

## Species Specific Defense Reactions

First proposed by Robert Bolles

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### **Abstract**

Suggests that prevailing theories of avoidance learning and procedures used to study it are out of touch with what is known about how animals defend themselves in nature, and proposes an alternate assumption that animals have innate species-specific defense reactions (SSDRs) such as fleeing, freezing, and fighting. If a particular avoidance response is rapidly acquired, then that response must necessarily be an SSDR, hence, the learning mechanism appears to be suppression of nonavoidance behavior by the avoidance contingency. Traditional approaches to avoidance learning appear to be slightly more valid in the case of responses that are slowly acquired, although in this case, too, the SSDR concept is relevant, and reinforcement appears to be based on the production of a safety signal rather than the termination of an aversive CS. (53 ref.) (PsycINFO Database Record (c) 2009 APA, all rights reserved)

### Application

It turns out that most critters have a “natural” reaction (one determined by contingencies of survival) to aversive stimuli. For example, rats run away from sources of shock (who doesn't!), while pigeons tend to flap their wings in an aggressive manner. Thus, if you are teaching avoidance behavior, and that behavior is similar to the SSDR, then conditioning will quickly occur. If the avoidance behavior is very different, or incompatible with, the SSDR, then conditioning will be very slow. Thus, teaching pigeons to peck keys to escape shock can be difficult.