Feelings change. How can the dynamics of emotion be represented in a modeling framework? One model of emotion dynamics, the DynAffect model, (Kappen, Oravecz, & Tuerlinckx, 2010), uses an Ornstein-Uhlenbeck process model to describe affective dynamics with home base, intraindividual variability, and attractor strength parameters. DynAffect models affective dynamics:

- In continuous time
- With continuous measurement dimensions
- As a person-specific process (iSD)

The current study is an application of the DynAffect model to examine the relations of age, sex, and emotion regulation strategies to DynAffect's affective dynamic parameters.

### Empirical Example

**Participants:** N=150 individuals from the Intraindividual Study of Affect Health and Interpersonal Behavior (SAIHEB) provided ratings on feelings and behaviors after social interactions lasting 5 minutes to 21 consecutive days via study-provided smartphone. Participants made 35-265 (M=145.46, SD=19.59) reports each. Demographically, 54% women, aged 18-89 years (M=47.10, SD=18.76). Participants were mostly well-educated (M(HU)=16.36, M(Or)=9.80), mostly white (91.5%, Caucasian), and mostly heterosexual (93%).

**Measures:**

- Core affect: Valence (“Unpleasant”-“Pleasant”), Arousal (“Activated/aroused”-“Stimulated/stimulated”), continuous, scaled 0-10
- Emotion regulation: Cognitive reappraisal (“I changed how I thought about the interaction”), Expressive suppression (“I kept my emotions to myself”), continuous, scaled 0-10

**Data Analysis:** 2-dimensional HOU model with uncorrelated affect dimensions was fitted in the Bayesian Hierarchical Ornstein-Uhlenbeck Modeling (BHOUM) Matlab toolbox (available from zitaoravecz.net). Age, sex (+female, +male), and iSDs of reappraisal and suppression engagement were included as person-specific covariates.

### Conclusions

- Higher age was associated with:
  - Higher levels of arousal
  - Less intraindividual variability in arousal

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