

EDITORIAL

Opportunist, selective, and other often-confused terms in the predation literature

Oportunista, selectivo, y otros términos frecuentemente confundidos en la literatura sobre depredación

In the preceding issue of this journal, Fuentes editorialized on the fact that many ecologists are confused as to whether the term competition is an unbiased descriptor of a natural phenomenon or only a convenient operational tool. I here follow his lead in pointing out to another frequent confusion among students of predation: that about the meaning of, and proper context for, the seemingly interchangeable dichotomies "opportunist versus selective", "generalist versus specialist", and "time-minimizer versus energy-maximizer". For the sake of brevity I will not cite references and will go directly to the point.

"Opportunist" is a predator that takes all prey in the same relative abundances as present in those patches where the predator hunts (during the period when the predator is active, and within size limits imposed by the predator/prey size ratios and the perceptive and handling capabilities of the predator). An opportunistic predator so defined has a diet that correlates well with the profile of prey abundances present at a given place and time. Also, such a predator shows either no difference between observed and expected values of abundance of prey in the diet and in the field, or a disproportionately large consumption of the most abundant prey (when a search image has been formed).

"Selective" is a predator that takes some or all prey in different proportions than those present in patches where the predator hunts (same constraints as above apply here). A selective predator so defined has a diet that does not correlate with the profile of prey abundances, and shows clear differences between observed and expected values of abundance of prey in the diet and in the field; in particular, a disproportionate-

ly large consumption of the largest prey that it can handle.

The above definitions could be criticized because prey abundance is used in lieu of the more adequate prey "availability". Certainly, the ranking of prey availabilities to a given predator may not necessarily correspond to the ranking of those prey abundances in the field. However, I see no easy solution to this problem; to date, no one has come up with a realistic index for prey availability in the field. For the time being, it seems that prey abundance in patches where (and at times when) predators hunt is the only reasonable substitute for prey availability.

Two other dichotomies are frequently found in the predation literature: "generalist versus specialist", and "time-minimizer versus energy-maximizer". I think that these two dichotomies refer to conceptual frameworks different from that implicit in the term "opportunist versus selective". Opportunistic or selective refers to the hunting behavior of predators, which in turn becomes reflected in their respective trophic niches. It is almost a truism that an opportunistic predator has a generalized diet (or a broad trophic niche), whereas a selective predator has a specialized diet (or a narrow trophic niche). Of course, there are apparent exceptions: an opportunist predator faced with a profile of prey abundances that is strongly leptokurtic, will ostensibly demonstrate a narrow trophic niche. This point stresses the importance of classifying predators according to both their behavior and the local profile of prey sizes and abundances.

The ultimate cause of a predator behaving as opportunistic or as selective may be related to its hunting tactics. An oppor-

tunist predator may, more often than not, be a "time minimizer", taking whatever prey comes within reach in the minimum amount of hunting time, ostensibly to use the remaining time in other activities. A selective predator, in contrast, may be an "energy maximizer", using ample time to find, catch, and subdue the most profitable prey.

Consequently, I propose that all these dichotomic terms refer to different phenotypic attributes of the predators. Hunting tactics are dictated by decision rules in-

volving either "time minimization" or "energy maximization"; these rules are reflected in the hunting behavior of predators, dichotomized as "opportunistic" or "selective"; and these behaviors, in turn, become transcribed in the trophic niche of the predators, be it broad/"generalized" or narrow/"specialized".

FABIAN M. JAKSIC

Departamento de Ecología

Universidad Católica de Chile, Casilla 114-D, Santiago, Chile