



Tufts
UNIVERSITY

International Resilience research & Policy/practice

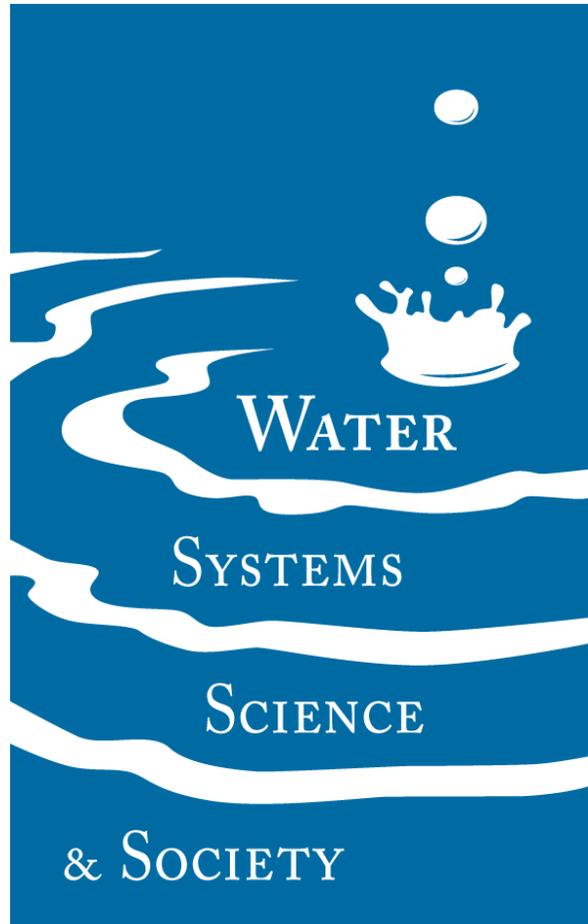
**Director
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Professor of Practice

**THE FLETCHER
SCHOOL**

Workshop on Integrated Water Resources Management 水资源综合管理研讨会



Traditional water resource management, human health and social-ecological systems resilience

传统的水资源管理、人类健康以及社会生态系统的恢复力之间的联系

(塔夫斯大学法律及外交学院教授)

Human health and Social-ecological (systems) Resilience

- Concepts & Definitions
 - Health
 - Social-ecological resilience
- Measurement/Assessment tools
- Focus on water and human health
- Policy/practice implications

Resilience: Theoretical Underpinnings

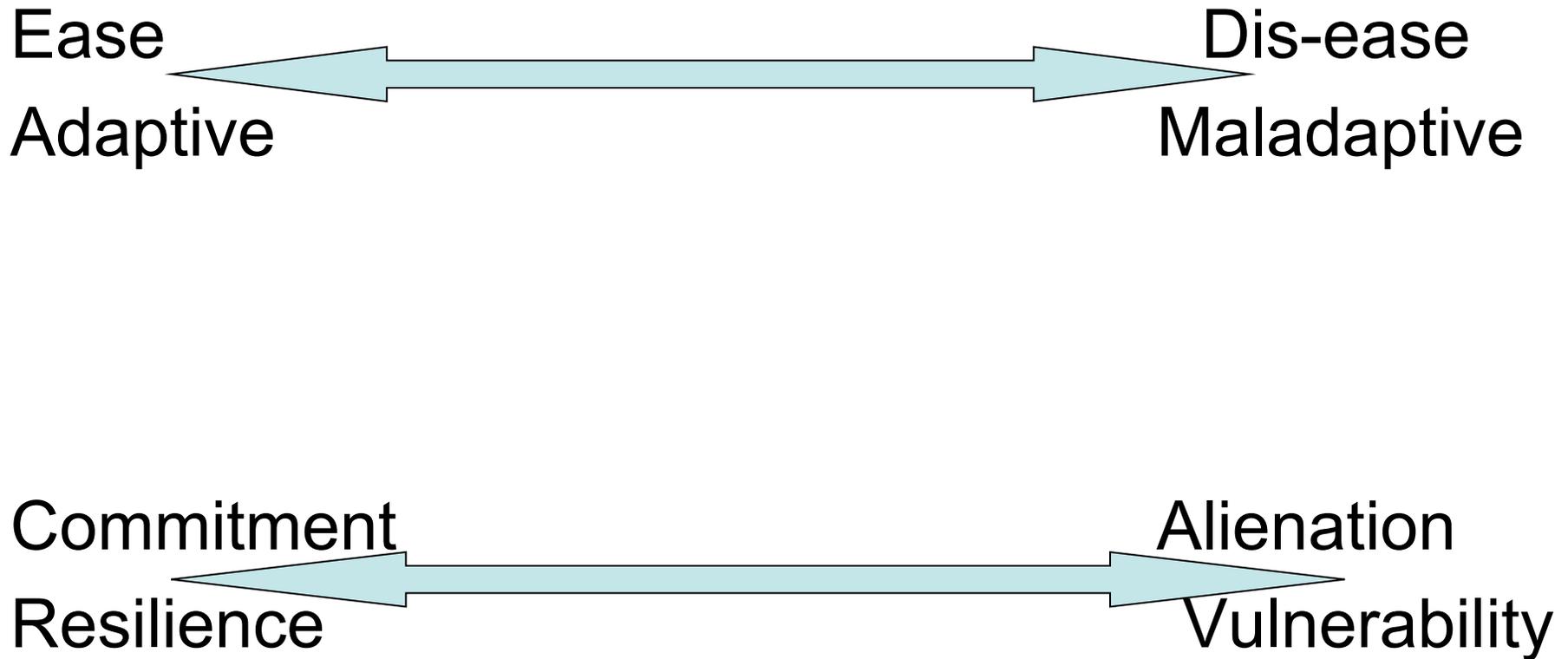
Salutogenesis

(Origins of
health)

Pathogenesis

(Origins of
disease)

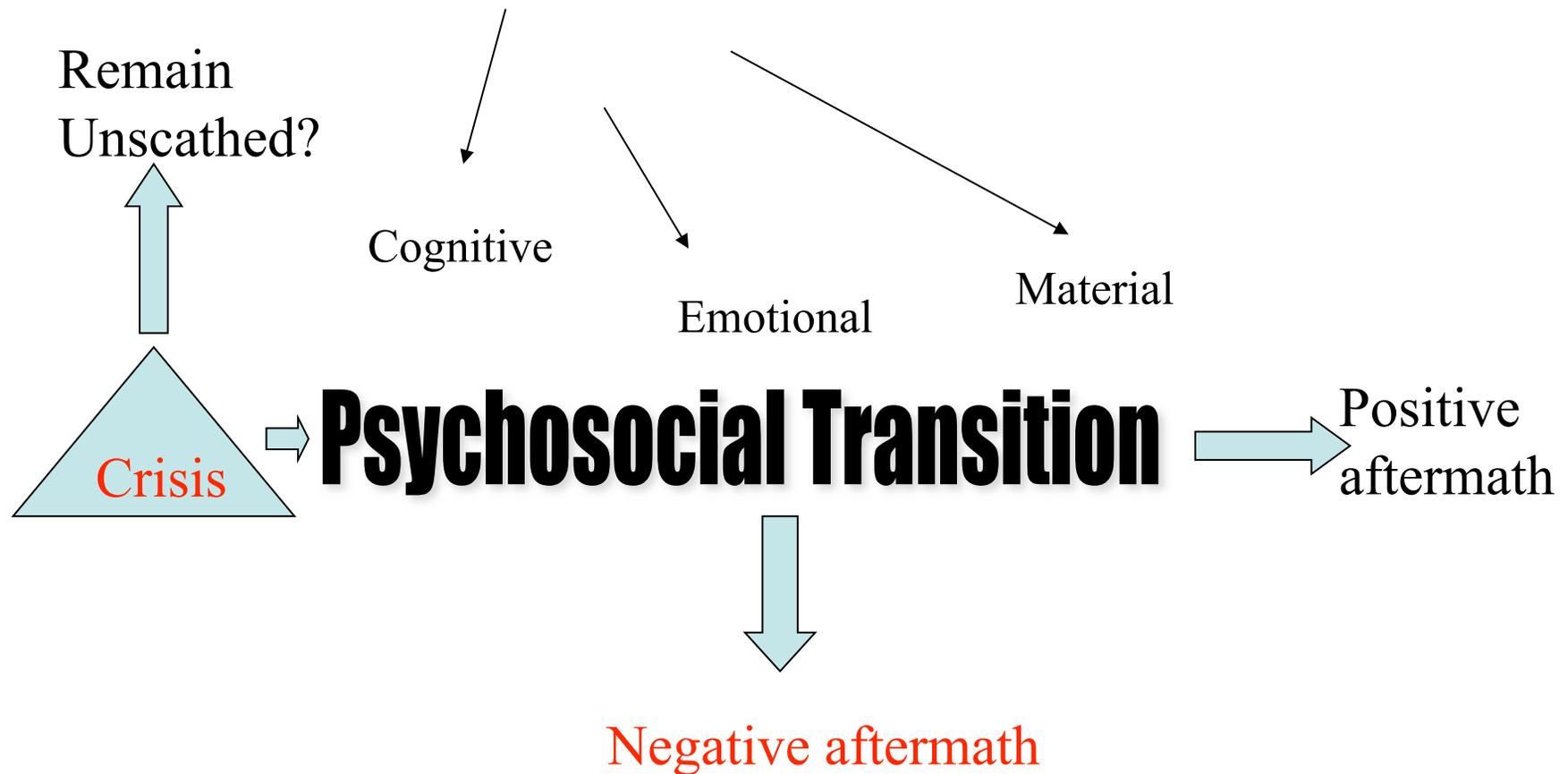
Dynamics of 'Health' and 'Resilience'



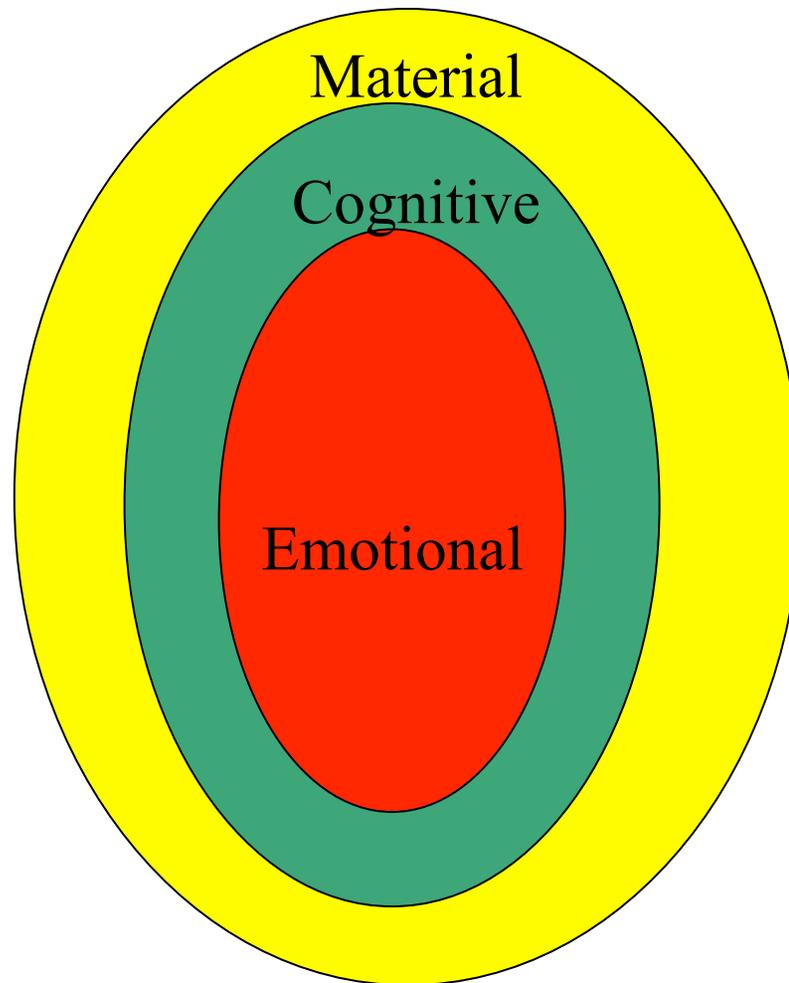
Resilience

- a multi-dimensional construct defined as the capacity of individuals, families, communities, and institutions to **anticipate**, **withstand** and/or judiciously **engage** with catastrophic events and/or experiences; actively **making meaning** out of adversity, with the goal of **maintaining normal function without losing identity**. (Almedom 2008)

Social Support: *types* and *timing* determine impact

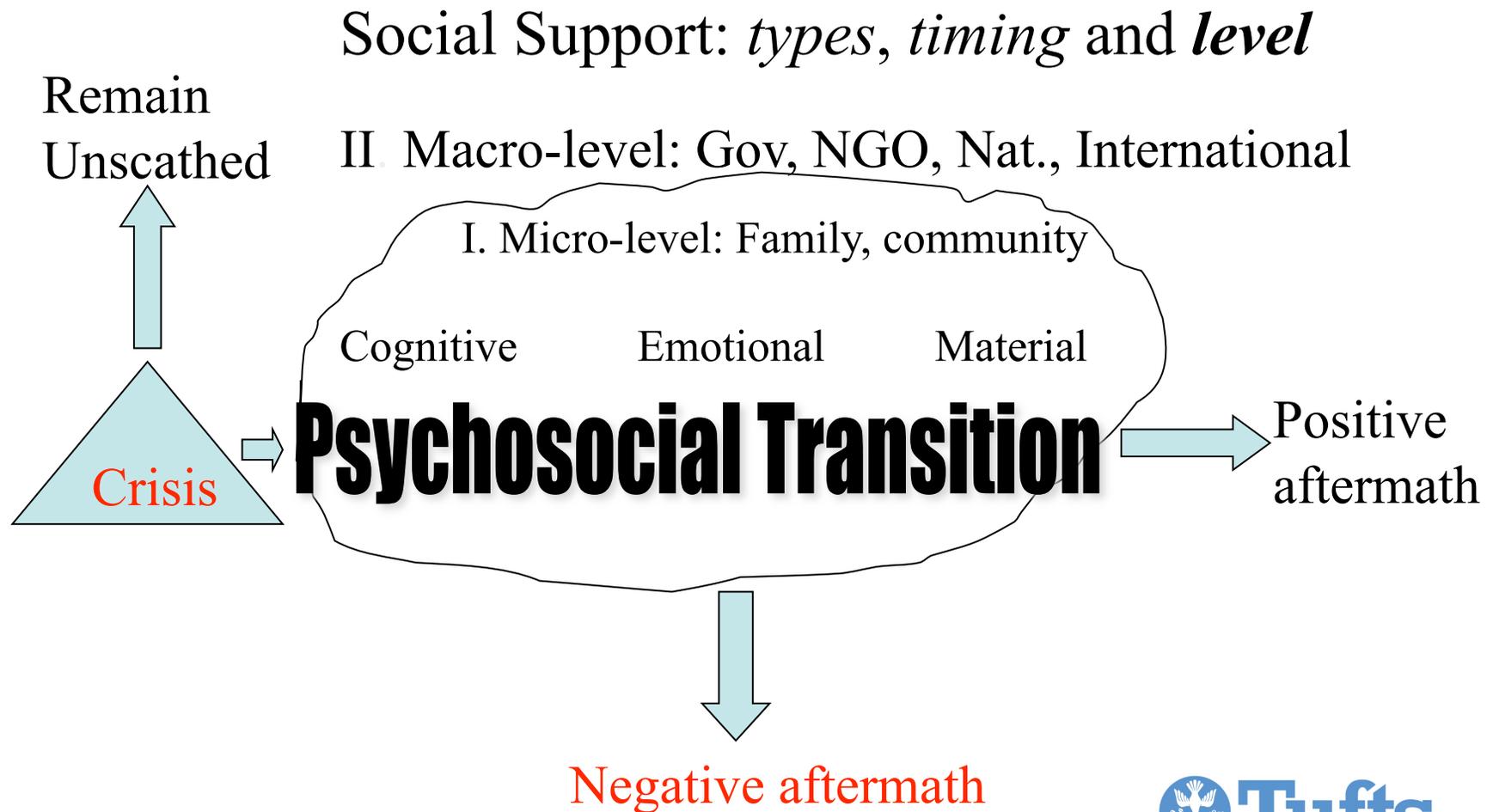


Social Support: *types*



Social Support

Psychosocial Transition – an integrated model (Almedom, 2004)



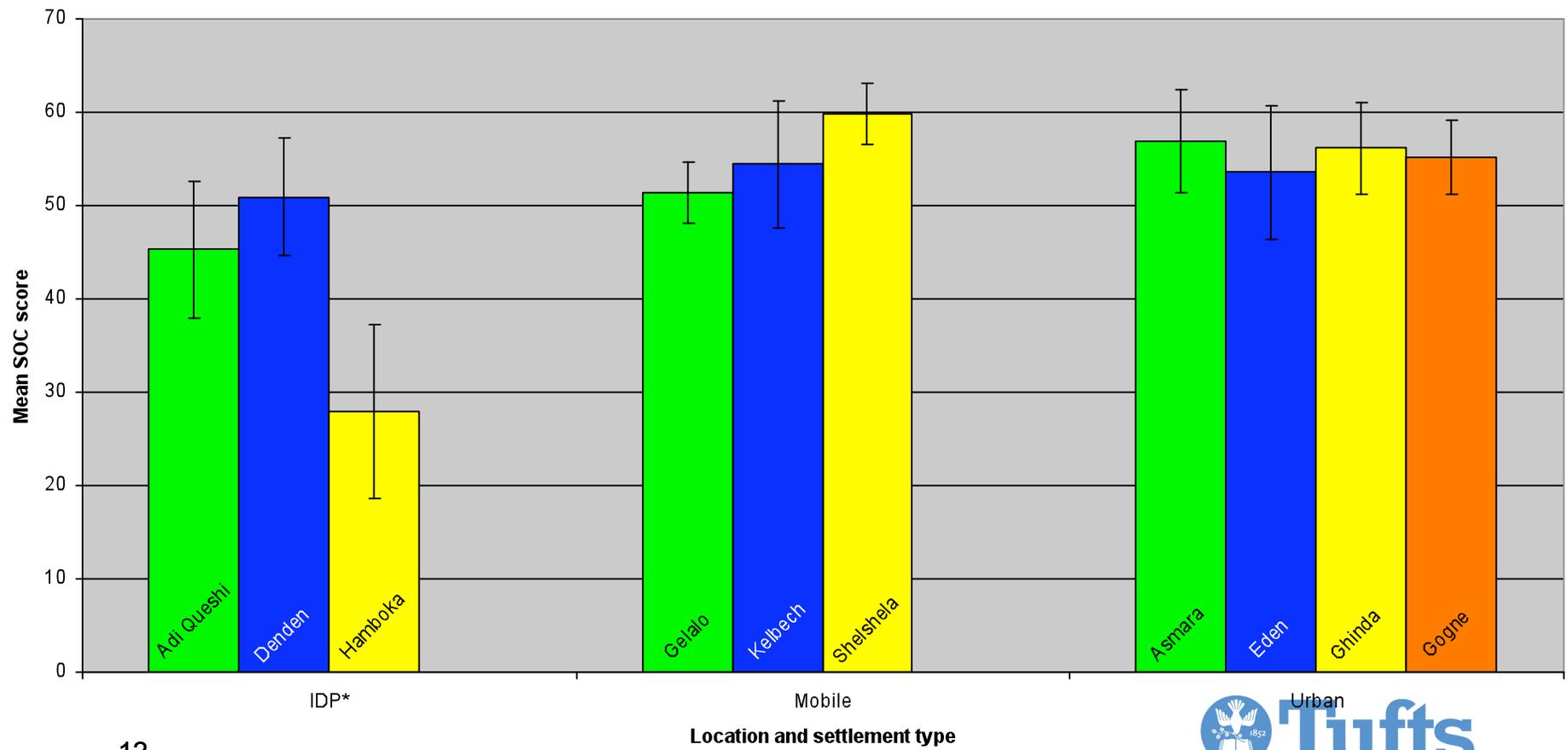
Sense of Coherence (SOC)

- a global orientation that expresses the degree to which one has a pervasive, enduring though dynamic feeling of confidence that engaging with adversity is...
 - i. Manageable
 - ii. Comprehensible
 - iii. Meaningful

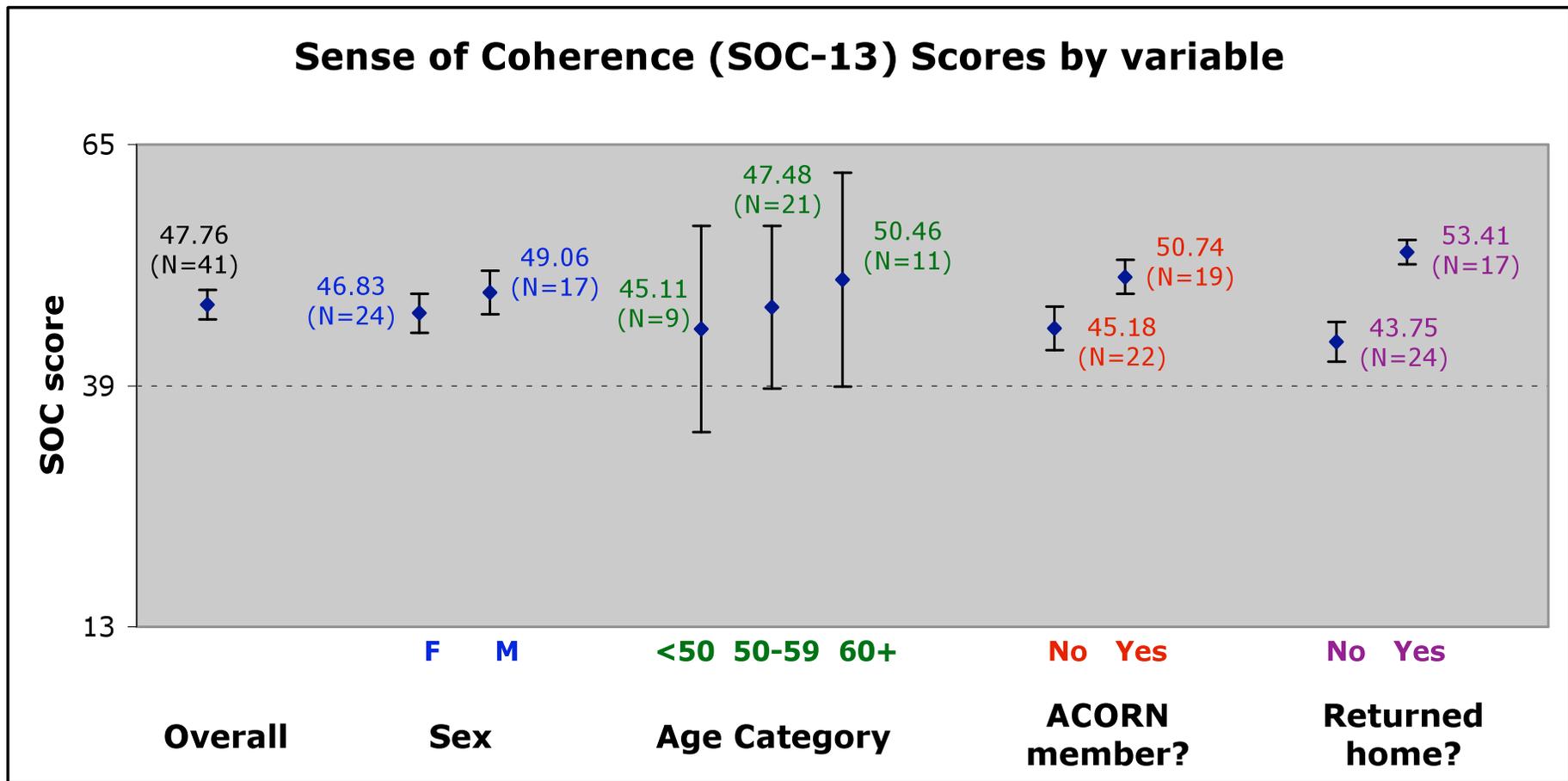
Antonovsky, 1987 (paraphrased)

Measuring Resilience using the Sense of Coherence (SOC-13) Scale in Eritrea

Mean SOC scores by location nested in settlement type (N=157 women)



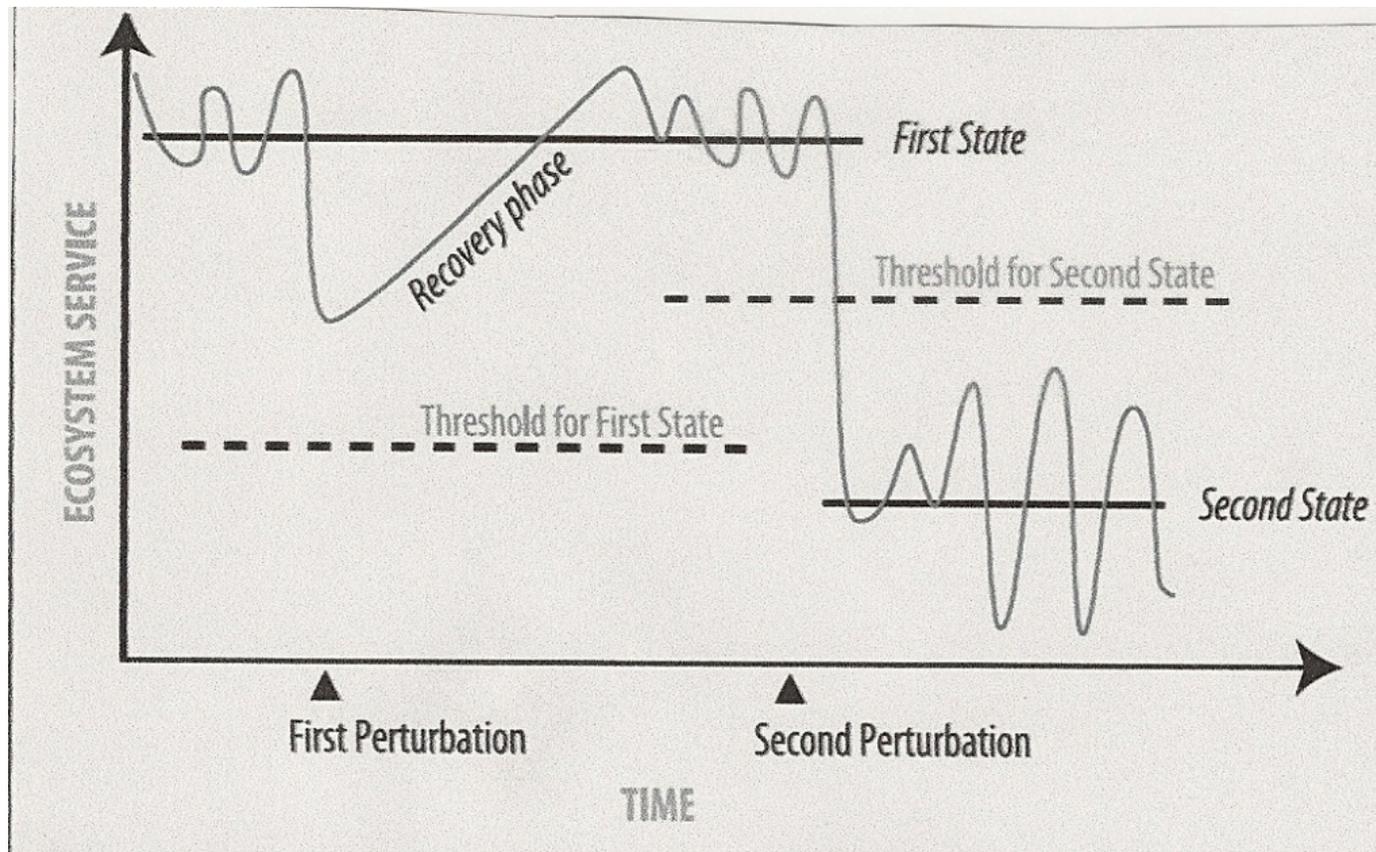
Sense of Coherence in NOLA, Lower 9th Ward & surroundings (March 2007)



My indicators of Resilience...

- **Social support** type; timing; **level**
- **Social capital** shared norms & values; Reciprocity; Trust; civic participation;
- **Sense of Coherence** manageability, comprehensibility, meaningfulness (of engaging with adversity)
- Ecological, historical, geo-political, economic **context** - narratives
- Institutional/organizational **innovation**; Flexibility; Adaptability to change - managing critical transitions without fundamental loss of identity

Resilience of Ecosystem Services (measured over time – “recovery time”)



Source: Millennium Ecosystem Assessment, 2005

THANK YOU & Questions please

- Our study participants
- My team of researchers/practitioners, associates
- Eritrean government Ministry of Health & CDC
- Tufts University (European Center; IGL-Merrin family and Luce Program; Graduate School of Arts & Sciences; Tufts Institute of the Environment);
- Universities of Bologna, London (Kings College), Warwick;
- UK government, HPA
- Henry R. Luce Foundation
- The Christensen Fund