

WORLDING IN AN INSECT HOTEL

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ABSTRACT

In this article, I examine how humans invite insects into the human-based order and materialism. I begin by exploring insect hotels' phenomenon, history, and aims. I then take a closer look at DIY guides and instructions on how to build an insect hotel. According to studies in urban ecology, the original goals of supporting biodiversity are poorly realized. Instead, I state that insect hotels can be seen as a practice of staying with the trouble. With this focus and with some works of art, complex questions of agency, representation, knowledge, power, government, and control can be examined.

KEYWORDS

nonhuman agency,
other-than-human agency,
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An insect hotel is an artificial, human-made nest for insects. A strategy of drilling holes into the walls of buildings was already used among farmers in the United States in the 1950s when transportable bee hotels, including paper straws and holes drilled into wooden blocks, began to be manufactured for agricultural settings (Maclvor & Packer, 2015). To tackle the global concern for the decline of pollinators and its negative impact on food production, artificial nesting cavities and boxes are found to be helpful in attracting pollinators and increasing their populations in agricultural and park environments as well as in urban gardens (Rahimi et al., 2021).

Insect hotels can be seen as part of the historical continuum of entangled and intertwined relations between humans and nonhumans. Over time, humans and nonhuman animals have been co-living with and co-shaping each other, both being mortal within the web of interspecies dependencies (Haraway, 2008). Within this context of entangled co-living, insect hotels are conceptualized as part of the historical continuum of human-made residences and habitats for nonhuman animals. Enclosures, aquariums, stalls, and stables are concrete examples of human-made structures that frame lives of more or less (or not at all) domestic, tamed, utilized, or otherwise co-living nonhuman animals. However, a difference between the above-listed human-made constructions for nonhuman animals and the residential constructions in question here is the ability and skills to construct and build shelters and nests not found among animals, such as horses, cows, and pigs, but found among insects and birds.

NONHUMAN ANIMAL ARCHITECTURE

Many nonhuman animals build nests for themselves and for their offspring. According to architect Juhani Pallasmaa (2002), who has published on the theory of architecture, species that build or have capacities to build can be found throughout the phyla, but the most intricate constructions can be discovered among three major groups: insects, spiders, and birds. The variety of constructions made by nonhuman animals is great, and to write about such a vast spectrum as a unified cluster may not show the appreciation they deserve. The functions of these constructions vary: to protect their offspring and themselves from the physical environment, such

as weather conditions; to provide protection from predators; to avoid recognition or detection by others; to get mechanical protection; to preserve and cultivate food; to communicate; to support mate selection and reproduction; and finally, to decorate.

The great manipulative skills of insects and spiders are related to the precise and sophisticated coordination of their multiple jointed legs and subtle mouthparts (Pallasmaa, 2002). Correspondingly, the great manipulative skills of birds are related to their narrow beaks and mobile head that make precise movements possible. For instance, manipulative skills are concretized in weaving and the intertwining and knotting practice of weaverbirds.

The scale and precision of constructions vary among other-than-human animal builders. Examples may shed light on the scale and diversity of manipulative skills, examined both with absolute measures and with relative scaling. According to Pallasmaa (2002), the largest known animal construction may be a beaver dam measuring 1,200 meters. A community of orb weaver spiders (*Araneus sermoniferus*) is known to build continuously additive nets with dimensions as large as 100 meters. Proportioned to human scale, these nets would have nearly 20 kilometers of expansion. The other extreme example is found at a microscopic level. Honeybees build their cells with a standard wall thickness of 0.072 millimeters. A common thread thickness of an adult orb spider is 0.010–0.012 millimeters. The thinnest known thread maybe 0.0002 millimeters in diameter and is created by cribellate spiders. A capture woff is then constructed with 50,000 individual threads.

According to Pallasmaa (2002), other-than-human animals use a wide range of materials for their constructions, such as plant fibers, leaves, branches, clay, mud, animal dung, and snow. Depending on the function of a construction, materials may be used in the available form or worked further following their physical properties. Wood, for instance, is used for producing paper or carton with saliva or excreta. Paper wasps harden the wood fibers with their saliva, some termites process the wood particles with their saliva or excreta, and the jet ant (*Lasius fuliginosus*) cultivates a specific type of fungi into wood particles to produce a strong mycotecture. Wood can also be a material for cardboard without the builder's

own saliva: The song-thrush (*Turdus philomelos*) uses rotting wood fibers and let microbes process the pulp further. Correspondingly, the Australian scrub-bird (*Atrichornis*) produces cardboard by masticating plant material, then designs a nest and allows the formed construction to harden.

A CAMPAIGN FOR THE INSECT HOTELS 2020

In the spring of 2020, the Ministry of Agriculture and Forestry of Finland launched a campaign (Ministry of Agriculture and Forestry of Finland, 2020a) called the Insect Hotels 2020 ("Hyönteishotellit2020" in Finnish). According to a press release, the main targets for the campaign were, first, to bring awareness to the decrease of insects and, second, to encourage people to build nesting sites for insects. The campaign was part of the United Nation's "International Year of Plant Health 2020" (FAO, 2020). Finnish collaborators included expertise-lead organizations, state-lead organizations, civil society associations, and the Helsinki city and the Korkeasaari Zoo. The main media collaborator was YLE, Finland's national public broadcasting and media company.

Learning about this campaign, I was immediately interested in it. Not least, because I feel sorrow and anxiety about the loss of ecosystems and great concern for the sixth mass extinction of species, and also because this campaign used pragmatic, optimistic, and hopeful strategies to contribute to tackling this critical global issue. The language used in the press release was a mixture of formality and easy reading for accessibility, an interplay between seriousness and playfulness. Playfulness was introduced with expressions such as "a new hotel chain is opened in Finland" and "to become a hotelkeeper?" and a mixture of formality and easy accessibility was formed, for instance, with varying Finnish words for an insect, including a pollinator, and a buzzing bug. The verb 'to tinker' was used instead of 'to build' (Ministry of Agriculture and Forestry of Finland, 2020b).

The media coverage and the campaigning strategy were obviously carefully planned. Two social media hashtags were introduced at the onset of the campaign: #hyönteishotellit2020 ('insect hotels 2020' in English) and #pelastapörriäinen ('save a buzzing bug') (Ministry of Agriculture and Forestry of Finland, 2020a). The first hashtag is formal; it has been used in a bit more than 1,000 public images on Instagram. The second one is an

imperative expression with a playful tone. It has a connotation of easiness, cuteness, and confidence, and a seemingly personal message. Over 14,900 public posts are tagged with this hashtag by the time of writing this article (Instagram, 2021). YLE, as a main media cooperation partner, has published several news on the topic. Sixteen insect hotel-related news and articles were published on its webpage during the campaign year 2020. Before the campaign, in 2013–2019, the topic was examined sixteen times in articles, and after the campaign, the topic has been handled nine times since September 2021.

Besides the urgency and importance of the underlying issues that drew me to this campaign, I was also drawn to it because I had seen those picturesque insect hotels in arboretums, public parks, and private backyards, and I had wondered about their seemingly easy, uncomplicated nature of being one's nest.

HOW TO BUILD AN INSECT HOTEL

The official webpage of the campaign introduces four versions of insect hotels. The first is named "A Milk Carton Motel." The second is named "Luxurious Hotel for Two-story Folks." The third one is named "An Artificial High Stump with Full-service - A Special Hotel for Forest-owners," and finally, the fourth one is "A Bright Woodblockhotel" (Ministry of Agriculture and Forestry of Finland, 2020a). In the following paragraphs, I examine these insect hotels in detail to portray a more specific picture of a habitat offered to pollinators.

Instructions for building are supported by images of the construction plan, photos of finished constructions, and a list of materials and tools required. Material lists include three unprocessed, plant-based materials that can be gathered from gardens, forests, or bodies of water, including dry cow parsley, common dry reed, and a cut tree that has been left to rot in a vertical position. In addition, ten human-produced materials are listed: Unfinished lumber, a wooden beam, dry and pre-sawed birch logs, an empty milk carton, string, cable ties, wood glue, screws, a hanging hook, and green or grey paint. In addition, duct tape and a cake box are not included in the material lists but are shown in instructional images and the descriptive text.

The lists of tools include a utility knife, a power drill, and drill bits of different sizes (4, 6, 8, and 10 millimeters). In addition, scissors, a paintbrush, a ruler, a saw, a chainsaw, and a screwdriver are needed in the process of realizing all of the insect hotel versions (Ministry of Agriculture and Forestry of Finland, 2020a).

The Ministry of Agriculture and Forestry's campaign site featured on YLE introduces three similar versions of an insect hotel in the article "Become a hotelkeeper! Here's how you build an insect hotel in your yard" (Asikainen, 2020). The first version is named "An Easy Hollow-Reed hotel," the second is named "A Grand High-Rise," and the third one is named "A Bunker hotel." Again, instructions are supported by photos as well as lists of required materials and tools. In addition to sand and organic, plant-based materials that can be gathered from gardens, forests, or bodies of water, material lists include pieces of firewood, untreated lumber, a dry wooden beam, a milk carton, plastic-coated cardboard, string, cable ties, screws, wood glue, and paint. Along with materials, lists include tools such as a saw, a shovel, a screwdriver, and a utility knife.

Measurements in the instructions are even numbered. Ready-made materials recommended for use in the construction bring along their scale and measures to the building. Milk carton, for instance, with its measurements of 7 cm x 7 cm x 20 cm, is a basic unit utilized for some housing models. The design of the Luxurious two-story hotel is based on a 15 cm wide wooden plank, and the dimensions follow its logic with measures 5 cm, 11 cm, 13 cm, and 25 cm. Among the instructions by both the official campaign and YLE, drilled holes are typically 10 cm deep with varying diameters of 4 mm, 6 mm, 8 mm, or 10 mm. The distance between the holes is suggested to be two centimeters.

Three types of roofs can be identified among insect hotel models: a gable roof, a flat roof, and an organically shaped, possibly a curved roof. An Easy Hollow-Reed Hotel has a pitched roof with two symmetrically sloping parts. Flat roofs are used in A Milk Carton Motel, a Luxurious Hotel for Two-story Folks, An Artificial High Stump with Full-Service – A Special Hotel for Forest-owners, and A Grand High-Rise. Organically formed roofs are used in two insect hotels: a curved roof in A Bunker Hotel and a round roof in A Bright Woodblockhotel.

BUILDINGS FOR OTHER-THAN-INSECTS, TOO

The strategy used in the campaign of Insect Hotels 2020 is well-known and widely used in bird conservation. In 2016, YLE launched the campaign "One million bird boxes" and invited people to contribute by building bird boxes and locating them all over Finland. The campaign's primary objectives were similar to the later-to-come campaign of insect hotels: To raise awareness of a decline of cavity-nesters populations and to support nesting by building new nesting cavities for birds. The campaign was a success, and more than 1,3 million bird boxes were built and registered in a year (Sundqvist, 2017). Bird nest boxes (bird houses) are commonly seen in singly home residential areas with lawns and gardens as well as in rural areas, but not that common in urban parks.

A typical and easy birdhouse can be built with a 12.5–15 cm wide, and 120 cm long rough-sawn lumber, according to YLE. A roof should be two-centimeters larger than the floor area and walls to prevent water from getting in. For the same reason, a hole should be drilled to slope out and downwards. Other materials needed are 15 nails, each 45–60 mm, 50 cm metal string, and strong plastic string or thin electric wire. Tools needed are a saw, a knife, a hammer, a drill, and drill bits of different sizes (28 mm or 32 mm, and "a size of a pencil") (Klemettilä, 2016).

A HELPFUL HAND

These construction projects seem to be grounded on and demonstrate the gesture of care: The guides on insect hotels and bird boxes emphasize the care for the anticipated resident's well-being, be it a waterproof roof, proper ventilation, or for protecting from predation. Even the notion of 'cleaning service' has been examined as a kind gesture by a human.

When examining expertise, for example, the waterproof roofing in housing, it is evident that humans are not the only ones to consider this, and not even the most experienced in planning and executing these. According to Pallasmaa (2002), even common bushtits (*Psaltiparus minimus*) build a roof onto their nests (p. 62). When examining the proper ventilation, the porous but protective materials used by nonhumans do the work. A more structured way of ventilation is organized by termites, especially *Macrotermes bellicosus*, as

demonstrated by their four meters high constructions, which are nests for over two million actively working termites. As oxygen usage is high indoors, termites integrate a complex and fully automated ventilation system into their architectonic structures. If we consider the protection from predation, it has been solved in various ways among phyla. One of the most insightful solutions is created by the double entrance design in the nests of the penduline tit (*Remiz pendulinus*). The apparent, false entrance leads into an empty pouch, while the actual but inconspicuous entrance that the bird uses is hidden by a flap.

Besides functional construction solutions, also aesthetic practices are found in nonhuman architecture. If one was advised to use green or grey paint to finish a “Luxurious Hotel for Two-story Folks,” it might have been for camouflaging it. Again, to protect is a gesture of care. Typically, other-than-human animals use plant-based materials and a spectrum of greenish-brownish-greyish color hues, and nests have camouflage properties from the start. However, in case of intentionally willing to put some extra effort into coloring, some nonhuman animals prefer bright colors instead of earthly tones. For instance, bowerbirds (*Ptilonorhynchidae*) make intense color by crushing blueberries with their beak and then painting their nest with a piece of fibrous bark as a brush (Pallasmaa, 2002). The painted color is meant to be noticed and enjoyed. Considering all this, I am led to ponder if anyone has asked if the green or grey paint is what the residents prefer.

The question of care is relevant when examining the human-made material world with its direct but also indirect implications. Following the argumentation of the caring and nourishing gesture, what might be the relations and divergences between the human-made quadrangle lumber and a wall structure made by a nonhuman animal? What are the implications for the nonhuman to inhabit and give birth to offspring in a building with either screw joints, wood glue joints, or duct tape joints? How is the metal hinge experienced compared to the organic one? Besides pondering the question of care, I find it crucial to ask, what is happening, ontologically, to the nonhuman animals when settled in these new material compositions.

WELCOME TO A HUMAN ORDER

The even-numbered proportions and manufactured construction materials welcome nonhumans

into a human world. Instead of using a scale of, for instance, the standard wall thickness of 0.072 millimeters built by honeybees, the scale is imposed by the standard wooden plank with a width of 15 centimeters or the standard milk carton with a width of 7 centimeters. These are rough examples that reveal fundamental anthropocentrism lurking behind the instructions. It is convenient and economical for humans to utilize a standard wooden plank from beginning to end, and to minimize the effort used for each of the stages. In addition, there is something characteristic of Western cultures’ ways of approaching and perceiving the world that reminds me of a photographic series *Making nature more natural* (2000–2001) by photography artist Sanna Kannisto. In her art, Kannisto investigates methods and metaphors for seeing. She has worked at field stations for biological research in, for instance, Amazonia rain forests in Brazil and in the nature reserve of Hanko peninsula, Finland. Kannisto explores scientific methods of observing, classifying, and representing natural phenomena and positions herself as an explorer and actor in her works. (Kannisto, 2002; 2020) In her art, Kannisto refers to the scientific visual tradition where the observed object is removed from its original habitat and is relocated on the white background in a position that reveals its species-typical visual characteristics.

The diptych *Making Nature More Natural: Landscape Before and After 1-2* (2001), which is photographed in La Selva biological station in Costa Rica, approaches human perception and representation through an intervention. The diptych shows a pair of scenes in a rainforest. The first scene is an inaccessibly thick tropic forest with leafy vegetation. There seems to be no structure in the scenery: Branches do not begin or end anywhere, soil or a sky cannot be seen, and withered leaves hang downwards among green ones that are directed to all possible dimensions. All stages of a vegetal lifespan are visible, supporting a non-linear dramaturge of a messy thicket. The second scenery, then, has a visual structure: Tall, vertical tree trunks are heading towards the sky, leaving space for vines to draw diagonal, woody lines into otherwise so green scenery. The floor of the forest seems to be accessible only with a few ferns and other small plants. Daylight shifts through the canopy, painting bright spots onto the ground.

The diptych *Making Nature More Natural: Landscape Before and After 1-2* is a result of an

intervention Kannisto did in the forest. Kannisto's touch makes the second scenery look like it has a structure, an understandable order of things. The structure a human viewer imagines in Kannisto's modified forest view does not resonate with the structure the forest has on its own when untouched. A natural environment is more complex and more interactive than earlier understood in the context of sciences. It is in constant flux, with dynamic and indeterminate matter and material forces (Coole & Frost, 2010). The visual representation tradition of nonhumans is not correlating with this current notion.

How are these processes or artwork by Kannisto related to insect hotels? Well, imagine a well-maintained park with neatly cut grass swards, sharp-edged flower beds, and a couple of carefully located trees positioned to make an atmosphere verdant, airy scenery full of light. There is visual clarity prevailing over the landscape, and things appear to exist in order. Imagine, then, an insect hotel mounted on one of the tree trunks next to the park's pathway. Within this kind of scenery, an insect hotel can be seen as a metaphor for a Western human desire to organize and govern. Those messy thickets that used to be habitats, or rather, whole worlds to insects, are too messy with their nonhuman dynamics for humans to govern. A classifying human gaze does not find a pleasant dramaturge in an inaccessible thicket with never-ending shadow, myriad branches, spiderwebs, and mosquitos. As Haraway (2008) so beautifully writes: "Our kind of capacity for perception and sensual pleasures ties us to the lives of our primate kin" (p. 6). Drawing from this, I ask what kind of visual pleasure the classifying and categorizing human gets while looking at the insect hotels with their symmetrically perfect gable roof and three or more floors that are divided into rooms with separately sorted materials and colors.

These insect hotels are humans' attempts to epistemologically define the presence of nonhuman animals within a human-centric society. According to Elisa Aaltola and Sami Keto (2015), the processes of knowledge production concerning nonhuman animals can be examined through three categories: human-made representations; human governance, and independency of a nonhuman animal. Representations are based on and made within the context of human languages, concepts, and visual cultures, and further, the way they are bound to human worldviews turns them back to human. Human-made representations of a

nonhuman reveal how humans are willing to see a nonhuman and coexist with them. Knowledge production processes are in multiple ways entwined with humans' attempt to govern and control. This endeavor appears in different sectors of society, disciplines, and within cultural contexts with varying emphases. However, they all share the same premise: Knowledge and power are intertwined within these human-based processes. Further following the argumentation by Aaltola and Keto (2015), the knowledge based on the independency of a nonhuman animal is formed within a process that is open to recognizing nonhuman animals as themselves with their particularity and respecting their ways of communication. This pursuit challenges a human to be exposed to other-than-human positions and standpoints.

There is a tension between these three categories of knowledge that define the presence of a nonhuman animal within a society. The human-made, virtual order of things in the insect hotels actually does not resonate with the structure of the world of insects. For there are no ultimate categories or separate divisions in natural environments (Haraway, 2003). And more, the virtual order of things in the insect hotels does not resonate with the complex realm of human-based manufacturing processes of the hotels. Manufacturing processes of, for instance, a wooden plank, a milk carton, a screw, or duct tape, when considered from the primary material production to product retail, are intertwined with global industries and economics. Every single material or item in an insect hotel has gone through several steps of supply chains and transportation systems before the end user, an insect, meets it in a park or a suburban yard. The end user, a single insect, or the colony may not have the capacity to impact global industries and economics. The dynamics of those global systems are out of reach of a nonhuman. If some changes took place in the supply chain of a milk package production, whichever a dairy or a plant-based product, would that cause changes to insects' nesting conditions? More, if the price of lumber, steel, or aluminum continued to climb higher and higher, how would that affect insects' nesting? Cartographies of these nets of materials and processes could be explored thoroughly with questions of ecological footprint, economics, geopolitics, and biopolitics, to name a few. Similar to how Anna Tsing (2015) traces and tracks the socio-cultural-economic landscape of the matsutake mushroom through utilized forests and abandoned industrial areas, one could follow the

path of an insect hotel from the very source of the materials all the way to the hardware or gardening store supplying the tools for these projects.

A DRILL BIT AND HOW TO CURATE A FUNCTIONING ECOSYSTEM

The official webpage of the campaign Insect Hotels 2020 introduces three possible residents to an insect hotel. The named residents are potter wasps, bumble bees, and a leaf-cutter bee (*Megachile lapponica*), important endemic pollinators in ecosystems in Finland (Ministry of Agriculture and Forestry of Finland, 2020a). It is, again, the classifying, categorizing, and determining human that makes a wish and anticipates certain inhabitants. An original goal, to support local pollinating insect populations, is studied with the means and methods of the particular ecology being studied. According to Ehsan Rahimi, Shahindokht Barghjelveh, and Pinliang Dong (2021), the occupation rate of insect hotels by bees or other aculeate species is reported to be, on average, 38 % (varying rates between 7% and 75%) in urban areas, and it is lower than in hotels installed in agricultural settings. According to Benoit Geslin, Sophie Gachet, and their colleagues (2020), there is very little evidence of the supportive impact of bee hotels on restoring local wild bee populations in urban parks. In their study in Marseilles, France, they first surveyed and found 114 wild endemic bee species in public urban parks and then installed 96 bee hotels and examined their use. The result was not expected: The bee species richness found in hotels was lower than the overall bee species richness in the urban parks; further, it was not the endemic wild bee species that occupied the hotels but the invasive bee *Megachile sculpturalis*. Several studies show a negative correlation between non-endemic *M. sculpturalis* and the endemic fauna, as *M. sculpturalis* uses insect hotels with an extensive territorial behavior.

What is worth noticing is that these kinds of interspecies entanglements are endless within post-industrial, global economic systems. In the article “Synchronies at Risk - The intertwined lives of horseshoe crabs and the red knot birds,” Peter Funch (2017) describes the vulnerabilities of ecosystems as some interspecies connections, and especially errors or disturbances in them may lead to unexpected, even serious outcomes. If human action causes interruptions and stress to certain species and their annual cycle, for instance,

adverse effects and harmful consequences will cascade and extend in the ecosystem.

Considering all this, the multispecies demographic re-vitalization and planning for urban parks seem to fail with insect hotels. According to Geslin, Gachet, and others (2020), the non-endemic bee *M. sculpturalis* is larger than native bees, and it nests in larger cavities. *M. sculpturalis* is reported to occupy drilled holes with a diameter of 9.57 mm and is reported to occupy stems with a length of 9.46 mm (males) and 12.03 mm (females). Native bees, instead, nest in smaller cavities with an entrance diameter of 7.76 mm (Geslin, Gachet, et al., 2020). These measures may seem irrelevant or obscure to a DIY maker or a gardener. However, they reveal the importance of choosing appropriate drill bits. Both the official campaign page (Ministry of Agriculture and Forestry of Finland, 2020a) and YLE (Asikainen, 2020) advise tinkerers to drill holes with the diameters of 4, 6, 8, and 10 mm without explaining the significance of this choice and thus leaving the responsibility of the possible consequences to the tinkerer. The original purpose to supporting local biodiversity can turn against itself.

As Grosz (2010) writes: “Materiality tends to determination; it gives itself up to calculation, precision, and spatialization” (p. 150), but there is a constant negotiation between determination and indetermination, as well as between predictability and freedom of consequential relationships of organic and inorganic matter and living bodies. Both chaos and complexity theories articulate unpredictability, nonlinearity, and complexity in dynamic processes, according to Coole & Frost (2010). In, for instance, ecosystems, economics, and new social movements, the well-known butterfly effect can refer to a possible non-linear chain reaction that expands from a small local event to large-scale consequences across the globe (Coole & Frost, 2010). It is unlikely that a diameter of a drill bit could forecast the occurrence of biodiversity in an urban park environment. Nevertheless, it could be pondered if a single media campaign, or any other natural or unnatural occurrence, could alter the trend of a multispecies demographic change. What is crucial here is to understand that the fundamental reasons for declines in fauna and flora populations must be invalidated with large-scale solutions, and the values of DIY tinkering without possessing the proper, in-depth knowledge are somewhere else.

If multispecies demographic planning was taken seriously in urban areas, all dynamic neighbor interactions and complex entanglements should be carefully considered. As Elisa Aaltola and Sami Keto (2015) write, most of the living beings that are intertwined into interactions in a so-called society are other-than-humans. Still, society is usually seen as a community of and interactions between humans. If multispecies demographic planning was taken into practice, all demographic populations, including pollinator insects, should be equally considered in processes of urban development. A model of an inclusive, representative democracy for interspecies society is examined by the artist Terike Haapoja (2022). *Party of Others* (2011–) is a political intervention and an art project that questions how a voice can be given to the silent majority of society. Following Haapoja's opening and referring to participatory budgeting (City of Helsinki, 2020–2021) and urban planning (City of Helsinki, 2019) models used in the City of Helsinki for urban planning, all urban populations should be represented in the planning and decision-making processes concerning habitats and their environments. To conclude with this logic, the residential building constructions for nonhumans should begin with a hearing of nonhumans, their interests in their habitats, and their life worlds.

A POLITICAL NONHUMAN

I cannot go sufficiently deep into the sensual point of view of an insect or to examine the inner experience of worlding in an insect hotel within the constraints of this article. Instead, I can only scratch the surface and ignite questions. According to Haraway (2008), who was inspired by Don Ihde and Maurice Merleau-Ponty, by using or employing a technology, one positions oneself to be used or employed by that technology. Further, technologies are more like organs and partners for being in the world, "infoldings of the flesh" (p. 249), that are worldly embodiments. Engaging with the world happens in the infoldings of others, compound things, and diverse agents (Haraway, 2008, p. 250). If an insect hotel is seen as a human-made technology that an insect then uses, it becomes a worldly embodiment of its resident, who then becomes infolded with the human-technology world.

Values guide the tinkering of insect hotels, even

though the DIY constructions are clearly not a straightforward solution to a global-scale biodiversity loss. Values may be found in the process of becoming with, becoming worldly (Haraway, 2008), which in this case employs the gesture of building a residence for the ones who are in-distress, an act evolving from empathy that should be encouraged.

According to Aaltola and Keto (2015) and Andrew A. Robichaud (2019), urbanization has profoundly changed the presence of nonhuman animals in the human-citizen's everyday life. A nonhuman animal is often present as a dead body or secreted substance. During their lifetime, humans with their domestic companions, like cats and dogs, are kept separate from the nonhumans that are utilized in food, clothing, and other industries. However, after their killing, they are present as materials and products. Robichaud (2019) states that the coexisting others that human citizens meet in their everyday environments are either tamed pets, caged animals for entertainment, or individuals of wild urban populations. According to Aaltola and Keto (2015), nonhuman animals can be seen to have a presence, in addition to a fleshly, corporeal, functional, or mediated, in social interactions within human life. At the latest, these social, interactive relations with, for instance, cats and dogs reveal contradictory, ambiguous, and tense human attitudes towards a wide-ranging nonhuman world. In addition to these classifications of nonhuman animals, Aaltola and Keto specify a category of independent, more or less self-reliant animals that challenge the human-centric worldview with their autonomous subjectivity and agency. These nonhuman animals, such as wolves or other carnivores, are at the same time invisible to a human-centric society and threats to human-centric policies, standards, and control. Insect hotels with their expected residents are interestingly mixing these categorizations, as they can be classified into wild urban populations and independent animals, as well as perceived as functional and co-existing. With their important pollinating labor, insects are utilized, but not caged neither kept separate from humans' awareness in urban parks and gardens. The benefits of pollination labor are actualized during insects' active lifetime, not after or due to their death.

Reflecting on this topic with Andrew A. Robichaud's (2019) arguments, these relations with nonhuman animals are transformed and specialized over time in modern, industrialized,

and urbanized societies. Most humans do not directly contribute to the actual utilization of non-human animals in their everyday life, and they do not meet nonhuman animal suffering and death. According to Robichaud (2019), in the moments of encounter with living nonhuman animals, humans interact with kindness, affection, and passive observation, and there has been an implicit notion “that promoting kindness and gentleness with animals would remake human life” (p. 265). Robichaud examines this topic mainly in the context of domesticated animals and with questions on power, suffering, and death. What Robichaud’s text is not considering are those indirect entanglements with nonhuman animals’ lives that cause indirect death and decline in the scale of populations, species, and ecosystems. To add complex relations and causalities of ecosystems decline and climate change into the big picture of interactions between human and non-human animals, we might not associate those complex interactions with *kindness* nor call those interactions gestures of care. In a case of an insect hotel, we might call a situation a paradoxical mess.

The lurking questions behind these unbalanced interactions are questions of agency and power. Interactions and entanglements in a built, urbanized environment are profoundly framed with and grounded on human-centric premises. Aaltola and Keto (2015) argue that independent non-human animals remind the human-centric society of another kind of existence based on nonhuman operating models and nonhuman agency which is not totally under human control. They propose that perhaps a fear of losing human-centric control is the fundamental reason why habitats and even the existence of these independent animals are threatened.

It seems that the insect hotels’ real value lies in their symbolic presence: The insect hotel is a symbol of the awareness of nonhumans’ needs. Conversely, the insect hotel installed into a tree trunk can be seen as a symbol of the awareness of nonhumans’ unrealized and unheard needs. Following Haraway’s (2016) ideas, escaping the troubles is not a solution to this ecological devastation. Rather, nonhumans are here to remind humans they cannot escape the damage, nor should or will humans. Staying with the trouble can be seen as a practice of co-living, “sympoiesis” (p. 58), and a practice of “learning to live and die well in a thick present” (p. 1). Suppose we do not want the insect hotel to be a symbol for a

cynical human-centric endeavor to control a presence and a representation of nonhuman animals over their own agency and intentions. In that case, we should nourish the thickets of miscellaneous relations and myriad entanglements and let the insects choose their own materials and drill bits.

CONCLUSIONS

In this article, I examined the phenomenon of insect hotels with animal studies, studies of non-human animal architecture, ecological research, theories of representation, and examples of artistic approaches toward human and nonhuman relations. I discovered that insect hotels can be seen as symbols for awareness of non-human animals’ unrealized needs and unheard interests. Referring to Haraway (2008), insect hotels can be seen as a practice for us humans to stay with the trouble. They offer a nodal point to explore the complex interspecies intertwines within global ecosystems. Still after Haraway (2016), staying with the trouble can be seen as a practice of co-living, “sympoiesis” (p. 58), and a practice of “learning to live and die well in a thick present” (p. 1).

With the intended, kind gesture of care of constructing insect hotels, we welcome non-humans to do the worlding within our material and spatial compositions. This gesture leads to complex questions of agency but also questions related to governance, control, and power. Insect hotels, as human-made representations within a DIY context, are humans’ attempts to define the epistemological presence of nonhuman animals within a human-centric society. Goodwill DIY guides on insect hotels reveal their paradoxical nature of being once we dare to ask: Who is doing-it-oneself? Could tinkering insect hotels be reckoned as being part of the real DIY culture, if we humans let the non-human animals build those constructions for themselves, by themselves?

The insect hotels, in their imperfectness, are worldly embodiments of their residents and, as such, an interesting topic to study further. Are there to be some nature-cultural turns in aesthetics and spatial design among pollinators that give birth to the next generation in human-made architecture? In this article, I approached the topic within a context and with questions relating to representation, agency, and power. I could not explore the sensual, fleshly point of view of non-humans living in an insect hotel. It is crucial to

examine what is happening to a nonhuman animal, ontologically, when its nesting is entangled with the human-made production and economic trends of material supply. These questions have to be examined further in later studies.

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