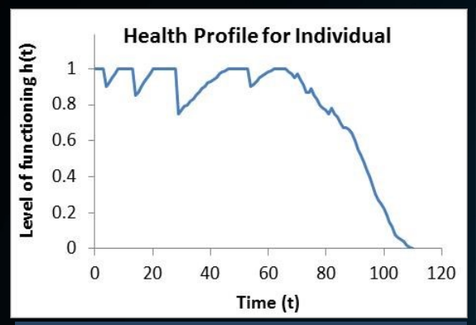
ESTIMATING THE HEALTH STATUS OF A POPULATION—THE HISTORY OF HEALTH STATE CURVES

Christos H Skiadas (ManLab, Technical University of Crete, Greece, Skiadas@cmsim.net) and **Charilaos Skiadas** (Hanover College, Indiana, USA, Skiadas@hanover.edu)

1976 A First Approach



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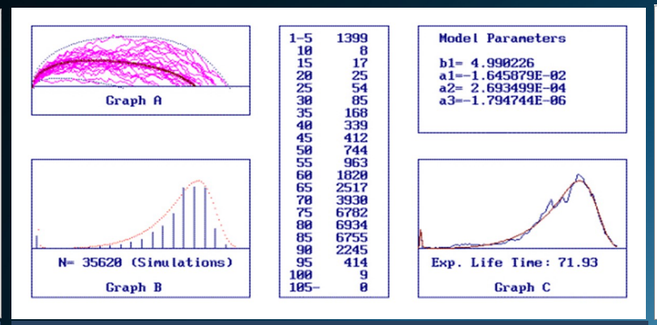
1995 Modeling, Fit and Simulation



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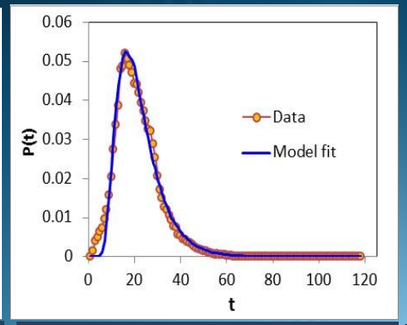
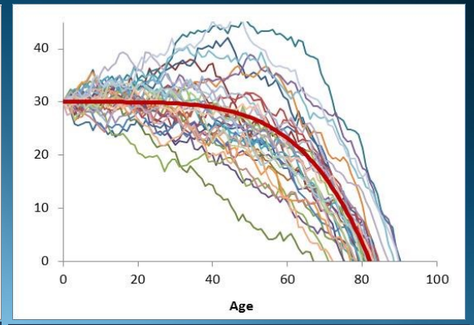
2001 Fit to Medfly



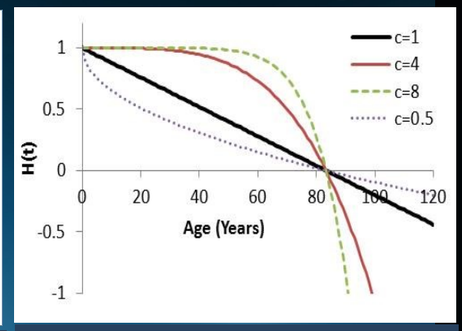
Weitz, J.S. and Fraser, H.B. Explaining mortality rate plateaus, *Proc. Natl. Acad. Sci. USA,* 98(26), 15383 (2001).

2010 Model-Simulation



Skiadas, C. and Skiadas, C. H. Development, Simulation and Application of First Exit Time Densities to Life Table Data, *Com. Stat.* 39, 2010: 444-451.

2014 Modeling



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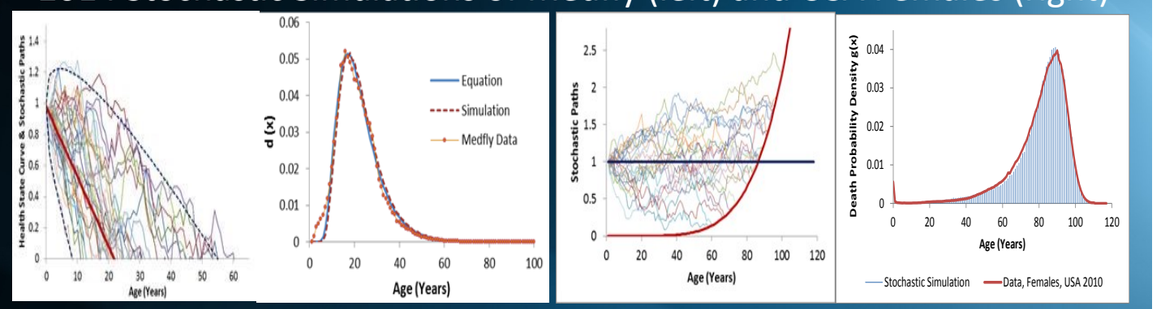
2014 Stochastic Simulations of Medfly (left) and USA Females (right)



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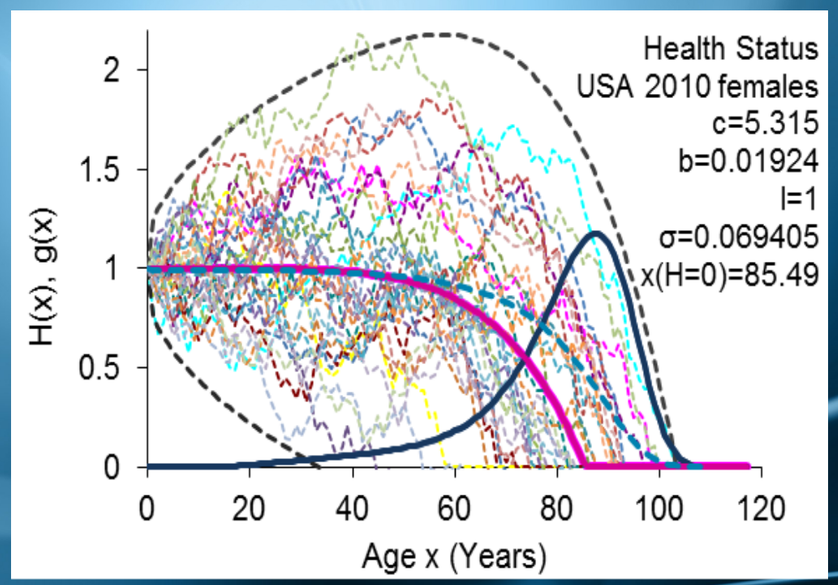
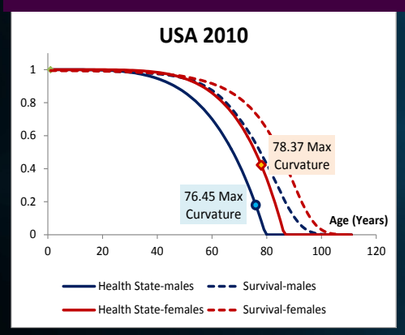
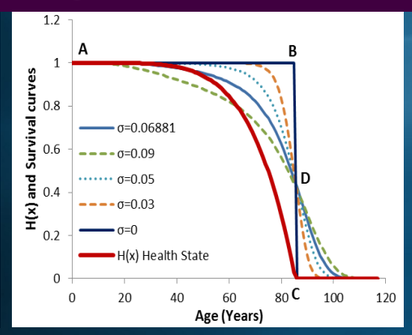


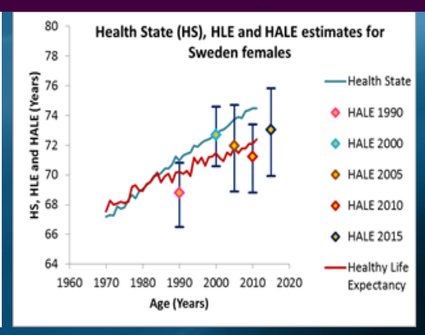
Although the Survival Curve is known as long as the life tables have introduced the Health State Curve was calculated after the introduction of the advanced stochastic theory of the first exit time.

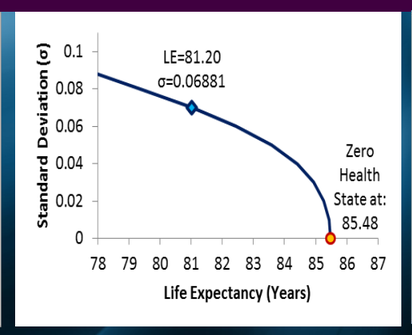
The health state curve is illustrated by the heavy magenta line (see left). The corresponding survival curve for the related case is presented by the cyan curve. The blue curve expresses the death distribution. The light curves with various colors are the stochastic paths from the related simulation. The two dashed black curves express the confidence intervals. The Health State, the Life Expectancy and the age at zero health state are also estimated.

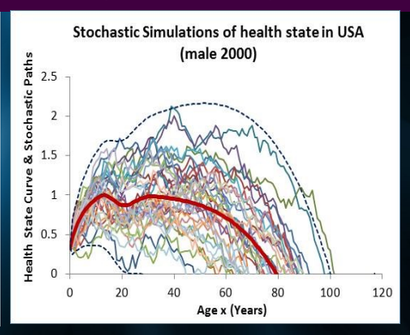
Health State and Survival Curves, Age at Maximum Curvature, Health State, Healthy Life Expectancy and HALE, Standard Deviation σ, Health State Curves (male USA 2000), Health State as the total area under (AB)

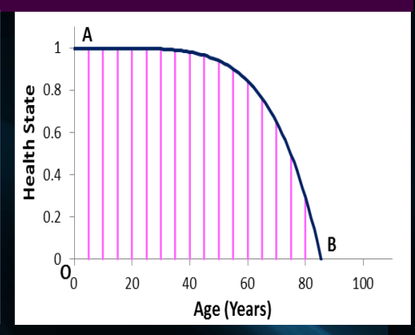












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