

## Social effects on parental care behavior

Hannah L Dugdale<sup>1\*</sup>

<sup>1</sup>Groningen Institute for Evolutionary Life Sciences, University of Groningen, PO Box 11103, 9700 CC Groningen

\* [h.l.dugdale@rug.nl](mailto:h.l.dugdale@rug.nl)

NVG keynote speaker

How and why social behaviours evolve is a central question in evolutionary biology, with widespread importance given that nearly all animals interact socially (e.g. during mating, group living or parental care). The interacting nature of social behavior means that social partners can influence the expression of a focal individual's behaviour. These interacting social effects can have a genetic basis and fitness consequences, and therefore affect evolutionary dynamics. In this talk, I focus on parental care behaviour, investigating whether parents change the amount that they provision their offspring according to the presence of their social partner(s). I then test whether these social effects have a genetic basis, known as Social Genetic Effects (SGEs; also termed indirect genetic effects). It is important to quantify SGEs, given that they contribute to the genetic variation that selection can act on, so that we can improve understanding how social behaviors evolve.

In cooperatively breeding species, both dominants and subordinates help raise the offspring of the dominants. The additional care provided by helpers can have indirect fitness benefits through increased survival of helped relatives, and may allow dominants to reduce their parental care. I will test this load-lightening hypothesis using data from the long-term Seychelles warbler project, and investigate SGEs on parental care. We did not detect SGEs, but document social effects in the form of load-lightening, with dominants reducing their provisioning rates when they have more helpers. The social environment therefore influences parental care levels in the Seychelles warbler. I will then present results from the Lundy house sparrow project where we detected sex-specific SGEs on parental provisioning behaviour. I discuss how this improves our understanding of the evolution of social behavior, in particular by highlighting how ignoring SGEs can lead to erroneous conclusions about evolutionary dynamics.