9.1 Introduction

There are two distinct roles for transformations in community analyses:

a) to validate statistical assumptions for parametric techniques – in the approach of this manual such methods are restricted to *univariate* tests;

b) to weight the contributions of common and rare species in the (non-parametric) *multivariate* representations.

The second reason is the only one of relevance to the preceding chapters, with the exception of Chapter 8 where it was seen that standard parametric analysis of variance (ANOVA) could be applied to diversity indices computed from replicate samples at different sites or times. Being composite indices, derived from all species counts in a sample, some of these will already be approximately continuous variates with symmetric distributions, and others can be readily transformed to the normality and constant variance requirements of standard ANOVA. Also, there may be interest in the abundance patterns of individual species, specified *a priori* (e.g. keystone species), which are sufficiently common across most sites for there to be some possibility of valid parametric analysis after transformation.

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