Situated Knowledges through Game Design:
A Transformative Exercise with Ants

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Abstract
The increasing body of knowledge in fields like animal ethology, biology, and technology has not necessarily led to the improvement of animal welfare. On the contrary, it has enabled humans to exploit animals more functionally and on increasing scales of magnitude. Building on approaches that stem from posthumanism and critical animal studies, we argue that instead of aiming for more general production of scientific knowledge, what is needed to counter exploitation and oppression is an increased sensitivity towards animals that arises from local, partial, and 'situated knowledges'. In the first part of this paper we articulate an argument that proposes how such knowledges can arise from the practice of game design as a form of 'doing multispecies philosophy'. The second part of this work expands this notion with an understanding of design as a practice of configuring and prefiguring situations in which we can enter in a relationship of response and attention with other 'selves', in other words, with entities that are alive. To explore the practical consequences of this framework, in the third part of this paper we discuss a game design project that involves some unexpected designerly negotiations with a colony of black ants. We conclude that our wider perspective concerning notions of knowledge, (game) design, and selves could elicit changes in our empathy towards other beings and help us develop new ideas and knowledges that favour less anthropocentric futures.

Introduction

The academic fields of game studies, ethology, and anthropology have argued - in several occasions and contexts - that playfulness is not an attitude or a way of being that is exclusive to human beings (Huizinga 1955 (1950); Bateson 1987 (1972); Burghardt 2006). The awareness of this encompassing quality of playfulness can be easily detected in the number of artefacts (such as toys, games, and computer games) that are produced on the basis of the belief that beings other than humans are not only sentient, but can express themselves playfully. Explorations of academic research that involve the development of playful artefacts are also a revelatory indicator

of the emergence of this new sensitivity towards non-human playfulness. In the specific case of animals, some examples include research projects conducted with touch screen game prototypes for sheltered orang-utans (Wirman 2014), a videogame concept that allows humans and farmed pigs to play together (Driessen et al. 2014), a tablet game prototype for humans and domestic cats (Westerlaken & Gualeni 2014), and prototypes that explore interactive toys for captive elephants (French 2015).

Our engagement with animals (as well as with non-living things) is defined by an ongoing transformative practice of developing 'knowledges'[1] and sensitivities – or insensitivities – that define the ways in which we establish and reshape our relationships with other beings such as our pets, the farm animals that some of us eat, or the insects that surreptitiously join our picnics. Following conceptual frameworks that emerged in fields like posthumanism and critical animal studies, with this paper we hope to contribute to the widening of our moral horizon in the field of design, and game design in particular, to include things like ecosystems, animals, artificial intelligences, and objects as stakeholders in design processes and as factors in the evaluation of the ethical implications of our design interventions.

As argued in our previous work, being playful is a mode of being that can be shared among different species (Westerlaken & Gualeni 2013). As also already explained elsewhere, we understand design as a practice that allows us to materialize not only our functional plans, but also our *ethos* and our sensitivity, making them objects for (their own as well as other people's) critical evaluation (Gualeni 2014b). Through design, we acquire new perspectives on who we are and understand and construct ourselves and our world (Gualeni 2014b). In this paper, we focus on the practice of designing computer games, and playful artefacts, for animals and reflect on how design is an activity that can be deliberately employed as a transformative process. Among several possible transformative uses of (computer) game design we will concentrate our attention to its suitability for challenging our relationships with other species and our anthropocentric preconceptions. With the game design experiment that we will explain and reflect upon in the third section of this paper, we are interested in exploring alternative scenarios in which speciesism[2] can be approached critically and new perspectives on the various and complex relationships between animals and humans can be reframed and reshaped.

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[1] The term 'knowledges' here is deliberately written in plural, aligning with Donna Haraway's notion of 'situated knowledges', which will be discussed more extensively later on in this paper.

[2] 'Speciesism' is a term that is brought under attention by the field of critical animal studies and refers to the assignment of values and rights to individuals solely on the basis of their species membership. The term first appeared in a pamphlet by Richard D. Ryder in 1970 that was used to protest against animal experimentation (Singer 2015 (1975)). Analogous with discrimination based on race (racism) or sex (sexism), speciesism has intersectional characteristics with other forms of oppression and follows a similar pattern in allowing the interest of one species (usually the human) to override the interests of other (usually non-human) species (Singer 2015 (1975)).

The field of digital game design has been understood and used as a tool for self-exploration and self-construction in a number of contexts including, among others, professional training, social activism, and philosophical inquiry (Gualeni 2014b). With this paper, we are not interested in producing academic outputs in the form of instrumental scientific constructs that aspire to universal validity and applicability. Instead, we are looking for new ways to talk about knowledges, in its plural form (Haraway 1988). When pursuing 'knowledges', rather than looking for comprehensive knowledge claims, we wish to further articulate Donna Haraway's idea of 'situated knowledges', which are partial and critical, interpretations of possible world-views that allow for unexpected openings and negotiations with other entities (Haraway 1988). Haraway's 1988 text *Situated knowledges: The science question in feminism and the privilege of partial perspective* advocates for alternatives to the dominant way of developing knowledge in Western societies, that is to say to the epistemological perspective which understands knowledge as a rational construal that, proceeding from experimental observations, aspires to be universally valid and applicable in every circumstance. When pursuing knowledge through the dominant, scientific paradigm, researchers customarily adopt detached, theoretical approaches (from a presumed 'view from nowhere') that reveal the world as consisting of objects and phenomena whose qualities and interactions can be understood quantitatively and employed with functional purposes in mind. Concerned with the exclusivity and often unquestioned claim to objectivity of science, Haraway proposes a different kind of *episteme* that values 'local' and contextual knowledges, and that arises from perspectives that are partial, flexible, and to a degree engaged with the very objects of their inquiry (a knowledge from somewhere, as opposed to 'from nowhere': an epistemological approach that is open to surprises and compromises). These local knowledges do not only come with a view from somewhere (or someone), but they also inevitably entail personal accountability. As Lucy Suchman wrote: "it is precisely the fact that our vision of the world is a vision from somewhere – that it is inextricably based in an embodied, and therefore partial, perspective – which makes us personally responsible for it." (Suchman 2002: 96).

Partially inspired by the concept of 'situated knowledges', in this paper, we argue for the complementary value of paying attention to how local knowledges arise from design practices, knowledges that could elicit and accompany shifts in our current worldviews, in the development of our sensitivity, and in the way we care for our environment. We believe that the notion of 'situated knowledges' fits particularly well with the practice of experimental and design-driven approaches as a way to prefigure and explore potential futures. Once again, we wish to emphasize that 'situated knowledges' arise from the processes of design itself: a practical form of producing knowledges and transformations, and taking responsibilities (both in the 'users' and in the designers themselves) in which designers are not usually aiming at producing universal

statements about their world and/or their creations, but rather configure and prefigure new perspectives and possibilities that could challenge or change the *status quo* and raise questions about the new worlds we can envision (Krippendorf 2005).

In particular, in the design experience discussed in this paper, our situated knowledges arose from designing games for (and together with) an animal that most of us are familiar with, but do not necessarily relate to in a playful manner: *lasius niger*, the common black ant. Motivated *not* by the desire to scientifically demonstrating that play is an activity that can take place with or among ants, *nor* by a need to confirm hypotheses concerning animal behaviour, this project was characterised by a 'research through design'[3] approach in a quest for situated knowledges and sensitivities towards other beings, that could be helpful in exploring potential relationships between humans and ants.

Aligning with theoretical notions from posthumanism and critical animal studies, and with the aim to expand the breadth of our moral circle to embrace a wider array of beings (coessential stakeholders of the planet we inhabit and in the interventions we design), we wanted to engage in a practice that could help us to negotiate and rethink our relationships with ants (or other insects). Rather than the more abstract task of designing for an entire ant colony or merely regarding the ants as a means for our own amusement, we carried out a design exercise as a deliberate, transformative practice for the designers: together with a group of students, we engaged in the practice of design to speculate on the idea of designing 'games' that an ant could actually decide – or refuse – to engage with. Over the course of six months, we carried out three phases of design exploration that we will elaborate on in a later section of this paper. These phases include a fieldwork phase that was documented through ethnographic as well as autoethnographic observations (I), a group exercise with 16 interaction/game designers in which five different prototypes were created (II), and a playtesting-plus-personal-reflection period of five weeks, broadcasted via *Twitch* and other streaming platforms in which the ants interacted with the designs (III).

In part 1 of this paper we will discuss and reflect upon the design of computerized (as well as analog) games for non-humans as a transformative practice that can help us approach 'the other' with openness and a willingness to engage with one another in unexpected ways as a form of *doing* multispecies philosophy. In part 2 of the paper we will tackle strategies and possibilities (both conceptual and design-related) that might allow us to relate to 'the other'. This passage will

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[3] With the term 'research through design' we refer to a growing academic field that is characterized by research contributions in which design processes and practical inquiries inform and investigate topics that are multistable (see footnote 6), complex, and future oriented (Buchanan 2001; Gaver 2012; Löwgren, Larsen & Hobye 2013).

be conducive to an attempt at articulating what we mean with 'design' and whom we could involve in design processes. In taking this reflection into the practice of design, we will then discuss how the ongoing design project with ants generated new perspectives and sensitivities concerning our engagement with other beings.

Part 1: Approaching the Other

The more we research the complexity of animals, the more we learn about their sentience, their cognitive capabilities, their preferences, and their unique traits. New insights into the peculiar ways in which animals are in the world, their striking analogies with human behaviour and their unique phenomenological and ethological traits could be springboards for a deeper and better-informed concern about the way we conceptualize, treat, and exploit animals. It could potentially foster long-term changes in our relationships with animals in the direction of a more embracing and articulated sensitivity towards them.

In a strident contrast with these expectations, capitalistic values as well as the impact of technological developments on the welfare of animals appear to be stuck to an exclusive (and exclusively functional) anthropocentric perspective. Rather than pursuing interests that would put an end to animal (or human) exploitation and would minimize their suffering, Western culture has used its universal and scientific knowledge to develop technology and design practices that expedite profit and increase productivity (Hribal 2007). Rather than working towards better animal (or human) treatment, one could argue that technology ranging from horse shoes, barbed wire, restraining devices, and automatic feeders all the way to genetic manipulation, specialized breeding, animal tracking, and artificial insemination has only allowed for more efficient exploitation and control of animals. It also enabled us to operate factory farming on much larger scales.

In other words, we can argue that generating scientific insights concerning animal welfare and animal suffering does not necessarily lead to an improvement in their life conditions. From this perspective, we argue that rather than aiming for more objective and granular scientific output, what is needed is to complement our current way of gathering information about animals with situated knowledges. A more engaged and context-sensitive approach, we believe, can increase our sensitivity and attitudes towards other entities on our planet and specifically motivate a reconsideration of relationships between humans and animals.

From our perspective, the objective of expanding the horizon of our moral concern should stem

from a willingness to move beyond anthropocentrism and the exclusive (or quasi-exclusive) economic focus that characterises contemporary social practices. We also believe that positive forms of interspecies engagements that are not aimed at producing or facilitating production, such as play or playfulness, are particularly suitable contexts in which the ethical and cultural goals outlined in this paper could be pursued (Westerlaken & Gualeni 2013). According to Haraway, through shared encounters of 'play' and 'touch', we experience and discover degrees of freedom and possibilities to 'become-with the other'. Here, 'becoming with' refers to the intuitive and bodily understanding that takes place between humans and animals when they encounter each other and recognize, respond to, and establish respectful relationships (Haraway 2008). With the objective of eliciting more sensitivity and empathy towards other beings on this planet, we propose to engage in activities that allow us to get to know other animals, and learn more about their specific preferences and interests. This is not to say that playfulness is the only, or the most preferable, way in which new situated knowledges could be generated and elicit a transformation. We could, with similar purposes, take part in other forms of shared interactions between humans and animals. For example, by designing for shared affection, shaping interventions that encourage humans and animals to do physical activities together, proposing critical artefacts that reveal unequal power dynamics between humans and animals, or even designing for negative experiences such as pain or distress[4]. These examples could all constitute shared contexts where we could work for and together with other beings towards situated knowledges that affect our relationships with them. In our work, as already mentioned, we are specifically interested in our relationship with animals, and in the design of playful interactions with them. By designing playful experiences for and with animals, we wish to try to invite the animal (within the constraints of the design) to willingly and freely appropriate artefacts and make decisions within playful settings.

In our aim to design playful interactions that are meaningful to the animal, we are exploring different possibilities for overcoming some of the complexities we encounter in trying to understand the life-world of the animal, the so-called 'other'. As Thomas Nagel answered to his question 'What is it like to be a bat?', there is surely something that it is like to be a bat. Just like humans, bats have a specific kind of selfhood, a unique way of being in the world that is largely, but not uniquely, determined by their perceptual and cognitive structures. According to Nagel, however, we can imagine and fantasize what it could be like for us to be bats, but never access the experience of what it is like to be a bat for a bat (Nagel 1974). Taking that perspective could perhaps only be possible through a deliberate and radical modification of human biology, and thus fundamentally altering our perceptual and cognitive systems. Without such drastic measures,

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[4] In our work, we are specifically interested in designing for positive and pleasurable experiences that could elicit a change in our sensitivity towards other beings. However, we need to consider that such changes could theoretically also be evoked (and perhaps even more effectively so) by interventions that explore experiences that are painful and distressing for the humans and animals involved. In this context, we recommend that the designers of such interventions consider with the utmost care the ethical implications and consequences of engaging in such practices.

Nagel argued, we cannot hope to understand or adopt an 'alien' selfhood.

Where Nagel tries to approach this topic through philosophical reasoning, others have attempted to experiment with this question through the practice of design. In a project called *Animal Superpowers*, designers Chris Woebken and Kenichi Okada explored how animal senses are different from human senses by designing artefacts such as a microscopic antenna that mimics the vision of ants, a bird device using GPS and vibrations to approximate birds' detection of geomagnetic fields, and giraffe goggles that raises the user's visual perspective by 30cm (Animal Superpowers 2008) (see Figure 1).
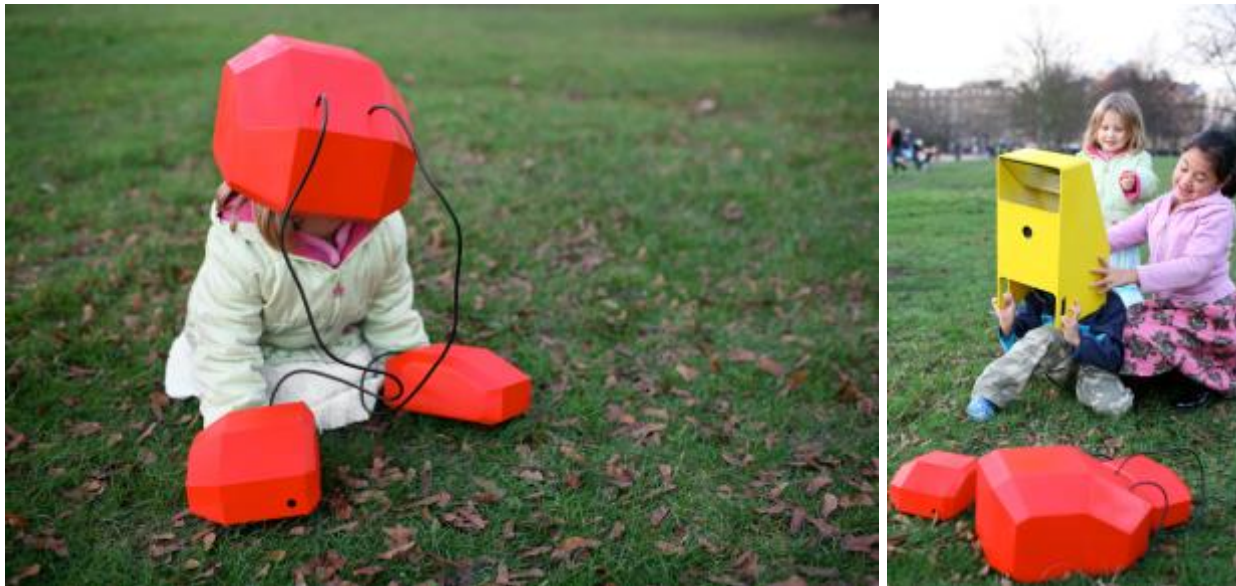
Figure 1: in approaching animal characteristics through design, the 2008 project *Animal Superpowers* explores the sensory perception of ant antennas that magnify the user's vision (left) and a giraffe device that heightens the user's visual perspective (right) (Animal Superpowers 2008). Images used with permission.

Another attempt at getting closer to the life experiences of an animal includes the experimental videogame *Haerfest*, developed in 2009 by *Technically Finished*. This digital experiment aimed to deal directly with some of the questions that were formulated in Nagel's essay (Gualeni 2014a). The game enables the human player to experience a virtual world in first-person through an 'alien' sensory system. Through processes of metaphorism and synaesthesia, the perceptions and interactive experience of a player in the world of *Haerfest* should approximate those of a bat, including a bat's short eyesight, its acute sense of smell, and its spatial understanding and navigation via echolocation (see Figure 2).

Figure 2: the action-adventure videogame _Haerfest_ offers its players the possibility to explore and interact with a tri-dimensional world with an alien sensory system that has analogies to that of a bat. The game uses a first-person perspective and also features a narrative progress around the themes of identity and self-discovery (Gualeni 2014a).

In both of these design projects it becomes apparent that, even though technology and virtual worlds open up new phenomenological (and even ontological) horizons, these experiences are still inescapably bound to the horizon of our being in the world as humans (Gualeni 2014a). Such experiments, in fact, are inevitably limited to being part of a human quest for knowledges and understandings that are 'human, too human' even because they are pursued through technology that materialize certain human ways to conceptualize world-views[5]: an enterprise that does not specifically encourage us to critically rethink anthropocentrism or social practices that affect lives of other species.

What if, instead, we deliberately tried to use technological mediation to share and disclose knowledges with the aim to foster transformations that encourage us to think beyond anthropocentrism in cultural practices? What kind of theories and design strategies can we adopt with the purpose to rethink and redesign relationships with 'the other'?

As mentioned in the introductory section, design understood as a practice for becoming sensitive to other beings as a starting point for making moral (design) decisions does not only arise out of instrumental scientific constructs from fields like animal ethology or biology, but should be complemented with sensitivities and knowledges that motivate a shift beyond anthropocentrism.

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[5] All technologies materialize specific declinations of rationality and of our inescapably human ways of understanding space, time, and causation (Gualeni 2015). For example, regardless of their absolute precision and the indefatigably repetitive cycles of their calculations, computers nowadays still retain the biological imprint of human kinds of world-views that inspired the first Turing machines. In the field of the digital humanities, Willard McCarty similarly focused on "the fundamental dependence of any computing system on a specific conception of the world or 'model' of it" (McCarthy 2005: 21). Still using the computer as a metonymy for any kind of technologies, we would like to paraphrase a famous remark by Ludwig Wittgenstein and propose the idea that 'if a lion built a computer, we could not use it.'

This implies that engaging in encounters in which we can get to know the animal and account for the unique qualities that characterize different beings prompts us to pay attention to affinities and similarities that we can recognize in 'the other', while at the same time perceiving our differences. These types of encounters, materialized in the case of this paper in the form of practical [computer (game)] design interventions and reflections, could propose alternative futures with animals and elicit a transformation in our sensitivity and *ethos* towards other beings.

An example of an approach that connects with these aims includes the *Playing with Pigs* project. As a reaction to a European law that requires all pigs to have toys in their shed as a form of environment enrichment to prevent boredom and tail biting, a team of researchers and designers started with the development of a videogame that connects humans and pigs over distance and allows them to interact with each other. Using the game prototype as a conversation piece, the *Playing with Pigs* project invites us to rethink and speculate about our relationships with farm animals through encounters that could be both scientifically interesting as well as intersubjectively meaningful (Driessen et al. 2014). The researchers suggest that philosophical inquiry and ethics do not only happen through articulated arguments and debates and designing can be a fruitful mode of thinking, through materializing ideas and tinkering with these on the go (Driessen et al. 2014).

These type of shared engagements, framed as a form of 'doing' multispecies philosophy through design practices could be a way to foreground the experiential nature of what it means to be a moral person (Driessen et al. 2014). Furthermore, the situated knowledges and sensitivities that are generated through this practice could help us to critically rethink the roles animals have in our society. Over the last couple of years, several other researchers/designers have explored the topic of playful interaction for, and together with, animals through the practice of game design (see for example Wirman 2014; Westerlaken & Gualeni 2014; French, Mancini, & Sharp 2015). These projects could undoubtedly generate situated knowledges and sensitivities that affect the relationships between the animals and humans that are involved in these processes, but the implications or impact of the transformations that they could elicit have never been explicitly articulated. Furthermore, these projects all involve animals that are relatively similar or known to us in terms of cognitive structures or playful behaviour, such as orangutans, pigs, cats, and elephants. If the idea of multispecies philosophy through design is to address the problem of speciesism (see footnote 2), who do we invite to these practices, and when is 'the other' so remote from ourselves and our level of understanding that it becomes impossible to design or philosophize with or about?

Part 2: Designing as a Practice that Enables Selves to Respond

The verb 'to design' can, in its widest sense, indicate the activity of configuring and prefiguring situations in order to propose alternative ones. A traditional, and still widely used, understanding of 'design' is the idea of "changing existing situations into preferred ones" (Simon 1969: 111). According to Krippendorf, this is a good start, but it is important to realize that the common role of designers is to propose changes rather than actually realize them; furthermore, the outlined, traditional definition completely ignores the historical – and more generally contextual – dimensions of design: in different situations – and under different systems of values – some design solutions can be understood as desirable for some, undesirable for others, at odds with societal norms and customs, or completely familiar (Krippendorf 2005). More encompassing (and inevitably vaguer) perspectives on design are offered by Highmore, who proposes to embrace it as a series of negotiations (Highmore 2009), and by Feenberg, who understands designs as "negotiated achievements" (Feenberg 1995: 9). Similarly, Verbeek embraces the practice of design as "a material form of doing ethics" (Verbeek 2008: 91), while for Keshavarez it is a "mode of acting, of doing and of configuring the situation in order to propose other possible situations" (Keshavarez 2016: 92). Famously, Dilnot understood design processually, that is to say a process of negotiation with the given which extends the boundaries of the previously possible (Dilnot 2005).

In our aim to engage in a form of multispecies philosophy through the practice of design, a broader understanding of design as a complex and multistable[6] activity is helpful in further defining who could potentially be involved in the designerly negotiations outlined above.

The various processes that constitute a design process can be recognized as having an impact on a multitude of beings, things, and situations. A seemingly simple design process could have effects and repercussions on a vast network of humans and non-humans that mediate, and are mediated by design processes in different stages of their planning and execution phases (Latour 1993; Verbeek 2008). In projects that aimed to configure and prefigure complex and multistable situations, design decisions even led to transformations of entire ecosystems (Monbiot 2014), or had unintended and unforeseen effects that resulted in completely unexpected ways in which artefacts were appropriated by their users (Verbeek 2008).

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[6] This term, introduced by Don Ihde in his 1990 book *Technology and the Lifeworld: From Garden to Earth* indicates the quality of a technology or an activity of being non-deterministic and influenced by a variety of factors. Multistable artefacts and practices are, according to Ihde, always appropriated and engaged by their users in ways that are flexible, adaptable, and context-dependent.

In our aim to expand our moral horizon beyond a perspective that is largely (or even exclusively) anthropocentric, the wider understanding of design that we discussed in the previous paragraphs informs new and practical ways of thinking that could help us in overcoming human-centred design practices with an interrelated set of objectives:

1) contributing to an ethical shift towards caring for other beings on our planet that we consider timely and necessary,
2) developing a clearer and more complete understanding of (game) design as a transformative practice for both the designers and the entities that are involved in – and affected by – design practices, and
3) of design and 'making' as ways of 'doing'[7] multispecies philosophy.

In the field of posthumanism, scholars such as Bruno Latour, Ian Bogost, and Peter-Paul Verbeek articulate theoretical frameworks that include non-humans as active components that shape and reshape the world in different ways (Latour 1993; Verbeek 2008; Bogost 2012). Here, the term non-human is used in a way that indicates everything that is not human: animals, objects, concepts, as well as other forms of life like algae and bacteria. Generally speaking, the aim of the mentioned scholars can be identified as restructuring and expanding our ethical framework and prompting us to consider (as well as re-consider) the involvement of other entities in social processes that involve planning and negotiating our shared practices. Their aim is, to put it in a somewhat simpler manner, to break down anthropocentric hierarchies. By separating humans from 'all that is other', however, these approaches maintain a focus on the human and can still be recognized as evidently anthropocentric, and thus problematic in terms of establishing a more compromissory and vast context for design processes that aim to involve animals (Westerlaken & Gualeni 2016, forthcoming).

Anthropologist Eduardo Kohn sees the traditional dichotomic division between humans and non-humans as the biggest shortcoming of the posthumanities. He argues that bringing non-humans and humans into the same analytical framework is an approach that leads to the under-appreciation of concepts like agency and representation, and leaves these topics outside of the central interests of disciplines within the posthumanities (Kohn 2013). He argues that these ways of thinking blind us to the kinds of agency that do in fact exist beyond human ontologies. In similar fashion, but grounded in the field of critical animal studies, Hribal also discusses our

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[7] In this context, we propose the idea of 'doing' as a possible, fruitful alternative to the logo-centrism that dominates the methodological horizon of the humanities. Constructing artefacts as a way to pursue philosophy offers, according to the outlined perspectives, an opportunity to correct the discursive and linguistic bias of humanistic culture. "According to this view, we should be open to communicating scholarship through artefacts, whether digital or not. It implies that print is, indeed, ill equipped [sic] to deal with entire classes of knowledge that are presumably germane to humanistic inquiry." (Ramsay & Rockwell in Gold 2012: 78)

tendency to overlook agency and selfhood in animals, and argues that this perspective unproductively understands animals as static beings, or as objects devoid of any 'real substance'. Hribal encourages us, instead, to recognize and appreciate their capacity for responding and resisting to situations and changes (Hribal 2007). With the aim of dismantling the conceptual dichotomy between humans and non-humans which he finds deleterious, Kohn takes a more encompassing and compromissory ontological stance and focuses on identifying what makes a process 'alive'. He argues that capabilities such as those of making choices, responding to stimuli, and adapting to new situations need to be accounted for, because if we continue to ignore these aptitudes in other entities, we are always forced to fall back on theories that centre around human-like forms of representation and intentionality such as language and moral reasoning when we wish to reflect on engagements with 'the other' (Kohn 2013).

The limiting approach to non-human agency that is often taken for granted in posthumanism overlooks the fact that some members of the non-human category can be understood as 'selves', where by selves we indicate – after Kohn – processes that are subject to response and adaptation, in other words to things that are 'living' (Kohn 2013: 7). The response and adaptation that qualify a 'self' according to Kohn do not need to take place at time scales and with modalities that customarily enter the horizon of human phenomenologies: for example, a coral reef takes centuries to grow, and climatic changes in an ecosystem are not always possible to be perceived and understood at the temporal scale of human beings. In rethinking 'otherness' from an angle that is grounded in phenomenology, philosopher Bernhard Waldenfels proposes the possibility of an 'alien phenomenology' that relies on 'responsive ethics'. We found that Kohn and Waldenfels took remarkably similar strategies to approach 'otherness', strategies that rely on basic perceptions and responses as its key tools, tools that are not rooted in symbolic, metaphorical, or abstract forms of thinking and expressing thought. Instead, their suggested approach has an indexical and responsive character (Waldenfels 2011). Both in the work of Kohn as well as in Waldenfels's, the very basic features that could allow us to engage with 'the other' are to be found in our fundamental similarities. It is in that basic, shared biological background that transformations and engagements (in the form of responses, reactions, and 'attention') can take place.

Using this theoretical lens is particularly useful as it allows us to distinguish entities with a self (like a cockroach or a human) from entities without a self (for example a chair or a rock, which do not respond and adapt in the same way that living entities do). To be sure, these selves are not necessarily part of the animal kingdom, and they do not even have to be endowed with a nervous system to be recognized as 'selves': according to Kohn, plants and mushrooms also qualify. Additionally, he maintains that selfhood can be distributed over multiple bodies. This is the case, for example of the 'selfhood' of a seminar, a crowd, a forest, or an ant colony (Kohn 2013).

In adopting definitions of both 'knowledge' and 'design' that are not solely focused on functional or universal aspects of their output, we aim to make space for less hierarchical and less anthropocentric forms of engagements with other entities. Starting out by arguing for the complementary value of generating situated knowledges through the practice of design, we can now come back to the question asked earlier in this paper.

We propose to articulate the practice of 'doing' multispecies philosophy through design by using the notion of a 'self' outlined above, where Kohn identified a 'self' as an entity (individual as well as collective) capable of responding and adapting. Starting with this conception of what a 'self' is, we might attempt to understand and design with 'the other' as an entity with which we can enter in a relationship of response and negotiation which can guide and shape the design as a shared activity in itself. In practice, this means that we could try to engage in a designerly relationships with plants, bacteria, and crowds because we could invite these entities to engage with – and adapt to – our design and to interact with the designers in an indexical exchange of responses. To be sure, these responses and adaptations do not necessarily have to be immediate or direct, but could also take place over longer timespans, happen over multiple generations, or manifest itself through the absence of response entirely. In contrast, these kind of processes could not be achieved in a similar way with non-living entities such as bricks, paper cups, and snowflakes, because these things do not actively respond to our design interventions. Arguably, from a metaphorical perspective, one could suggest that, non-living entities, such as the materials that are used in a design process, are also capable of responding to the way in which they are used by the designer, for example when materials break down or 'resist' to certain kinds of treatment. Donald Schön labelled this as 'back-talk', "a reflective conversation with the materials of a situation" (Schön 1987: 31). However, in this paper, we are specifically interested in sensitivities and transformations that arise from the practice of engaging with living entities with whom we can actively and dynamically negotiate in design processes.

In the first two parts of this paper, we aimed at articulating ways that can help us expand our moral concern to other selves and generating situated knowledges through the practice of doing multispecies philosophy. To explore the practical consequences of these arguments, we initiated a project in which we actively tried to engage in a design process with an ant colony, as an exercise in designing with 'otherness' that is fairly remote from our everyday understanding of the world, but could still produce relatively recognizable and immediate responses towards the design interventions we present.

Part 3: Design Challenges with Ants

The experimental project that we will describe and account for in this section of our paper was motivated and guided by the following question: (how) can we actively involve ants, as selves, in the process of designing a playful space or a game that they can potentially appropriate?

In this process we did not aim to demonstrate playfulness as an activity in ants, or try to produce generalizable knowledge claims on ant behaviour or cognitive capabilities. Instead, our goal was to use design practices to generate 'situated knowledges' that could encourage transformations and sensitivities among designers that could propose new ideas about our relationships with these ants (as well as ant colonies) as selves that are included in our moral horizon. Furthermore, this project allowed us to practically question and reconfigure our understanding of what constitutes 'players'. So instead of defining concepts like 'play' and 'players' as the a priori foundations of this experiment, we adopted a 'research through design' approach (see footnote 3) where doubts and emerging reflections provided the flexibility and the philosophical space to adopt new perspectives and sensitivities on both play and the selfhood of ants, and to respond to the actions and behaviours of the ant colony.

The project spanned over a period of five months and can be divided in three different phases: a fieldwork phase (I) in which we took an attempt at familiarizing with the ants and the behaviours of this very alien 'selfhood', documented through ethnographic as well as autoethnographic methods (including pictures, conversations, and a designer journal), a design phase (II) consisting of a short gamejam with 16 interaction/game designers that developed different prototypes, and a playtesting phase (III) in which the interactions of the ants where each of the prototypes was live-streamed and reflected upon as the ants appropriated them.

Phase I: fieldwork, or: living with an ant colony

In the first phase of this project, the first author of this paper acquired a black ant colony (including a queen and 15 workers) and set up a living environment for the ants at her workspace for a total of three months. These ant nests are available as commercial products in different sizes and possible configurations (see Figure 1) As expected, the introduction of an ant colony in an office setting was in itself a source of unexpected situations and possibilities for 'situated knowledges' to develop. The ant colony became an often discussed subject among colleagues, and people made a habit of visiting that particular office to see what the ants were doing. While spending time with the ants on a daily basis, the designer herself reported that she started caring

about the ants at an emotional level, which caused mixed feelings of doubt about the ethical problems with keeping the said ants in captivity. Furthermore, during these three months, we tried out different living arrangements and small design interventions to see how the ants would respond and the designer spent time learning more about ant behaviour through getting engaged with existing literature, recent scientific research, and nature documentaries.

One day, the ants managed to escape from their artificial and confined living space, which qualified as one of the most thought-provoking events of the whole period. Their remarkable escape story involved some ants that found a small opening between two walls of their *Plexiglass* living space, escaped, gathered some pieces of carton from a nearby source, and stacked these pieces in between the *Plexiglass* in order to make the opening bigger and walk in and out more comfortably.

Figure 3: the confined living environment of the ants (left image) consisted of a plastered nest with different chambers and an outside area made of transparent *Plexiglass* where the ants gather resources and bring out garbage from their nest. The attached tubes provide sugary water. The image on the right shows the queen ant, some of the workers, and the (then taped off) part of the *Plexiglass* that the ants used to escape through.

The designer then started to reflect on how this escape-story could be used as a provocative and speculative starting point for a design context opening that could inspire designers to develop escape-room challenges[8] that the ants could potentially play (regardless of whether we are willing to accept their interaction with the prototypes as playful). At the same time, this escape-story and the close day-to-day relationship with the ants evoked feelings of doubts and cruelty that the designer documented in a journal:

"*Some days I feel a bit bad about having those ants in possession. […] It seemed like ants*

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[8] "Escape rooms are live-action team-based games where players discover clues, solve puzzles, and accomplish tasks in one or more rooms in order to accomplish a specific goal (usually escaping from the room) in a limited amount of time." (Nicholson 2015: 1).

could actually be satisfied in captivity, because they have all the resources they need and in the wild they apparently don't go further away from their nest than absolutely necessary. But the more I think about these things, the more I feel that I'm somehow cruel to them, especially in relation to their escape adventure and me blocking their way out (after they put so much effort into building their escape route) or using this as an insight into making escape rooms in which we as humans are in control of their life in such an unequal way."

In spite of these doubts, the designer decided to continue the project while musing over the power dynamics and inequality between the humans and animals that were involved in it. At that point, she wanted to know whether other people would undergo similar transformations once they got involved in a design process that similarly aimed at engaging an ant colony as an example of an 'other'.

Phase II: design, or: escape room challenges for ants

With this escape story as inspiration, an Escape Room for Ants Gamejam was organised during the Student Interaction Design and Research (SIDeR) conference at Malmö University (Sweden) in April 2016. During this two-hour jam, 16 interaction and game design students with various international backgrounds developed a total of five different prototypes for a potential escape room challenge designed specifically around the skills and possibilities of ants.

During this design activity, the participants were asked to experiment with the speculative idea of seeing the ants as players and design a challenge that would not be too easy, and not too difficult, for the ants to solve. In this case, the designers lacked any of the knowledge and perspectives that are customarily considered to be necessary to design a meaningful experience (in terms of proposing interactions that could eventually be appropriated in ways that somewhat align with what the designers intended). This put the designers in the situation of having to start experimenting and figuring things out through the practice of design with the materials that were available to them (and the information they could quickly obtain, such as the dimensions, weight, and walking pace of the ants). As an example, some of the designers started their ideation process by crafting metaphors taken from game design with humans and tried out where these could apply to designs for ants. Some groups tried, instead, to envisage and control the effects of their design ideas by designing puzzles and level progression while continuously trying to speculate and discuss how the ants would specifically interact with their prototypes. The following images show two of the prototypes that the designers built.
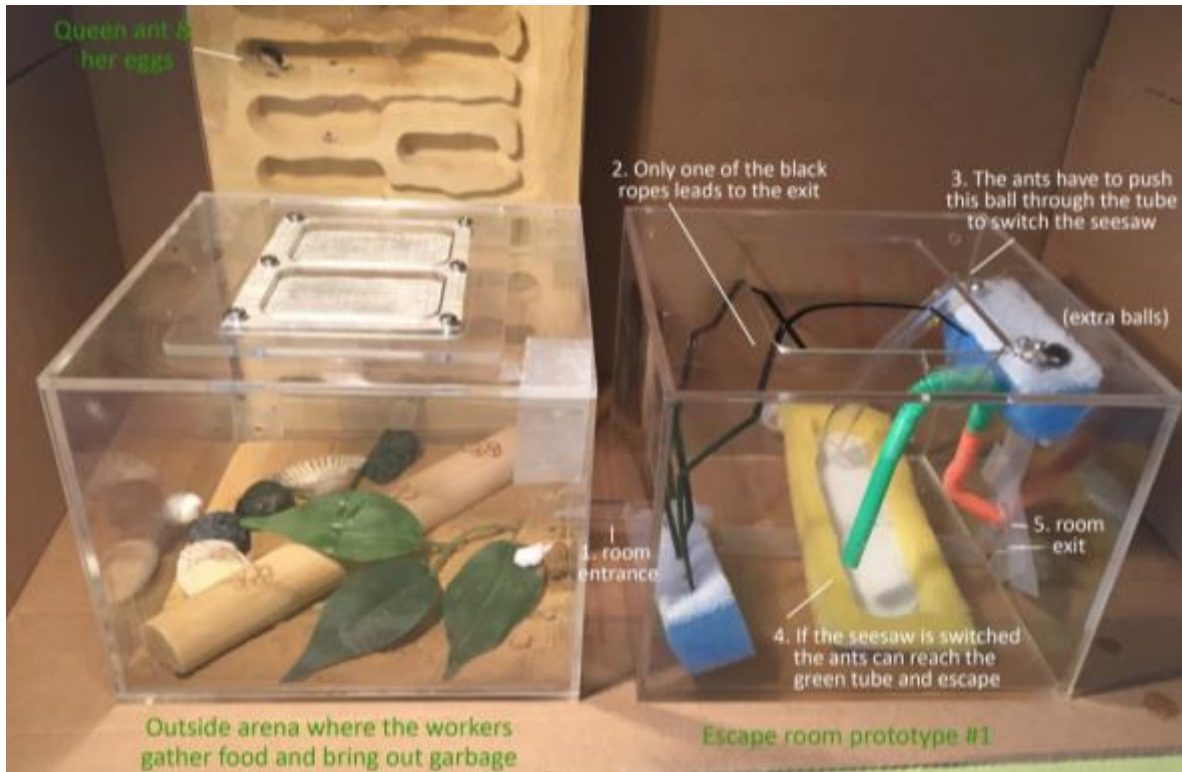
Figure 4: in this prototype, the designers (Ralitsa Plamenova Retkova, Simon Nilsson, Eliel Camargo-Molina, and Pak Lau) propose an escape room with three different stages. First the ants have to choose the correct wire that leads to the next area. Then the ants need to push a ball through the transparent tube. This action will pivot the seesaw after which the ants can exit the room through the green/red tube.
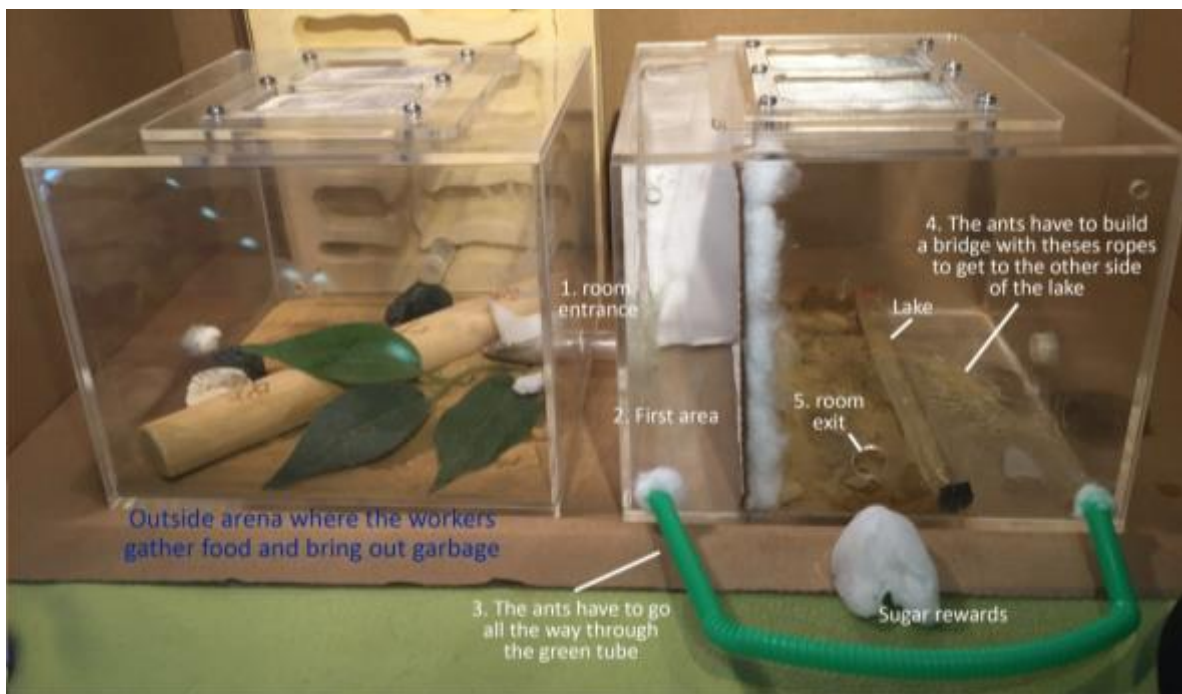

Figure 5: the protoype in this image, made by Marian Vijverberg, Nele Schmidt, and Koen Wijbrands proposes an escape room in which the ants enter into a small room on the left of the box. The ants then have to crawl through the green tube to enter a bigger area. The ants can escape the room after crossing a small lake by building a bridge using small ropes.

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More detailed explanations of all five prototype as well as the credits of the other designers that took part in their ideation and assemblage can be found online through: http://wp.me/p2y7bd-dF

Additionally, at the end of the workshop, all 16 designers filled in a survey with open questions regarding their experiences. Their answers illustrated how nearly all designers started considering the previously unexplored possibility of ants being curious and perhaps even playful. Furthermore, the participants reflected on ethical interrogatives and implications that should be discussed in the case of pursuing a design intervention that involves ants. Some of their answers:

> *"They [the ants] should not be led into dangerous situations."*
> *"It should not be dangerous. We should <u>respect</u> these small animals."*
> *"Whether it is okay to design for ants without even knowing whether they want it."*
> *"We should be careful of not ending up killing them or make them suffer."*
> *"We created a design [in which] the ants can be trapped forever without food. We almost went ahead and presumed they're smart enough to figure [this] out. I feel guilty about this."*

However, none of the designers considered the activity as an ethically questionable exercise in itself, or refused to participate in it, despite the openness of the organizer regarding the mixed feelings she had prior to the beginning of the gamejam. In the same survey, the designers were asked if this short activity changed their view on ants or their relationships with them:

> *"I have never thought that ants possibly could enjoy certain activities, instead of doing it out of instinct or just to survive"*
> *"It was super interesting as the word "empathy" often is a key word in IxD [Interaction Design]. This is usually easier with people as you can relate to them. It was fun trying to imagine yourself as an ant, and it somehow creates a "weird" bond with them that you had not considered before."*
> *"No…Or maybe a little. We began to give them personalities."*
> *"It was very interesting to design for something that you have absolutely no clue about. I feel more close to the ants (feels like that). And I can identify more since I know more about them."*
> *"I think we view them as much smarter animals now."*
> *"We almost humanize them by saying things are 'fun' and all. I don't know how much of this is true, but it does make me wonder!"*
> *"You can design with/for ants to entertain probably mostly oneself."*
> *"I never thought that ants are playful. Not that I thought they weren't, I just did not think about it."*

Despite the subtle differences in their experiences during the workshop, we concluded that most designers (at least 12 out of 16 participants that completed the survey) included a specific reflection on their increased sensitivity and interest towards the ants that were involved in this project. A frequently mentioned topic included the designers' consideration of ants being perhaps "more playful", "smarter", or "more curious" than they would expect them to be. Furthermore, most participants seemed to be interested in giving more thought to the idea that ants might do something, such as exploring or manipulating objects, for reasons that are not purely functional or done for immediate survival. These insights remained a topic of conversation during the next days of the SIDeR conference. Additionally, a follow-up survey that was send out six months after the gamejam elicited two replies. In both of these, the participants shared how their experiences changed their encounters with the ants they met after the gamejam and made them feel more curious and considerate towards the ants' lives. In the next project phase, we explored how the ants interacted with the prototype and the response this generated.

Phase III: playtesting and reflections, or: how Twitch closed down the livestream

In this phase we wanted to complete the cycle of this exercise and invite the ants to react to the designs that were created by observing the ants' interaction with the prototypes. This process was broadcasted on *Twitch* and other online streaming platforms with the aim of generating conversations and furthering reflections concerning the ideas that this project proposes. After the first day of streaming, the platform *Twitch* closed the online broadcast of the ants interacting with the escape room prototypes and labelled it as "non-gaming related content". This event generated mixed feelings among viewers that started arguing online about the potential paradox (and the irony) of designing escape rooms for captive animals and society's concept of gaming understood as an exclusively human activity. This situation produced several online discussions and illustrated different degrees of sensitivity that people perceived in their relationships with these ants while watching them interact with the prototypes. Some examples:
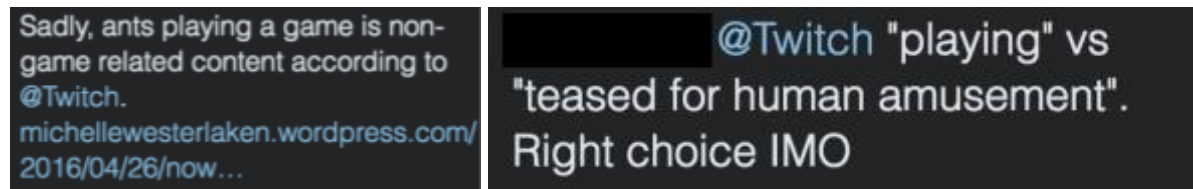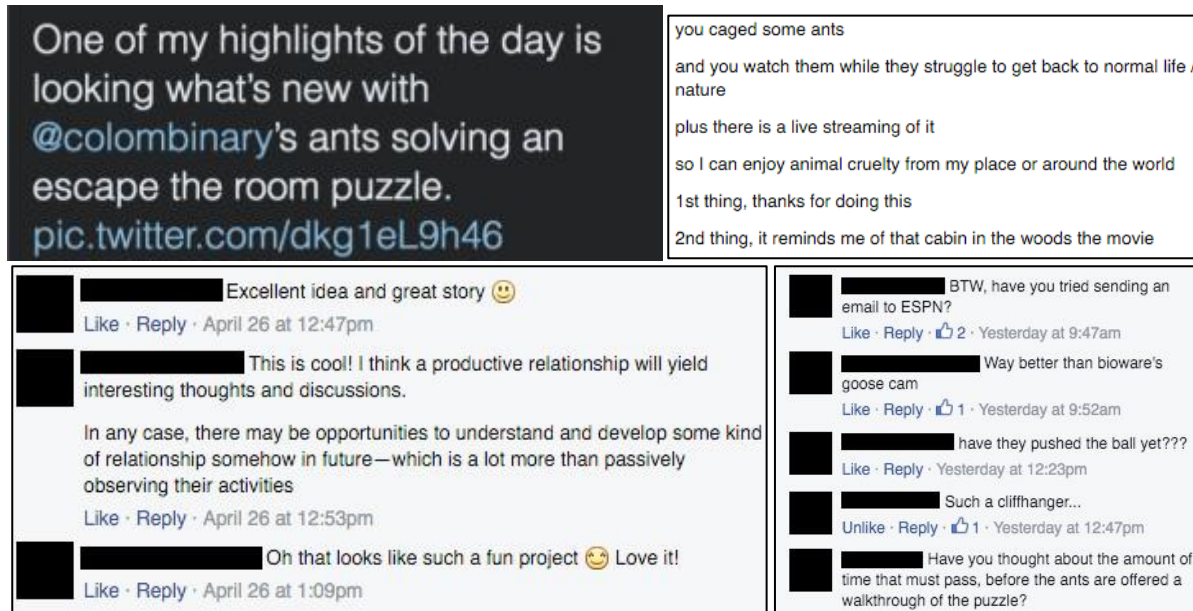
Figure 6: some of the online reactions on the livestream of the ants interacting with the five different prototypes. The degree to which people shared different forms of empathy towards the ants varied greatly. Some people were very engaged with the interactions of the ants with each of the prototypes, whereas others discussed the cruelty that this project inflicts.

Over a period of five weeks, the ants interacted with each of the five prototypes. During this time, the ants managed to escape from three of the five rooms. More details on these escapes and their interactions with each specific room can be found online via http://wp.me/p2y7bd-eT

Conclusions

In this paper we followed Haraway's notion of 'situated knowledges', an understanding of design as a practice of 'configuring and prefiguring situations', and Kohn's wider perspectives on selves as entities that are alive and respond. These theories inspired us to argue for the value of paying attention to the local knowledges that can specifically arise from design practices. The insights and transformations that (game) design-driven approaches produce could help us approach and engage with 'the other' as a form of 'doing' multispecies philosophy. With this framework we aim to expand our moral concern towards other animals and to critically rethink relationships with other entities on our planet. Specifically related to (game) design, we propose the inclusion of other selves that could actively participate in design processes and respond to the artefacts we create.

In taking this framework into the practice of design, we discussed how the ongoing design project for (and with) ants generated new perspectives and sensitivities concerning our engagement with

other beings. The reflections and conversations that emerged during (and because) the design experiment with ants (Part 3) constitute fragmented, subjective, and incomplete interpretations of insights that were gained during and after this short exercise. As 'situated knowledges', they do not simply share facts about the lives and behaviours of ants; they also illustrate how the act of getting contextually engaged with the life of other species can be a transformative exercise that generates sensitivities and empathy towards other selves. This process was naturally already influenced by the preconceptions and ideologies of the designer that organised and guided the different events that took place. However, it is important to note that the ants were not passive entities during this process: by being there, acting, escaping, responding, and appropriating artefacts in unexpected ways, they influenced the way in which these transformations took place and the project evolved during all three phases.

Without taking any deliberate sides as to the debate whether the ants are players or not, our exploratory design exercise with ants spurred multiple conversations (both online and in person) concerning play and player subjectivity. What we considered to be one of the most interesting approaches on this particular corollary of our engagement with ants was to try to understand the prototypes in terms of what Björk and Juul identified as 'Zero-Player Games' (Björk & Juul 2012)[9]. We feel that this label does not do particular justice to the role of the ants, reduced to trivial, automated agents, but we believe that this concept of Björk and Juul is a relevant and stimulating framework to continue the conversation on other selves and their playfulness. It offers an initial springboard for the further exploration of the concept of ants (or other selves) as participating to the design and to the functioning of a game without labelling them as players in the conventional use of the term, or imbuing them with playful attitudes and needs that might be difficult to detect or discuss.

In articulating and practically trying out new perspectives that combine notions of knowledge, design, and selves, we suggest that our efforts in this project merely entail a first experiment in exploring the transformational qualities of design towards embracing and responding to 'otherness'. Not only our perceptions of other selves and how they can be involved in the practice of design might shift, but also the very definition of what constitutes a self could undergo more expansion and refinement through both theoretical and practical engagements.

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[9] Here, under the label of Zero Player Games, we discuss games (or more generally artefacts) devoid of player involvement. In particular, escape rooms for ants could be described as fitting under two of the categories of 'zero-player games' envisaged by the authors:
- 'setup-only games' (games for which player input is only possible in the initial setup, after which the game proceeds on its own), and
- 'games played by AIs [artificial intelligence]' (Björk & Juul 2012).

We argue that – similar to the activity of play (Westerlaken & Gualeni, 2013) – the practice of design, as a form of 'doing' multispecies philosophy, allows for unexpected situations capable of stimulating new thoughts, alternative points of views, and previously unexperienced forms of engagement. This seems to be a fruitful context where responses can be exchanged and transformations happen.

As part of our shared research interests, as authors we consider it fruitful and important to continue investigating design (and game design in particular, but not exclusively) in its potential to elicit and accompany self-transformation as well as a less constrained capability to imagine and operate in the world. In this specific instance, we focused on the possibility for (game) design to help give rise to a less speciesist world, but these efforts could focus on other societal issues as well[10]. If nothing else, this first attempt to negotiate with otherness will affect our next encounter with ants.

Acknowledgements

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[10] Other examples and ideas on this topic, can be found on http://gadtrap.gua-le-ni.com

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