

WORKPACKAGE 3 – INTELLIGENCE AND ADAPTATION

DELIVERABLE 15 – FIELD REPORT FOR TARTU, SUMMER

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 the ethological point of view, from the 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 (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, and geographical and cultural norms of corvids, this step aims to map more precisely the way corvids adapt, understand and create semiosis in their environment, 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 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 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 of observation were closer to the ones chosen in D12 and D13, with the addition of Raadi Cemetery, mainly explored during Spring. This choice was made due to the return of some groups of corvids in areas from where they were absent or almost absent during nesting season (Uus tänav or the north edges of Emajõgi river, for instance).

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, 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 (if 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 and 3 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

Nesting areas are apparently not used anymore at this time of the year; therefore, it was very difficult to find the flocks. Some areas deserted during nesting season are slowly populated again; some flocks are appearing at some places once, and are nowhere to be found the next day; most of the individuals are missing from the usual observation spots.

The only solution found for the moment is to use again the strategy used in Deliverable 12 and to multiply field works in the city, to have a chance to be there when the "one-time events" occur.

POINTS OF VIGILANCE

Due to an important difficulty to find back the specimens, the data of this Deliverable are particularly fragile.

RESULTS

RAW RESULTS

The nesting areas, especially Raadi Cemetery, have been completely deserted by all three of the species.

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Important Autumn observations spots are starting to be full of individual of all three of the species again.

Contrary to what was observed during nesting season, aggressivity between species seems to have completely disappeared.

Individuals were also much calmer and more stress-free around other city's species, like humans or dogs.

INTERPRETATION

Cohabitation between corvid species in Tartu appears to be pacific most of the time. Behaviours like foraging or resting are again shred in close proximity just after the critical period of the nesting season is passed. The potential predation of one species towards the younglings of another, as suggested by Marko Mägi (Institute of Ecology and Earth Sciences of Tartu), does not seem to affect the neutral and stress-free relationship between species as soon as the nesting period is over.

The return of many individuals in the areas where they have been observed during both Autumn and Winter suggests that two areas of life are existing in the city for these species: area of nesting and area of usual life.

After nesting season, the aggression rate, already very low, drops to zero.

MILESTONE 3 – PROGRESS REPORT

IMPACT OF RESULTS

With this Deliverable, a complete year of observations for Tartu is available. These results will be gathered and analysed in Deliverable 20.

ISSUES, PROBLEMS OR LACKING

Some data, especially in this Deliverable, can still be considered fragile, due to a not satisfying number of observations. Observations will continue for all the length of the project, with a regular update of the website, of the field diary, and possibly of the following deliverables.

NEXT STEPS

Next step of field observations should be in Paris, in October 2022. These field observations will also be used to have an interview with researchers in charge of corvids monitoring in Paris, at the National Museum of Natural History, to attend a marking session and to learn more about the strategy of management of aggressive individuals.

GENERAL PROJECT – CURRENT STATE OF PLAY

IMPACT OF RESULTS

With the results, the fieldwork can be considered as rich enough to start the analysis step, and consequently to evaluate the generalization of results gathered in Workpackage 1.

PROPOSITIONS FOR OTHER ASPECTS OF THE PROJECT

ACADEMIC ASPECTS

These results will be introduced to the National Museum of Natural History team, in October, in order to gather their own opinions, data and experience.

POPULARIZATION ASPECTS

The visual material of this step will be used on communication supports, especially to gather more participants in the survey ongoing.

NEXT STEPS

The visual material will be added to the blog and transmitted to communication stakeholders.

ANNEXES

REFERENCES

- 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 (*Parus 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

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DOCUMENTS

PREVIOUS DOCUMENTS ATTACHED

Field diary (PDF version – 31/08/2022)

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.

changing time between summer and winter
b) is not changing of time zone.

Entry n°: 50
Date & time: 2022/08/09 – 17:30
Weaver: Cloudy – 19C°
Place: Uus 55
Number: 20, from three different species
Observation: All of them were resting in the tree, sometimes very close to each other, even between different species (see video R01). It is the first time in month that they are so numerous in this tree.

Entry n°: 51
Date & time: 2022/08/10 – 12:00
Weaver: Sunny – 22C°
Place: From Uus 55 to Delta Center to Raaskoja plats to Kyartal center to Uus 55
Number: 2 *C. cornix* + at least one non-identified individual
Observation: One individual was spotted near Pikk bus station (*C. cornix*) but was not recorded. It was near group of ducks that seemed no stressed about its presence (see pictures P01 and P02 and videos R01 and R02). One lonely individual (*C. cornix*) was spotted in front of Delta center (see picture P03 and videos R03 and R04). In the Tartu Keskpark, at least one individual was heard calling from a tree (see picture P04) but could not be seen and caught on camera.

Entry n°: 52
Date & time: 2022/08/17 – 12:30
Weaver: Sunny – 28C°
Place: From Uus 55 to Delta Center to Raadi Cemetery to Uus 55
Number: 2 flocks of at least 40 individuals
Observation: A first flock (*C. monedula*) was foraging grass along Emajõgi, in front of Pikk bus station, and a second one (*C. frugilegus*) was flying by when passing under the bridge of the Jõhvi-Tartu-Valga. The rest of the loop was empty of corvids, they seem to have deserted Raadi Cemetery after nesting season. Much more smaller birds could be observed (see videos R01 and R02).

Entry n°: 53
Date & time: 2022/08/25 – 12:30
Weaver: Cloudy – 21C°
Place: Uus 55
Number: 1
Observation: A *C. cornix* walking on the ground and foraging for food (see video R01). Corvids appear to be back in this district.

Entry n°: 54
Date & time: 2022/08/25 – 14:00
Weaver: Cloudy – 21C°
Place: Along Emajõgi, crossroad between Uus and Pikk
Number: Between 30 and 50
Observation: An important flock of *C. monedula* was foraging for food. Some individuals of *C. frugilegus* were present among them, without any sign of stress or aggressivity (see videos R02 to R05). People, some with dogs, some on bicycles, were passing nearby without disturbing them. No sign of competition was observed, between the two species or inside each species. A few meters away, a small group of *C. cornix* was also present (see video R06) but with no interaction with the other mixed group. Some signs of aggression intra-group were observed in this small flock, but they were very mild and no individual was really chased away.

Entry n°: 55
Date & time: 2022/08/25 – 14:20
Weaver: Cloudy – 21C°
Place: Uleiõe Park, in front of the Arch bridge
Number: 4
Observation: A small flock of *C. cornix*, walking on the ground and foraging for food. They show no sign of apparent stress around humans acting in various situations (bicycles, electric scooters, people walking their dogs, people having a photo shoot and installing a lot of image and light material while behaving very differently than the normal passer-by).

Figure 1 - Sample of field diary - Summer, Tartu



Figure 2 - Video rush T_SM_220825_R03 showing individuals from *C. monedula* and *C. frugilegus* feeding in the same area.



Figure 3 - Video rush T_SM_220825_R06 showing peaceful cohabitation between *C. frugilegus*, *C. cornix* and *C. monedula*.