

State-of-the-Art Stress Models and Research Methods in Organizational Psychology: The Case of the Dynamic Development of Activation

2017 Workshop on Stress and Social Economic Decision-Making

Christian Dormann

University of Mainz, Germany & University of South Australia, Adelaide
cdormann@uni-mainz.de

JOHANNES GUTENBERG
UNIVERSITÄT MAINZ



Overview

Stress Models (in Organisational Psychology): It's all About Moderation/Interaction

- *Primer*: Coping (Lazarus & Folkman, 1984) & Resource Loss (Hobfoll, 1989)
- Demand Control-(Support) Model (Karasek, 1979)
- Effort Reward-Imbalance Model (Siegrist, 1996)
- Effort-Recovery Model (Meijman & Mulder, 1998) & Allostatic load (McEwen, 1998)
- Job Demands-Resources Model (Demerouti & Bakker, 2007)

Empirical Studies on the Development of Positive/Negative Activation across Time:

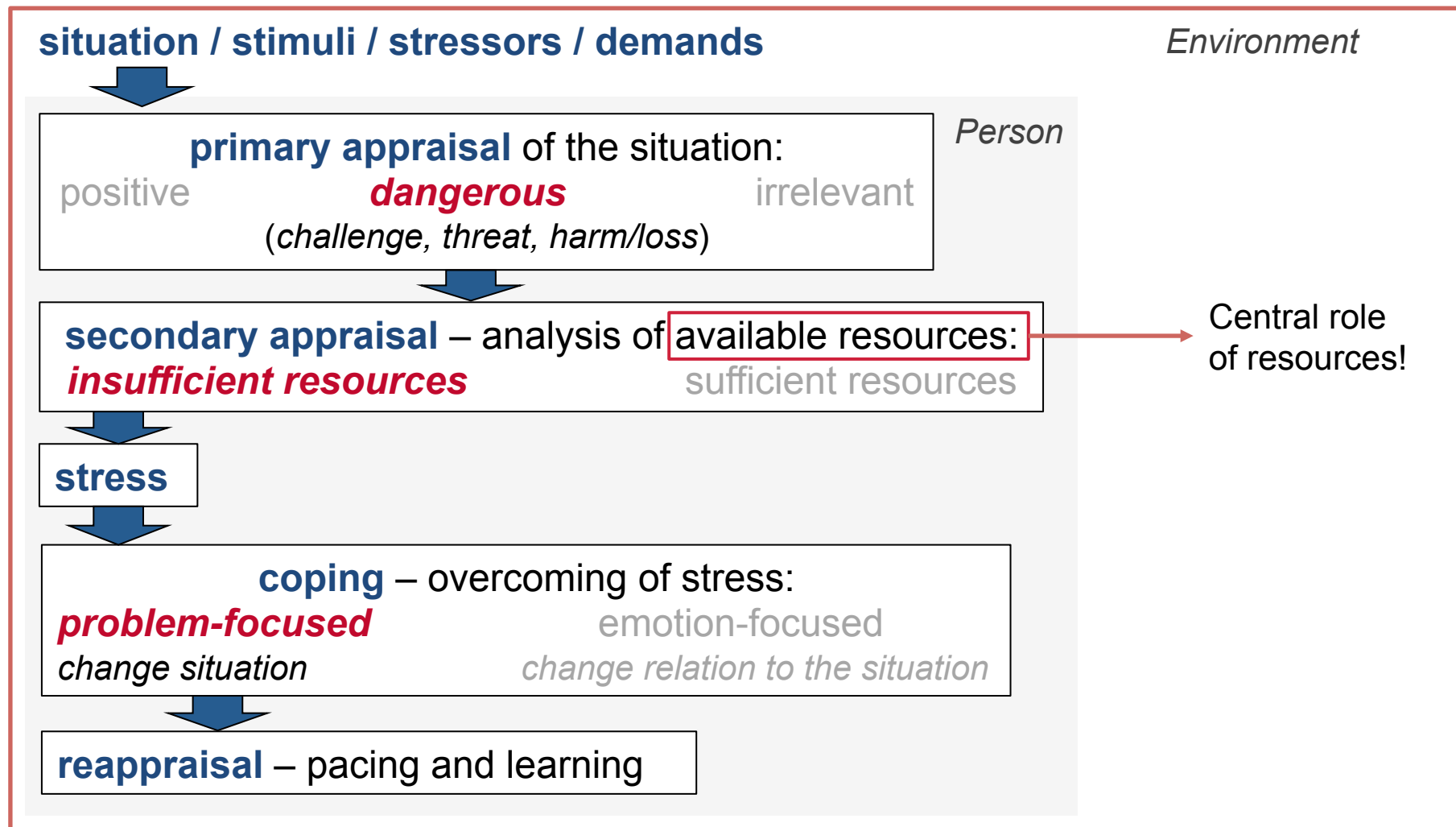
- Biorhythm of PA/NA
- HLM: Crossover of Affect between Partners and Time Spent Together as Moderator

Part I

Stress Models

Stress Models (in Organisational Psychology): It's all About Moderation

Coping (Lazarus & Folkman, 1984) & **Resource Loss** (Hobfoll, 1989)



Stress Models (in Organisational Psychology): It's all About Moderation

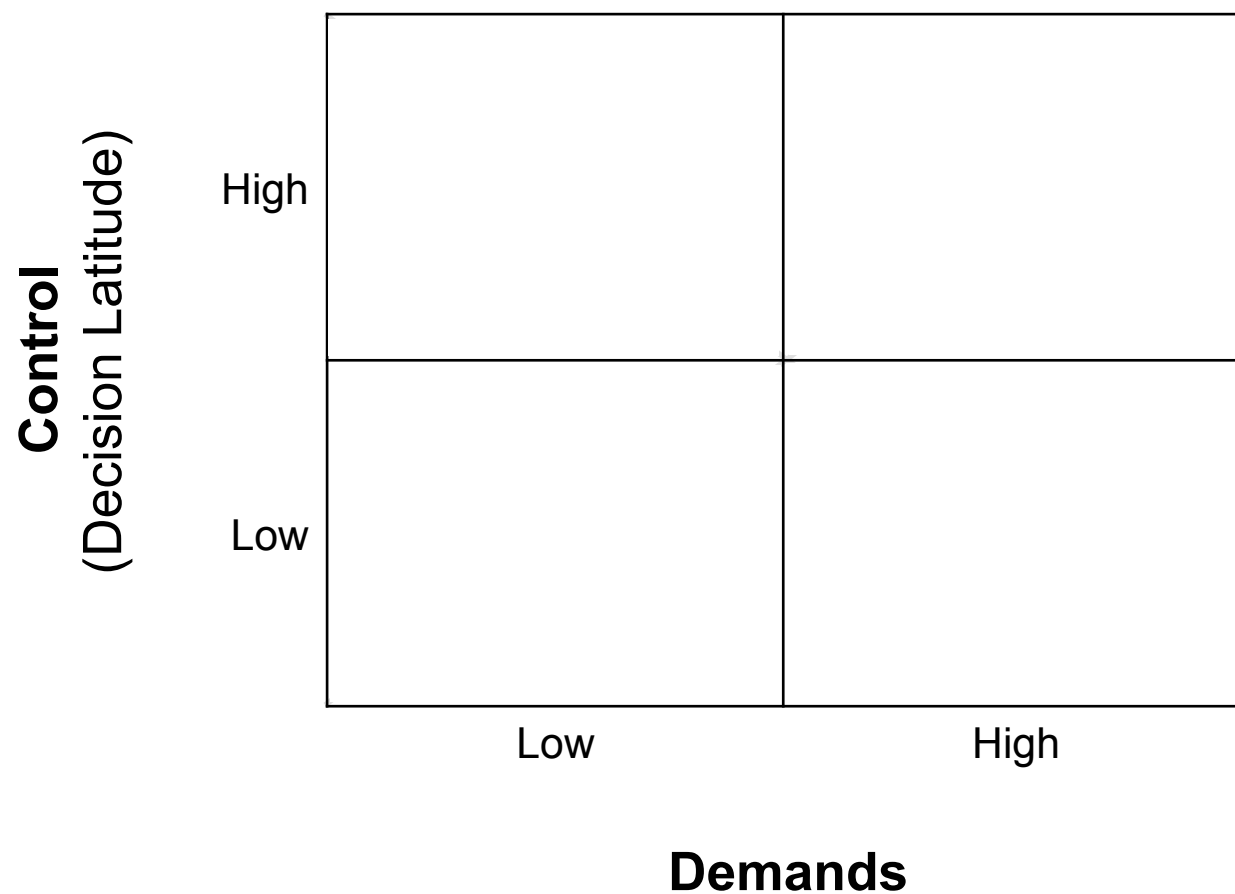
Coping (Lazarus & Folkman, 1984) & **Resource Loss** (Hobfoll, 1989)

Conservation of Resources Theory (Hobfoll):

- Gives up the distinction between stressors and resources
- **Resources** are those entities that either are
 - centrally valued in their own right (e.g., self-esteem) or
 - act as a means to obtain centrally valued ends (e.g., money)
- Key resources (e.g., Hobfoll, 2002):
 - control (e.g. Skinner, 1996)
 - self-efficacy (e.g, Bandura, 1997)
 - self-esteem (e.g, Semmer et al., 2015)
 - degree of goal pursuit (e.g., Frese & Zapf, 1994, Heckhausen & Schulz, 1995)
- Stress occurs when resources are threatened, lost, or when individuals invest resources without gaining adequate resources in return (loss spirals)

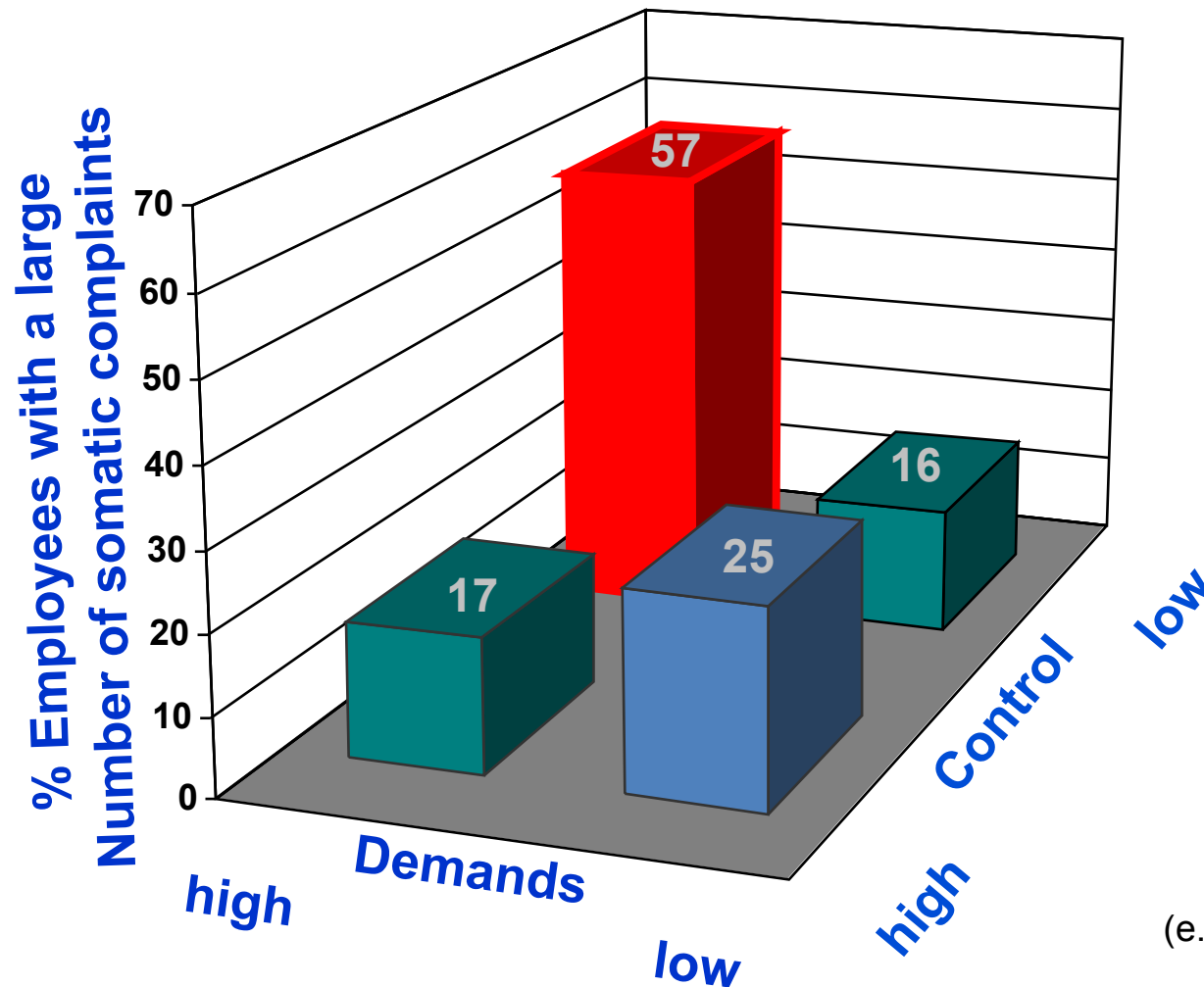
Stress Models (in Organisational Psychology): It's all About Moderation

Demand Control-(Support) Model (Karasek, 1979)



Stress Models (in Organisational Psychology): It's all About Moderation

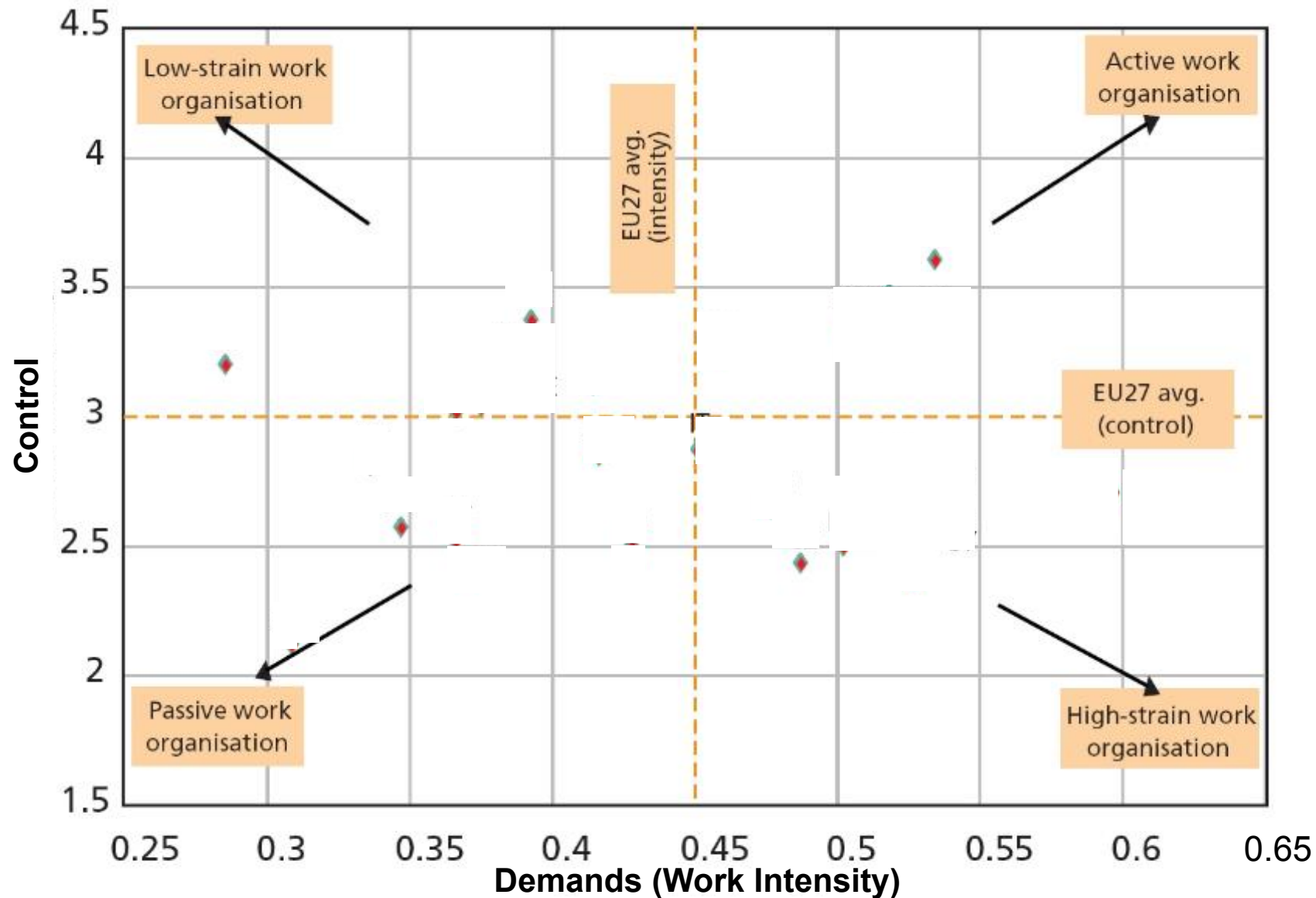
Demand Control-(Support) Model (Karasek, 1979)



(e.g. Frese & Semmer, 1991)

Stress Models (in Organisational Psychology): It's all About Moderation

Demand Control-(Support) Model (Karasek, 1979)



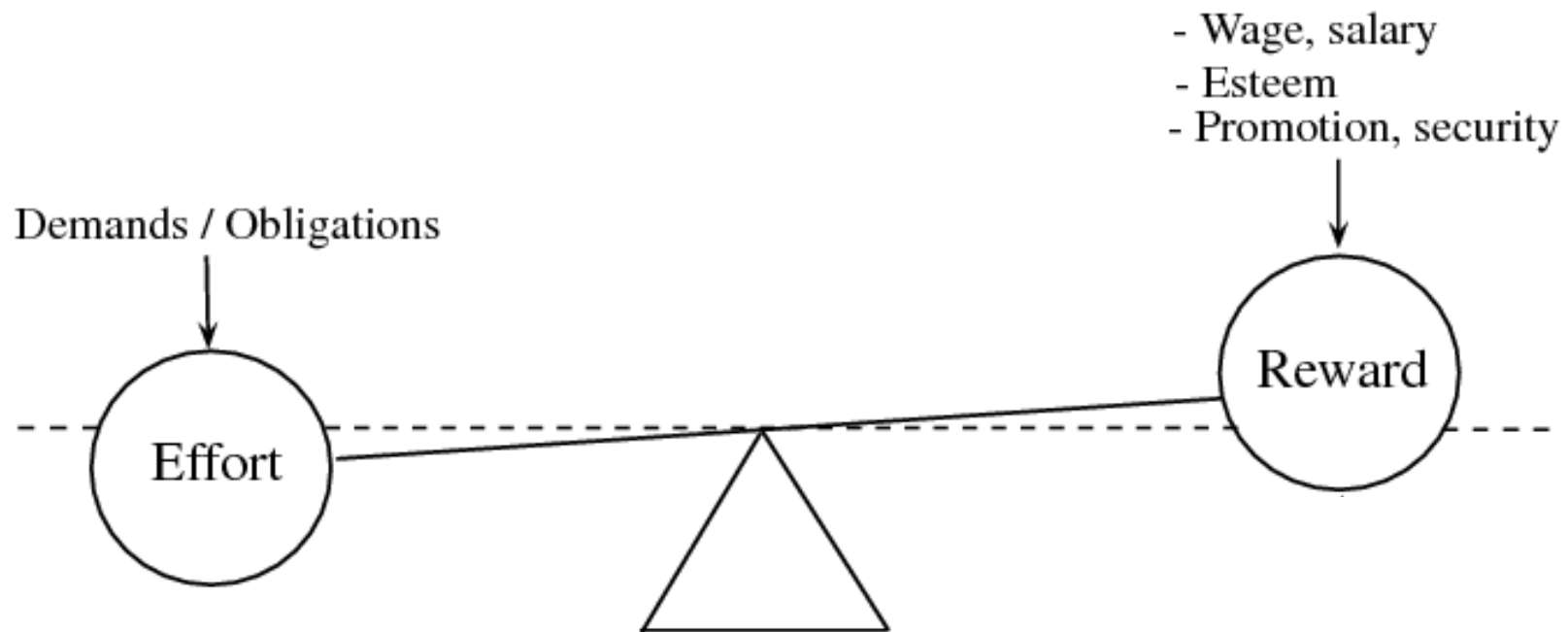
Stress Models (in Organisational Psychology): It's all About Moderation

Demand Control-(Support) Model (Karasek, 1979)

- a) **Job demands:** Workload, time pressure, role conflicts, physical/emotional demands
 - b) **Job control/decision latitude:** Extent to which an employee is able to control tasks and general work activity: Two major components:
 - skill discretion (use of specific job skills)
 - control (aka decision authority/autonomy/freedom of choice/etc; e.g., concerning content of tasks, methods, timing etc.)
 - c) **Social support at work:** Another valuable resource that promotes coping with demands. Isolated jobs vs. collective jobs (few vs. many opportunities for interactions with co-workers)
-
- **Strain hypothesis:** High strain jobs (high demands, low control) bear the highest risk of decreased well-being
 - **Learning hypothesis:** Combination of high demands and high control fosters learning
 - **Buffer hypothesis:** Interaction of demands and control (and support), such that control (support) reduces the negative impact of job demands

Stress Models (in Organisational Psychology): It's all About Moderation

Effort Reward-Imbalance Model (Siegrist, 1996)



Stress Models (in Organisational Psychology): It's all About Moderation

Effort Reward-Imbalance Model (Siegrist, 1996)

- a) **Efforts:** job demands or obligations for employees
- b) **Rewards:** resources distributed by the employer, e.g., money, esteem, career opportunities

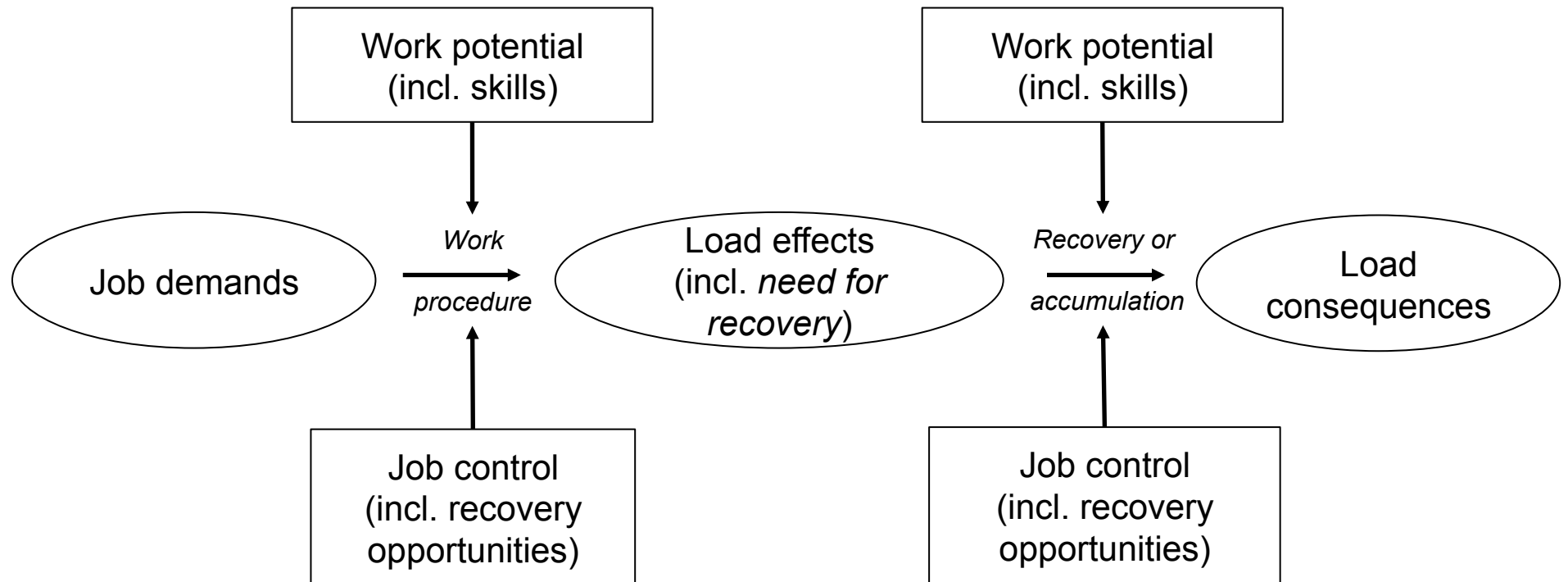
An imbalance between (high) effort and (low) reward is maintained ...

1. when there are no alternative jobs on the labour market
2. for strategic reasons (to improve career prospects)
3. when the employee is characterized by a motivational pattern of excessive work-related commitment ('overcommitment'), i.e., ambitious and in need for approval

- High efforts-low rewards imbalance increases the risk of reduced health
- Overcommitted people are at increased risk of reduced health

Stress Models (in Organisational Psychology): It's all About Moderation

Effort-Recovery Model (Meijman & Mulder, 1998)



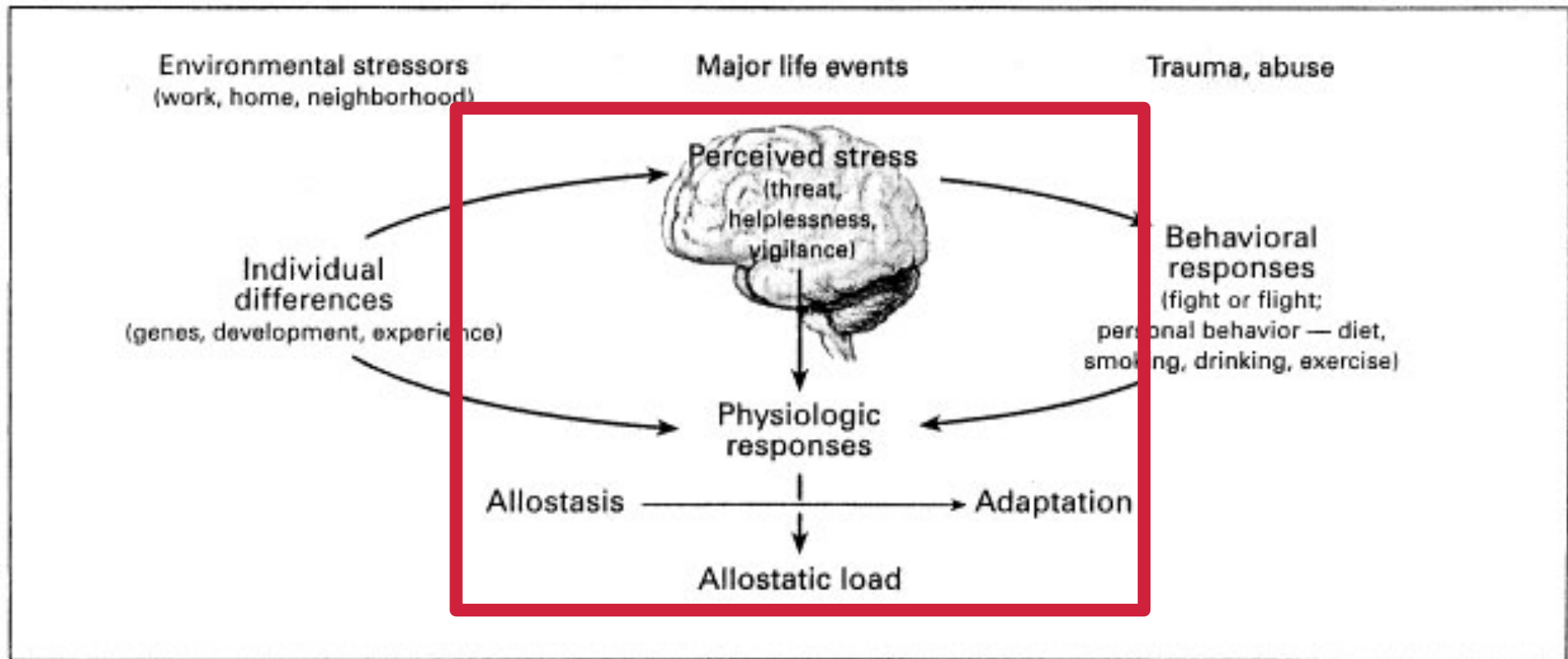
Stress Models (in Organisational Psychology): It's all About Moderation

Effort-Recovery Model (Meijman & Mulder, 1998)

- a) **Effort:** Spending effort at work imposes *load* on an employee, which causes physiological, behavioral, and subjective reactions in the employee
- b) **Recovery:** Such reactions are reversible under normal conditions: When the demanding situation ends, load reactions are released and the psychobiological systems return to the 'predemand'-level, i.e., recovery as a process of unwinding
 - Successful recovery compensates for fatigue or exhaustion
 - But when demands continuously persist, recovery will be insufficient/incomplete (e.g., still being tired from recent work day); load reactions accumulate to reduced well-being, fatigue, exhaustion and might cause irreversible (negative) load effects
 - Danger of ending up in a downward spiral, where resources are entirely depleted

Stress Models (in Organisational Psychology): It's all About Moderation

Allostatic load Model (McEwen, 1998)



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Allostatic load Model (McEwen, 1998)

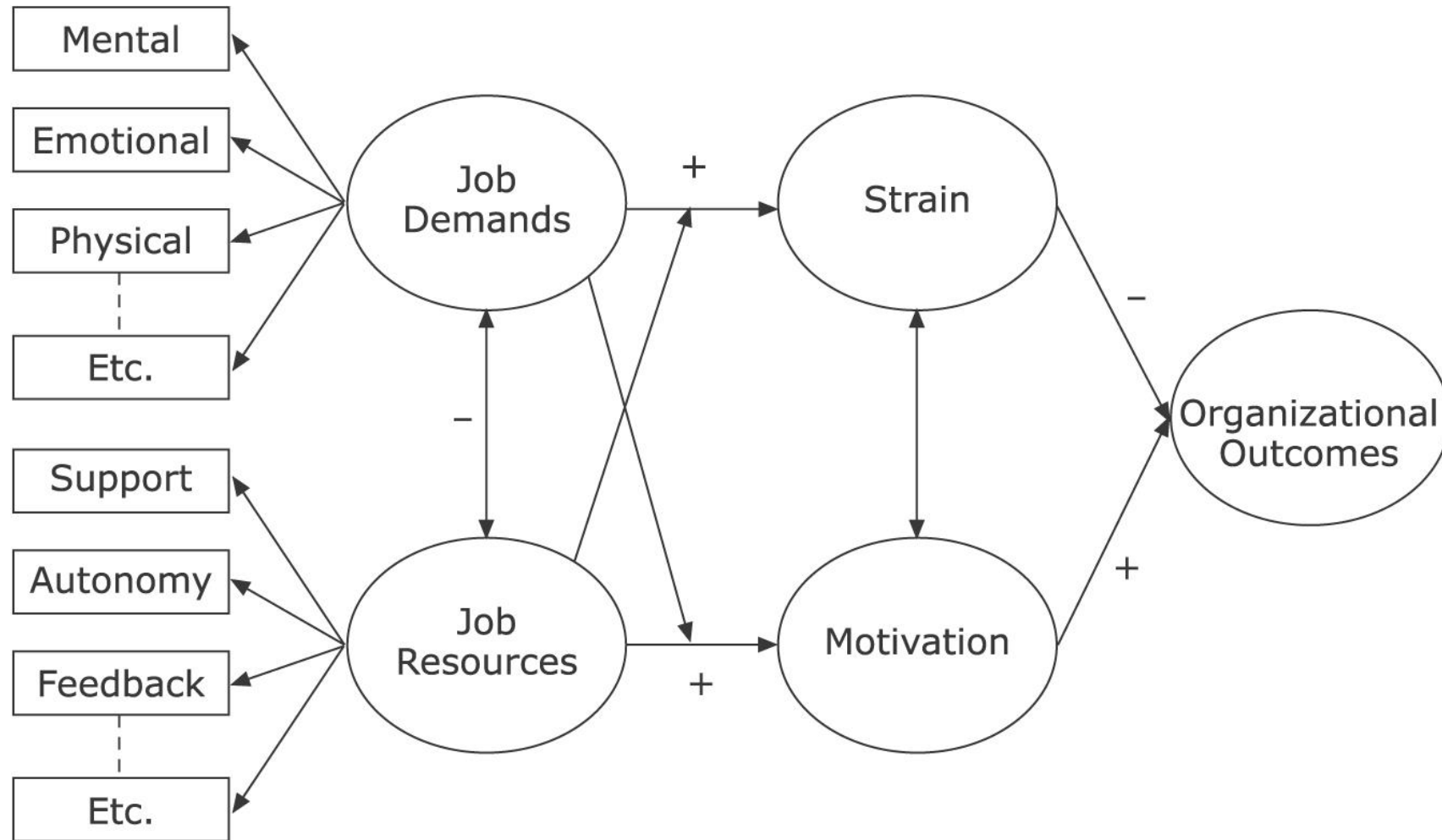
- A person's physiological system responds to stressful events to maintain its stability (*homeostasis*), e.g., with higher blood pressure or an increased heart rate
- This adaptation process of several neurological processes is called *allostasis*
- „*Allostatic load* is the wear and tear on the body and brain resulting from chronic overreactivity or inactivity of physiological systems that are normally involved in adaptation and environmental challenge“ (McEwen, 1998, p. 37)

Allostatic load results from ...

- a) frequent and massive stress requiring adaptation and hindering recovery
- b) failed shut-down due to chronic activation of stress response systems
- c) inadequate response, because other systems compensate for initial (but depleted) systems, which are unable to respond

Stress Models (in Organisational Psychology): It's all About Moderation

Job Demands-Resources Model (Bakker & Demerouti, 2007)



Stress Models (in Organisational Psychology): It's all About Moderation

Job Demands-Resources Model (Bakker & Demerouti, 2007)

- a) **Job demands:** physical, psychological, social, or organizational aspects of the job that require physical or mental effort
- Examples: High work pressure; emotional demands; unfavorable physical environment
- b) **Job resources:** physical, psychological, social, or organizational aspects of the job that help to achieve goals, to reduce (or buffer the detrimental effects of) job demands, or stimulate growth and development
- Examples: (i) *organizational level*: career opportunities, job security; (ii) *social level*: support from colleagues or supervisors, team climate; (iii) *organization of work*: role clarity, participation in decisions; (iv) *task level*: autonomy, feedback

Two processes leading to either strain or motivation:

- **Health impairment process:** job demands deplete employees' resources
→ Exhaustion
- **Motivational process:** job resources are motivational in their nature
→ Engagement, performance

Stress Models (in Organisational Psychology): It's all About Moderation

Summary

- Environmental **demands** are primarily 'neutral' (neither pos. or neg. per se)
- Demands may turn into **stressor** if
 - **internal resources** (cognitive, emotional, behavioral, physiological) are
 - insufficient (to cope, to be fair).

Insufficiency of resources could be objectively the case or be subjectively perceived.
- Perceived insufficiency of resource is often used to define the term **stress**.
 - E.g., *“job stress is defined as an experienced incongruence between job demands and job or personal resources that is accompanied by cognitive, emotional, physical or behavioural symptoms.”* (de Jonge & Dormann, 2016, p. 85)
 - Organizational psychologist rarely measure stress. Rather they measure *cognitive, emotional, physical or behavioural symptoms*
- Sufficiency of internal resources depends on availability of
 - **external resources** (control, support etc.).

Utilization of external resources is not necessary. Perception is usually sufficient.
- Resources may
 - prevent stress and stress outcomes (e.g, depression, smoking)
 - Lead to **motivation** and **personal growth**

Part II

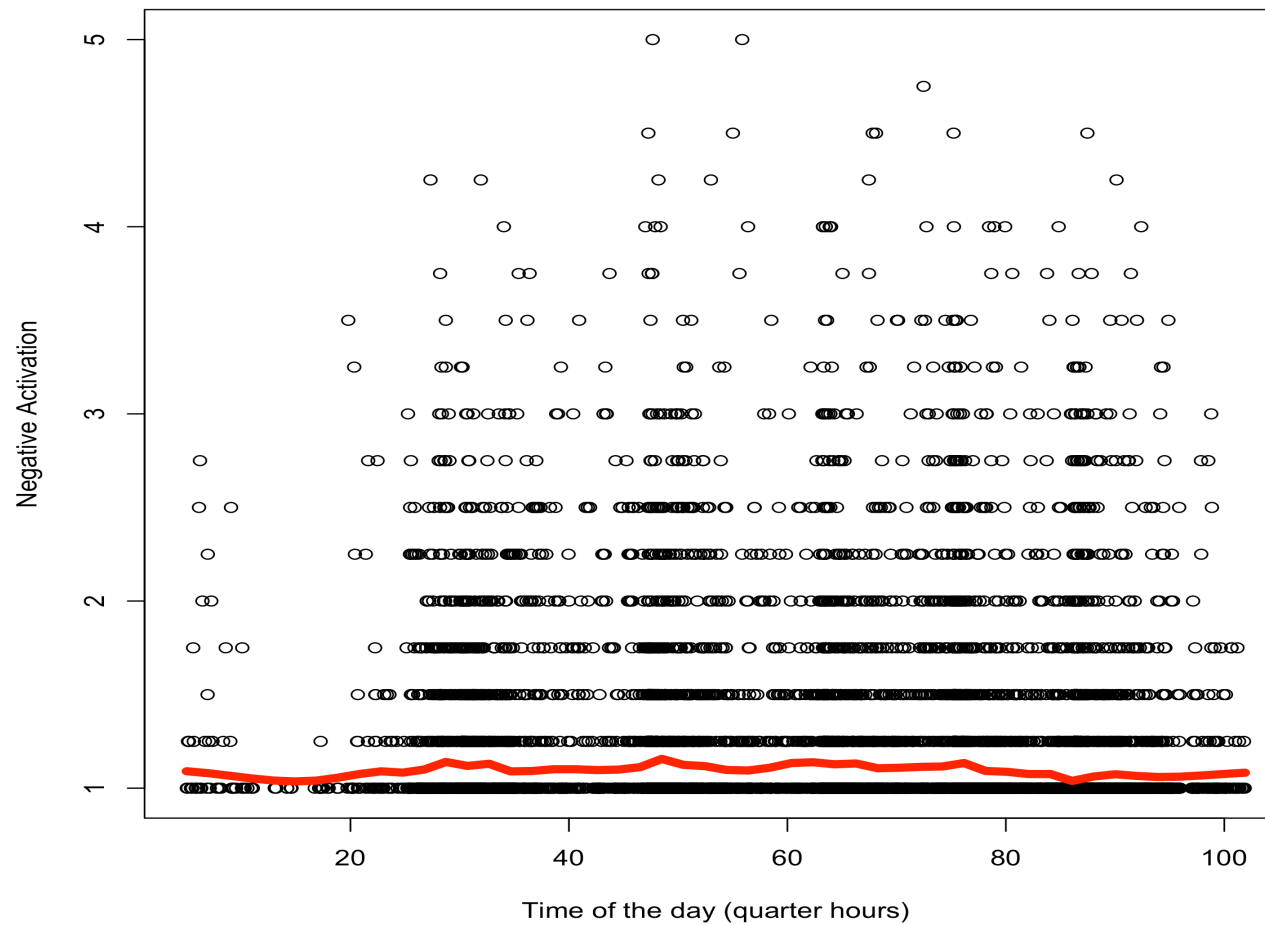
Empirical Study 1

Study Design

- **Sample:** employees ($N = 192$) forming 96 couples, of which at least one partner was employed at a large German university.
- **Survey:** Java scripts on mobile phones or web-based questionnaires (smart phones/desktop)
- **Measures:**
 - 4 items addressing felt
 - state negative affect/activation (NA; afraid, upset, jittery, irritable)
 - state positive affect/activation (PA: inspired, enthusiastic, excited, strong):
at morning, lunch, afternoon, dinner, & bedtime
- **Analysis:**
 - Descriptive distribution of NA/PA across day (in quarter hours)

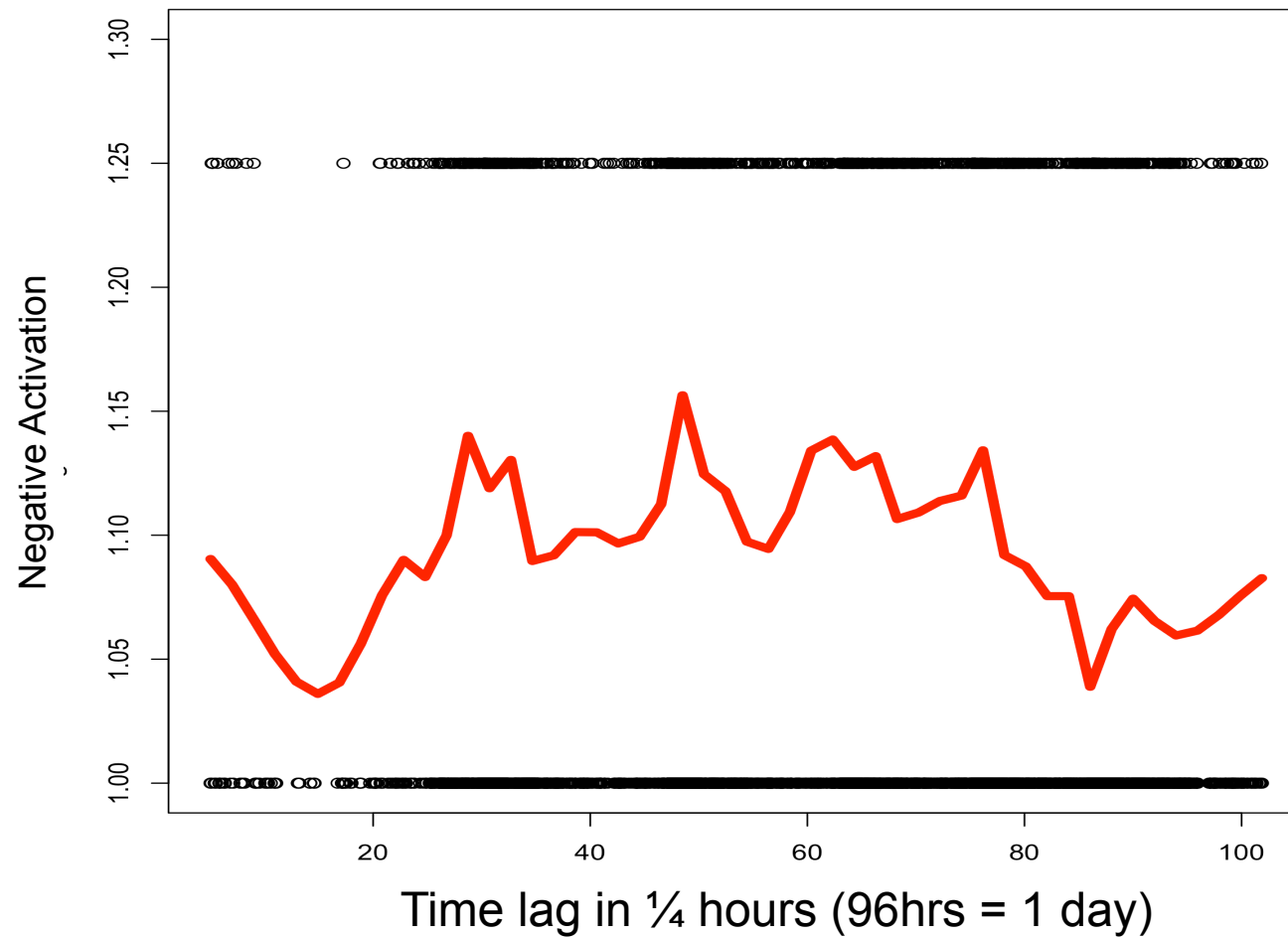
Circadian Rhythm of NA and PA

Circadian Rhythm of Negative Activation (full scale shown)



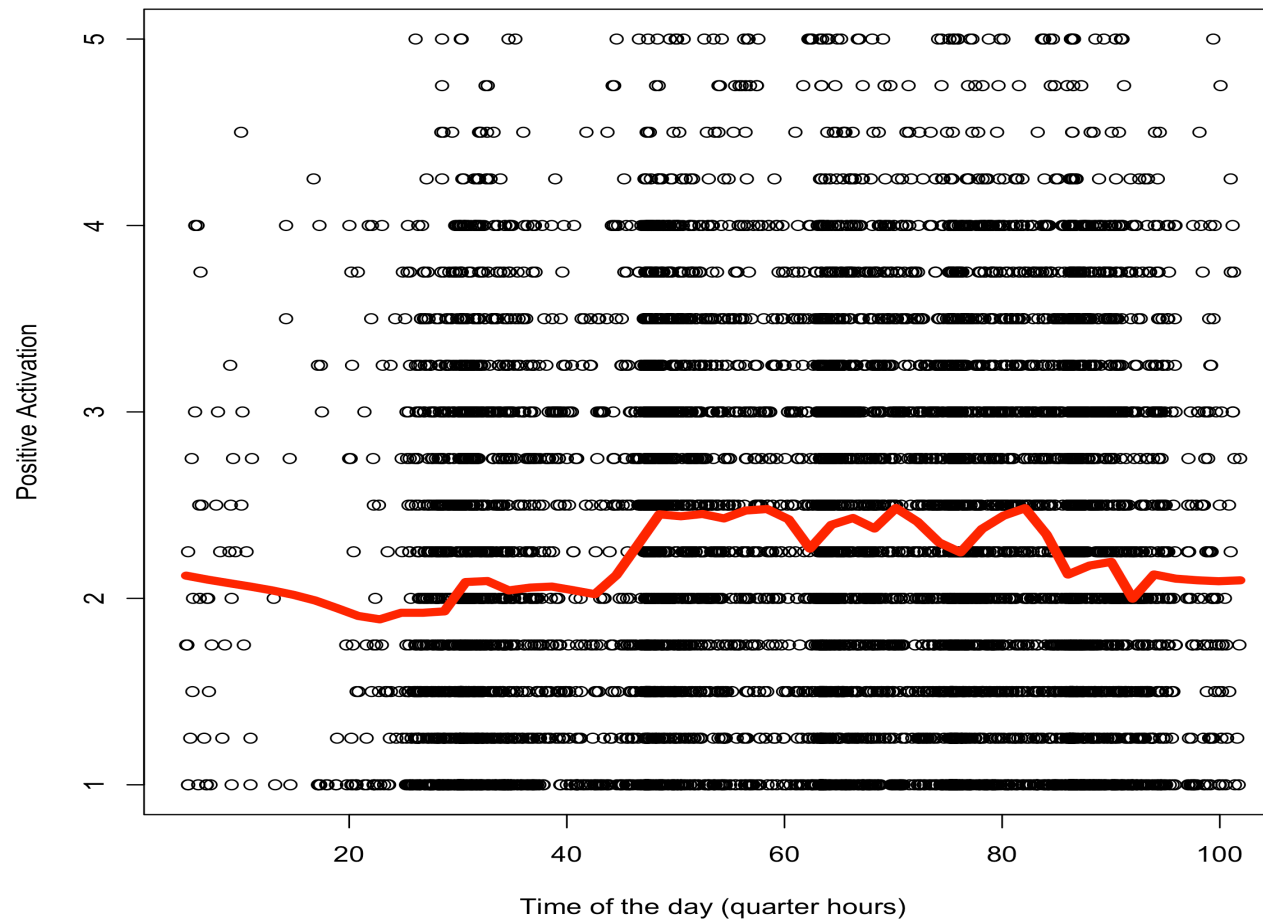
Circadian Rhythm of NA and PA

Circadian Rhythm of Negative Activation (zoomed in)



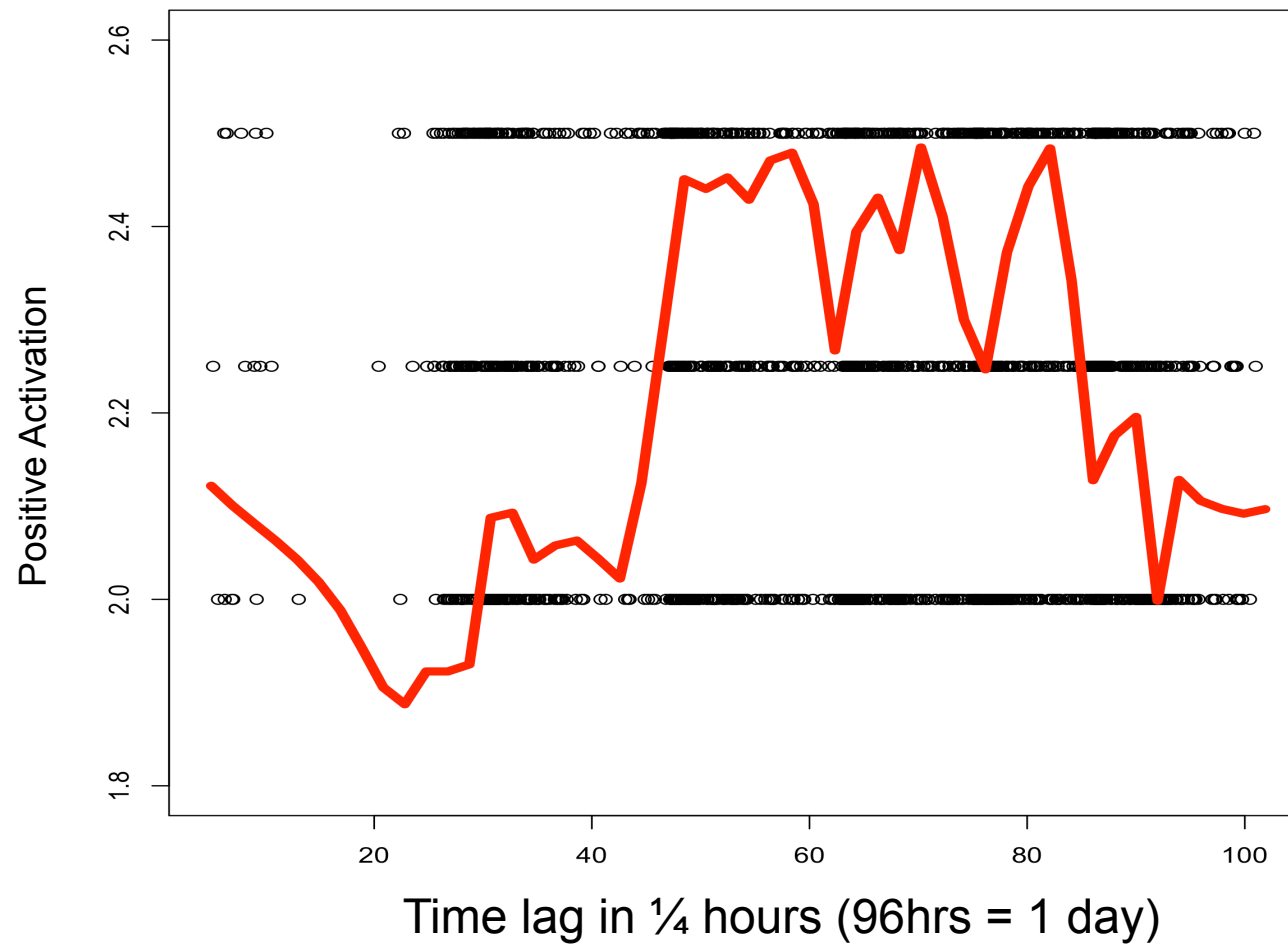
Circadian Rhythm of NA and PA

Circadian Rhythm of Positive Activation (full scale shown)



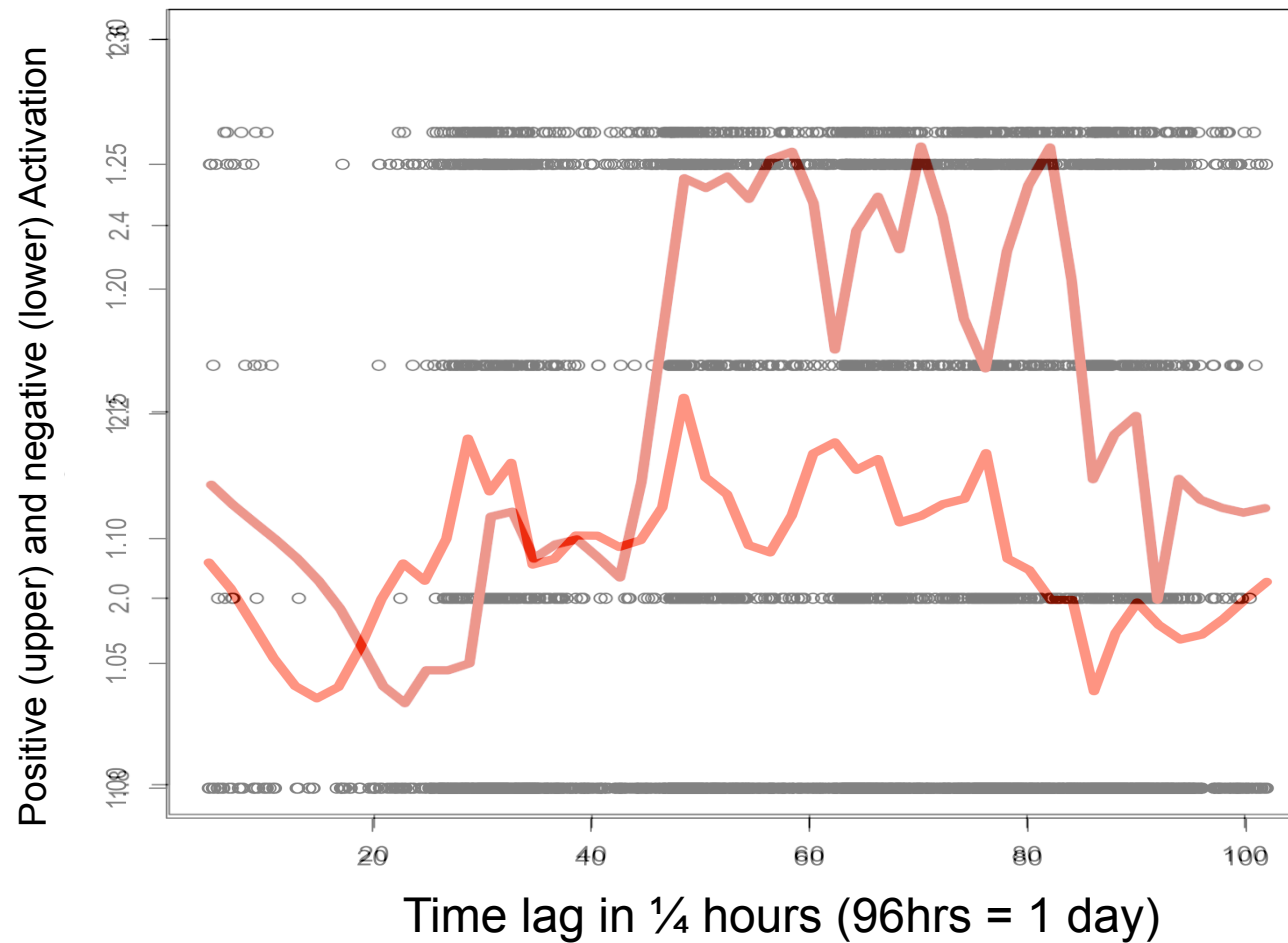
Circadian Rhythm of NA and PA

Circadian Rhythm of Positive Activation (zoomed in)



Circadian Rhythm of NA and PA

Circadian Rhythm of Negative & Positive Activation (zoomed in)



Summary of Findings

- Increased negative (NA) and decreased positive activation (PA) can be regarded as indicators or outcomes of stress
- Most people are not unhappy for most of the day (but they are not really happy)
- PA 'spikes' a bit later than NA. Probably after making some pos. experiences at work
- Prolonged PA after work until bedtime and reducing NA => recovery

=> How can partners (spouses) help to recover (next study)?

Part II

Empirical Study 2

The role of partners for affective recovery: Asymmetric cross-over of PA/NA

Aim: Explain how/when partners contribute/hinder recovery

- **Recovery** from work stress = distancing from work demands and stressors to restore lost resources (Meijman & Mulder, 1998)
 - Recovery **experiences** = resource-gaining experiences (Sonnentag & Fritz, 2007)
 - Possible roles of significant others in employee recovery:
 - engagement in **joint leisure activities** with partners
=> detachment, relaxation, mastery during weekends (Hahn, Binnewies, & Haun, 2012)
 - partner's **recovery support**
=> actor's recovery experiences & life satisfaction (Park & Fritz, 2015)
 - partner's detachment is **emotionally contagious**
=> actors 's detachment (Hahn & Dormann, 2013)
- => Crossover effects** between actors and partners

The role of partners for affective recovery: Asymmetric cross-over of PA/NA

Crossover

- Strain perspective: crossover = *“the reaction of individuals to the job stress experienced by those with whom they interact regularly”* (Westman, 2001, p. 717)
- Broader view: emotions, experiences, behaviors, well-being etc. are transmitted between actors and partners (Baker & Demerouti, 2013)
- Cross-domain crossover:
 - behavior -> affect (e.g. recovery support => recovery experiences & life satisfaction, Park & Fritz, 2015)
 - affect -> behavior (e.g., psychological distress -> hostile behavior, Matthews, Conger, & Wickrama, 1996)
 - job demands -> exhaustion (Bakker, Demerouti, & Dollard, 2008)

The role of partners for affective recovery: Asymmetric cross-over of PA/NA

Within domain-crossover

- Demand Crossover:
 - Conflicts at home (Sanz-Vergel, Rodríguez-Muñoz, & Nielsen, 2014)
- Recovery crossover:
 - Detachment (Hahn & Dormann, 2013)
- Strain crossover
 - Burnout (Demerouti, Bakker, & Schaufeli, 2005; Westman, Etzion, & Danon, 2001)
- Well-being crossover
 - Happiness (Rodríguez-Munoz, Sanz-Vergel, Demerouti, & Bakker, 2013)
 - Engagement (Bakker, Demerouti & Schaufeli, 2005)
- Self-evaluations
 - Self-efficacy (Neff, Niessen, Sonnentag, & Unger, 2013)

=> Most crossover effect involve some sort of positive affect or (absence of) negative affect

The role of partners for affective recovery: Asymmetric cross-over of PA/NA

Mechanisms of Crossover

- empathic processes
- shared events (e.g., stressors)
- communication & behaviors (e.g., social stress & social support; Westman, 2006)

Facilitators of (emotional) Crossover

- paying close attention to others
- construing oneself as interrelated to partner
- susceptibility to emotional stimuli
- empathy (Hatfield, Cacioppo, & Rapson, 1994)

=> The duration of actor's and partner's interactions (time spend together) has been largely neglected as a facilitator of crossover

The role of partners for affective recovery: Asymmetric cross-over of PA/NA

Central Propositions

- Affective crossover is facilitated by (Hatfield, Cacioppo, & Rapson, 1994):
 - paying attention to others
 - susceptibility to emotional stimuli
- Thus, time spend together should act as a moderator
 - Affective crossover becomes stronger with increasing time couples spend together
- Expression of positive and negative affect as a core crossover process
 - Expressed PA of partner -> felt PA of actor
 - Expressed NA of partner -> felt NA of actor
- Felt affect as cause of recovery:
 - Positive affect -> detachment (PA = positive activation, broaden & built; Fredrickson, 1998)
 - Negative affect -> lack of relaxation (NA = negative activation; Watson & Clark, 1994)

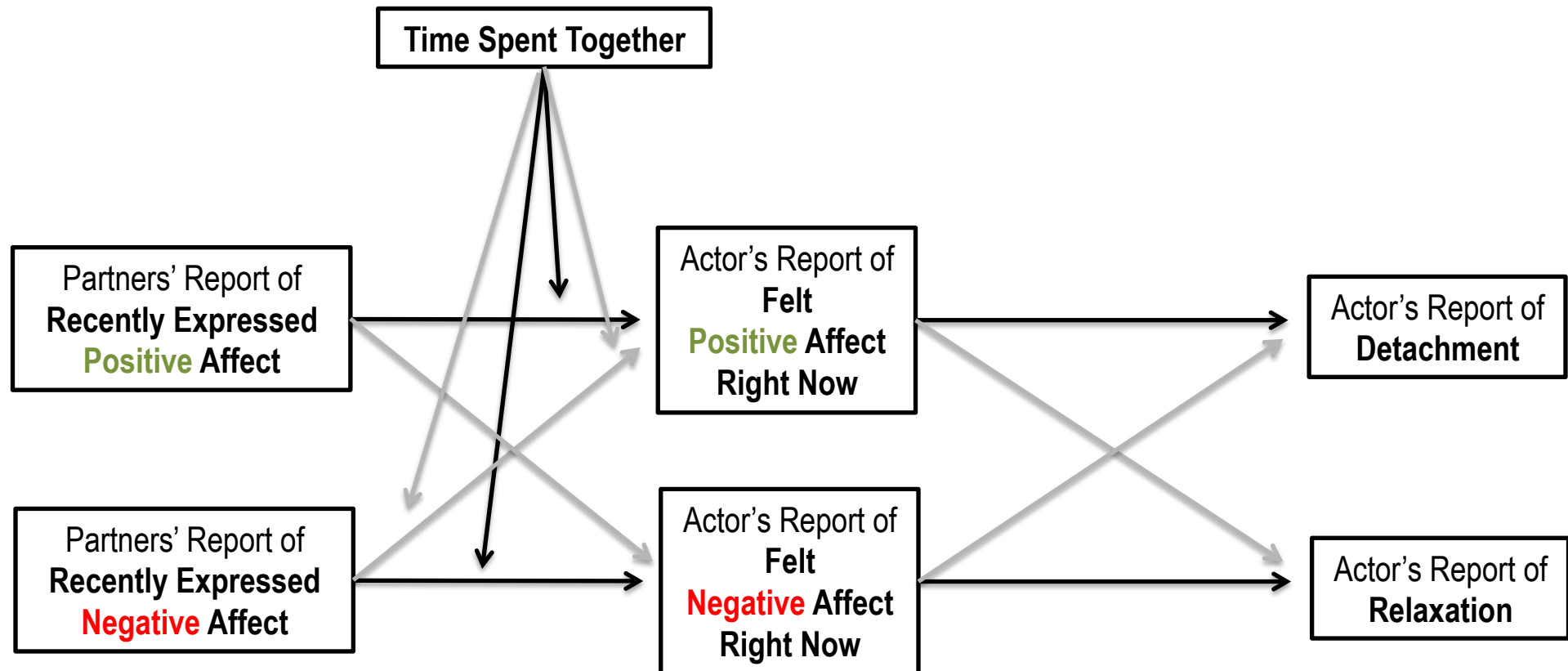
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Present study

- Focus on overt expression of affect
- Utilizes different data sources (actor & partner)
- negative + positive crossover
- Time spend together as moderator
- Role of PA and NA for recovery (detachment & relaxation)

The role of partners for affective recovery: Asymmetric cross-over of PA/NA

Model tested



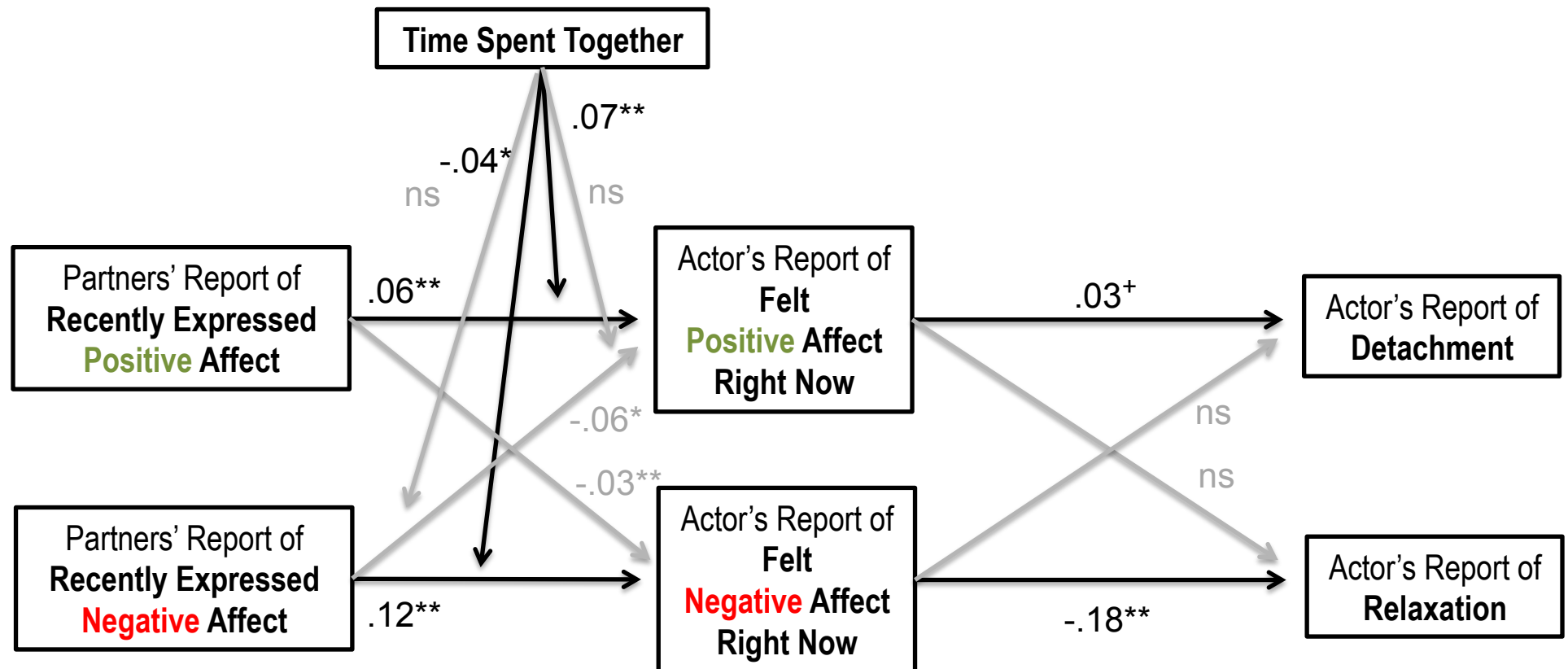
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Study Design

- **Sample:** employees ($N = 192$) forming 96 couples, of which at least one partner was employed at a large German university.
- **Survey:** Java scripts on mobile phones or web-based questionnaires (smart phones/desktop)
- **Measures:**
 - Felt state negative/positive affect (4 items): dinner & bedtime
 - Time spent together recently: dinner & bedtime
 - Detachment & relaxation (single item): bedtime
 - Partner's report of expressed negative/positive affect (4 items): dinner & bedtime
- **Analysis:**
 - Stratification taken into account (Mplus) in multi-level SEM (no APIM)
 - Simultaneous within and between analysis (only within results reported)

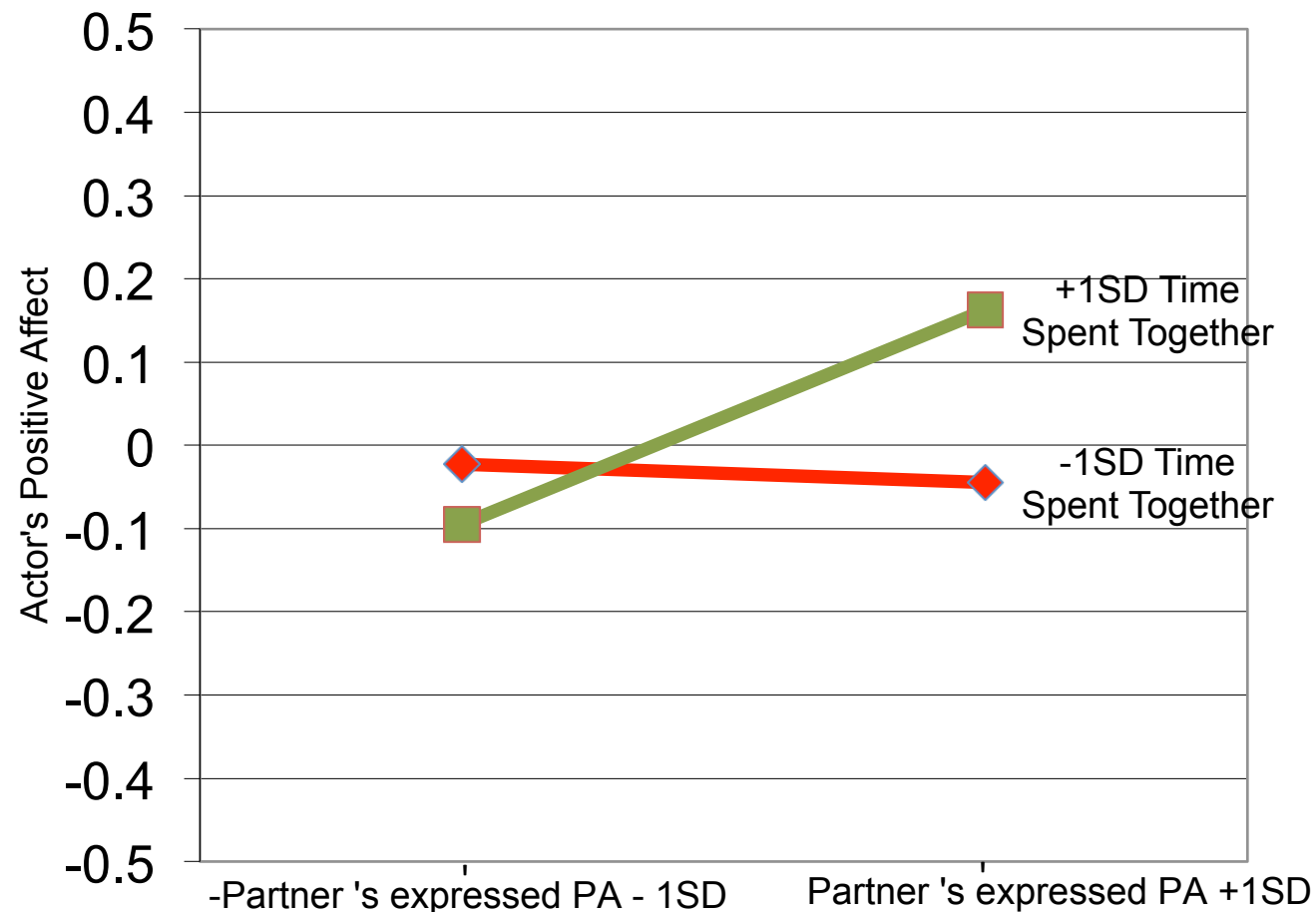
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Model results (Evening/Bedtime Variables used)



The role of partners for affective recovery: Asymmetric cross-over of PA/NA

Moderation Effect for Positive Affect



The role of partners for affective recovery: Asymmetric cross-over of PA/NA

Moderation Effect for Negative Affect

