About emergent properties and complexity in scientific theories

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Our aim is to present some ideas about the notion of scientific theory. We examine relationships (for instance, when a theory is stronger than another) among theories and examples of theoretical situations. In this context we propose a theoretically acceptable approach to the notions of emergent properties and complexity. Respectively, we can say that a property is *emergent* with respect to a theory **T**, if it can be expressed in the language **L** of **T**, but it cannot be proved in **T** and a portion of reality is said to be *complex* if, for each theory which describes it, there are always emergent properties. These definitions are exemplified by the development of some biological theories.