

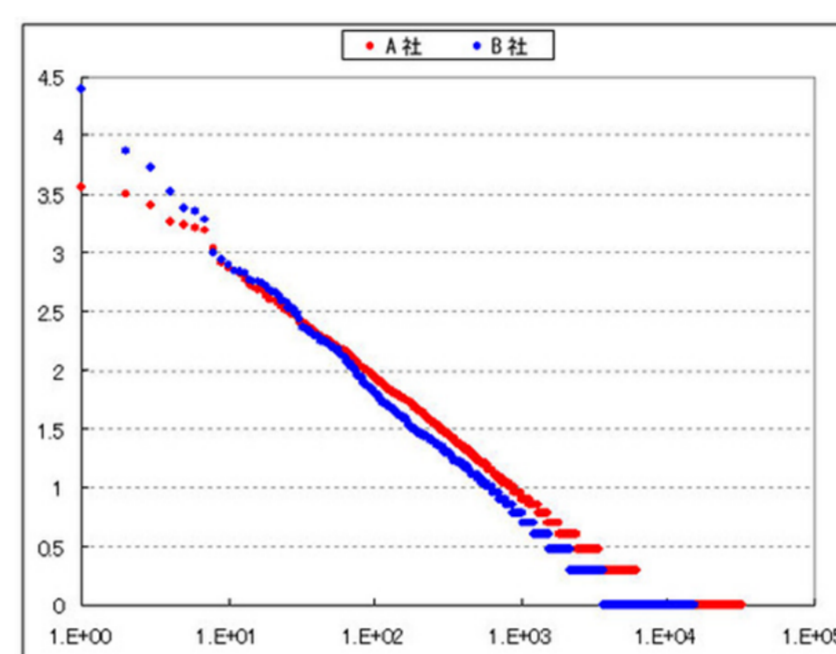
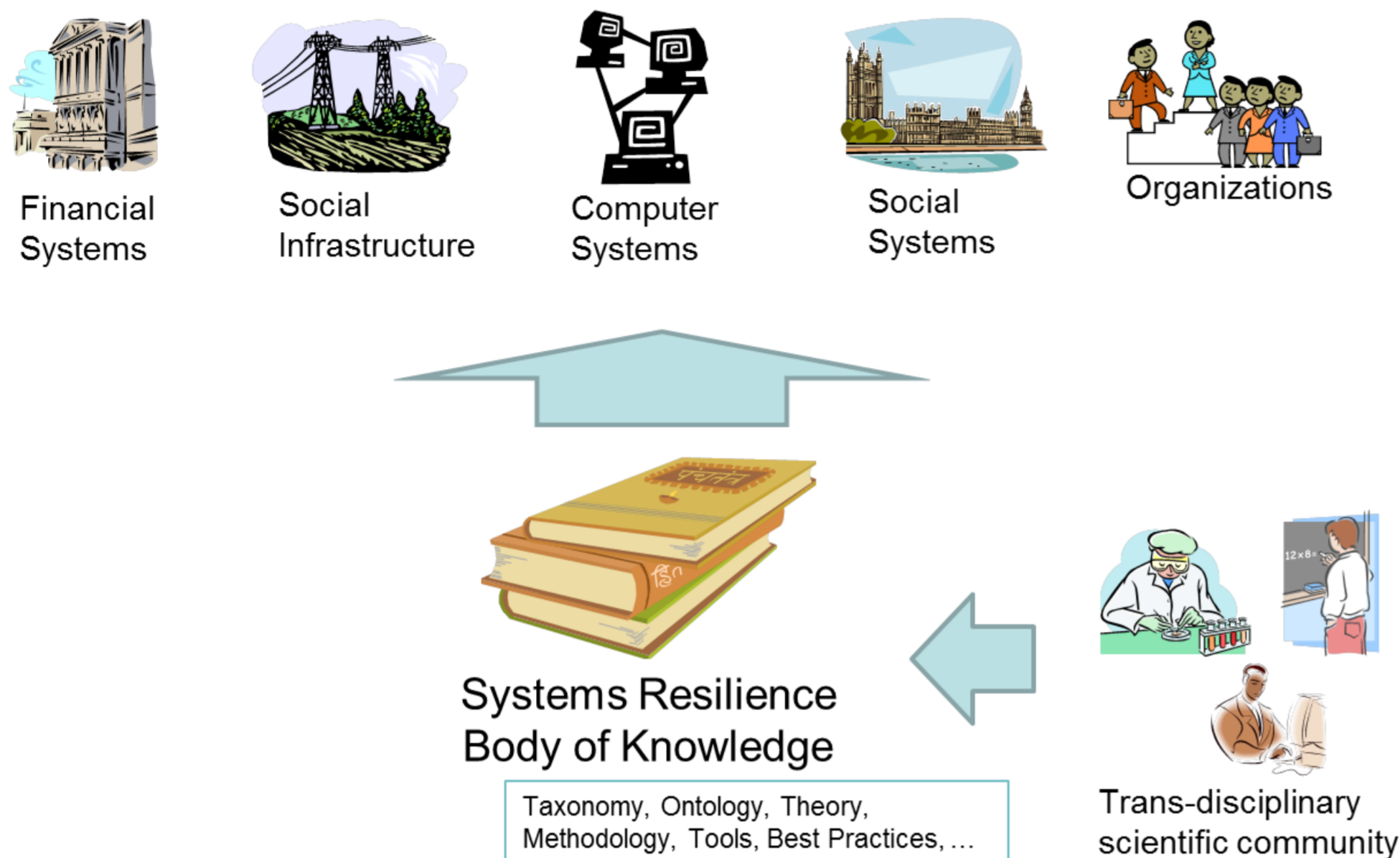
Systems Resilience

Hiroshi Maruyama

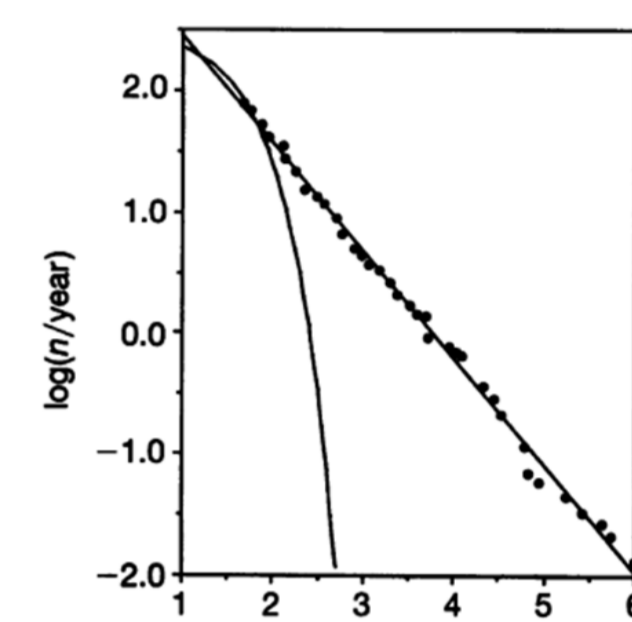
We need a new discipline, probably called "Resilience Engineering," that enables building a techno society that can recover from the damages of a disaster ...

University of Tokyo, School of Engineering, Urgent Engineering Vision Working Group, "Direction of Engineering Research after 3.11," <http://www.t.u-tokyo.ac.jp/epage/topics/pdf/vision.pdf>

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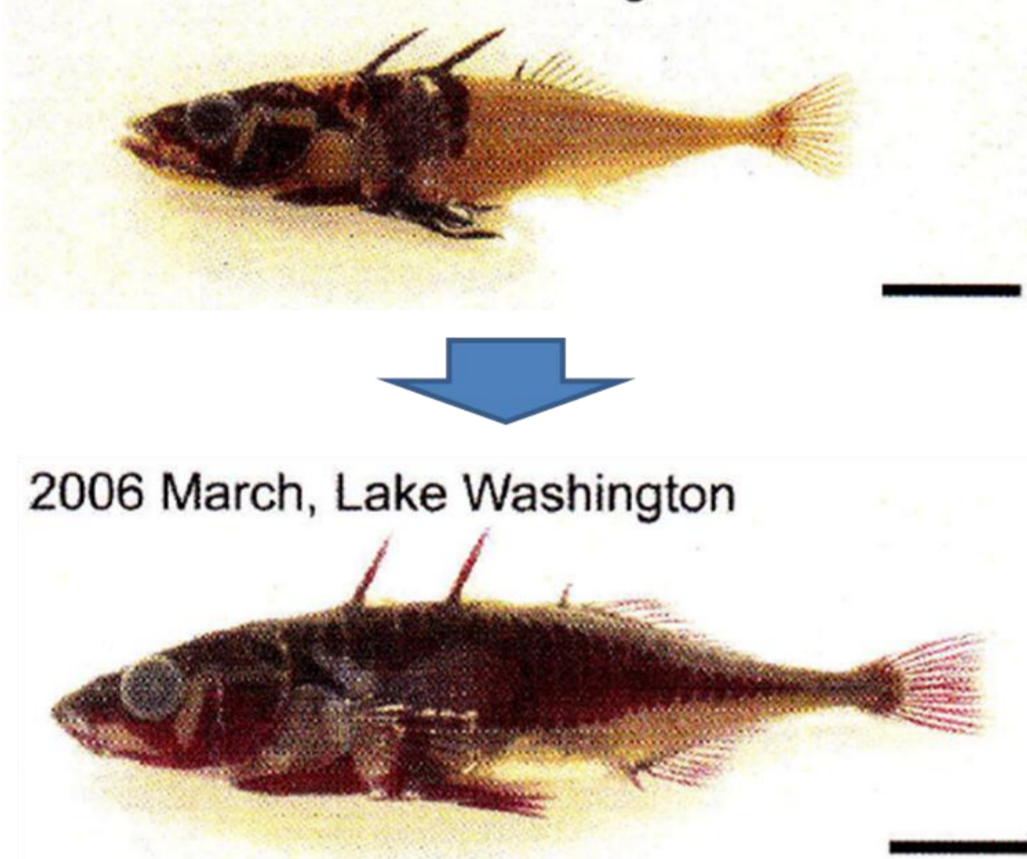
Web site traffic vs Search Keywords
<http://gitanez.seesaa.net/article/22472562.html>



Distribution of earthquakes in the New Madrid zone in the southeastern United States during the period 1974-1983, collected by Johnson and Nava. P. Bak and M. Paczuski, Proc. Natl. Acad. Sci. USA, Vol 92, 1995.

Biological Resilience

1957 March, Lake Washington

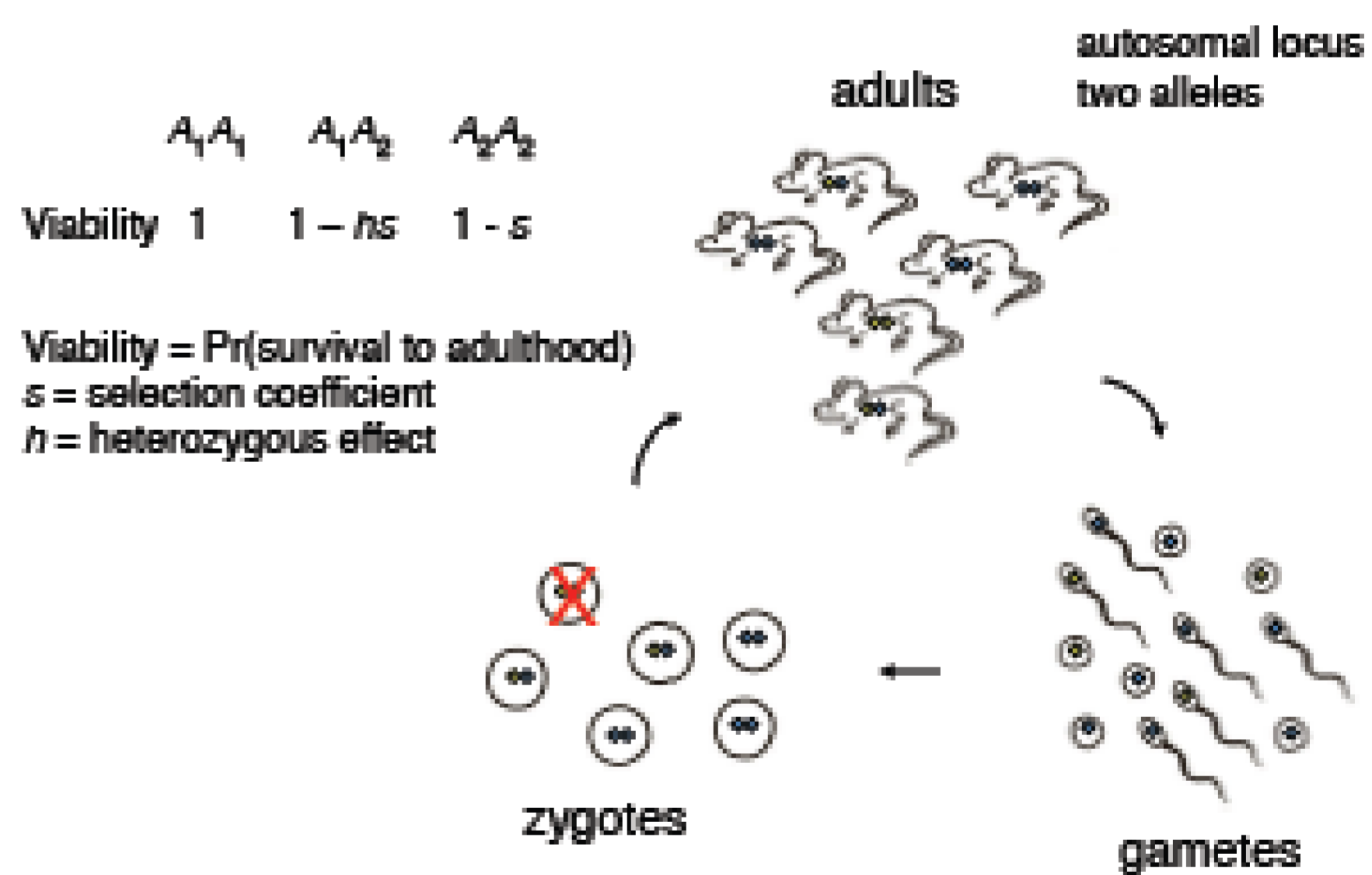


Threat of Trout Predation



J. Kitano, et al., "Reverse Evolution of Armor Plates in the Threespine Stickleback," *Current Biology* 18, 2008.

Natural selection: unequal survival among genotypes



Small-scale disturbances

"Management that encourages small-scale disturbances and innovation during the conservation phase reduces the vulnerability to larger disturbance." ...

"Perhaps most dangerous management strategy would be to prevent disturbance uniformly throughout a region until all subunits reach a similar state of maturity, making it more likely that the entire system will change synchronously."



Co-regulatory Structure : Lifelog Regulation in U.S. and UK

