of problematic socio-technical dead-ends. Mission-Oriented Design projects ambitions that feel reachable to galvanize 'effects of volition' among a coalition and catalyze

coordinated experimentations and institutional transformations. Speculative Design projects current rules and institutions into the future to generate 'mirror effects' stimulating critical imagination untamed by official realities. Pluriversal Design fosters 'effects of self-determination' by projecting ecologies of practice rooted in relational, embodied, and culturally enduring ontologies. More-Than-Human Design plays with 'effects of diplomacy' facilitating mutual sensing and coordination by projecting entangled becoming across species, systems, and materialities.

Taken together, these effects concern the context of design projects rather than only designed objects. This corroborates the shift of considering design as problem-finding rather than solution-finding (as documented by Jensen, 2023; Jönsson, 2014; Marenko, 2018). Furthermore, these effects are more than causal impacts on the world. They operate more like optical effects, altering the perception and intensity of what is known as possible in a given world, without concealing their causal root. Beyond problematizing the design project, emerging design approaches conceive projecting less as a planning than a piercing, poking, spiking, protruding through a given system of knowledge. Projecting means troubling the taken-for-granted ground of the negation of future here and now.

In doing so, emerging design approaches reconceive the epistemic core of design: its projective function. They do not intent to project better but to alter what we know as projecting. The meaning of projecting shifts, from materializing potential outcomes to generate knowledge about the future, towards assembling entangled and sensitized capabilities that conspire anticipatory worlds from within. The Object of Design comprises more of what resists than what resolves. It becomes an intricate matter of subjectivation rather than disentangling objectivation. This is true even for emerging design approaches based on humanist theoretical frameworks; for instance, Transition Design or Mission-Oriented Design aim at creating forms of collective agency. Projecting becomes less of a creative planning exercise than a subjectivity building experience.

Discussion

This paper contributes to discussing the futuring potential of 'new design philosophies' in three ways. First, it clarifies the epistemic shifts introduced by five emerging design approaches to expand what design can know, do, and become. Second, it delineates how these emerging design epistemologies do more than equipping design with projective capabilities; They reframe the very notion of projecting in design. Third, this paper offers *anticipatory archaeology* as a conceptual method for surfacing the theoretical groundings of design approaches in practice.

INSERT TABLE 2

Epistemic Reframing of Projecting

Historically, design's projective function aimed at reducing uncertainty through planning before delivering (Galle, 1999; Krippendorff, 2005; Vial, 2014). Design furthered its projective ability to conceive what-does-not-yet-exist in context of the systemic indeterminacy (cf. Buchanan, 1992). But such art of projecting remains problematic as it objectifies. As long as design uses representations to enact a world, the design project monopolizes the relation to the future (Giutterez, in Escobar et al., 2024). In so doing, it carries unwanted effects of a worldview, formed out of a particular culture projected into the world that design actualizes (Fry, 2020; Valtonen, 2020). Galle (1999) already

remarked that projecting also triggers the subjective question of 'what becomes of us in this current world?' once we envision and enact the yet-to-be-conceived world.

In contrast, emerging design epistemologies embrace indeterminacy as an ethical condition. Projection no longer means the action of objectifying paths toward probable outcomes, but the ways of conspiring with what troubles established certainties to effectuate alternatives to preconceived futures. For instance, the desirable futures earmarked in Transition Design or Mission-Oriented Design approaches do not solve a present challenge. These futuring activities serve to transcend either differences or uncertainties by puncturing the status-quo belief of unchangeable complex institutional landscapes and triggering coalitions of concerned actors devising interconnected interventions. Even the work of backcasting introduced in Transition Design epistemology, which punctually objectifies desirable transition pathways, is an iterative process convoking concerned stakeholders to oversee and devise variations of these transition pathways (Irwin & Kossoff, 2024), therefore a long term subjectivizing activity. Speculative Design projects ambiguity and undecidability in everyday situations to poke publics' beliefs, foster debates and trigger alterations of habits. Pluriversal Design and More-Than-Human Design project Others' modes of being and sensing to hole the knowledge on what is possible and allow new sociabilities of inter-dependence to flourish.

In other words, emerging design epistemologies propose to generate 'futuring' effects by redefining how 'projecting' can be done in practice. Before devising better, inclusive, decolonial, or sustainable future outcomes, emerging design approaches identify what 'projects' (pierces) through a given regime of knowledge. This discursive evolution goes beyond reframing design's role as 'provocative' for audiences or end-users (see for e.g. multiple articles in DRS 2022, 2024). Rather, these emerging design epistemologies enable design to problematize a given regime of knowledge and effectuate, in practice, new articulations of propositions and matters of fact, different from those established in dominant regimes of knowledge.

In practice, this epistemic reframing of projecting conserves characteristics of what a project is; It is temporary (fluid), a first of its kind (never done before), and something imagined (Jensen, 2023). Yet, it is not necessarily of the future. Rather, it is critically of the present. It echoes Redström's (2017) reading of futuring as a 'present-ing' alternatives or futures already present, real but not yet actualized. Secondly, the time of the project becomes open-ended as Tonkinwise (2015) noted; it is not a phase of planning prior to, and closed with, its realization. The object is co-constitutive of the assembling of a problematizing "thing" that generate insights and anticipates worlds (see for e.g. Giaccardi et al., 2020; Hill, 2022; Wilkie & Michael, 2025). While the studied design approaches remain outcome-led, that outcome is more about grounding an inclusive, sustainable ability to design than a ready-to-use solution to a given problem. Once self-sustaining, design professionals leave this venture to itself and engage with other design projects. Thirdly, fostering the conditions of emergence of such critical and autonomous subjectivities entails creating unknowns as a reflexive space eluding the power of knowledge, what Geiger (2022) names spaces for (de)subjectivation. In their guide for better design briefs, Wilkie and Michael (2025) encourage designers to site and attune oneself as 'idiots', inventing more interesting questions rather than resolving pre-defined problems. This art of projecting uncertainties echoes explorations to consider design practice as event, simultaneously defined by and defining all entities touching it (Jönsson, 2014; Wilkie, 2014). In these instances, ethics can be

understood as the 'joyful encounters that augment our capacity to affect and be affected by others' (Thanem & Wallenberg, in Gherardi, 2021).

Challenges remain. Translating high-level epistemic ruptures into day-to-day design practice demands new facilitation techniques, educational curricula, modes of prototyping, and evaluative metrics. For instance, when activities of observing and representing become un-disconnected from intervening and constructing (Jensen, 2010), qualitative research approaches cannot presume distinct observant and informant subjects, nor a stabilized, universal notion of data, nor an assigned voice or 'I' speaking, experiencing, etc. (Gherardi, 2021; Wilkie & Michael, 2025). How to individuate a 'research problem' in the assemblage of heterogenous entities constantly intra-acting, never stable, and never the same? How to conceive of 'design briefs' activating this mode of projecting? How to prevent flat ontologies to obscure entrenched capitalist logics that persist beneath egalitarian rhetoric (Schleusener, 2021)?

Additionally, this emerging discipline of the project still needs to make itself necessary, just as the art of projecting before realizing made itself necessary in times of resource constraints and rationalization imperatives (cf. Vial, 2014). Projects documented in studied emerging design approaches (see texts in table 1) suggest that projecting as troubling the unquestioned is already valuable for innovation industries, system shifters, or any stakeholders aiming at disturbing the status-quo to make a difference (Giaccardi et al., 2025; Hill, 2022; Irwin & Kossoff, 2024; Mitrović et al., 2021). Yet, rendering such art of projecting uncertainties *necessary* beyond the fact of problematizing the design project raises questions; What change in our shared rationale would ratify as valuable inventive problem-making before problem-solving and the catalyzing of critical subjectivities conspiring alternative futures? Conversely, what are the limits of such art of projecting uncertainties in times of our symptomatic attraction for a permanent present disconnected from ambiguous pasts and uncertain futures? And what is the required intensity for the trouble (making things less certain, less automatic) to be significantly effective (reducing effects of de-futuring for others) and not simply signaling a difference (staying within the boundaries of established media bubbles and echo chambers)?

This study proposes the *anticipatory archaeology* as second contribution. It differs from 'archaeologies of the future' with fictive remnants triggering an imagination of a coming civilization (see e.g. Geiger 2022). In contrast, the *anticipatory archaeology* is an analytical lens for mapping epistemic discontinuities introduced to actualize change in ways of doing design.

This textual approach matters for practice as it enables design professionals to sense the effects of mapped epistemic shifts and critically and collectively engage with the effects of these new paradigms in practice. While theories have the potential to make things less certain in practice, the *anticipatory archaeology* enables those playing with theoretical frameworks to delineate, and therefore manage, the grounds and effects making things less certain within the project time. The approach proposed in this paper requires design practice and referred theoretical frameworks to be documented. The historically biased availability of textual resources on design practices and design reflections limits the study of variety of types, languages, and geographies of ways of designing (Kaszynska & Kimbell, 2025).

Conclusion

This research investigates the grounds on which emerging design approaches intend to equip design to bring about meaningful change in the world. These emerging design approaches leverage

philosophical and social science theories to foster design's ability to reflect on its ontological potential of futuring (and response-ability for not generating de-futuring effects by design). The *anticipatory archaeology* of discontinuities in meaning mobilized by emerging design approaches from the theoretical frameworks to change design reveals that design's ontological evolution hinges less on acquiring new tools to project what design designs (Fry, 2020) and more on transforming the very meaning of what it is to project. The arts of projecting are less about creative planning which tends to rationalize and economicize the future, than an ethical and political subjectivity building experience to figure out livable worlds. Because design is ontological as a discipline of the project, orienting its impact in the world needs to focus on the art of projecting. In other words, design can design change on the ground that creative techniques of projecting evolve towards ethical projections in practice.

This research acknowledges avenues for research. First, the selected emerging design approaches remain 'discussed' rather than 'applied' to date. Future research could empirically examine through interviews or observations how these theoretical ruptures manifest in real-world projects or pedagogical strategies for cultivating ethical projection skills. Further explorations on cross-cultural interpretations of emerging design paradigms beyond English-language discourse would contribute to surface the plurality of the art of projecting. By embedding anticipatory archaeology into design education and practice, the field can sustain critical reflexivity and chart more deliberate pathways toward socially and ecologically just futures. A third avenue for research arises from the evolution of design beyond the boundaries of a discipline, a methodology or a defined object of science, towards the open field of a study, a mode of research and inquiry composed around a concern. Indeed, the object of design is a subject of pluri-disciplinary concerns and problematization more than a rationalization or objectivation of a problem that calls for a solution.

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Table

Table 1. Corpus & Categories

	Design literature	Theoretical grounding
Transition Design	Boehnert (2008) Design and transition: What designers can learn from the transition movement. Irwin, Tonkinwise, & Kossoff. 2014. Provocation and Briefing Kossoff, Irwin & Willis (2015) Transition Design Tonkinwise, (2015) Design for Transitions – from and to what? Boehnert (2018) Design, Ecology and Politics. Towards the Ecocene Irwin & Kossoff (2024) Transition Design Wicked Problem Resolution	Capra (1996) Living system theory Meadows (1999) System thinking Geels (2004) Multi-Level Perspective Bookchin (2005) Social Ecology Ehrenfeld (2008) Sustainability by Design Grin, Rotmans & Schot (2010) Socio-Technical Transition Theory Hopkins (2014) Transition Town
Mission Oriented Design	Hill et al. (2022) Mission Oriented Design Malde (2024) Mission possible? What the UK can learn from Sweden for implementing mission-led government and ways the civil service can adapt	Sabel & Zeitlin (2012) Experimentalist Governance Mazzucato (2017) Mission-Oriented Innovation Policy Mazzucato & Dibb (2019) Missions, a beginner's guide OECD (2021) The Design and Implementation of Mission-Oriented Innovation Policies Mazzucato (2021) Mission Economy
Speculative Design	Dunne & Raby (2001) Design Noir Candy (2010) The Futures of Everyday Life Auger (2012) Why Robot? Dunne & Raby (2013) Speculative Everything Malpass (2015) Between Wit and Reason Laranjo (2016) Design should be decolonized Raby (2018) Stitching Worlds, Building Walls, Designing Drones Candy & Lockton (2019) Future Studies Mitrović et al (2021) Beyond Speculative Design Zhang (2022) Imaginary Ethics	Barthes (2009) Mythologies Stengers (2014) On Science Fiction Stengers (2015) Gaia, the Urgency to Think (and Feel) Ursula Le Guin (2016) Freedom Baranzoni (2024) After Politics. Governing through Affect?
Pluriversal Design	Escobar (2017) Designs for the Pluriverse Abdulla et al. (2019) A Manifesto for Decolonizing Design Leitão (2022) From Needs to Desire Büsse (2022) What are the politics of ontological design? Driesse (2023) Leaving Dry Land Akama & Yes (2023) Entanglements of Designing Social Innovation Leito et al (2024) Pluriversal Design as a Paradigm Ansari (2024) Decolonization & Knowledge in Design	Maturena & Varela (1987) The Tree of Knowledge Wynter (2003) Unsettling the Coloniality of Being/Power/Truth/Freedom Descola (2014) Ontologies Tsing (2015) Mushroom of the end of the world Berry (2022) The Agency of (Planetary) Feeling
More-Than-Human Design	Cila, Giaccardi, Speed (2016) Things as co-ethnographers Wilkie (2016) Aesthetics, Cosmopolitics and Design Giacardi (2020) Casting things as partners in design Beckett (2020) Knowledge Conditioned by the Void Sehgal & Wilkie (2023) More-Than-Human aestethics Tironi et al. (2023) Design For More-Than-Human Futures Giacardi & Bendor (2024) Rethink Design Nicenboim et al. (2024) More-Than-Human Design in Practice Folkmann (2024) Agency Context and Meaning Poikolainen Rosén & Heitlinger (2024) Introduction to the forum More-than-Human Design in Practice	Whitehead (1967) Adventures of Ideas Stengers (2005) The Cosmopolitical Proposal Bennett (2010) Vibrant Matter Braidotti (2013) After Cosmopolitanism Tsing (2013) More-than-human sociality Haraway (2016) Staying with the Trouble Latour (2018) Esquisse d'un parlement des choses

Table 2. Aggregated Findings

	Transition Design	**Mission-Oriented Design**	**Speculative Design**	**Pluriversal Design**	**More-Than-Human Design**
Epistemic Discontinuity	From finding solutions to transitioning out unsolvable problems	From individual market solutions to collective public value generation	From usability to critique of current ideologies	From universalism to relational autonomy of multiverse	From human-centeredness to ontological symmetry of all beings
Operative Reason	Consensual aim to transcend differences & backcasting of socio-technical transitions	Effectuation logic to transcend uncertainties & public value to orient innovation	No inevitability & radical contingency of any given order	Ontology of relationality, autopoiesis, & Sustainment over efficiency	Ontological symmetry, Sympoiesis, & pre-cognitive sensing & semiotics
Emerging Modes of Projecting	Transition Effects; Projecting as agreeable way out of wicked problems	Volition Effects; Projecting as effectuating and experimenting with coalitions of the willing	Mirror Effects; Projecting as critical distancing & reflexive matter	Self-determination effects; Projecting as ontological affirmation	Diplomacy effects; Projecting as co-sensing & aesthetic attunement
Design Agency	Systemic mediators enabling consensus-based futures	Coalition-led direction-setting through goal-oriented experimentation	Powerful minorities presented through reflecting worlds	Communal labor of self-determination and epistemic unlearning	Pre-cognitive modes of sensing and negotiating multispecies becoming
Design Object	Sustainable ways of living (via socio-technical regime evolution)	Public value spillover (via a portfolio of interventions)	Critical prompts occasioning ideological reflexivity	Autonomous world(s) beyond universal reason	Collective life across human and nonhuman assemblages
Acknowledged Side Effects	Consensus may mute dissensus; Risk of neglecting subaltern voices	Utility-driven optimism may mask systemic injustices	Deferment of responsibility; Risk of corporate co-optation	Romanticizing niches; Reintroduction of binary oppositions	Objectification blindness in flat ontology; Difficulty to operationalize