Abstract for the general public in English

Parental care in birds has long been viewed in the context of sexual conflict, i.e. a tug-of-war between the parents, where each of the parent tries to maximize breeding success with the lowest possible cost on his/her side, even if that is to be achieved by overexploiting partner. Such interpretation, however, does not explain all observed patterns of parental care, especially coordinated performance of parental activates In fact, growing number of studies demonstrates that avian parents do coordinate their parental activity, and that coordination may positively affect the breeding outcome of the pair. It thus suggests that parents cooperation (apart from sexual conflict) may be an evolutionary power shaping parental care in birds. **What are ecological drivers of parental coordination in birds**, and **what are proximate mechanisms regulating the coordination** are now open and very exigent questions. The main aim of our project is to answer these questions**.** We will apply modern statistical techniques (meta-analyses) to examine possible ecological factors affecting patterns/level of parental coordination. We expect here, that of the most important ecological factors influencing parental coordination is food availability and predator pressure (with parents coordinating better in less favourable conditions, low food availability, high predator pressure). To examine proximate mechanisms of parental coordination, we will focus on a seabird species, the little auk and we will examine concentration of three hormones: corticosterone (CORT), prolactin (PRL), and mesotosin (MT), which concentration we will measure at various stages of little auk breeding. It is already well known that CORT and PRL play important role in regulation of parental efforts while oxytocin-like hormones (i.e. mesotocin) regulates strength of pair bond, thus we expect that the level of these hormones in both partners is related to their parental coordination. Examining these endocrine mechanisms in a seabird species will not only make the project tasks feasible (relatively big body size allowing for extensive blood sampling for hormones, the little auk parents already reported to coordinated the chick provisioning, etc) but will also allow to recognize true range and overall causality of the observed patterns of parental coordination in birds (most work is performed on small body-sized species). Finally, we will examine mechanistic of parental coordination across species. For that purpose we will utilize literature on a standard handicap experiment (a bird is treated in a way that distorts its behaviour, e.g. by clipping a flight feather), where we will analyse how the handicap of one partner affects parental performance of the other, and so the whole pair. We expect here that response of partner of the handicapped parent depends on the current level/pattern of the parental activity/pair bond, and we assume that this all can be considered as a proxy for prediction on parental coordination in given species. For example, if parental coordination is somehow conditional on partners performance, the handicap experiment should affect parental effort of the partner (decreasing it) and so the pair coordination. If parents coordination is fixed, however, the handicap should not change behaviour of untreated parent, etc. Owing to the **broad and complex approach approach (**meta-analyses and standard field methods - observations and experiments), the project promises to end up with a general model explaining parental coordination in birds, this way significantly **expanding our knowledge on parental care in birds,** and so **developing evolutionary and behavioural ecology**.