

# WORKPACKAGE 3 – INTELLIGENCE AND ADAPTATION

## DELIVERABLE 17 – FIELD REPORT FOR PARIS, AUTUMN

### 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 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 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 field report is a part of a 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, influencing 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 animal 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 and 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 autumn season, an intensive observation period was set up (from 11<sup>th</sup> January to 18<sup>th</sup> 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 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

An abnormal heatwave was hitting France at the time of observations. Consequently, instead of an autumn climate, Paris was still under a summer-like climate, that could affect the behaviour of the crows.

### POINTS OF VIGILANCE

Observation time has been shortened to spend enough time in interview with Frédéric Jiguet (CESCO, MNHN, Paris), both for qualitative interview and international partnership discussion (see document I2).

## RESULTS

### RAW RESULTS

In the Champs de Mars, the observations of Summer (see Deliverable D16) are apparently confirmed. The only remaining pair seems to had a successful nesting season, and between 4 to 6 crows are now visible in the garden, never far away from each other.

Foraging behaviour was observed, no individual seemed particularly nervous on the ground, even when dogs of inhabitants were passing closely. This behaviour was already observed in the remaining pair in Winter (see Deliverable D18), and could be a direct influence of the parents on the offspring.

In the MNHN, crows were pushed away from the centre of the garden by gardeners who were preparing the winter's plants. Individuals observed did not seem bothered by these circumstances and were still very bold and stress-free around other humans.

The flock is in good condition, and Frédéric Jiguet (CESCO, MNHN) has confirmed (see document I2) that the nesting season was successful despite the massive heatwave and that no abnormal casualties took place. Crows with GPS devices were observed in the garden.

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### INTERPRETATION

If no clear answer about the disappearance of the flock in the Champs de Mars was found, the remaining family group is healthy and stress-free, behaving normally and apparently able to pass the winter season. Magpies have been observed here for the first time, and a replacement of the void left by the flock in the ecological niche of the garden may be currently taking place.

The behaviour of the MNHN's flock is consistent and peaceful toward humans and other species (no aggression on pigeons, tits or parakeets (*Psittacula krameria*) was observed or reported). The nesting season was very successful and the flock seems to be perfectly able to use human resources (like water devices for the plant or trash cans) when difficult conditions occur.

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## MILESTONE 1 – PROGRESS REPORT

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### IMPACT OF RESULTS

These results are interesting counterpoints to autumn 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.

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### ISSUES, PROBLEMS OR LACKING

The foraging behaviour in the grass was not observed because the climate is too warm, and the larvae are not burying themselves yet. Frédéric Jiguet and his team send an experimental paper he and his team wrote about this precise behaviour (Lequitte-Charransol and Jiguet 2021).

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### NEXT STEPS

Next step of field observations should be in Paris, in April 2023.

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## GENERAL PROJECT – CURRENT STATE OF PLAY

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### IMPACT OF RESULTS

These results are not yet fully relevant, especially due to the climate that was not favourable for a representative observation, but the observations made are showing more and more that a cross-observation between countries could indeed be helpful to see behavioural patterns. With the particular monitoring through marking in the MNHN, some solutions for aggressive behaviour management or epidemiological monitoring (see document I2) can also be studied comparatively.

## PROPOSITIONS FOR OTHER ASPECTS OF THE PROJECT

## ACADEMIC ASPECTS

A potential partnership with the MNHN is definitely possible after this visit, both on the behaviour/ornithology aspect and the semiotic/narrative aspect (see document I2).

## 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 is expected in step COM4).

## 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, and Pauline Delahaye. 2019. *Des Corneilles et des Hommes*. Association Science Télévision. <https://vimeo.com/366803347>.
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- Whiten, Andrew, Victoria Horner, and 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>.

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## DOCUMENTS

## PREVIOUS DOCUMENTS ATTACHED

Field diary (PDF version – 21/10/2022)

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

## TABLES AND FIGURES

<p>Entry n°: 61  Date &amp; time: 2022/10/04 – 17:40  Weaver: Partially cloudy – 10C°  Place: Uus 55  Number: Between 40 and 50, of the three species  Observation: One of the first major gathering since the nesting season (see picture P01 and video rush R01).</p>	<p>Date &amp; time: 2022/10/12 – 11:15  Weaver: Sunny – 19C°  Place: Champs de Mars, Paris  Number: Between 4 to 6  Observation: The only pair observed before in the garden is apparently still there, with what appears to be from 2 to 4 younglings from the successful nesting season (see pictures P01 and P03, and video rushes R01 to R07). A small group of magpies were also observed, even if they are not, apparently, part of the usual populations of the garden (see picture P02).</p>
<p>Entry n°: 62  Date &amp; time: 2022/10/05 – 10:30  Weaver: Very cloudy and a bit rainy – 8C°  Place: Uus 55  Number: 2  Observation: A probable pair of <i>C. cornix</i> sitting on the roof from where they are completely absent during the nesting season of the seagulls there (see pictures P01 and P02).</p>	<p>Entry n°: 65  Date &amp; time: 2022/10/18 – 11:25  Weaver: Cloudy – 12C°  Place: Champs de Mars, Paris  Number: Between 4 to 6  Observation: The small group of the garden seems healthy and bold, not afraid of humans passing nearby or even dogs (see video rushes R01 to R03, rush R02 was cut early because an inhabitant was worried about the camera).</p>
<p>Entry n°: 63  Date &amp; time: 2022/10/11 – 15:45  Weaver: Sunny – 18C°  Place: Jardin des Plantes, MNHN, Paris  Number: Between 75 and 100  Observation: France was currently experiencing an abnormal heatwave in autumn, and vegetation was more summer-like than autumn-like (see pictures P03, P04, P07 and video rush R11). Crows were also probably disturbed by autumn work by gardeners, in order to prepare the botanical garden for winter (see pictures P01 and P02). Despite these quite unusual conditions, several individuals have been seen foraging on the ground (see pictures P05 and P06 and video rushes R04, R06 and R08 to R10), walking near humans (see video rushes R01 to R03), emptying trash cans (see video rush R12) or simply resting in trees nearby (see video rush R07). Some individuals were seen in the trap used in the monitoring program (see video rush R05), and one was been seen with a GPS device (see picture P08 and video rush R13).</p>	<p>Entry n°: 66  Date &amp; time: 2022/10/18 – 13:30  Weaver: Cloudy – 14C°  Place: Jardin des Plantes, MNHN, Paris  Number: Around 80  Observation: Individuals previously marked appeared to be calm and able to feed on grass and trees without problem (see picture P01 and video rushes R04 to R05). A youngling has a strange pattern of feathers that could be a disease (see pictures P02 to P04). It was attacked by a couple of individuals (see video rush R06) but also seemed to get along with most other individuals (see video rushes R07 and R08). Even individuals able to feed on the ground will prefer the easy opportunity of food distributed by humans (see video rush R09), and there were new individuals in the trap (see video rush R10).</p>
<p>Entry n°: 64</p>	<p>Entry n°:  Date &amp; time:</p>

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

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



Figure 2 - Picture P\_A\_221011\_P08 showing a crow of the Museum flock, equipped with a GPS device.



Figure 3 - Video rush P\_A\_221011\_R12 (2:54) showing young individuals from the Museum flock emptying a trash can.



Figure 4 - Video rush P\_A\_221018\_R03 (0:50) showing a probable offspring of the last pair remaining in the Champs de Mars, walking on the ground without no sign of stress as inhabitants and their dog are passing by.