

## IN SUPPORT OF REAL ENVIRONMENTS

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Organisms have evolved in environments in which changes in physical, chemical and biotic factors create huge complexity in time and in space. While the “real world” may not be the most attractive stage on which to perform experimental science, we cannot hope to understand the multiplicity of factors which regulate fundamental processes if we reach conclusions based **solely** on simple manipulations of variables. Examples will be cited to point out the kinds of misunderstandings that can occur as a result of “simple” experimentation which neglects the complexity encountered in an uncontrolled, or partially controlled, environment. The German word “gestalt”, defined in Webster’s dictionary as “a structure, configuration, or pattern of physical, biological, or psychological phenomena so integrated as to constitute a functional unit with properties not derivable by summation of its parts”, points clearly to the perils that may be associated with “simple” approaches which are, in effect, “shallow”. On the other hand, there are sound and robust reasons for employing experimental methods in which the term “simple” is synonymous with “manageable”.