

# The Parameters of the Posthuman

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Most posthuman approaches dismantle the idea of the environment as a conceptually neutral ground (or its corollary, nature as originary or pure) by demonstrating the constitutive role of technology in various aspects of the environment. One reasonably comprehensive articulation of this claim is that of Crutzen and Stoermer, who coined the term "Anthropocene" to describe the present geological era, one in which man (anthros) has become the most significant factor affecting global environmental change.<sup>1</sup> Other efforts to qualify the posthuman continuum between human, technology and nature include White and Wilbert's anthology *Technonatures* (2009), which translates the anthropocene concept from the geological and evolutionary to the ethno-cultural level, describing how various human social groupings utilize technologies to construct their own versions of nature, which the authors term "social natures."<sup>2</sup> Architecture is undeniably implicated in such revisions of the term "nature," as David Gissen demonstrates in his book *Subnatures* (2009), which catalogues a material-aesthetic incipient in some contemporary architectural practices that makes use of "peripheral and often denigrated forms of nature."<sup>3</sup> Such recent qualifications of architecture's environment as "sub-natural" or "techno-natural," or even "socio-natural," jibe with the parametric naturalization of the environment as a flexible matrix of digitally-coded objects.

According to Patrik Schumacher's manifesto, parametricism promotes "the total integration of the evolving built environment, from urban distribution to architectural morphology," using "parametric design tools and scripts that allow the precise formulation and execution of intricate correlations between

elements and subsystems."<sup>4</sup> If, in Schumacher's terms, parametricism is a strategy that optimizes relationships between geometrically-related objects, then prefixes (sub-, techno-, socio-) invoke the forces, desires and drives that resist the "natural" orders presumed by parametricism's binary codification of its design environment. The posthuman may be considered a theoretical framework for such oppositional forces, yet rather than reiterating what Schumacher terms yet another "negative heuristic," it is an approach that is projective in staging scenarios that address the hybrid subjects of the Anthropocene period. This paper therefore recruits another "post"—the posthuman—to reflect on the slippery status of the "post-parametric" environment, marking our changing relationship to nature and registering what we term an emerging architectural imagination of posthuman hybridity. The work of *The Living and R&S(n)*, featuring animal subjects and vegetal cyborgs, engage hybrid subjects, that challenge the normalizing filters of parameterized behavior.

Posthumanism conjures almost as many different positions and interpretations as it does species that represent the continuum between human, animal and digital life. Advances in biotechnology fuel a current debate on human medical enhancement as a form of posthumanity: Fukuyama's *Our Posthuman Future* (2002) decries the "dehumanizing" effects of biotechnological advancement, while Ray Kurzweil, in his *The Singularity is Near: when humans transcend biology*, (2005) promotes a technological positivist (or *transhumanist*) evolution of the human species, involving the singular merger of human intelligence with human technology by 2050. Yet posthumanism also designates a longstanding

philosophical project that questions the foundational myths of man, a position that recalls Foucault's haunting conclusion to his *The Order of Things* (1966), as well as the Derridean critique of Western binary constructs and Deleuzian models of fluid and distributed organization. In coming to understand what posthumanism offers for an architectural theorization of the environment, we will find that many aspects of these two positions—posthumanism as techno-transcendent versus posthumanism as disciplinary revisionist—in fact blend. Two architectural themes that offer examples of this hybridization—the concepts “subject” and “site” may demonstrate how posthuman thought presents a counter-environment to the parametric.

### HYBRID POSTHUMAN SUBJECTS

Posthumanist perspectives in cultural and science studies highlight the incommensurable varieties of human experience harbored by individuated bodies that, unlike the idealized proportions of Vitruvian or Modular man, are in constant flux. In our contemporary world, the image of the human body is being reshaped continuously by its fusion with technological devices. Implicit in discourses on ergonomics following the Second World War, this idea took physical form when 1960's aerospace engineers developed a cybernetic organism (“cyborg”): a self-regulating human-machine system capable of enabling human life in new environments. Feminist theorist Donna Haraway later popularized the term in her 1985 “A Manifesto for Cyborgs,” invoking the cyborg as a sophisticated blend of body and machine that challenges the organic composition of the human while embodying its particular political and economic context. Haraway defines the concept in her introduction:

Cyborgs are post-Second World War hybrid entities made of, first, ourselves and other organic creatures in our unchosen “high-technological” guise as information systems, texts, and ergonomically controlled labouring, desiring, and reproducing systems. The second essential ingredient in cyborgs is machines in their guise, also, as communications systems, texts, and self-acting, ergonomically designed apparatuses.<sup>5</sup>

Haraway intends her “cyborg” to frame a sly critique of feminism; she offers an “ironic political myth,” whose subversive humor registers the discrepancy between the naturalisms attributed to gender through biology and the lived experience of a reality infused with technology. Indeed, the Promethian

possibilities of the body, represented as monster, alien, cyborg or animal, brings identity politics into closer dialogue with technology and undermines essentializing affiliations of the body with nature.<sup>6</sup>

The posthuman is equally a product of what might be termed the globally networked economic subjectivity of the late twentieth century, a postmodernity for which architecture served as a primary reference. Architectural theorist Reinhold Martin suggests that the architectural “endgame” of postwar corporate modernism is a “‘postindustrial’ or even ‘posthuman’ subject, a subject immersed in and constructed by data flows and patterns.”<sup>7</sup> Martin describes how organizational models have evolved to adopt hybrid, disembodied and material forms, in accordance with the patterns of information by which they are constituted.

The idea that the hybrid status of the body—its interpenetration by and translation into patterns of information—is not new, but is closely bound to mid-century cybernetic research, is well developed by N. Katherine Hayles in her integrative book *How We Became Posthuman: virtual bodies in cybernetics, literature and informatics* (1999). “In the posthuman,” writes Hayles, “there are no essential differences or absolute demarcations between bodily existence and computer simulation, cybernetic mechanisms and biological organism, robot teleology and human goals.”<sup>8</sup> Hayles stresses that posthuman subjectivity is relational; distributed across and outside of the body.

The cybernetic underpinnings of modern discourses on proportion are also described by Christopher Hight in his *Architectural Principles in the Age of Cybernetics* (2008). Probing the legacy of the Vitruvian figure in postwar formulations, Hight locates the blurred contours of the humanist body in both post-structuralist and phenomenologist theorizations of architecture and points to the contemporary proliferation of architectural bodies as blobs, mutant figures and protheticized structures. However, his statement that “cybernetics and the cyborg stand in contemporary theory for the post-human” oversimplifies the scope of the posthuman project and to a large degree, overlooks the hybrid subjectivities already figured in certain contemporary architectural practices.<sup>9</sup> What we might say in this regard is that posthumanist theorists extend the cyborg metaphor to recruit the body as a site of cultural analysis.

The hybridity that extends beyond the human body envelope, an entangled embodiment comprising networks of humans and non-humans, is extended to politics in the work of Bruno Latour. In *The Politics of Nature* (2004), Latour describes a “non-modern” politics embracing a “republic of more-than-human, less-than-natural assemblages.”<sup>10</sup> This ecological idea of assemblage has occupied the margins of architecture since the early 20th century, from Patrick Geddes’s ecological planning in his 1915 *Cities in Evolution* to John McHale’s work with Bucky Fuller on global feedback systems and his 1970 *The Ecological Context*. The networked and heterogeneous quality of an assemblage runs counter to the modern idea of making categorical distinctions, such as among human, animal, nature and machine, an opposition that Latour develops in *We Have Never Been Modern* (1999). Latour and Hayles frame their visions of socio-technical assemblages within the politics provoked by rapid technological change. As Hayles informs us: “What it means to be human is finally not so much about intelligent machines as it is about how to create just societies in a transnational global world that may include in its purview both carbon and silicon citizens.”<sup>11</sup> In *The Politics of Nature*, Latour differentiates the posthumanist politics of “collectives,” a term with a similar connotation as “assemblages,” from the humanist politics of nature. Latour recommends a politics that can only be applied site- or circumstance-specifically. This pragmatist approach is meant to explicitly encode the operating principles of an ecology: the integration of as many elements present in a given place or situation at a moment in time, and the generation of as full an understanding of their interactions as possible. The humanist politics of nature, by contrast, is based upon a static conception of nature versus man; it prescribes only a limited set of objectifying and exploitative interactions between man and his surround; and as such it prevents systems (such as man, animal, machine, society) from co-evolving.

The assemblage that is architecture locates itself within two shifting, at times indistinct overlapping networks: the network of architectural discourse; the network of material elements. In the posthuman understanding of architecture, discursive and material networks, interacting cybernetically, accommodate human, hybrid and non-human users.

## DESIGNING FOR HYBRID SUBJECTS

Architecture imagined program addressing mechanical if not silicon subjects already in the 1950s as postwar research in cybernetics prompted new interpretations among artists, engineers and architects. Nicolas Schöffer’s *Tour Spatiodynamique* (1954) was equipped with a mechanical system enabling it to respond to its changing environment conditions with sound and motion, while his cybernetic apparatus CYS-1 (1956), a “robot-dancer,” performed with Maurice Béjart’s ballet dancers, among its most memorable stagings occurring on the rooftop of Le Corbusier’s Cité Radieuse in Marseilles.

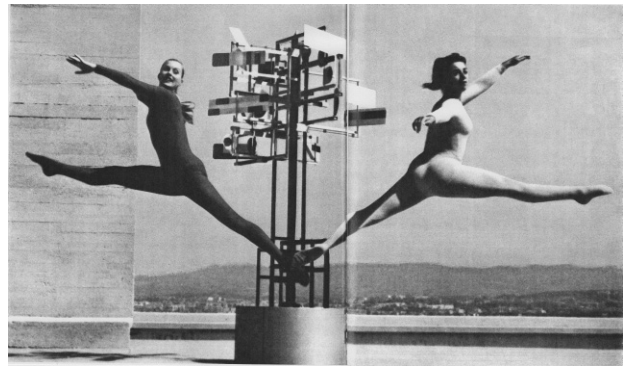


Figure 1. CYS-1, *Atomes* v. 137 (October 1957)

Schöffer’s collaboration with architect Claude Parent extended this exploration of interactive construction to an urban scale with the *Ville Spatiodynamique*. Related efforts could include Cedric Price’s visionary Fun Palace (1961-4); a collaboration between the architect, the theater director Jan Littlewood and cybernetician Gordon Pask, the Fun Palace was conceived of as a building with “a mind of its own,” its provisional form orchestrated by moving gantry cranes and temporary stages, responsive to its public as a dynamic and self-regulating scaffold for leisure activity. Yet while the cybernetic imperative of projects such as the Fun Palace proposed to integrate human with machine on the inside of the building, it did not consider that its exterior environment might harbor additional non-human subjects.

In his 2003 essay, “Towards a Theory of Architectural Program,” architectural historian Anthony Vidler suggests that “a contemporary sense of program would imply the radical interrogation of the ethi-

cal and environmental conditions of specific sites, which are considered as programs in themselves."<sup>12</sup> The radical interrogation of program that the posthuman approach brings to bear upon the discipline would further integrate the ontological and ethical status of animals and plants to make explicit, as it were, the assemblage that contemporary architecture addresses as its subject. For example, buildings designed for amphibious, avian and aging subjects (often treated as if they too were not human) seem to go this necessary step in folding the environmental conditions of specific sites back into the performance of the building.

The hybrid subjects for the environments imagined by The Living and R&Sie(n) defy parametric reason; these subjects are mischievous, with behaviors that can hardly be rendered into logical patterns let alone binary code. Similarly, both architecture firms gravitate to what is framed as "architectural experiments:" instead of algorithms for predictable outcomes, experiments produce a type of performance. This performative quality differs from parametric optimization or the athletic understanding of performance, and it instead stages the conditions for unpredictable results, producing what could be considered a scientific (as opposed to a filmic) outtake. A scientific outtake questions the status of the experiment and revels in the comic potential inherent in the meeting of matter and hypothesis. It encapsulates a critique of the parametricist's vision of total quantification. The meeting of living matter with reasoned hypothesis produces an assemblage that can not be so easily distanced from its object of study and prompts behaviors that, while comic, intersect with and reveal social anxieties about the environment.

If the parametric understanding of the environment yields aesthetic objects that reiterate a modernist desire for delivering a formal equilibrium between body and landscape, then the counter to this static vision of the environment may include the hybrid subjects and unreliable sites of The Living and R&Sie(n).

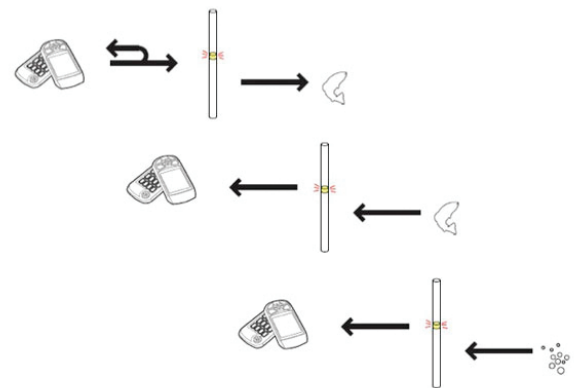
### THE LIVING

The Living presents work such as *River Glow*, and its successive reformulation with Natalie Jeremijenko in the 2009 *Amphibious Architecture*, within the framework of obtaining real-time data on water quality.



Figure 2. The Living, *Amphibious Architecture*, 2009, courtesy of the architect.

Consumer electronics, embedded chips and existing communications systems are reconfigured for the aquatic environment: *Amphibious Architecture* is a network of floating tubular light displays equipped with multicolor LED light displays: these act as sensors for water quality and are supplemented by ultrasonic sensors for fish presence and an SMS interface signaling human presence. The project reveals that water, rather than functioning solely as a decorative and conceptually inert surface for architecture, harbors multiple agents: its depth as an urban actor—a non-human assemblage in Latour's usage—can be made visible by simple electronics and low resolution information.



INTERFACE TO DATA, INTERFACE TO PUBLIC INTEREST

Figure 3. The Living, *Amphibious Architecture*, 2009, courtesy of the architect.

This communication network, according to Natalie Jeremijenko, an artist with a portfolio of work oriented towards non-human programs, envisions an

interspecies communication: “fundamentally the interaction was intended for a local audience human, piscine, avian and one or two beavers and turtles.”<sup>13</sup> The aims of this experiment appear modest: will the public interact with fish?; will the signaling system interact with fish?; and will the public interact with water as an animate urban surface? The project’s website offers a tutorial on procedures for SMSing the fish, and offers an important set of diagrams, whose deadpan humor should be savored: communication with fish and water is just an arrow away.

The idea of SMSing fish, or naming fish as collaborators, may be a joke but one which performs in ways that outlasts its punch line if we appreciate the project’s fundamental questioning of architecture’s anthropocentrism.

Moreover, the low resolution of information (lights on or off) and acceptance of ubiquitous communication locates ecological action within the urban context. This context represents a fundamental shift from the remote sites that characterized architectural forays into interspecies communication such as Ant Farm’s Dolphin Embassy, located in its alternative formulations in the sea or in space. The urban context, in projects by The Living in collaboration with Jeremijenko, among others, no longer requires the didactic separation of urban humans from all other species. In distinction from the conservationist approach to the environment as best left untouched by humans and a parametricist approach featuring urban masterplanning that utilizes nature as urban decoration, The Living in integrating piscine, human and media ecologies within an urban experiment visualizes the posthuman continuum of humans, non-humans, and technology.

### R&SIE(N)

A second example may further explicate the interrelation of locality, materiality and a conception of hybrid subjects. *I’m Lost in Paris* is the title of R&Sie(n)’s 2008 Paris residence; a title that plays on the architectural imagination of the Situationist *derive* as much as it does on ecological anxieties about invasive plant species that, like the kudzu colonizing roadside spaces, transform human infrastructure into shaggy green monsters. The actual construction wraps the stereotypical ecological house within a heterogeneous functional membrane cum decorative façade comprised of hydroponic

ferns, glass vessels and digital feedback systems to create a vegetal cyborg in an urban landscape.



Figure 4. R&Sie(n), *I’m Lost in Paris*, 2008, courtesy of the architect.

Site in R&Sie(n)’s scenario is considered differently from the two main spatializations of nature in the city—as the familiar bounded entity of the park or as a set of dispersed decorative strips of urban waterfronts.

In neither scenario does vegetation stray from the boundaries delineated by planners, designers and architects. Yet R&Sie(n)’s building sustains a dialogue of subterfuge with its site: it constructs the fantasy of a primeval forest while simultaneously triggering an array of anxieties for the urban dweller—the overgrown or neglected site harbors the gloomy prognosis of the *memento mori*, that latent within each well groomed Parisian lot lies a potential (and eventual) ruin.

In R&Sie(n)’s work, mesh, plants, water vessels and even their electronic feed-lines become characters endowed with individuated intelligences: they have the potential to eventually encroach or unbuild the functionality of the human residence. The irreducible responsiveness of materials is manifest over timeframes that defy human utility. In *I’m Lost in Paris*, as well as another residence by R&Sie(n), *Spiderthewood* (2007), the meshwork walls of which slowly yield to the pressure of the site’s teeming vegetation, the vegetal occupants threaten to overwhelm human inhabitants. While

this project has been thoughtfully interpreted by Javier Arbona in terms of its anxiety-provoking impact on its neighbors, *I'm Lost in Paris* may equally address the non-human as an architectural subject and engages Latour's proposal to allow non-humans to speak.<sup>14</sup>

The non-human inhabitants of *I'm Lost in Paris*, like humans, rely on feed-lines to supply energy and to siphon off waste. Yet the giant "prehistoric" fern, monstrous in terms of its foreignness to Parisian climes yet playful in its parody of preservationist agendas, requires a nutrient infrastructure whose chemical ratios need to be adjusted by the residence's human inhabitants working alongside digital monitoring systems. The fern is a cyborg, yet one whose facture undermines the technological fetishism against which Haraway had taken aim. Hand-blown glass bulbs are part of the infrastructure sustaining the plants—this clear reference to artisanal manufacture folds into the project's critique of the economizing imperatives of sustainability.



Figure 5. R&Sie(n), *I'm Lost in Paris*, 2008, courtesy of the architect.

Such allocation of labor and luxury for a non-human subject (a fern) reiterate the logics of Bataille's 1949 *The Accursed Share*, a text which set forth an ecological vision of a "general economy" within which surplus energies (sexual and sensual) remain outside of the restricted economy.<sup>15</sup> These surplus energies, "cursed," contaminated by virtue of their heterogeneous quality and therefore outside of conventional usage, nevertheless fuel species' growth. The anemic vision of society config-

ured by modernist efficiency or today's parametric optimization ignores the persistence of behaviors that engage this economy of excess. Inverting the morality of the typical "sustainable house," R&Sie(n)'s Parisian residence simultaneously signals the hybrid subjectivity of its vegetal cyborg and that of the contemporary city as "a topography of spectacular energy expenditure."<sup>16</sup>

A house for a machinic fern might recall projects such as Hejduk's houses for the suicide and for the mother of the suicide, architecture that plays off of the anxiety provoked by the "undesirable neighbor" yet manifests the heterogeneity of subjects produced by the city.

### POST-PARAMETRICISM

The urbanity proposed in the projects by R&Sie(n) and The Living is one comprised of hybrid subjects—an assemblage of human and nonhuman—occupying the urban environment by territorializing space and by instigating multiple spheres of action. The parametricist agenda of "optimizing" urban energies instead returns to a geometrical vocabulary of legible hierarchies and order, suggesting that in order to delineate the city in such aesthetic clarity, only a narrow range of behaviors are permitted. Stable cartographies of ownerships are troubled by the new inhabitants described in this essay: R&Sie(n)'s vegetal cyborg promises to outgrow the boundaries of civilized neighborhoods, just as the piscine subjects in *Amphibious Architecture* remind us of territories that are inherently fluid within the urban landscape.

A posthuman approach to architecture expands the architectural subject beyond the human user, extends the architectural building material to include assemblages of inorganic and organic, and invokes the architectural assemblage as a multi-scale territory. The post-parametric (or posthuman) imagination suggests that what was formerly known as nature is an environment bristling with hybrid subjects.

### ENDNOTES

1 Paul Crutzen and Eugene Stoermer, "The Anthropocene," *IGBP Newsletter* 41, May 2000. While the term "anthropocene" was coined recently, Crutzen and Stoermer locate the beginnings of the Anthropocene period to the 19th century's innovations in industrial production.

2 Damien White and Chris Wibert, "Inhabiting Technonatural Time/Spaces," *Technonatures*:

- environments, technologies, spaces and places in the twenty-first century, ed. D. White and C. Wilbert (Waterloo: Wilfrid Laurier University Press), 1-32, 6.
- 3 David Gissen, *Subnatures: Architecture's Other Environments* (New York: Princeton Architectural Press, 2009), 22.
- 4 Patrik Schumacher, "Parametricism: A New Global Style for Architecture and Urban Design," *AD Architectural Design - Digital Cities*, Vol 79, No 4, July/August 2009, 14-17; "The Parametric City," "Being Zaha Hadid", *Abitare*, 511, April 2011.
- 5 Donna Haraway, *Simians, Cyborgs and Women: the Reinvention of Nature* (New York: Routledge, 1990), 1.
- 6 Andy Miah provides an excellent analysis of the dialogue between cultural and philosophical approaches to posthumanism. The philosophical approaches to destabilizing the humanist tradition include an anti-humanist position (for example, Lyotard, ), ethics of undecidability (Levinas and Derrida), philosophy of technology (Ellul and Heidegger) to which we can add the pragmatic tradition of Rorty and James. Andy Miah, *Posthumanism: A Critical History*, in Gordijn, B. & Chadwick, R., *Medical Enhancements & Posthumanity* (New York: Routledge, 2007). Cultural perspectives on posthumanism are united in the following useful texts: Neil Badmington's *Posthumanism* (2000); Halberstam and Livingston's *Posthuman Bodies* (1995) and Elaine Graham's *Representations of the Post/Human: Monsters, Aliens and Others in Popular Culture* (2002).
- 7 Reinhold Martin, *The Organizational Complex* (Cambridge: MIT Press, 2003), 12.
- 8 N. Katherine Hayles, *How We Became Posthuman* (Chicago: University of Chicago Press, 1999), 3.
- 9 Christopher Hight, *Architectural Principles in the Age of Cybernetics* (New York and London: Routledge, 2008), 189.
- 10 Bruno Latour, *The Politics of Nature* (Cambridge: Harvard University Press, 2004), 63
- 11 N. Katherine Hayles, "Computing the Human," *Theory Culture and Society* 22 (2005), 131-151, 148. Bruno Latour, "How to talk about the body? The normative dimension of science studies" *Body and Society* 10 (2004), 205-229.
- 12 Anthony Vidler, "Towards a Theory of Architectural Program," *October* 106 (Fall 2003), 59-74; 59.
- 13 Nathalie Jeremijenko, David Benjamin and Soo-in Yang, "Case Study: Amphibious Architecture," *The Sentient City* (Cambridge: MIT Press, 2010), 55.
- 14 Javier Arbona, "It's Your Nature, I'm Lost in Paris," *AD Territories*, June 2010, 46-53.
- 15 Allan Stoekl's book, *Bataille's Peak: energy, religion and postsustainability* (Minneapolis: University of Minnesota Press, 2007) notes in Bataille's work, "there is a heterogeneous matter whose very virulence presents its exclusion in any "closed economy" of use, practicality or recuperation (18)." Stoekl further describes: " that surplus energy, in Bataille's terminology, is "cursed," always already unusable, outside of the categories of utility," 35.
- 16 Stoekl, xix.