IN·DEI·NOMINE·F

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Note that:

Recurrence values **will** change with changes in the parameters

The safest bet for behavioural data:

- Do recurrence calculations with one set of parameters for all of your data sets.

- Then, do this again with another set of parameters and make sure the overall results pattern the same way.

- Then, you can be sure that your results are not artefacts of your parameter selection

68

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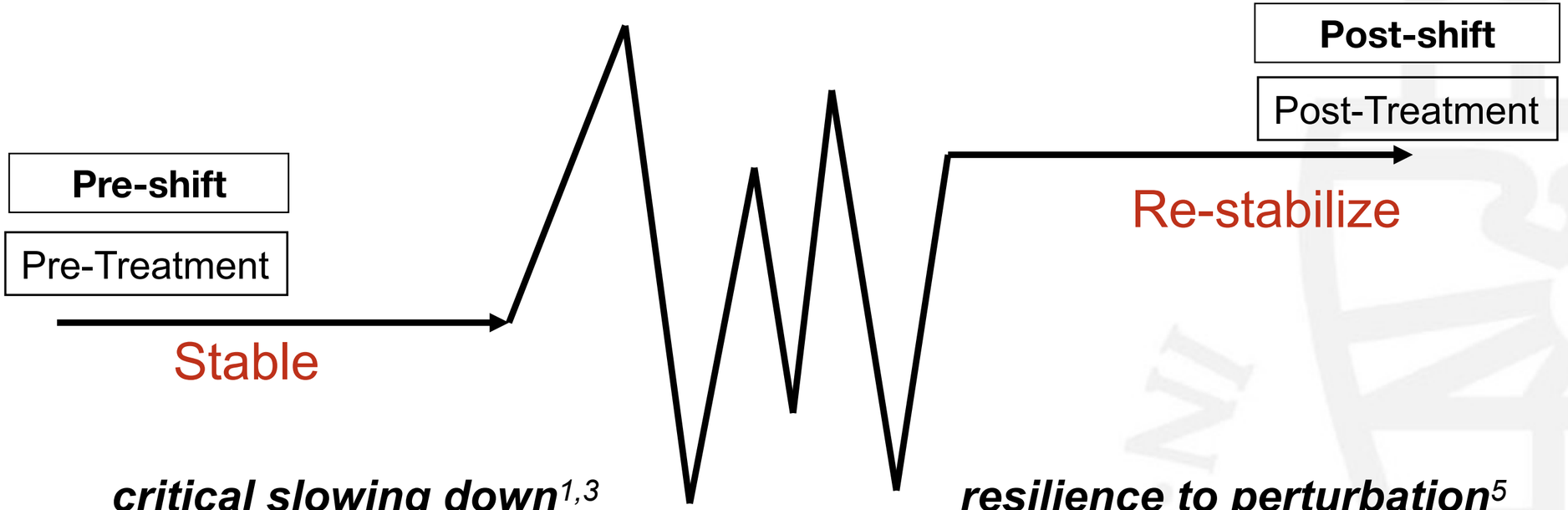
Period of Destabilization



critical slowing down[1,3] ***resilience to perturbation***[5]

critical fluctuations[3,4]

- increase in recovery and switching time after perturbation
- increase in variance, autocorrelation, long-range dependence
- increase in occurrence and diversity of unstable states
- increase in the entropy of the distribution of state occurrences

[1]Scholz JP, Kelso JAS, Schöner G. (1987). Nonequilibrium phase transitions in coordinated biological motion: critical slowing down and switching time. *Physics Letters A 123,* 390–394.

[2]Scheffer M, Bascompte J, Brock W A, Brovkin V, Carpenter SR, Dakos V, Held H, van Nes EH, Rietkerk M, Sugihara G. (2009). Early-warning signals for critical transitions. *Nature 461,* 53–9.

[3]Stephen DG, Dixon JA, Isenhower RW. (2009). Dynamics of representational change: Entropy, Action and Cognition. *JEP: Human Perception and Performance 35,* 1811–1832.

[4]Schiepek G, Strunk G. (2010). The identification of critical fluctuations and phase transitions in short term and coarse-grained time series … *Biological cybernetics 102,*197–207.