CHAPTER 8

Incorporating Empathy: To Middle Species, With Love, *Columbus, Indiana*

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For nearly two decades, I have been designing and building structures that are intended for inhabitation by nonhuman species. Often characterized as "animal architecture" or "habitecture," my projects create and amplify transspecies habitats and, more broadly, grapple with the built environment's crucial role in combating biodiversity loss. But how do we begin to design for—and with—animals? How do we consider the nature of nonhuman beings as stakeholders in our work? As a first step in my design processes, I often attempt to imagine the world through the lens of a project's inhabitants.[1] In selecting a site, for example, one could ask: Where might I, as a bird or a bat, want to take a break when scouting for food? Where is the closest body of water for proximity to hydration? In what kinds of spaces might I want to roost as a bat? As a small bird, where might I hide from predators?

In thinking through these sorts of projective questions, a useful concept to consider is the notion of the *Umwelt*, a term deployed by the late nineteenth-century biologist Jakob von Uexküll in describing the defining characteristics of specific environments that are significant to the inhabitants of that environment.[2] So, in other words, what are the conditions of a space that really matter, and to whom do they matter? As a biologist, Uexküll refers to an example regarding a tick and a deer. While both animals may be located in the forest, the *Umwelt*, or the specific environment for the tick, is not the forest but the deer itself. The forest matters to the deer, but it's the deer that matters to the tick. For a designer, the task of understanding and perhaps even embodying the *Umwelt* is an important part of the process in understanding what truly matters and for whom.

To illustrate an approach to empathic design, I will describe an installation that I developed for Exhibit Columbus,[3] an architecture biennial sited in Columbus, Indiana, that features public installations in the city's civic spaces. I was invited to be part of the 2020–2021 Exhibit Columbus cycle as university design research fellow. In response to the theme "New Middles: From Main Street to Megalopolis, What Is the Future of the Middle City?,"[4] my project, titled *To Middle Species, With Love*, aimed to amplify urban habitat conditions and draw awareness to the presence of urban wildlife in the Columbus region. In contrast to the notion of "flagship species"—in other words, the animals we as humans might think about when we consider wildlife conservation efforts, such as polar bears, rhinos, or other so-called charismatic species—"middle species" are those who are embedded in our environments and part of our everyday lives but often underacknowledged. Through design thinking and processes, how might we recognize them as our community members or neighbors?

Approach to Design

In foregrounding design for animals, I explore a number of gaps in the logic of "sustainability" as we have conventionally understood it. In the context of buildings, sustainability discourses have centered on issues such as electrification, renewable resources, weatherization and passive systems, and so on.

In the context of urbanism, conversations about sustainability tend toward strategies of resilience and green infrastructure. In thinking about our cities, we recognize that urban habitats—and the deleterious effects of habitat loss—are significant conditions to contend with, and we recognize flora and fauna for their significant roles in "ecosystem services," in other words, the role that ecosystems have in supporting human needs. Yet the role of animals—as sentient living beings—is often marginalized within current discourses of "sustainable design." How might we shift the consideration of animals beyond the scope of regulations, "services," and "performance"—to include agendas of spatial experience, care, ethics, and identity?

Acknowledging Animal Narratives and Lived Experiences through Research

To Middle Species, With Love is a project that aims to move the consideration of animals—our community members and neighbors—beyond ecosystem services and toward crafting spatial experiences that tap into empathy-driven sensibilities. To give a brief description of the project, the installation is a series of nine towers sited near the confluence of two rivers in Mill Race Park[5]—and adjacent to an iconic concrete observation tower. The nine structures are designed to support wildlife habitat—with bat houses and bird perches at the top and stone mounds

for smaller terrestrial and amphibious animals at the ground. The bat houses are adaptations of a typical "rocket box" bat house design, which has been noted to be effective in serving as roosts for the endangered Indiana bat,[6] one of roughly thirteen bat species in Indiana. Several of the structures are equipped with bat detection equipment, which recorded bats' high-frequency echolocations—typically inaudible to the human ear—in and around the site each day and night.

Figure 8-1: *To Middle Species, With Love*, sited in Mill Race Park, near the observation tower. (Photo by Joyce Hwang)

This summary might be sufficient in explaining the performative motivations of the project as a functional ecological habitat project. But to move toward an empathic process that acknowledges and reflects on lived experiences and personal narratives—particularly in the case of urban wildlife—is, needless to say, a more complex and nuanced task.

What do animals say? How do we hear them? How do we know where they want to be and how they want to live? How do we understand their voices? And how do we do this when they are not easily visible or audible to us? While it is often the assumption that scientific inquiry doesn't necessarily lead to an adequate sense of empathy or subjective understanding, the role of scientific research—in the case of designing for animals—is critical in opening the window to a fuller understanding of our nonhuman neighbors. In my work, I typically consult with biologists and ecologists—as well as specialists such as entomologists. In the case of *To Middle Species, With Love*, I consulted with a mammalogist, Tim Shier, from the Indiana Department of Natural Resources to learn about bat species in Indiana and methods for tracking bats and to get a sense of where bats might "hang out," to think about siting the installation in a way to benefit and amplify bat habitats.

Yet the most poignant moments of the process emerged from a messier constellation of activities and conversations—not only with the biologists but also with artists, musicians, and environmental activists based in Indiana. I began discussions with several organizers from local nonprofits that had already been doing work in advocating for pollinators by transforming urban spaces into pollinator gardens, for example. Through these meetings, I learned about ongoing efforts in Columbus to support nonhuman flourishing. A transformative connection emerged from conversations with a local musician, Stuart Hyatt, who had—for many years—already been experimenting with recording sounds from the environment and bringing them into musical compositions. He had produced a project, titled *Ultrasonic*,[7] in which he worked with biologists to collect recordings of bats and use the sounds as source material for an album of songs, which was a collaborative process with many musicians. As I was thinking about and designing the installation project, I listened to Hyatt's *Ultrasonic* album on

repeat. The songs are striking and evocative in how they foreground the bats' voices in each composition. One of the songs, titled "Between the Hawthorn and Extinction," is particularly powerful in how it combines an overlay of voices through both bat recordings (which we can hear through technology but not understand) and spoken word poetry (which we can understand). The recited poem, by Cecily Parks, offers glimpses into what bats might possibly say as they are out on their nightly journeys. Some poignant phrases in the piece are written as if the bats were speaking.

> My umbrella was cut in half says one.
> Goodbye havens and hibernacula says another.
> I never knew a belfry says one.
> I spent my whole life shouting hello says another.

Through our discussions, and inspired by Hyatt's music, I became even more compelled to explore the nightly lives of bats through first-hand listening experiences. In my research trip to Columbus, I made it an explicit point to spend time getting to know how bats, birds, and other animals inhabit the city through a series of hours-long walks. Carrying a number of ultrasonic detectors, bat recorders, and other wildlife recorders and listening through a pair of headphones, I meandered throughout the city—both day and night. Resulting from these walks were a collection of wildlife recordings, GPS-derived mappings of bat locations, and personal notations and observations, all of which became instrumental in the site selection process, as well as in developing the project design. Also emerging from these days of exploration was a confirmation of the emotive power of immersing oneself in the act of listening to voices and chatter between animals. Even if it is unintelligible to us, what's clear is that they live in community with one another.

Aesthetics and Care

A constant thread through my design projects is a concerted attention to aesthetics, morphology, and the resonances that are produced from the project's formal and spatial disposition. While attention to these issues might be considered to be a kind of formalism, I would argue that elevated attention to aesthetics, form, and space are crucial to prioritize in architectural projects, not only for the sake of design itself but also in projecting a sense of intentional care. All too often, in the instances where we find artifacts created in support of animals, we also find a projected sense of invisibility (a bat house that is tucked on the backside of a building or painted in such a way that it is camouflaged in among trees), or a reduced-effort aesthetic (why would we make an effort to have a nesting box look nice if animals don't care how it looks?). While it is arguable whether the aesthetics or formal disposition of an artifact may not be of importance to animals, I would argue that attention to these issues is important in projecting a sense of care and intentionality of design. As in the case of human communities, an elevated and intentional design contributes to a sense of dignity, as well as a perception of value. For communities of flora and fauna (particularly those that are less celebrated), this is significant in countering the tendency toward rendering them less visible. Architecture's role in addressing biodiversity enhancement and species conservation, therefore, is not only to consider the environment and ecosystem dynamics; it is also to focus on the formal and spatial design of artifacts and their aesthetics.

In a way, strategies for animal advocacy in architecture are not entirely different from strategies for animal conservation. Biologists use the term "nonhuman charisma" to describe the outward characteristics of species and the capacities of "charismatic" features to draw human interest and captivate hearts. In the case of architecture, it's the "character" of buildings and structures that becomes influential in conservation efforts.

The notion of aesthetic character is highlighted in *To Middle Species, With Love*. The structures were designed to respond to the adjacent observation tower—a stoic concrete structure with an observation deck at the top of the tower and extended space that reads as the tower's "head." Similarly, each of the installation's nine towers also has a "head," which is created from a series of wood planks that are layered to create gaps of bat inhabitation space. Rather than standing upright, however, the nine towers all lean toward one another in various directions. Some towers lean toward each other, almost appearing to be in conversation. Others lean toward a tower that is leaning in a different direction,

Figure 8-2: Dusk view. (Photo by Joyce Hwang)

Figure 8-3: Dry-stacked mound of stones, installation in progress. (Photo by Joyce Hwang)

appearing to be whispering to them or trying to get their attention. One senses perhaps that these towers are a grouping of characters in dynamic conversations.

Linked inextricably with aesthetic character is also the notion of craftsmanship and material consideration. In the case of *To Middle Species, With Love*, the decision to source local stones and to use species of wood that grow in Indiana was certainly a key driver in crafting the project's aesthetic disposition and effects. But in addition to that, an elevated execution of craftsmanship also connotes a sense of care—not only that it reflects care for the environment but also that it prioritizes those who inhabit it. In the case of this installation, my design team was particularly attentive to several considerations: first, using materials that would create an appropriately warm thermal environment for its

potential inhabitants, and second, organizing the steel components and fasteners in such a way that sharp tips and edges remained embedded in wood, were covered, or were sanded down. An ongoing sentiment among the fabrication team was to always be on the lookout for conditions (such as protruding screw tips) where a bat wing might get accidentally caught.

Lessons Learned from "Testing" and "Prototyping" in the Design Process

While a consistent thread in my design projects is attention to craft and aesthetic resonance, another constant is addressing issues of environmental performance. In designing for flora and fauna, one of the questions I often encounter is "Does it work?" In nearly every discussion or conversation that I've had about my projects, inevitably someone asks whether I have seen animals living in my installations. Certainly, it is important to test this question throughout the process. In several of my projects, I have used visual and audio monitoring equipment—such as "camera traps" (motion-sensing cameras for wildlife documentation) and ultrasonic bat detection and recording equipment. This type of "post-occupancy" observation and documentation is crucial for broadening and deepening our knowledge about how animals inhabit the planet. But it's important to also acknowledge that the notion of "testing" does not end with the artifact or designed object itself but must necessarily always extend to its broader context. In the case of animal habitats, external environmental conditions always matter; temperature, humidity, light, shade, wind, proximity to water, access to food, and presence of predators are all equally significant to determining the suitability of any habitat.

In the case of *To Middle Species, With Love*, a particularly poignant moment of observation came even during the installation process itself.

While we were stacking the stones on-site, we noticed a number of very small toads trying to find their way into the stone mounds. Having sited the project near a river, and in an area of the park that was prone to flooding, we were expecting that amphibious species might find the stacked stones to be of interest, but we did not expect to see them attempting to take residence so soon. While observing these toads, we became aware that the height of the steel platform at the foundation made it a bit challenging for the toads to easily hop in. So, in response, we adjusted the design of the bases by adding stacked stone "steps" adjacent to each platform, which allowed for better access by smaller animals such as these toads.

Figure 8-4: A resident toad. (Photo by Joyce Hwang)

Further beyond the ecological context, how do we "test" a project's reception from the human perspective? This is where scientific inquiry overlaps with subjectivity. Although we as humans recognize the urgency

to combat biodiversity loss and species extinction, as well as the importance of ecosystem services, our anthropogenic perception of urban animals is nonetheless conflicted. Depending on the situation at hand, animals are usually deemed to be a desired presence or seen as unwanted pests (why is it that we want to see birds in the park or in our backyards but not on our windowsills?). Since the perception of the urban "pest" is always contingent upon the proximal relationships between animals and humans, it is also critical for architecture and design to aid in advocating for our nonhuman coinhabitants of the planet. In this sense, small-scale installation projects hold the potential to serve as prototypes, not only to test and demonstrate ecological design principles, but also to shift and shape public perception about urban animals. The project—as a constructed urban animal habitat that amplifies wildlife conditions in

Figure 8-5: One of many tours led by Exhibit Columbus. (Photo by Hadley Fruits)

the city—has been part of a number of community-centered educational events, including tours for local K–12 students.

Collective Impacts and Responses

To Middle Species, With Love was conceived of and created as a temporary project for a design biennial, and in that sense, the project as it stands would not be able to truly serve as a long-term ecological testing site. As noted by our consulting biologists, the short-term periodic nature of biennials doesn't align well with the longer-term needs of ecological cycles. Yet—perhaps as a result of the collective public reception of the project during the Exhibit Columbus cycle—the installation will have the opportunity to live on and contribute to the community. Although the project is slated to be temporary by nature of its commission, it is—at the time of this writing—still standing in Mill Race Park after the conclusion of the exhibition period, owing to a request from the Indiana Department of Natural Resources (DNR) to keep the project in place for an additional year to continue monitoring. Additionally, I have been in conversation not only with the DNR but also with a local nonprofit organization, Friends of Pollinator Parks, about reinstalling the structures at different sites in the city to benefit their mission to amplify habitat for pollinators.

Beyond the built structures themselves, further impacts of the project have emerged from another interdisciplinary collaboration with sound artists. Inspired by the powerful effect of Stuart Hyatt's music, I commissioned two musicians, Shawn Chiki and Onokio (Zach Williams), to create soundtracks using the bat sounds gathered from the project's ultrasonic recorders as source material for electronic compositions.[8] For the opening of Exhibit Columbus, we premiered several of their pieces in a "bat concert." Also as part of the performance, two additional musicians (who also were part of Exhibit Columbus's team: graphic designer

Jeremiah Chiu and historian Enrique Ramirez) used the raw bat recordings as source material for live music performances. The enthusiastic reception of the idea of a "bat concert" began as early as the concept design presentation, when the idea was tossed into the Zoom chat by an audience member. The concert that took place during the opening of Exhibit Columbus received enthusiastic support as well, and it was—for me—a uniquely moving experience. Scheduled at dusk, we heard the sounds of the bats, modified and recomposed through electronic amplification, just as the bats were starting to emerge from a day's rest and populate the sky. The overlay of experiences was one that created a sense of both wonder and care for the environment, not only as an ecosystem but as a living community.

The public reception of animals as part of our community—and "deserving" of design attention and visibility—is a fundamental issue in my work to amplify transspecies habitats. All too often in our urban environments, appearances of "unregulated" flora and fauna are categorized as nuisances or lack of maintenance. This is a sentiment that needs to be addressed in how we design the built environment, particularly in the face of unprecedented biodiversity loss and mass extinction. While placing emphasis on the importance of ecosystem services is critical, I contend that it is equally critical to create experiences that intentionally evoke empathy. How can we design not only through empathic processes but also in a way that centers the role of empathy and its effects to radically shift our environmental narratives, to expand beyond our anthropocentric motivations and toward a more collective sense of care?