

WORKPACKAGE 3 – INTELLIGENCE AND ADAPTATION

DELIVERABLE 23 – RECOMMENDATIONS FOR RESULTS EXPLOITATION

CONTEXT

GENERAL CONTEXT

Solutions for cohabitation between species, especially between humans and other animals, are not easy to generalize successfully. A lot of factors must be taken into account, from an ethological point of view, from an anthropological point of view but also from a semiotic point of view. One of the least taken into account aspects is probably the animals' agency.

We know that animals of the same species don't communicate, behave or interact in the same way in different places (Freeberg, 2012; McGowan, 2001), sometimes even leading to geographical cultural norms (Whiten, Horner, de Waal 2005). Again, the particularly complex cognitive abilities of corvids (Fleming, 2010) make them very interesting subjects for a case study about the animal agency.

INSIDE THE PROJECT

As the project aims to propose semiotic solutions for cohabitation that could be generalized, different aspects have to be taken into account, and this case study aims to address the question of animal agency. By studying the behaviour, habits, geographical and cultural norms of corvids, this step aims to map more precisely the way corvids adapt, understand and create semiosis in their environment, in order to understand on which points a generalization of solutions would have to focus.

RESEARCH QUESTION AND HYPOTHESIS

QUESTION AND SUBQUESTION

This deliverable is part of the Case study 3, aiming to study the relationship between the agency of some liminal species, like corvids, and the generalization of semiotic solutions for a better cohabitation of species in cities. The main question of this Case study is: How can we generalize semiotic solutions for human/animal cohabitation in different environments/cities?

This recommendations' documentation is a part of the fieldwork distributed during the length of the project. This fieldwork aims more precisely to answer the question: How can we acknowledge behavioural components when trying to generalize a semiotic solution?

HYPOTHESIS OF THIS STEP

The general hypothesis of this Case study is that some species are particularly well-adapted to human contact, and their behaviour can be different depending on the behaviour and culture of the humans they live with. Their adaptability and intelligence must be taken into account when exporting urbanism solutions to another country, culture or climate.

The precise hypothesis of this step is that some behaviours need to be acknowledged properly when wanting to generalize semiotic solutions.

METHODOLOGY

METHODOLOGICAL CHOICES

Observations were done during at least one complete year in two different cities and documented by notes (see Field diary in the Documents section) and recordings. Videos and photos were archived on an external hard drive (see the Documents section for the nomenclature of the files). Special notes were made about:

- change of behaviour, including change in the repartition of species through the global area
- signs of a stress-free attitude in situations that could have been stressful
- aggression behaviours (real aggressions, fake aggressions, threats) towards conspecifics or other species
- unexplained but repetitive behaviours
- exceptional and impressive behaviours

The entire observations were then reviewed in order to extract patterns of behaviours and potential sensitive points for cohabitation.

ISSUES AND PROBLEM-SOLVING

A general issue of the project is that one year is enough to have a complete observation, but probably not enough to have a perfectly representative one. Therefore, some behaviours may still remain unnoticed and undocumented.

Part of the flocks that should have been observed in the comparative city (Paris) was missing, since the Champ de Mars flock disappeared without explanation. Further observations showed that the remaining pair was nevertheless healthy, and had a successful nesting season, so a traumatic cause is not suspected.

POINTS OF VIGILANCE

Data are fragile due to difficulty to find the specimens: in Tartu, because of the moving of the flocks through seasons, in Paris, because of the disappearance of the Champs de Mars flock.

Data in Paris may be different from the norm due to exceptional heat waves that occurred during the observation periods, including a very warm winter (winter was also warmer in Tartu, but the difference with the previous winter was less significative). Nevertheless, as these events are unfortunately expected to be less and less rare in the future, this data is still relevant.

RESULTS

RAW RESULTS

ETHOLOGY

There are few differences between the two species in general behaviour, and comparison remains relevant. In both cities, species seemed to be well adapted to the urban environment. They find a way to feed, nest, and raise healthy younglings.

INTERACTIONS WITH OTHER SPECIES

In both cities, corvids have been observed to have some occasional and opportunistic predatory behaviour towards, either themselves (in Tartu, during nesting season, *C. cornix* can attack *C. monedula*) or other birds'

species (in Paris, gardeners have witnessed attacks of *C. corone* towards different species, from small chicks to big pigeons if they are in a group). Aggression between individuals of the same species has been observed.

In all situations, aggressions seem to be anecdotal in the urban environment where food is easily available. “Demonstrative” aggressions can occur during nesting, either against conspecifics, other corvids or other birds, seagulls and gulls in particular. Very rarely, larger prey birds (in particular falcons) can interact with crows and will be systematically chased away if crows are in pairs or group.

INTERACTIONS WITH HUMANS

In both cities, crows are well tolerated by humans. The aggressions, in both directions, are very rare. In France, some minor part of the population seems to be particularly hostile for emotional and symbolic reasons (see Document I3, M2 and EX2).

Most of the time, humans see crows as an interesting species, with individual moods and personalities, and are feeling sympathy towards them. Informal discussions started during observations show that the inhabitants are also willing to learn about the species and their behaviour.

Crows have a quite confident and stress-free attitude towards humans. They are perceived as food providers, especially in Paris, where crows are bold enough to approach humans to beg for food as close as 20 cm. Crows in Tartu are more cautious, even if no aggressive behaviours from inhabitants could explain this difference. The most probable explanation is that in Paris, crows are in contact with an important number of tourists, especially during summertime, and bold behaviours can be seen as cute or more susceptible to provoke empathy, and would result in more feeding. This kind of behaviour could then have been selected by the very touristic environment. It is sometimes observed in Tartu during winter time if temperatures drop drastically (minus 20C° or less) and a heavy amount of snow is making finding food difficult, even in trash cans (since everything tends to freeze quickly).

INTERACTIONS WITH CITY INFRASTRUCTURES

Different strategies of environmental interaction seemed to be used between the two cities:

- In Tartu, corvids are moving from spot to spot. In summer, the departure from the nesting areas to be back into the areas where they are feeding in resting during the rest of the year is a clear sign of seasonal strategy (from an area rich in nesting and hiding spots to an area rich in easily accessible food).
- In Paris, pairs of experienced adults own a territory and won't move from it. Younglings and young unexperienced adults are living together in large flocks in places with a lot of accessible food.

Besides that, no real damages (inhabitants complain about droppings on their cars or public equipment, but this can't count as permanent damages) are created by the crows in Tartu. In Paris, their predatory behaviour towards certain kinds of larvae leads them to damage, sometimes heavily, grass and gardens. A solution to this problem has been experimented with success by Frédéric Jiguet (French National Natural History Museum) (Lequitte-Charransol & Jiguet, 2021) and his team but is not yet generalized and implemented, mainly for administrative and political reasons.

INTERPRETATION

LOW MAINTENANCE GENERALIZATION

When trying to generalize results, differences in taxonomy can be less relevant than differences in interactions. In this case the four species studied are very close but still considered as different species. Nevertheless, differences are more important between two very close ones – considered as two subspecies of the same

species only a few years ago – interacting with different environments and human cultures, than between species living in the same city but more diverse phylogenetically speaking.

Generalization must take into account the variability of behaviours through the year, but these behaviours are quite strongly predictable, both in time – they follow some natural indicators of temperature, amount of light etc. – and in nature – behaviour observed in a species of a family can be generalized to another species of the same family or with the same functioning.

HIGH MAINTENANCE GENERALIZATION

The major factor a generalization process must take into account is the human culture with which the species interact. Since ethology is not under many variations from one place to another, it is mostly the human culture that will indicate the kind of interactions the species have with inhabitants, the kind of nuisances they created – or which are the nuisances perceived as such – but also the kind of solutions that are relevant and how they can be implemented.

In case of an attempt to generalize a semiotic solution that was successful in an area of low conflict or aggression to an area with higher conflict or aggression, it must also be taken into account that the targeted species will need an adaptation time – especially in the case of corvids, or other species with life-long memory – and that aggressive, cautious or defence behaviours can remain for one or two generations time. Inhabitants should be very well sensitised to this aspect, in order to prevent a regrow of the conflict.

MILESTONE 3 – PROGRESS REPORT

IMPACT OF RESULTS

These recommendations are a good overview of what can be learned and taken into account in a project of this kind and when addressing this kind of cohabitation issue. They form a satisfying conclusion to Milestone 3.

ISSUES, PROBLEMS OR LACKING

The time of the project is, still, quite short. Especially in the context of global climate change, unusual weather, temperatures, and climate events (wildfires, tornados etc.) could also have a deep impact on the species that are poorly taken into account here.

NEXT STEPS

The next step is to include this set of recommendations in the Milestone 3 report (see Document M3).

GENERAL PROJECT – CURRENT STATE OF PLAY

IMPACT OF RESULTS

These recommendations, with the results summarized in Deliverable 22, are the major point of Milestone 3.

PROPOSITIONS FOR OTHER ASPECTS OF THE PROJECT

ACADEMIC ASPECTS

These results will be mixed with the results of Workpackage 2 in a last proposition of academic article (see Document P3).

POPULARIZATION ASPECTS

These results will be used to enforce the guidelines for generalization in different countries, cities, linguistic areas etc. that will be proposed in EX3.

NEXT STEPS

This deliverable closes the research component both for Milestone 3 and for the complete project. Next steps are Milestone 3 report (see Document M3) but also the Project Final Report.

ANNEXES

REFERENCES

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DOCUMENTS

Field diary (PDF – version 29/04/2023)

Nomenclature (xls – version 17/11/2021)