WORKPACKAGE 3 – INTELLIGENCE AND ADAPTATION

DELIVERABLE 19 – FIELD REPORT FOR PARIS, SPRING

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, an anthropological point of view but also 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 (McGowan 2001; Freeberg 2012), 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 animal's 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 field report is part of fieldwork distributed during all the length of the project. This fieldwork aims more precisely to answer the question: What elements of behaviour should be acknowledged 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 hypothesis of this collection of steps (from Deliverable 12 to Deliverable 19) is that some particular behaviours, having an influence on human beings, pets or infrastructures, must be taken into account to

generalize solutions for cohabitation. But these behaviours can change during the time of the year and the city of living. Pointing out these changes is important to understand how to create generalizable solutions, but also how to take into account the animal's agency.

METHODOLOGY

METHODOLOGICAL CHOICES

Spots were chosen based on previous experience of crow video observations and recordings, especially ones made for the short film *Des corneilles et des Hommes* (Champiat et Delahaye 2019). The first one is the Champs de Mars garden, the second is the botanical garden of the Muséum National d'Histoire Naturelle (MNHN).

For the spring season, an intensive observation period was set up (from 20th April to 25th April). All observations are gathered in a Field Diary (see Figure 1 for a sample of Field Diary). Field Diary is part of the section Previous documents attached. For each observation, was noted:

- Number of the entry, in order to spot any missing entry in case of format change
- Date (in YYYY/MM/DD format for better archive management) and time (as precisely as possible)
- Weather (for influence on specimens but also on pictures) and temperature (as precisely as possible)
- Place (in the localisation is not a specific address, all information useful to find the localisation was noted)
- Number of specimens (or at least an estimation, in case of a big flock or if they are in movement making it difficult to count them)
- Any useful observation: behaviour, attitude, other species present, signs of stress or calm, presence of humans etc.
- If pictures or videos could be taken, the number of the picture or rush where the observation can be seen (see Figures 2, 3 and 4 for examples of interesting observations caught in tape)

All the photos and videos were copied on an external hard drive and named in a way that could allow anyone to easily find the material needed (see Table 1 for the nomenclature). All these files are stored without any cosmetic treatment, cut in the tape or modification, according to the Data Management Plan, validated by the grants' office.

ISSUES AND PROBLEM-SOLVING

On the Champs de Mars spot, the entire flock is still missing and no explanation was found for the moment. The unique pair remaining in the garden was heard again, but only one individual could be recorded on camera, despite more clearly being present.

POINTS OF VIGILANCE

No satisfactory explanation could be found for the disappearing of the Champs de Mars entire flock (except the one remaining pair). More observations did not allow to understand what is happening there. Contact with local professional didn't gather more information.

RESULTS

RAW RESULTS

In the Champ de Mars, the major change in population observed before – the disappearance of the entire flock except one pair – is still present. The remaining pair was heard very clearly, still healthy, with at least one other

individual that is probably the youngling observed in summer. The observed individual was healthy and confident.

The foraging behaviour observed this time, despite the close human presence, as well as the occasional presence of dogs.

In the MNHN, the flock seems healthy, bold and well-fed. Multiple interactions crow-human have been observed. Most of the crows were marked in green, white bands are becoming rarer and rarer with time passing due to earlier marking campaign and crows' lifespan. One individual from the former Tuileries flock – marked in red – was spotted, but alone. She is apparently known to be there as the only remaining individual from the Tuileries flock, but nobody in the team of Frédéric Jiguet knows why.

Several individuals with partially white feathers were spotted, probably due to feeding deficiency during young age, but no strange behaviour or apparent sign of bad health could be spotted.

INTERPRETATION

There is still no sign of the flock in the Champ de Mars, but the remaining individuals are having a normal behaviour, and fertile nesting season, with no major signs of stress. A traumatic or violent cause for the disappearance of the rest of the flock seems unprobeable, especially now that we know that a similar event occurred with the Tuileries flock.

The behaviour in the MNHN seems a good sample of the usual behaviour of crows in Paris, especially regarding the close proximity the birds have with humans. The beginning of the nesting season did not seem to disturb this relationship at all, and did not create any visible aggressive behaviour, between crows or towards humans.

MILESTONE 3 – PROGRESS REPORT

IMPACT OF RESULTS

These results are interesting counterpoints to spring observations in Tartu and a critical comparative analysis will be done in Deliverable 22, since a sample for every season is now available for each city.

ISSUES, PROBLEMS OR LACKING

The flock in the Champ de Mars did not reappear, but a similar story apparently happened few years ago with the Tuileries flock, which was marked with leg band, but still could not be found.

NEXT STEPS

The critical comparative analysis (Deliverable 22) will close this third milestone for the research aspect.

GENERAL PROJECT – CURRENT STATE OF PLAY

IMPACT OF RESULTS

These results are not relevant alone, but some observations made show that a cross-observation between countries could indeed be helpful to understand the direct influence of the environment on corvids' behaviour.

PROPOSITIONS FOR OTHER ASPECTS OF THE PROJECT

ACADEMIC ASPECTS

These results will be integrated, through Deliverable 22, to the introduction of the project conclusions in conference (see Document C2) and paper (see Document P3).

POPULARIZATION ASPECTS

The video material gathered during observations will be integrated into the last major communication deliverable (see Document COM5).

NEXT STEPS

The visual material will be added to the blog. Video material will be prepared for a potential popularization video/short movie.

ANNEXES

REFERENCES

Champiat, Clément, et Pauline Delahaye. 2019. *Des Corneilles et des Hommes*. Association Science Télévision. https://vimeo.com/366803347.

Fleming, Susan. 2010. « A Murder of Crows ». *Nature*.

Freeberg, Todd M. 2012. « Geographic Variation in Note Composition and Use of Chick-a-Dee Calls of Carolina Chickadees (Poecile Carolinensis): Geographic Variation in Chick-a-Dee Calls ». *Ethology* 118 (6): 555-65. https://doi.org/10.1111/j.1439-0310.2012.02042.x.

McGowan, Kevin J. 2001. « Demographic and Behavioral Comparisons of Suburban and Rural American Crows ». In *Avian Ecology and Conservation in an Urbanizing World*, édité par John M. Marzluff, Reed Bowman, et Roarke Donnelly, 365-81. Boston, MA: Springer US. https://doi.org/10.1007/978-1-4615-1531-9_17.

Whiten, Andrew, Victoria Horner, et Frans B. M. de Waal. 2005. « Conformity to Cultural Norms of Tool Use in Chimpanzees ». *Nature* 437 (7059): 737-40. https://doi.org/10.1038/nature04047.

ACKNOWLEDGEMENTS

The team of Frédéric Jiguet for their explanations and details given.

DOCUMENTS

PREVIOUS DOCUMENTS ATTACHED

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

Data Management Plan (PDF version – 18/01/2021)

TABLES AND FIGURES

Nomenclature of the files				
Field observations format: CITY_SEASON_DATE_NATUREnumber				
City of observation	**Season of observation**	**Date of observation**	**Nature of file**	**Number**
P: Paris T: Tartu	A: Autumn SM: Summer SP: Spring W: Winter	Format YYYYMMDD	P: Picture R: Video rush	From 01 to 99, restarted in each folder

Table 1 - Nomenclature of the files for field observations

defrost seems to ease some tensions now that food is much more accessible on the ground.

Entry n°: 85
Date & time: 2023/03/09 – 17:15
Weaver: Clear – -8C°
Place: From Uus 55 to Reakoja plats
Number: Around 15 in trees and on roofs + an important flock
Observation: The heavy layer of snow (see pictures P01 and P02) is preventing crows to start nesting season as early as they did last year. Nest are still empty and no bird are working on them (see picture P06). The crows are remaining calmy on trees and on roofs (see pictures P03 to P05 and video R01), sometimes inside the center of the city (see pictures P07 and P08). An important flock passed above Raekoja plast at 17:55 but could not be recorded.

Entry n°: 86
Date & time: 2023/03/11 – 15:10
Weaver: Sunny – -3C°
Place: Edges of Emajõgi, in front of Pikk bus station
Number: 6
Observation: 6 C. cornix bathing in a hole in the ice. This observation could not be recorded.

Entry n°: 87
Date & time: 2023/04/12 – 15:10
Weaver: Sunny – 16C°
Place: Vabaduse puiestik
Number: 4
Observation: Two apparently pairs of *C. cornix*, emptying each one a different trash can, by pulling things out and shaking them, eating what was falling or throwing it and starting again with other thing if it was empty. No picture could be taken.

Entry n°: 88
Date & time: 2023/04/20 – 15:30
Weaver: Partially cloudy – 12C°
Place: Botanical garden of the French Natural History Museum
Number: Around 60
Observation: The flock is numerous and in good health (see videos R01 to R03 and R11). Some individuals were spotted with partially white feathers (see videos R04 and R06) but that does not seem to alter their health or behaviour. They feel confident enough, even in presence of humans (including small running children) to rest directly on the ground (see video R05). They are very active in the pedagogical garden, where they behaviour around the scarecrow seem to amuse inhabitants (see picture P01 and videos R07 to R10, R12 and R13). Some other foraging behaviours in the flowerbeds, in front of the gardeners, was also seen as more funny than really problematic (see video R14).

Entry n°: 89
Date & time: 2023/04/20 – 17:00
Weaver: Clear – 14C°
Place: Champs de Mars
Number: 3, maybe one or two more
Observation: Crows were clearly heard but could not be seen.

Entry n°: 90
Date & time: 2023/04/25 – 16:30
Weaver: Cloudy – 14C°
Place: Champs de Mars
Number: At least two
Observation: One individual land on the ground and started to pluck the grass (see videos R01 and R02). The individual was clearly eating something under the grass, probably larvae, and was from time to time answering the calls of another individual at least, that could not be observed.

Entry n°:
Date & time:
Weaver:
Place:
Number:
Observation:

Entry n°:
Date & time:
Weaver:

Figure 1 - Sample of field observations diary - Spring, Paris

Figure 2 - Video rush P_SP_230425_R02 (0:52) showing one of the last individual of the Champs de Mars flock plucking the grass and feeding.

Figure 3 - Video rush P_SP_230420_R13 (0:18) showing 058, the last known individual from the Tuileries flock.

Figure 4 – Video rush P_SP_230420_R09 (0:16) showing the crows of the MNHN feeding next to the scarecrow.