The effect of fertility on parents' happiness

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„Regretting Motherhood“, based on interviews with 23 Israeli biological mothers (Donath 2015):

“Already during pregnancy I have sensed regret. (…) I understood it was a mistake, yes.”

“After the first birth I understood that the coupledom relationship will never be the same, that from this day on I need to look after another human being beside me (…).”

Children add “virtually nothing to life, apart from perpetual difficulty and worry”.
„It turns out parenthood is worse than divorce, unemployment — even the death of a partner“
(Washington Post, August 11th 2015, citing Margolis & Myrskylä 2015)

**Loss of happiness**
The average change in well-being on a scale of 0 (completely dissatisfied) to 10 (completely satisfied) by life event.

<table>
<thead>
<tr>
<th>-1.6</th>
<th>-1</th>
<th>-0.5</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth of first child</td>
<td>Unemployment</td>
<td>Divorce</td>
<td></td>
</tr>
</tbody>
</table>

Source: Max Planck Institute for Demographic Research
THE WASHINGTON POST
Why do we expect a non-constant effect of children on their parents’ happiness?

- **Economic theory**
  - Benefits and costs of children vary with their age:
    - Younger children need more care than older children
    - Higher direct costs of older compared to younger children
    - Opportunity cost compensation by welfare state (“Elterngeld”)
  - …

- **Predetermined setpoint**
  - “Each individual […] tends to restore well-being to a predetermined setpoint after each change in circumstances (Kahneman 1999: 14)
  - “Hedonic treadmill“ (Brickman and Campbell 1971)
  - Genetic disposition explains different happiness levels (see twin studies)
Previous research: 3 recent papers

- Myrskylä & Margolis (2014)
  - SOEP & BHPS
    - Positive anticipation effects already 2-3 years before birth
    - Effect lasts 1-2 years
    - Effect of a first child is never significantly negative

- Pollmann-Schult (2014)
  - SOEP
    - Controlling for costs, also older children make their parents happy.

- Mikucka (2015)
  - Russia Longitudinal Monitoring Survey 1994-2012
  - Hardly comparable, all models control for mediating mechanisms
Data & Sample

- pairfam - The German Family Panel (v6.0)
- 6 waves, 3 cohorts
- Usually 1 year between interviews
- Separate analyses of women and men
- Censored at second pregnancy

<table>
<thead>
<tr>
<th>Analytic Sample I</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (Persons)</td>
<td>3,568</td>
<td>3,905</td>
</tr>
<tr>
<td>N (Person years)</td>
<td>10,511</td>
<td>11,227</td>
</tr>
<tr>
<td>N (first births)</td>
<td>427</td>
<td>393</td>
</tr>
</tbody>
</table>
The Basic Fixed-Effect-Model

- **Dependent Variable**
  - Life satisfaction (happiness)

- **Explanatory variable**
  - Age of first biological child, in 3-month-intervals
  - Dummy impact function with anticipation effects
Step- vs. Dummy-Impact-Function

**Step impact function**
Immediate and permanent impact
- event dummy
  \( (0,0,0,0,1,1,1) \)

**Dummy impact function**
Arbitrary impact (including anticipation effect)
- dummy event time
  - -1 dummy
    \( (0,0,0,1,0,0,0) \)
  - 0 dummy
    \( (0,0,0,0,1,0,0) \)
  - 1 dummy
    \( (0,0,0,0,0,1,0) \)
  - 2 dummy
    \( (0,0,0,0,0,0,1) \)

(c.f. Brüderl 2015)
The Basic Fixed-Effect-Model

- Dependent Variable
  - Life satisfaction (happiness)

- Explanatory variable
  - age of first biological child, in 3-month-intervals
  - Dummy impact function

- Controls
  - Period (wave dummies)
  - Age (lin., sq., cub.)
  - Relationship-, cohabitation- and marriage-duration (categories)
  - Infertility (of respondent and/or partner)
Robustness of Findings

- Alternatives in preparing and analysing data:
  - Longer impact and anticipation-effects
Women - Longer Impact- & Anticipation-Effects

Effect on Happiness

Effect on Happiness over Months before and after birth

-24 -18 -12 -6 0 6 12 18 24 30 36 42 48 54 60+
Alternatives in preparing and analysing data:

- Longer impact and anticipation-effects
- Alternative definitions of first births
- Not censoring at the second pregnancy or birth
- Controlling for higher order births with impact functions
- Alternative or no controls for age and/or period
- No controls for partnership-, cohabitation and marriage duration

→ 19 alternative model specifications tested
Effect on Happiness

Women - Basic Model - Robustness

Effect on Happiness vs. Months before and after birth
Results for men compared to women

- Similar patterns
- Equally robust

- Weaker effects
  (0.6 versus 0.8, 0-3 months after the first birth)
- Anticipation effect not as strong, but longer
  (happiness increases already 12 versus 6 months before the birth)
Men - Basic Model - Robustness

Effect on Happiness

Months before and after birth
Potential mediators (controls for costs): Change in
- Objective income (household net income, personal net income)
- Subjective income (making ends meet, 2 items)
- Hours of sleep on an average day during the week
- Subjective health
- Frequency of sexual intercourse and satisfaction with sex
- Pregnancy as explanation for anticipation effects (women)
- Pregnancy of the partner as explanation for anticipation effects (men)
Women - Basic Model - sleep

Effect on Happiness

Months before and after birth

-12 -6 0 6 12 18 24 30 36+

-1 -0.5 0 0.5 1 1.5
Effect on Happiness

Months before and after birth

Women - sleep
Effect on Happiness

Months before and after birth

Women - Basic Model - Sex
Effect on Happiness

Months before and after birth

Women - Sex
Effect on Happiness

Months before and after birth

Women - Basic Model - Pregnant
Women - Pregnant

Effect on Happiness

Months before and after birth

-12 -6 0 6 12 18 24 30 36+

Effect on Happiness

-1 -0.5 0 0.5 1 1.5
<table>
<thead>
<tr>
<th>Mediators</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective income</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Subjective income</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Health</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Hours of sleep</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Sexual freq. &amp; sat.</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Pregnant</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Partner pregnant</td>
<td></td>
<td>✗</td>
</tr>
</tbody>
</table>
Summary & Discussion

- Time-varying effect of children on parents‘ happiness
- Successful reproduction of Myrskylä & Margolis (2014)
  - with a more detailed impact function
- Costs (as far as already controlled for) do not significantly moderate the impact function.

- Possible remaining explanations:
  - Variation in unobserved costs
  - Variation in benefits: Cuteness
  - Setpoint theory
Lessons Learned: Impact Functions

- Build impact functions by hand, do not use Lag- and Lead-Operators within the Stata regression command
  - Otherwise, we lose many waves!
- If waves are missing for some respondents: ensure to account for this, recode data by waves, not by lines
- We recommend the use of dates (e.g. the difference between a birthday and the day of interview)

- Graph the range of impact function as a robustness check (coefplot with gen-option -> min/max -> rarea)