

WORKPACKAGE 3 – INTELLIGENCE AND ADAPTATION

DELIVERABLE 12 – FIELD REPORT FOR TARTU, 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 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

Different spots were tested, after advices of Timo Maran and Lona Päll (Department of Semiotics, Tartu University) who had a better knowledge of the city. The first idea was to have fixed spots for all the field observation, but interview with Marko Mägi (Institute of Ecology and Earth Sciences of Tartu) lead to conclusion that this was not appropriate: corvids are moving from spot to spot through the seasons, and a better choice was to chose an appropriate spot for each season. Preliminary observations concluded that areas around Uus 55 and longing the Emajõgi river from Pikk and Pärna streets crossing to Kaarsild bridges gather an important number of individuals during autumn period.

For autumn season, a regular observation period was set up (from 13th October to 23rd October), with some additional observations when an interesting event or behaviour would happen. 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 and 3 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

The two main issues were:

- Difficulty to choose right spots for observations: this was addressed by listening advices of colleagues, and would eventually solve itself as the environment of Tartu will become more and more familiar through time.
- Difficulty to obtain the quality of pictures and video tapes wanted: this will also solve itself by becoming more and more familiar with the video material (and perhaps, for the communication part, post-treatments software).

POINTS OF VIGILANCE

As discussed with Marko Mägi, corvids tend to change of preferred place of residence during seasons. A particular vigilance in the choice of future spots is needed to avoid “silent” places.

Some behaviours seem to be different than what can be observed in Paris, but some of them could be explained by the presence or absence of a third-part species (especially some insects). This should be investigated further.

As crows are able to recognize human faces (Marzluff et al. 2010), a particular care is needed for avoiding any behaviour that could be perceived as a threat or a nuisance, and could therefore ruin the entire field.

RESULTS

RAW RESULTS

Some interesting behaviours were observed, like stealing food, foraging garbage or gathering in trees, all being possible nuisances for humans.

Some behaviours, previously seen in Paris, seem to be absent (like destroying grass to find precise kind of insect’s larva).

Some behaviours, never seen in Paris, were observed here, like throwing moss from the roof, probably foraging for insects.

Some patterns of cohabitation with other species seem to emerge: no stress from *Corvus cornix* around small birds or *Coloeus monedula*, signs of tension and food competition around *Corvus frugilegus*, important stress with alarm call around the Charadriiformes family.

INTERPRETATION

Interesting behaviours should be considered as possible items for survey (in Deliverable D6).

Absent behaviours should be looked for in further observations in Tartu. Records of these behaviours in Paris for comparison could be necessary.

Original behaviours should be looked for in further observations in Paris to be sure they are truly original from other groups in other cities.

Patterns of cohabitation are yet to fragile to conclude and need more observations, especially during nesting seasons.

MILESTONE 3 – PROGRESS REPORT

IMPACT OF RESULTS

Some behaviours have been identified as possible focus points. They should be particularly monitored during other observations in Tartu around the seasons (in Deliverables D13, D14 and D15) but also compared with autumn observations in the control area (in Deliverable D17).

ISSUES, PROBLEMS OR LACKING

As birds are not marked, it is not possible to tell exactly how the groups moved from the beginning of the observation time to the end. After questioning Marko Mägi on this aspect, this issue has no solution in foreseeable future: corvids are indeed not marked, and no program is scheduled to do so on any of this family species.

NEXT STEPS

Next step of field observations should be in Tartu, in January 2022. Due to personal travel, it is possible that some useful observations of winter can also be gathered in Paris in late December 2021 or beginning of January 2022.

GENERAL PROJECT – CURRENT STATE OF PLAY

IMPACT OF RESULTS

The impact of the results is not yet relevant, but the impact of the methodology, and methodological choices, are real and will influence the next observations. All other observations will be as congruent as possible with the methodology explained in Methodological choices section, with trying to solve any remaining issue from the Issues, problems or lacking section, and a special focus on what was introduced in the Points of vigilance section.

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

Rushes and pictures took during the observation time are a good material for communication and dissemination. They will be quickly involved in the beginning of the communication part (see document COM1).

NEXT STEPS

The visual and video material will be used to launch the communication program via a page or a blog. A linguistic assistance in Estonian will be necessary in order to make this support attractive for general public who probably doesn't speak (or not casually) English.

ANNEXES

REFERENCES

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- Marzluff, John M., Jeff Walls, Heather N. Cornell, John C. Withey, et David P. Craig. 2010. « Lasting Recognition of Threatening People by Wild American Crows ». *Animal Behaviour* 79 (3): 699-707. <https://doi.org/10.1016/j.anbehav.2009.12.022>.

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DOCUMENTS

PREVIOUS DOCUMENTS ATTACHED

Field diary (PDF version – 17/11/2021)

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

- Entry n°: 1
Date & time: 2021/10/01 – 9:45 & 12:45
Weaver & temperature: Clear – 11C°
Place: Ulikööli street
Number: 2, but could be the same individual at two different moments
Observation: Was probably looking for insects under moss on top of roofs. Was pulling moss off and dropping it, with its soil, on the street. This day and followings, this kind of “moss+soil in a middle of pavement” droppings were also observed.
- Entry n°: 2
Date & time: 2021/10/02 – 10:30
Weaver: Clear – 13C°
Place: Crossing of Pärna & Pikk
Number: 5 on ground, probably more in the trees
Observation: Were foraging grass, probably looking for insects. A small group of *Coloesus monedula* (5-6) was also foraging near them, without any sign of stress or aggressivity from one group or the other.
- Entry n°:3
Date & time: 2021/10/04 – 10:15
Weaver: Clear – 8C°
Place: Pedestrian walk longing Emajõgi river, from Pikk bus stop to Kaarsild bridge
Number: 15, mostly on the ground, some of them on guardrails
Observation: Were foraging grass for individuals on ground. Individuals on guardrails were looking at people passing by. A passing as close as 1,5m from them did not trigger any eviction movement; on the contrary, stopping next to them at 2-3m of distance seemed to make them nervous or at least curious.
- Entry n°: 4
Date & time: 2021/10/06 – 16:45
Weaver: Clear – 11C°
Place: Unamed road, deserving Uus 53 and connecting Uus 55 to Pikk 60
Number: 1
Observation: Was sitting on a fence, looking at people passing by. Seemed very curious, did not try any escape movement during a 20 second encounter at 2m distance.
- Entry n°: 5
Date & time: 2021/10/09 – 17:30
Weaver: Cloudy – 11C°
Place: Uus 55
Number: Between 15 and 25
Observation: Were standing in a tree, addressing calls and moving from the tree, to roofs of nearest buildings, to tree again, making them difficult to count. The species was already observed at this place before, but the number of individuals gathered seemed to grow quickly.
- Entry n°: 6
Date & time: 2021/10/11 – 10:00
Weaver: Clear – 6C°
Place: Crossing of Pärna & Pikk
Number: 3 on the ground, at least another calling from a tree but not to be seen
Observation: Were foraging grass. The group was few meters away of three other individuals identified as *Corvus frugilegus*. The distance between them was much more important than with *Coloesus monedula*.
- Entry n°: 7
Date & time: 2021/10/13 – 15:30
Weaver: Very cloudy – 7C°
Place: Raekoja plats
Number: 2
Observation: Probably a pair, were following each other when changing of spot (different roofs around the place). See rush R01, rush R07 and rush R08.

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



Figure 2 - Picture T_A_211109_P02 of a probable grooming behaviour from a probable pair



Figure 3 - Video rush T_A_211103_R01 (1:25) of different alimentation behaviour, including an attempt of stealing an apple or onion from a garden