

WORKPACKAGE 3 – INTELLIGENCE AND ADAPTATION

DELIVERABLE 18 – FIELD REPORT FOR PARIS, WINTER

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 ethological point of view, from anthropological point of view but also from semiotic point of view. One of the least taken into account aspect 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 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 a part of a field work distributed during all the length of the project. This field work 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 behaviour and culture of 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 time of the year and city of living. Pointing out these changes is important to understand how to create generalizable solutions, but also how to take into account 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 winter season, an intensive observation period was set up (from 10th January to 13th January), as the journey in France was shorter than intended. 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 a 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 were noted)
- Number of specimens (or at least an estimation, in case of a big flock or if they are in movement making 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 photo and video were copied on an external hard drive and named in 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

Observations were intended to be in December, and an entire week-long, during a personal trip in France. Due to contracting Covid-19, this trip was postponed in January, and shortened. The observation time was consequently also shortened. No satisfying solution was found.

On the first spot of observation, at the MNHN, was disturbed by a temporary outdoor exhibit, with massive sculptures implanted in the area where crows used to feed. They did not seem bothered by this situation.

On the second spot, the entire flock have disappeared and no explanation was found. An unique pair remains in the garden.

POINTS OF VIGILANCE

As observation period was shortened, observations can be fragile.

No satisfactory explanation could be found for the disappearing of the Champs de Mars entire flock (except the one remaining pair). More observations in this area will be needed to understand what is happening there.

RESULTS

RAW RESULTS

In the Champs de Mars, the entire flock have disappeared. An unique pair is remaining (observations two days apart could not find any situation with more than two crows, always quite close to each other). This pair is feeding, flying and behaving normally, even particularly stress-free (not flying around dogs, for example).

Behaviour of foraging grass and heavily damaging it was still present. This one was not yet been observed in Tartu.

In the MNHN, the flock is not disturbed by the exhibit and its sculptures, individuals sometimes sit on them comfortably.

Cohabitation patterns with other species are similar to what was observed in Tartu one month earlier in the resting areas.

Individuals are not afraid of humans, and are even coming closer here than what was observed in Tartu. This behaviour also applies to individuals marked with a claw ring, that could have been cautious around humans due to their previous capture.

In the aviary trap used for marking birds, interesting behaviours were observed from free birds, interacting with the cage, but also sometimes with trapped individuals.

INTERPRETATION

No one seems to know what happened to the Champs de Mars flock (and no one seems really to care). The normal behaviour of the remaining couple seems to dismiss any violent hypothesis. The fact that the ecological niche of the crows is now occupied by seagulls also dismiss hypothesis about pollution and urban work disturbance (even if both of them could be possible due to actual urban works and depollution works in this area).

The normal behaviour of the MNHN flock seems to indicate that crows adapt easily to important changes in their living area. No aggressive behaviour or complete desertion of the exhibit area was observed.

Behaviours around the trap for marking is particularly interesting, as free crows seem concerned by the situation of trapped crows. Observation of “beak-to-beak” behaviour between a trapped crow and a free individual could suggest that this attitude is due to having its partner trapped inside. No panic sign was observed nevertheless, probably because this trap has been here for a while, a lot of individuals have been caught for marking, yet no violent behaviour from humans ever occurred.

MILESTONE 1 – PROGRESS REPORT

IMPACT OF RESULTS

These results are interesting counterpoints to winter observations in Tartu and a critical comparative analysis will be done in Deliverable 22, when more general observations would have, hopefully, helped to understand some aspects still unclear.

ISSUES, PROBLEMS OR LACKING

As observations were shorter than intended and it is not possible to have a second round of observations in Paris, interpretations should be careful and cautious.

If the flock of the Champs de Mars is not seen again, another spot should be chosen for further observations.

NEXT STEPS

Next step of field observations should be in Tartu, in April 2022.

GENERAL PROJECT – CURRENT STATE OF PLAY

IMPACT OF RESULTS

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

PROPOSITIONS FOR OTHER ASPECTS OF THE PROJECT

ACADEMIC ASPECTS

It is too early to talk about academic use of these results, but the visual material can be used as pleasant way to illustrate other results of the projection (especially in Workpackage 1) at conferences (see document C1), with international partners (see document I1) or in a paper (see document P1).

POPULARIZATION ASPECTS

During the observations some particular cases (like the one in Figure 3) occurred. If it is difficult to see how to exploit them scientifically yet, they are making good narratives, that could be used in communication or dissemination aspects, especially through video (as it is expected in step COM2).

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

Due to still delicate state of health, last day of observations at the MHNH was assisted by family members.

DOCUMENTS

PREVIOUS DOCUMENTS ATTACHED

Field diary (PDF version – 21/01/2022)

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

seem bother by them (See pictures P01, P02, P05 to P07 and see videos R08 and R09). In other areas, the increased number of visitors did not seem to frighten crows, that still walk close to humans, on the ground (See ~~rush~~ R02 to R07).

Entry n°: 29

Date & time: 2022/01/11 – 15:45

Weaver: Sunny – 10C°

Place: Champs de Mars, Paris

Number: 2

Observation: The flock (estimated at more than a thousand of individuals) has disappeared. Some important works of construction and depollution could be the cause (See pictures P01, P02 and P08). An important number of seagulls seem to now occupy the ecological niche (see pictures P06 to P08 and rush R03). A unique pair of *C. corone* seems to remain (see pictures P05 and ~~rush~~ R01, R02 and R04). These individuals still feed very close to humans (See picture P03), sometimes on the ground next to sidewalk (see pictures P12 and P13 and ~~rush~~ R05 and R06), with often one of them watching from a more or less high position (see pictures P04 and P09). This apparently stress-free attitude makes the hypothesis of volunteer extermination or chasing of the rest of the flock very improbable. The damage on the grass indicates that the pair seems to live here permanently, and was not just passing by (see pictures P10 and P11).

Entry n°: 30

Date & time: 2022/01/12

Weaver: Cloudy – 8C°

Place: Champs de Mars, Paris – 15 :17

Number: 2

Observation: Still no sign of the flock, but the (probably) same pair is still there. No other individual was observed. The pair is often observed functioning with a “watch” system, with one feeding on the ground as another is watching (see picture P01 and rush R01). When both are on ground, they again seem stress-free around humans, and

even around their dogs (see pictures P02 and P03).

Entry n°: 31

Date & time: 2022/01/13

Weaver: Slightly cloudy – 8C°

Place: Jardin des Plantes, MNHN, Paris

Number: 3

Observation: A small group of three, on the roof of the palaeontology gallery (see rush R01). In a nearby tree, more *Pittacula kramera* were spotted (see pictures P01 and P02).

Entry n°: 32

Date & time: 2022/01/13

Weaver: Clear – 10C°

Place: Jardin des Plantes, MNHN, Paris

Number: Between 50 and 100

Observation: In the area ~~were~~ the sculptures were implanted, most of the crows are in the trees (see pictures P03 and P18 and rush R14). Inside the undergrowth area, lonely subjects were found eating on wood storage or roof of storage shelter (see picture P04 and ~~rush~~ R02 and R03). In the least visited areas of the botanical garden, other species can also be found like common moorhen (*Gallinula chloropus*) (see picture P05). It is important to note that a increasing number of the museum flock is marked, following an ornithology program (see picture P06). Consequently, some individuals can almost always be found in the aviary trap (see rush R06). It is interesting to note that trapped individuals seem a source of curiosity, puzzlement and maybe anxiety from free individuals that multiple interactions with the aviary (see ~~rush~~ R06 to R08) and sometimes even with a precise individual inside, perhaps a trapped partner (see rush R04). Most of the time, crows seem very comfortable in presence of humans and forage grass near them (see picture P14 and rush R05) or walk by their side (see pictures P07 to P10) without any sign of stress. During the observation, a little girl with her family insisted to give bread to a pair of ducks, immediately attracting crows

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



Figure 2 - Video rush P_W_220111_R04 (0:49) showing the probable last pair of the Champs de Mars flock.



Figure 3 - Video rush P_W_220113_R04 (0:36) showing "beak to beak" behaviour between a free and a trapped crow at MNHN.



Figure 4 - Picture P_W_220110_P07 of a *C. corone* adjusting well to new objects in its environment.