



Seewiesen Colloquia

Speaker invited by: Research Group Dingemanse

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Context dependent signalling in birds

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We all like very simple explanations for what we observe – and in fact, much of science is based on the principle of parsimony where the simplest explanation is considered the best. But nature is messy, it runs many different ‘experiments’ where the details matter, and all of this gets even more complicated when you deal with social groups where both cooperation and conflict are a regular part of life. In this talk, I use my own work looking at the evolution of complex social signals in two species of songbird to illustrate the role of context-dependent social behavior in the evolution of signals. These examples show how social selection can generate diversity and how relatively simple interactions can generate complexity. The good news is that by digging into the details of the system, we can actually decompose this complexity and start to understand it. The first story I will talk about (briefly) is how variation in social contexts during male-male competition and variation in environments across time for female mate choice can influence the evolution of sexual signals in the lark bunting (*Calamospiza melanocorys*). This example is informative in that it shows how selection pressures across contexts can counteract long term selection and preserve variation in sexual signalling traits. The second story I will talk about (in more detail) is how variation in social structure can favour the evolution of multiple social signals in wintering birds – golden crowned sparrows (*Zonotrichia melanocorys*). In this example we start with a basic question about badges of status and discover complex social structure in wintering birds and that this social structure has a profound impact on the evolution of social signals.

Who is Alexis Chaine?

- 2006 PhD University of California, Santa Cruz
- 2006-2009 Post-doctoral fellow, CNRS Moulis, France
- 2009-2014 Charge de Recherche 2 (Research Scientist ~Asst. Pr), CNRS Moulis
- 2014-now Charge de Recherche 1 (Research Scientist ~Assoc. Pr.), CNRS Moulis
- 2014-now Adjunct Researcher, Institute for Advanced Studies in Toulouse, Toulouse School of Economics

Selected publications:

- Chaine A.S. and Lyon B.E. (2008) Adaptive plasticity in female mate choice dampens sexual selection in male ornaments in the lark bunting. *Science* 319: 459-462
- Lyon B.E., Chaine A.S., Winkler D.W. (2008) A matter of timing. *Science* 321: 1051-1052.
- Chaine A.S. and Lyon B.E. (2008) Intra-sexual selection on multiple plumage ornaments in the lark bunting. *Anim. Behav.* 76: 657-667.
- Chaine A.S., Roth A., Shizuka D., and Lyon B.E. (2013) Experimental confirmation of multiple badges of status in a songbird. *Animal Behavior* 86: 409-415.
- Shizuka D., Chaine A.S., Anderson J., Johnson O., Laursen I-M, and Lyon B.E. (2014) Across-year social stability shapes network structure in wintering migrant sparrows. *Ecology Letters* 17: 998-1007