

**Time-scales alter the inferred strength and temporal consistency of
intraspecific diet specialization.**

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Supplementary Material

S1. Additional details for the four similarity indices

The classic incidence-based Jaccard index of similarity reflects the similarity of prey identities (the proportion of shared prey taxa) and is calculated as

$$S_J = \frac{A}{A + B + C},$$

where A is the total number of species present in the diets of both individuals, B is the number of unique species in the diet of the first individual, and C is the number of unique species in the diet of the second individual (Jaccard 1901).

The frequency-based Jaccard index of similarity reflects both prey identities and their occurrences, and is calculated as

$$S_{Ja} = \frac{UV}{U + V - UV},$$

where U is the sum of the proportional frequencies, p , of prey species in the diet of the first individual that it shares with the second individual ($U = \sum_{k=1}^A p_{1k}$) and V is the sum of the proportional frequencies of prey species in the diet of the second individual that it shares with the first individual ($V = \sum_{k=1}^A p_{2k}$) (Chao et al. 2005).

The frequency-based Jaccard index estimator is an extension of the frequency-based Jaccard index that considers the probability of having not observed prey species that are actually present and shared between the diets of two individuals; the other indices assume full and complete knowledge of each individual's diet. It is calculated as

$$S_{Je} = \frac{\hat{U}\hat{V}}{\hat{U} + \hat{V} - \hat{U}\hat{V}},$$

where \hat{U} and \hat{V} are estimators of U and V that take into account the number of prey species that are observed only once or twice in the diets of the two individuals (see Chao et al. 2005 for details).

Finally, the index of proportional similarity is calculated as

$$S_{PS} = 1 - 0.5 \sum_{k=1} |p_{1k} - p_{2k}| = \sum_{k=1} \min(p_{1k}, p_{2k})$$

(Renkonen 1938; Schoener 1968). This individual-to-individual implementation of the PS index differs from its individual-to-population implementation in the IS index of individual diet specialization (Bolnick et al. 2002), but reflects the converse of its use in the dissimilarity-based E index, $\bar{S}_{PS} = 1 - E$ (Araújo et al. 2009; Araújo et al. 2008), and exhibits more favorable properties than do other indices of similarity not considered here (Gerrard and Barbour 1986; Schatzmann et al. 1986; Wolda 1981). We included the PS index in our analyses to permit comparisons to other studies of individual variation since the three Jaccard indices have not seen previous application in this context.

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