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Diary studies: What, why, and how?

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What?

Diaries = “a method to collect data at the daily level or even several times a day” (Ohly, Sonnentag, Niessen, & Zapf, 2010)

- Refers to a class of methods:
 - Daily or weekly diaries
 - Experience sampling
 - Event sampling
- What they have in common:
 - Repeated measurements
 - High intensity



What?

Example:

Griep, Y., Vantilborgh, T., & Pepermans, R. (in review). The straw that breaks the camel's back: Investigating threshold mechanisms in the relationship between psychological contract breach, violation and counterproductive work behavior.

- Weekly diary study
- 5 consecutive weeks
- 388 respondents



Why?

- How happy were you yesterday?
- How happy are you today?
- Many variables in psychology fluctuate on a weekly / daily / hourly /... basis
- These fluctuations are meaningful!

Why?

- “Capture life as it is lived” (Bolger, Davis, & Rafaeli, 2003)
 - Less (recollection) bias
- Study inter-individual variation (*within-person differences*)
- Distinction between traits and states
 - Overlooking this distinction means that we treat day-to-day variation as measurement error
- Increased predictive power of momentary behaviours



How?

Collecting data:

- In our example:
 - One general survey
 - Five weekly diary surveys
 - Intervals of one week because volunteers in our sample were not active every day
 - Online survey
 - Individualised link sent each friday
 - Survey had to be filled in between friday 11AM and saturday 11 AM

How?

Collecting data:

- Keep it short!
 - Shortened scales
 - Rule of thumb = max. 2 minutes to complete diary survey
- Pen-and-paper survey vs. online survey?
- Interval between measurements depends on rate of change in focal variables

Analysing data:

- Analysis should take nested structure of the data into account
 - Observations nested within individuals
- Sample size in example = 388 respondents
 - Average of 3.37 completed weekly diaries / respondent
 - Effective sample size = 865 observations



How?

Analysing data:

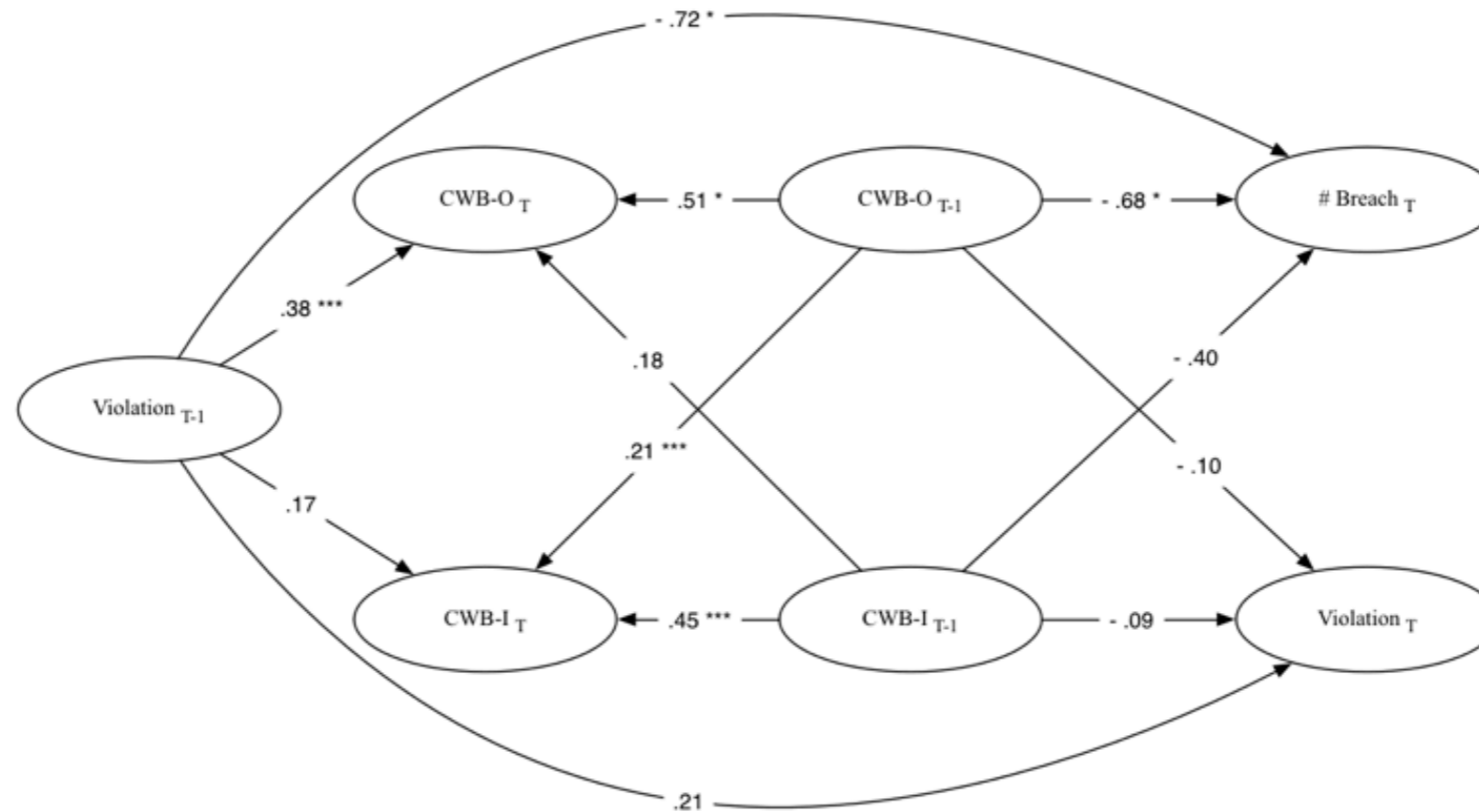
- Multilevel analysis (*Hierarchical Linear Modelling*)
 - Level 1 = weekly observation (e.g., level of psychological contract breach experienced in week T)
 - Level 2 = individual characteristics (e.g., educational level of respondent)
 - Time-lagged variables:
 - Predict variable Y (measured at week T) with variable X (measured at week T-1) → ability to establish temporal precedence
 - Predict variable Y (measured at week T) with variable Y (measured at week T-1) → control for prior level of focal variable and model change



How?

Analysing data:

- Multilevel analysis (*Hierarchical Linear Modelling*)





How?

Analysing data:

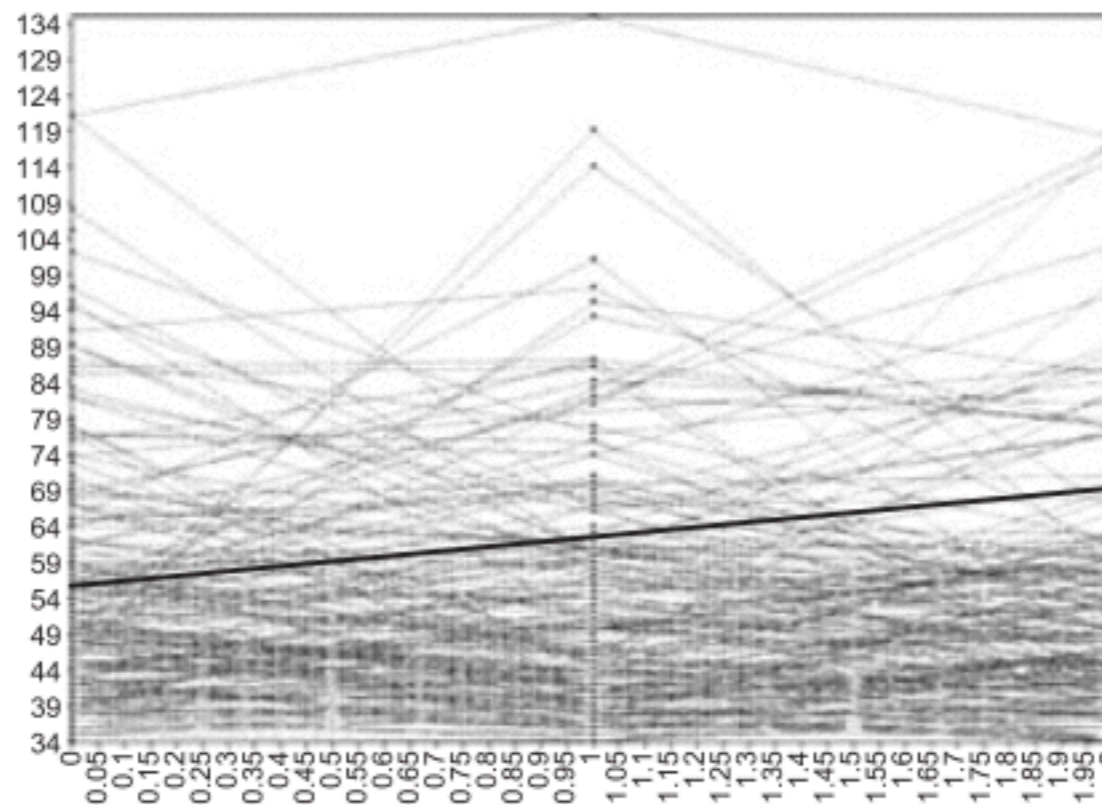
- Latent growth modelling (LGM)
 - Find function (linear, quadratic, cubic, sine wave, ...) that approximates change in focal variable across the different measurement moments
 - Relate variance in functions of distinct variables to each other
 - Predict variance in function by a “trait-like” variable



How?

Analysing data:

- Latent growth modelling (LGM)

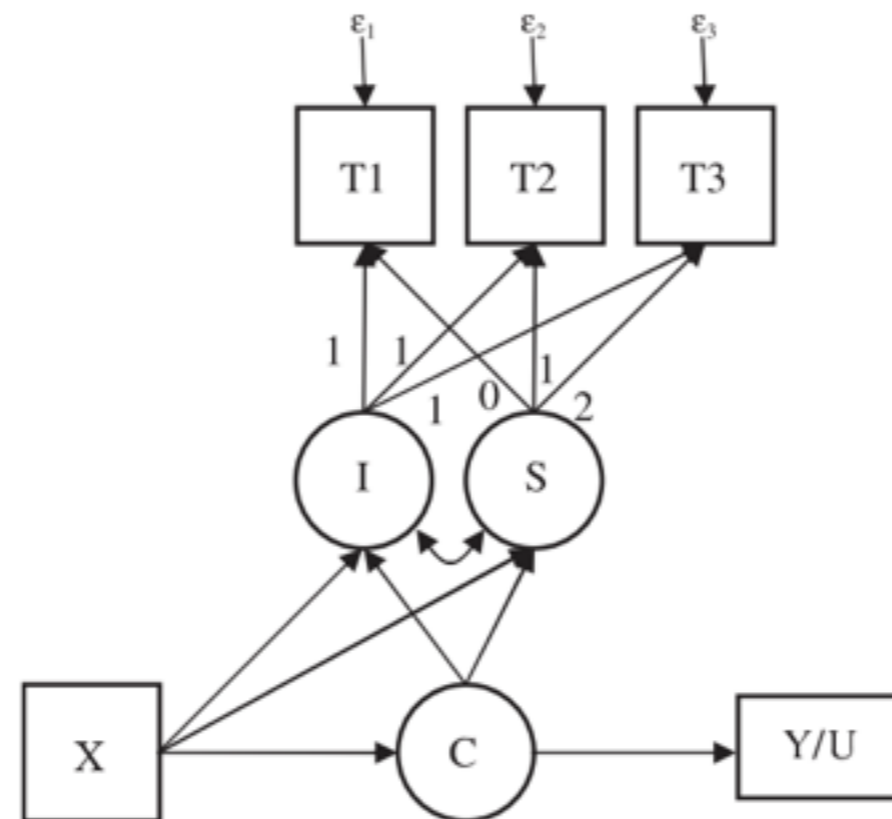




How?

Analysing data:

- Latent growth modelling (LGM)



More info?

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, *54*, 579–616.

Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary Studies in Organizational Research. *Journal of Personnel Psychology*, *9*(2), 79–93.

Jung, T., & Wickrama, K. a. S. (2008). An Introduction to Latent Class Growth Analysis and Growth Mixture Modeling. *Social and Personality Psychology Compass*, *2*(1), 302–317.