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## Life-history theory, reproduction and longevity in humans

Virpi Lummaa

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### (-) Abstract and Keywords

The basic assumption underlying life-history theory is that natural selection has selected for an optimal combination of life-history traits that maximizes individual fitness. The best studied trade-offs include: investigating how individuals should allocate resources to reproduction versus their own growth and survival; and when reproducing, how should they divide their effort between current and future reproduction or between the number, sex, and quality of offspring. Co-ordinated evolution of all these principal life-history traits together determines the life-history strategy of the organism. The environment, in turn, determines the action of natural selection: traits may be adaptive only within reference to a particular environment and few, if any, traits are adaptive in all contexts. Life-history theory proposes that, generally, there should be no selection for living beyond one's reproductive capacity. Instead, the 'surplus' energy reserves which would allow post-reproductive survival are predicted to be better off spent earlier in one's life, during reproductive years.

Keywords: *life-history theory, natural selection, fitness, reproduction, growth, survival, sex, offspring, environment*

Virpi Lummaa

Dr. Virpi Lummaa, Department of Animal and Plant Sciences, University of Sheffield