

Kritische kantelpunten

Stilte, of toch gefluister voor een storm?

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Radio: Vroege Vogels, NPO Radio 1

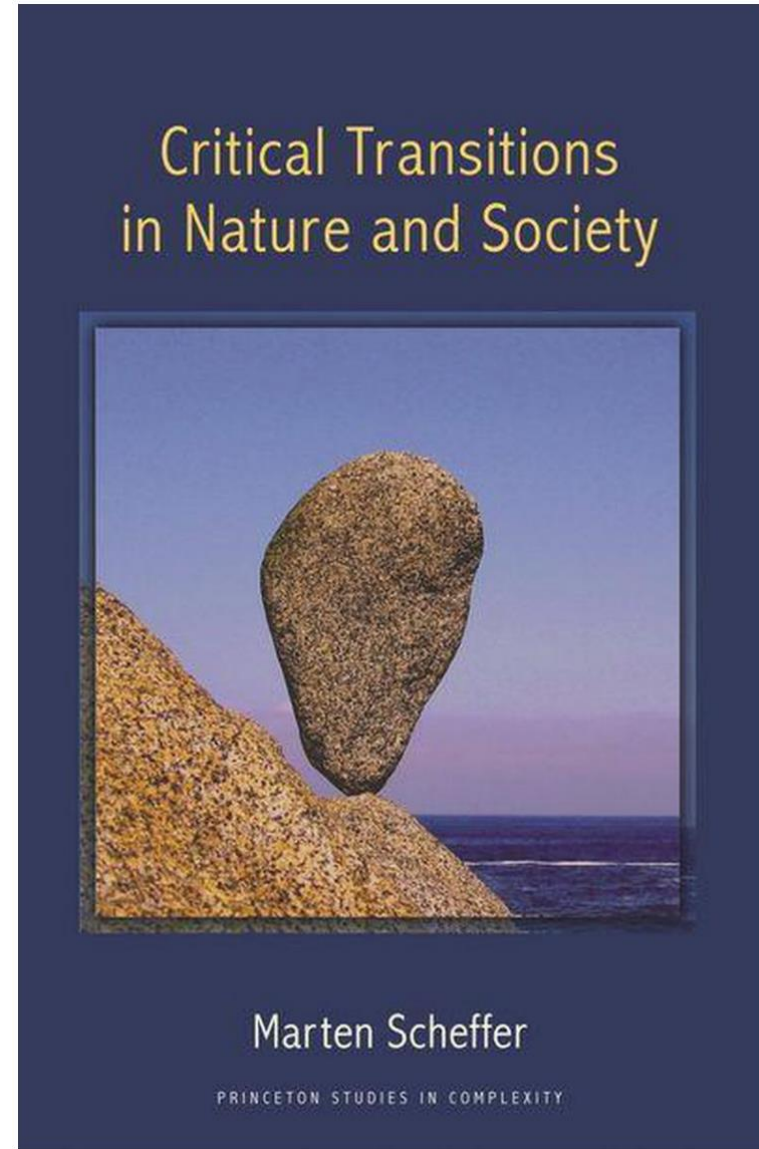
Kranten: Trouw, NRC

Tijdschriften: National Geographic e.v.a.

www.robbieter.nl (aan onderhoud toe ;-)



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Winnaar 'Spinozapremie NWO 2009'



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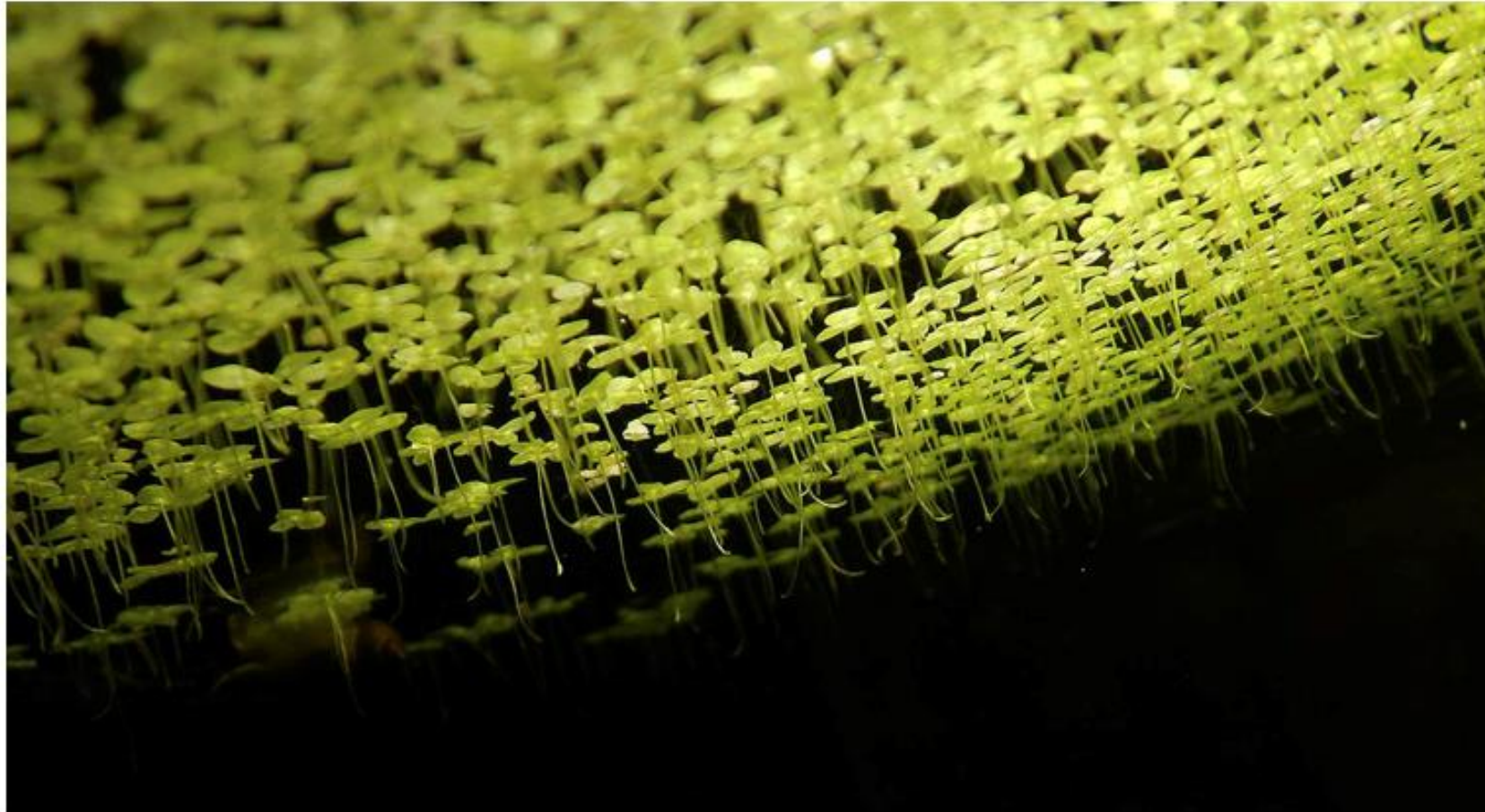
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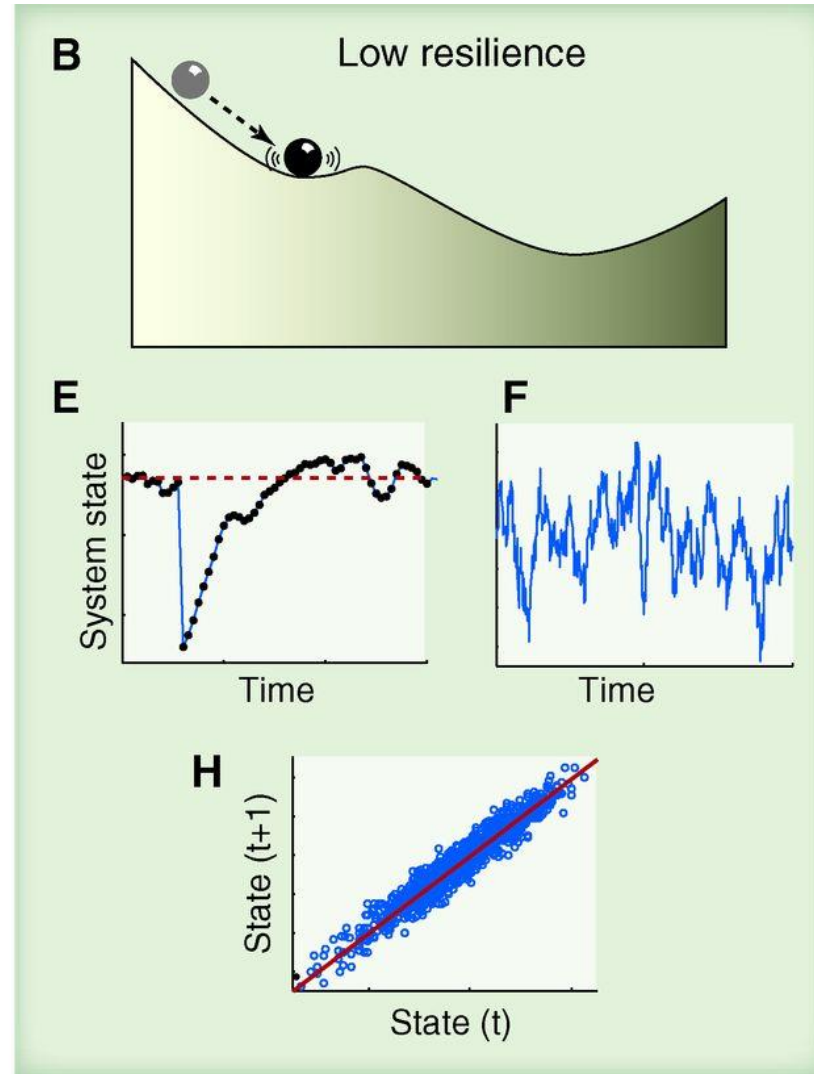
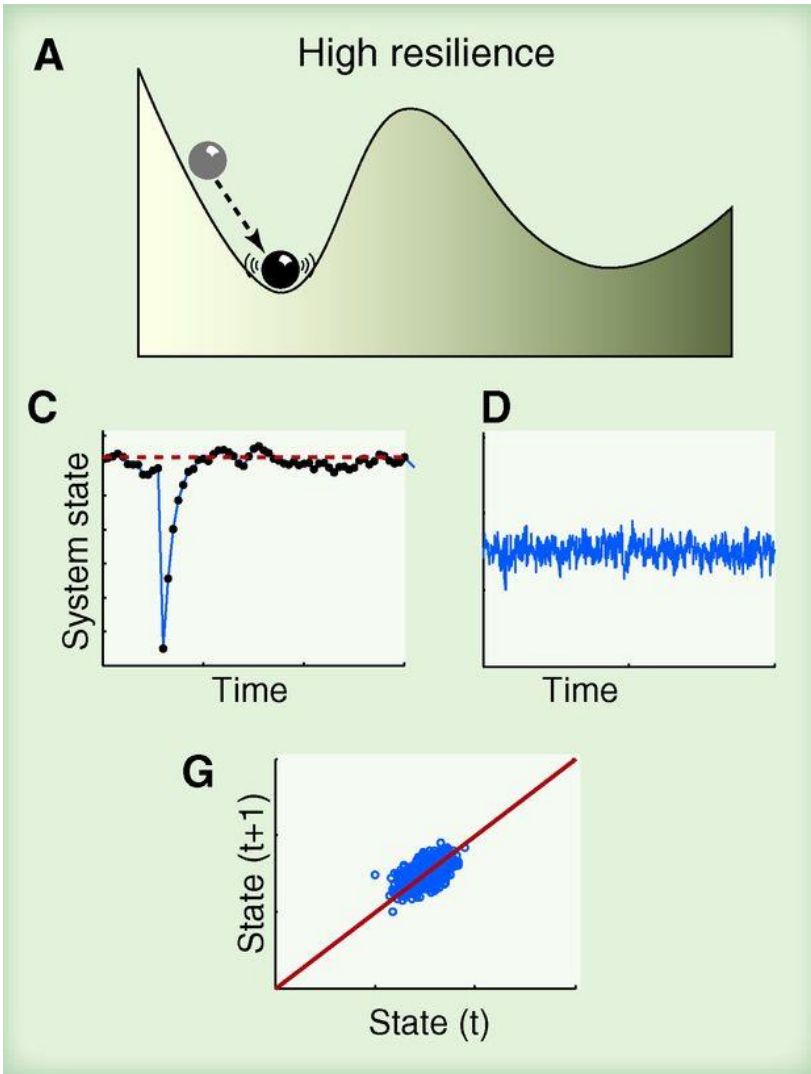
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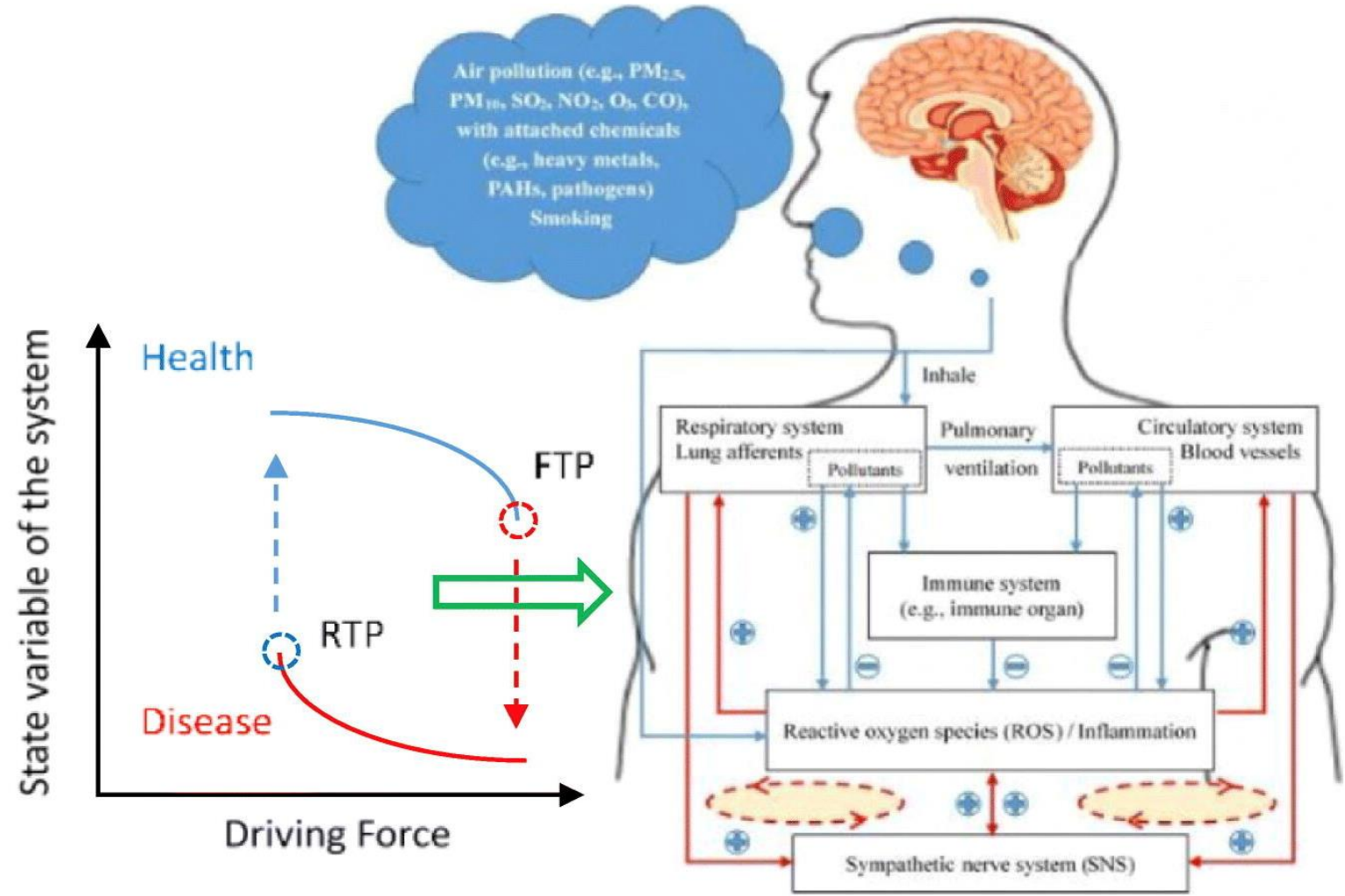
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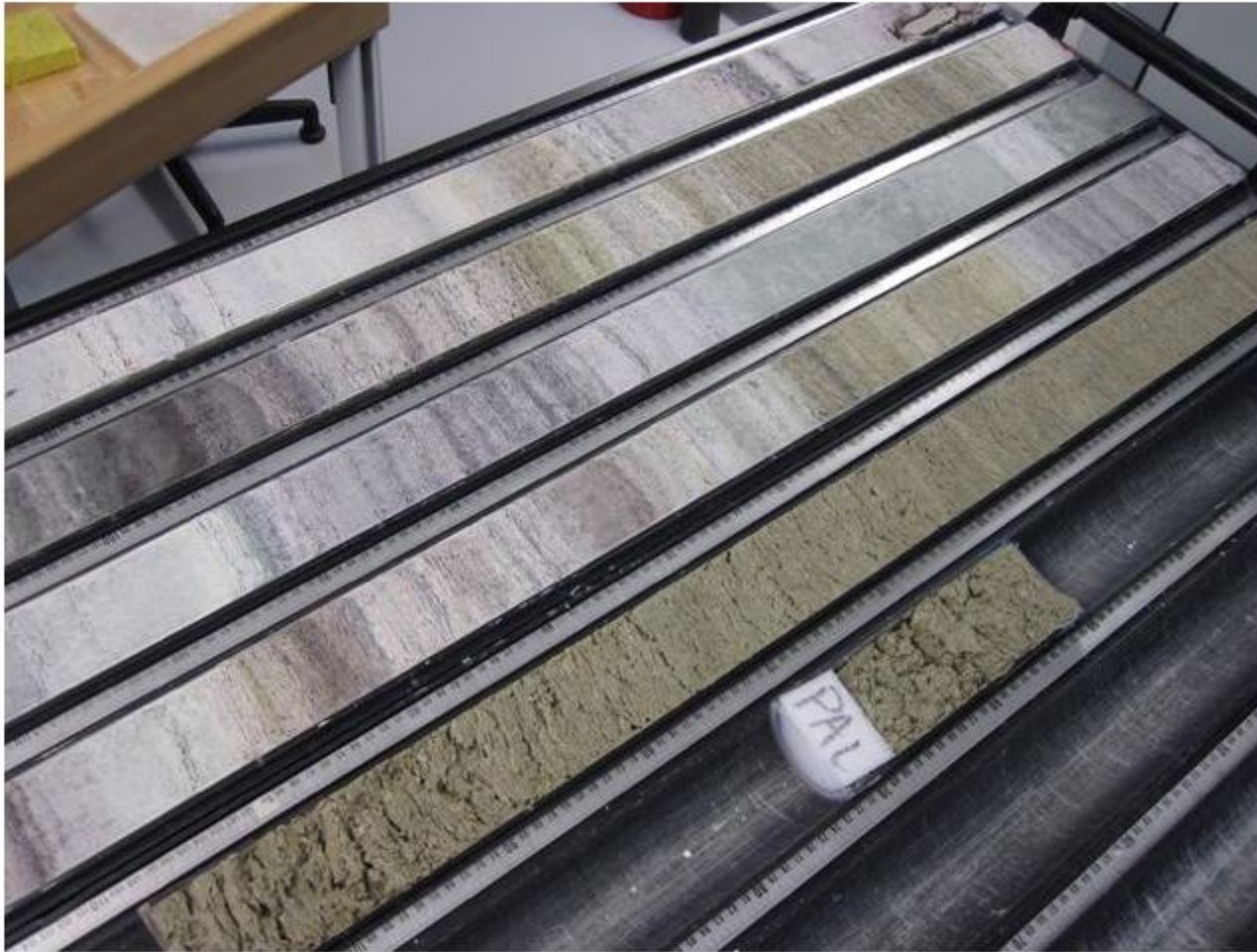
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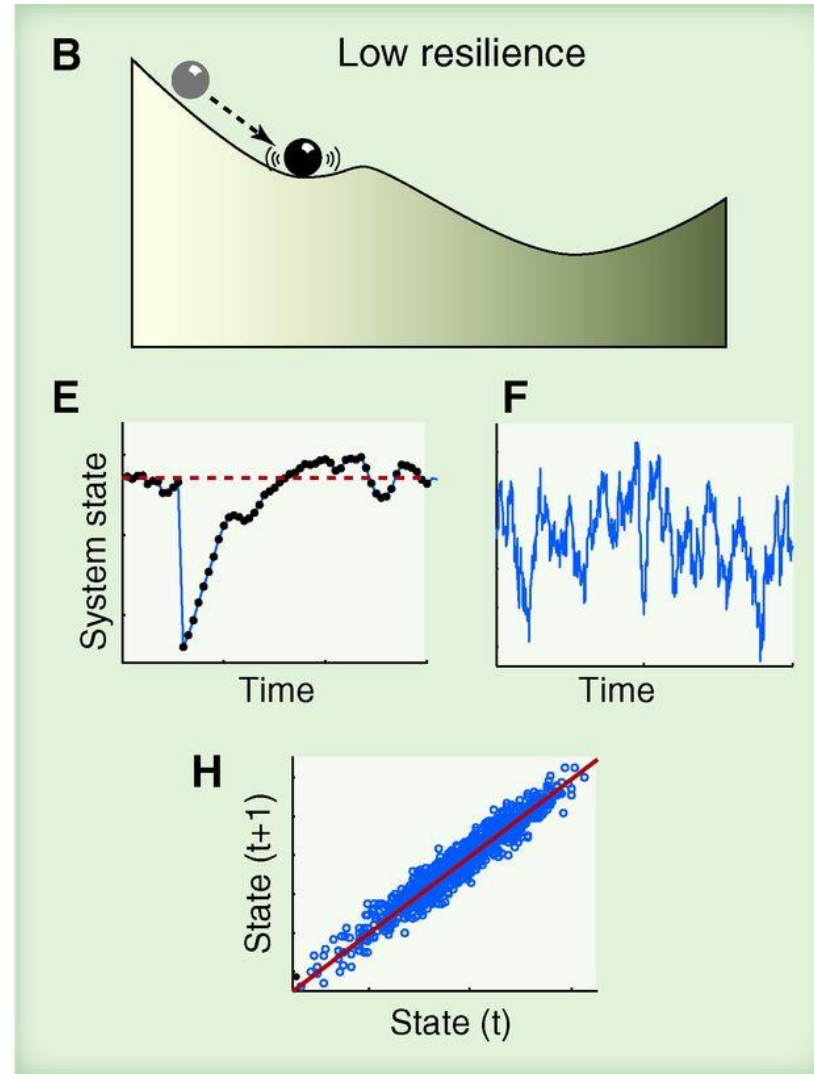
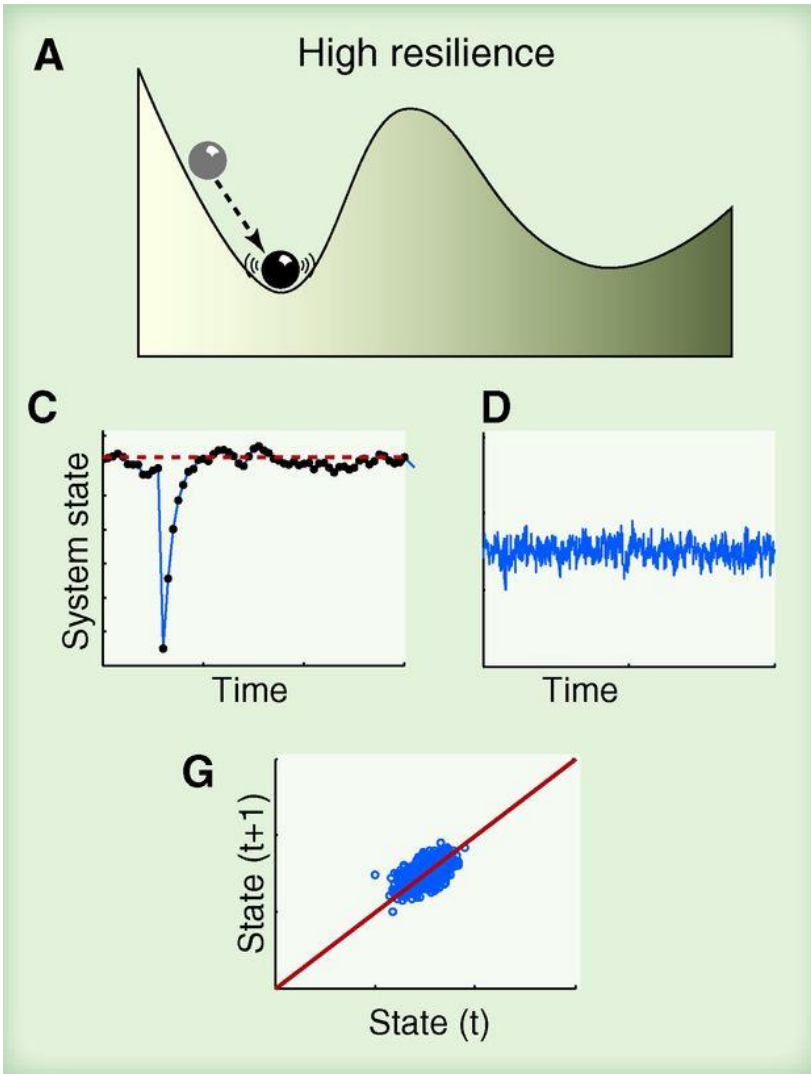


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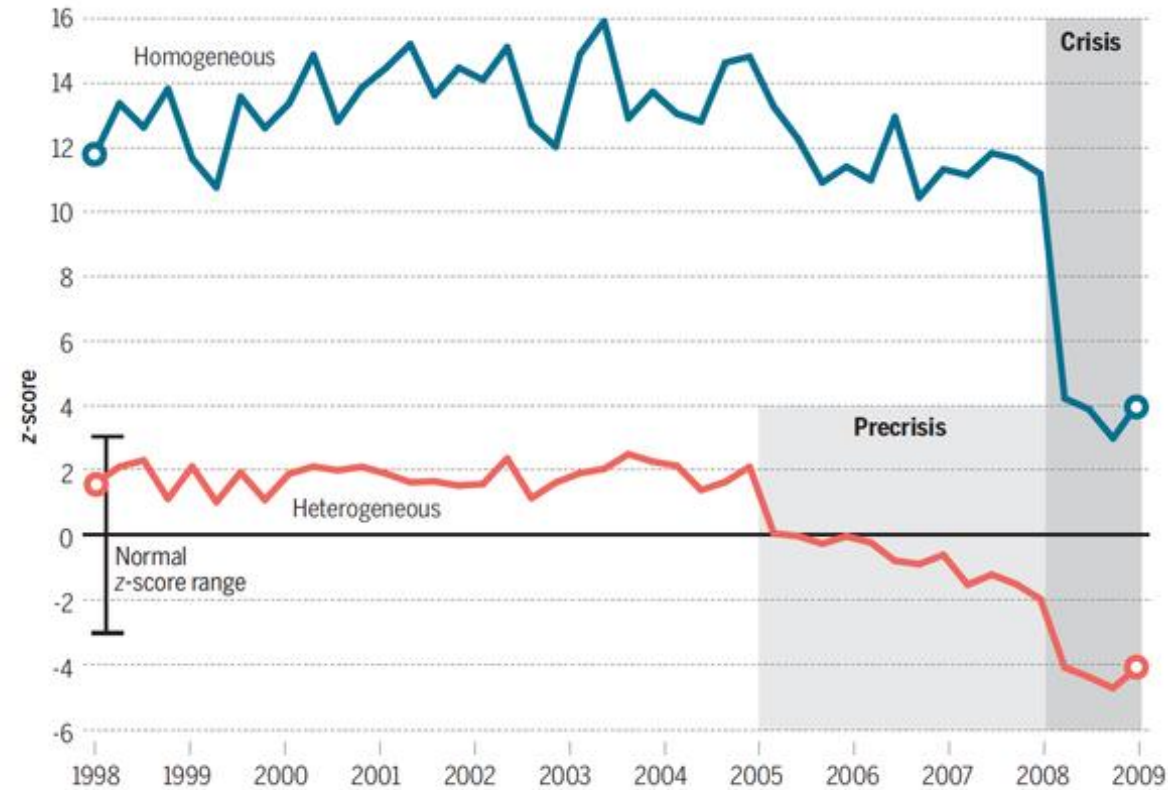


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Early-warning signals of the 2008 crisis in the Dutch interbank network. The figure portrays a temporal analysis of two loops, pairs of banks that are at the same time debtor and creditor to each other. Although the raw number of two loops is not very informative about possible ongoing structural changes, its comparison with a random network model benchmark is. A z-score represents the number of standard deviations by which the number of two loops in the real network deviates from its expected value in the model. Small magnitude z-scores (<3) indicate approximate consistency with the model, whereas larger magnitudes indicate statistically significant deviations. Two different random network models were used: a homogeneous network with the same total number of links as in the real network (top) and a heterogeneous network where every bank has the same number of connections as in the real network (bottom). The homogeneous model, often used in standard analyses, highlights only a late and abrupt structural change (2008). The more realistic heterogeneous model also identifies a gradual, early-warning “precrisis” phase (2005–2007). [Modified from (2)]



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Ingrijpen?



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Is er stilte voor de storm, of klinkt er gefluister?

Wat zijn de symptomen (kroos of waterplanten? Omzet, of ... ?)

Wat zijn de vroege signalen (het wiebelende balletje: meststoffen in het water?)

Hoe snel reageert het systeem op een verstoring?

Hoeveel moeite moet je doen om het balletje in het kommetje te houden?

Vs

Hoeveel moeite kost het om hem weer terug te krijgen?

Refs:

Complexity theory and financial regulation, Economic policy needs interdisciplinary network analysis and behavioral modeling, Battiston et al, Science 351
DOI 10.1126/science.aad0299

Anticipating Critical Transitions, Scheffer et al., Science 338
DOI 10.1126/science.1225244

Foreseeing tipping points, Marten Scheffer, Nature 467
DOI:10.1038/467411a

Boek: Critical Transitions in Nature and Society, Marten Scheffer (ISBN 9780691122045)