

Summary of the project

“Vertical social transmission of animal-human relationships”

(FWF, 2022 – 2025, 385.935 €, PI S. Lürzel)

The animal-human relationship, i.e. the emotional perception of humans by animals, is highly important for farm animal welfare in addition to having economic benefits. A positive animal-human relationship can mitigate stress and allow for positive experiences and thus a good quality of life. Gentle interactions (e.g. stroking, talking in a gentle voice or offering palatable food) improve the animal-human relationship effectively but can be time-consuming as they are directed at single animals. Vertical social transmission (the transmission of information or behaviours between generations, often from mother to offspring) may be a more efficient way to improve the animal-human relationship in young livestock, potentially influencing several animals per interaction.

Cattle and pigs are among the most important farmed species and there are indications of vertical social transmission of food preferences in both of them. However, their phylogeny, number of young per birth and way of raising their young differ considerably, barring the transfer of results between the two species. We will test the hypotheses that the relationships of calves and piglets with humans improve when they witness their dams interacting with humans, and that the effect is related to the dam's behaviour towards the person. We will also test for potential effects on weight gain.

As some aspects of the animal-human relationship are heritable, we will use a cross-fostering approach to exclude genetic effects. In the cattle study, each foster cow will raise at least two experimental calves that will be assigned to different treatments: observation of gentle interactions between a person and the foster dam (OBS) and presence of a person (PRES; to control for direct habituation to the person). In the pig study, each fostered litter will be assigned to one of three treatments: OBS, PRES or a minimal treatment including only the contact during routine management (MIN; to assess the overall effectiveness of OBS and PRES). We will assess the offspring's relationship with humans via their approach, affiliative and avoidance behaviour towards humans and by measuring the salivary cortisol response to handling.

Our project will represent the first systematic investigation of the vertical social transmission of animal-human relationships, which may be more effective and have a longer lasting impact than direct interactions with the offspring. The information will be an important piece of the puzzle of the animal-human relationship and is likely to make a substantial contribution to enhancing farm animal welfare.