Interlacing of Experiences, Behavior, Psychology, and Biology in Daily Family Life

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Individual exposure to daily stressors outside of the home

Family at home

Individual’s mood, behavior, activities, diurnal cortisol

Other family members’ mood, behavior, activities, diurnal cortisol
Interlacing of Experiences, Behavior, Psychology, and Biology in Daily Family Life

• How do daily stressors change social behavior in the family?

• How do family members shape responses to daily stressors?

• Can we observe an impact of those responses on the mood, biology, and behavior of other family members?
Strategy

- naturalistic methods
- day-to-day variability in individual behavior and family life
- daily reports, videography
Center on Everyday Lives of Families

- Generous support of the Alfred P. Sloan Foundation
- Collaborative research efforts of members of the UCLA Center on Everyday Lives of Families (CELF)
- Participating families in study
CELF Study: Multiple Methods

- Video ethnography of interaction
- Tracking space use in home
  (Who, where, what -- at 10 min intervals)
- Repeated measures on 3 weekdays:
  Saliva sampling to assess diurnal cortisol rhythms; mood

- And much more...
  - Ethnographic interviews
  - Questionnaires
  - Video tours, floor plans, photographs
CELF Study: Tracking Spatial Proximity of Family Members
CELF Fathers Alone: Tracking Data

- Fathers were more likely to be alone in a room (39% of the observations) than to be sharing a space with children (25%)

- Fathers were observed alone in home space significantly more than mothers were ($M=30\%$ of mother observations)

- A father alone in a home space was the most frequent family home space configuration observed

(Campos, Graesch, Repetti, Ochs, & Bradbury, 2009)
Parents and Children At Home After Work: Videotaped Parent-Child Reunions

What kind of reception does the returning parent receive?

Coded greeting behavior of children and spouse at each first contact
(positive behaviors, negative behaviors, reports of information, logistic behaviors, distraction)

How do children welcome mothers?
How do children welcome fathers?
Parents and Children At Home After Work: Videotaped Parent-Child Reunions

Distraction

Children Greeting Mothers: 22%
Children Greeting Fathers: 38%

At least one child distracted
- Greeting Mothers: 44%
- Greeting Fathers: 86%

(Compos, Graesch, Repetti, Bradbury, & Ochs, 2009)
Fathers were less likely to share space with children during evenings at home. Social withdrawal?

Is a tendency to withdraw encouraged by children’s distracted behavior?

(Compos, Graesch, Repetti, Bradbury, & Ochs, 2009)
CELF fathers responses to job stress

- Behavior after work (Wang, Repetti, Campos, 2011)
- Cortisol after work (Saxbe, Repetti, Nishina, 2008)
CELF Fathers social behavior after work

- Analyzed after-work videos on 2 weekdays from the 30 couples
  - 30-sec “slices” of video taken at 10-min intervals
  - Focus on first hour after work

- Trained researchers coded for:
  - Social Engagement ($\alpha = .96$)
  - Talking ($\alpha = .99$)
  - Negative Emotion Display ($\alpha = .90$)
  - Positive Emotion Display ($\alpha = .95$)
CELF Fathers Social Behavior after Work

More self-reported job stress correlated with:

- *less* talking and *less* negative emotion among fathers with *lower* neuroticism scores (social withdrawal?)

- *more* talking and *more* negative emotion display among fathers with *higher* neuroticism scores (negative emotion spillover?)

(Wang, Repetti, Campos, 2011)
Cortisol - “stress hormone”
- Can be assayed from saliva samples
- Reaction to stressors
- Also a diurnal rhythm

Steeper decline over the day
--> better health outcomes

CELF Fathers’ Cortisol After Work
Diurnal Cortisol in CELF Study

Saliva sampled 4x’s/day on three weekdays
  ▫ Morning (at home)
  ▫ Before Lunch (at work)
  ▫ End of workday (at work)
  ▫ Bed time (at home)

Computed a cortisol at 8:00pm measure

Stressors at work: Social interactions with Coworkers and Supervisors (2x/day)
Husbands group-centered afternoon negative social interactions predicting time-adjusted cortisol at 8:00pm (Saxbe, Repetti, & Nishina, 2008)
So far the CELF study suggests...

- Fathers are alone more often than other family members are alone.
- Fathers are more likely to receive distracted greetings when they return home from work.
- Residue of job stress reflected in behavior and in day-to-day changes in cortisol.
Work Worries Study

- N=37 dual-earner couples, at least one child (3-5 years old)
- Concerns about work while at home
- Momentary associations with cortisol
- Cortisol assessed 6x’s/day

(Slatcher, Robles, Repetti, Fellows, 2010)
Work worries

• Wives’ cortisol levels were associated positively with their own work worries (especially if they reported low levels of marital satisfaction)

• Husbands’ cortisol levels were associated positively with their own work worries

(Slatcher, Robles, Repetti, Fellows, 2010)
Work worries

• In addition, wives’ cortisol levels were associated positively with their husbands’ work worries.
• Evidence suggesting a residue of husbands’ job stress in their wives’ cortisol levels.
• Husbands’ cortisol levels were not associated with their wives’ work worries

(Slatcher, Robles, Repetti, Fellows, 2010)
Research using CELF couples suggest that spouses show “coregulation,” or synching-up, of their everyday mood states & levels of cortisol.

Spouses’ everyday social behavior and activities also appear to affect their own & their partners’ cortisol.
Coregulation in CELF couples

Analyzed the 12 cortisol samples & mood reports (4x/day over 3 days) collected by the CELF couples.

Husbands’ & wives’ cortisol were positively associated (after controlling for time of day); so were husbands’ and wives’ negative (but not positive) moods.
CELF Study: Couple coregulation of negative mood states

Over three days:

An increase in husbands’ negative mood was associated with an increase in wives’ negative mood ($b = .19, p < .001$)

Wives’ higher-than-usual negative mood was associated with husbands higher-than-usual negative mood ($b = .14, p < .05$).

Saxbe & Repetti (2010)
Negative Mood Coregulation Moderated by Marital Satisfaction (wives’ mood predicting husbands’ mood)

Saxbe & Repetti (2010)
Negative Mood Coregulation Moderated by Marital Satisfaction (husbands’ mood predicting wives’ mood)

Saxbe & Repetti (2010)
Physiological Co-regulation in the CELF Study

Over three days...

- changes in wives’ cortisol predicted changes in husbands’ cortisol ($b = .20, p < .001$)

- changes in husbands’ cortisol predicted changes in wives’ cortisol ($b = .16, p < .001$).

Saxbe & Repetti (2010)
Physiological Coregulation Moderated by Marital Satisfaction (husbands’ cortisol predicting wives’ cortisol)

Saxbe & Repetti (2010)
Summary of Couple Co-regulation
Findings from the CELF Study

- cortisol and negative mood “co-regulation” between spouses

- while in a shared environment (home) but not while at work

- more maritally satisfied spouses were less reactive to fluctuations in negative mood/cortisol; coregulation appeared to be strengthened by marital dissatisfaction.

Saxbe & Repetti (2010)
So far the evidence suggests...

- Echo of job stress in the employed parent’s cortisol & social behavior
- Residue of husbands’ work worries in wives’ cortisol
- Coregulation of negative mood & of cortisol

Next, what about the link between behavior and cortisol?
  - Addressed through analyses of CELF parents’ activities and social behavior
After-work activities & cortisol
(Saxbe, Repetti, & Graesch, 2011)

- Using tracking data, looked at whether spouses’ weekday afternoon and evening activities at home were linked with evening cortisol levels

- For both wives & husbands, spending more time on housework linked with higher evening cortisol
When both spouses’ activities were examined together, *leisure activities* were linked with *husbands’ cortisol*

- Husbands’ own leisure activities were associated with *lower* evening cortisol
- Wives’ leisure activities were associated with husbands’ *higher* evening cortisol

(Saxbe, Repetti, & Graesch, 2011)
After work activities & cortisol

When both spouses’ activities were examined together, *housework activities* were linked with *wives’ cortisol*

- Wives’ own housework was associated with *higher* evening cortisol
- Husbands’ housework was associated with *wives’ lower* evening cortisol

(Saxbe, Repetti, & Graesch, 2011)
Behavior at Home and Cortisol

Activities at home after work correlated with that evening’s cortisol levels in the individual and the spouse.

Next we examined parent social behavior:
- Social Engagement, Talking, Positive & Negative Emotion Display
- First-hour after-work; 30-sec “slices” of video taken at 10-min intervals.
CELF Study: Parents’ social behavior at home

Wives displayed more social engagement, talking, and negative and positive emotion behavior than did husbands.

Wang, Repetti, & Campos (under review)
Parent social behavior and cortisol

Analyzed linkages between social behavior codes and cortisol slope values (Early morning – 8pm).

• For husbands, steeper cortisol slopes were associated with less own negative emotion expression.

• For wives, steeper cortisol slopes were associated with more own social engagement and talking.

Wang, Repetti, & Campos (under review)
Is cortisol linked to the spouse’s social behavior?

- Among fathers, the steeper cortisol slopes were also associated with less *wife* social engagement and positive emotion expression.
- No links between mothers’ cortisol slopes and their husbands’ social behavior.

Wang, Repetti, & Campos (under review)
Wife social engagement and couples’ cortisol

(Wang, Repetti, & Campos, under review)
Spouses’ social behaviors in the home are intertwined with their physiology (stress recovery).

Husbands have better stress recovery when they spend more time in leisure, and when their wives spend less time in leisure and are less engaged and less emotionally expressive.

However, wives have better stress recovery when they are more engaged and more talkative and do less housework, and when their husbands do more housework.
Evidence suggests:

- Residue of daily job stress in cortisol and social behavior after work, including residue of work worries in spouses’ cortisol
- Day-to-day coregulation of negative mood and cortisol at home

Activities and social behavior at home after work associated with own and spouse cortisol

What may be a source of resilience for one spouse may be a behavioral pattern that is detrimental to the partner.
Child Responses to Social Behavior in the Family

Can we observe children’s short-term emotional and behavioral responses to parents’ social behavior at home?

Are differences in the way that children react to family events linked to other aspects of their development?
WT Grant Foundation Study
with Ted Robles and Bridget Reynolds

Parents and target children (8-13 years old) (preliminary analyses based on the first 27 families)

8 Weeks of daily diaries, including:
- Parent daily reports of marital conflict
- Parent daily reports of child behavior
- Child daily reports of mood
Children’s short-term (daily) responses to increases in marital conflict

• Increases in negative mood (sad, mean, tense, angry, worried, etc.)
  \( (B = +.12, p<.01) \)

• Increases in difficult behavior (angry, argumentative, cried, moody, whiny, demanded attention, etc.)
  \( (B = +.36, p<.05) \)
Emotional and Behavioral Reactivity to Marital Conflict as Individual Difference Variables

• Emotional reactivity: increases in self-reported negative mood on days that parents reported more marital conflict

• Behavioral reactivity: increases in mother’s report of difficult child behavior on days that parents reported more marital conflict
Behavioral Reactivity and Anxiety

![Graph showing the relationship between Behavioral Reactivity to Marital Conflict and Total Anxiety (RCADS)].

R² Linear = 0.321
Individual exposure to daily stressors outside of the home

Family at home

Individual’s mood, behavior, activities, diurnal cortisol  Other family members’ mood, behavior, activities, diurnal cortisol
Interlacing of Family Members’ Daily Experiences, Behavior, Psychology, and Biology

- Daily stressors
- Mood
- Worries
- Cortisol
- Social behavior
- Housework & leisure activities