

## CONCEPT PAPER TEMPLATE

**Provisional Paper Title:** Parental history of wellbeing/positive development and child behaviour in next generation offspring: A two-cohort prospective intergenerational study

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**P.I. Sponsor**  
(if the proposing author is a student or colleague of an original PI) Prof Bob Hancox

### Objective of the study:

This paper will draw on rare data from two prospective intergenerational Australasian studies to examine the extent to which preconception parental wellbeing/positive development predicts offspring behaviour during early childhood.

The Dunedin Study (DS) assessed wellbeing during adolescence (15-18 years) and child outcomes in the Parenting Study during toddlerhood/preschool (3-5 years).

The Australian Temperament Project assessed positive development during young adulthood (19-27 years) and child outcomes in the Generation 3 Study (ATPG3) during infancy (1 year postpartum).

The intention is to undertake sequential analyses and report findings from the two cohorts in one manuscript but it is possible that two separate manuscripts will be prepared.

### Data analysis methods:

We will estimate the associations between G2 preconception wellbeing and G3 child behaviour, separately for DS and ATPG3, using linear generalized estimating equations (GEE). In ATPG3, the GEE will account for potential correlations between offspring outcomes due to within-parent clustering (i.e., parents with multiple offspring).

Associations will initially be estimated unadjusted, then partially adjusted for preconception factors (family background and preconception characteristics), and then further adjusted for parental age and offspring sex. We will assess the interaction between wellbeing and parent sex, and wellbeing and offspring sex in fully adjusted models.

Each scale or item that contributed to the wellbeing construct will be calculated as the Proportion of Maximum Percentage (POMP; Cohen, Cohen, Aiken, & West, 1999) and mean POMP score across all items of each construct will be used as predictor variables.

The primary analyses for the Dunedin Study will employ an overall measure of adolescent wellbeing (see Olsson, McGee, Nada-Raja, & Williams, 2012). Secondary analyses will disaggregate the wellbeing measure to explore the relative contribution of different aspects of adolescent wellbeing (life satisfaction, strengths, social attachment and social participation) to offspring behaviour. Statistical analyses for Dunedin Study data will be undertaken by the team in Dunedin.

The primary analyses for ATPG3 will employ an overall measure of wellbeing/positive development in young adulthood (see Hawkins et al., 2009, 2011, 2017). As for the Dunedin analyses, secondary analyses will disaggregate the measure to explore the relative contribution of different aspects of young adult positive development to offspring behaviour. Statistical analyses for ATPG3 will be undertaken by the ATPG3 team.

### **Variables needed at which ages:**

#### **From the Dunedin Study:**

##### *Exposure:*

- Adolescent Wellbeing as per Olsson et al. (2012):
  - Parent and Peer Attachment (age 15)
  - Life Satisfaction (age 15 & 18)
  - Strengths (ages 15 & 18 – both self and other identified)
  - Club/Sport participation (ages 15 & 18)

##### *Potential confounders (based on VanderWeele's (2019) recommendations):*

##### *Family Sociodemographics (Generation 1; G1):*

- SES (birth to age 15)
- Education
- Family Structure
  - Single parenting (G1)
  - Parental separation (G1)

##### *Generation 2 (G2) characteristics/behaviour:*

- G2 sex
- G2 DSM diagnosis of depressive or anxiety disorder at ages 11 and 13
- G2 DSM diagnosis of conduct disorder at ages 11 and 13
- G2 Early exposure to substances: Use of drugs (e.g. inhalants, cannabis) or use or purchase of alcohol on multiple occasions over the past year at age 13, age 15, or both (as per Meier et al., 2016)

#### **From the Dunedin Parenting Study:**

##### *Outcome (Generation 3: G3):*

- 19 item child behaviour problems measure (Richman, 1977) at 3-5 years
- Parent rating of child difficulty: G2 parent's overall perception of the child, rated from 0 (very easy child) to 6 (very difficult child with no redeeming features)
- Observed child ratings of positive mood and activity

##### *Demographic covariates:*

- G2 parent age
- G3 sex
- G3 age

### **Significance of the study (for theory, research methods or clinical practice):**

A growing body of research has demonstrated that parental preconception psychopathology predicts early child behaviour (eg., Letcher et al., 2020; Spry et al., 2019). By contrast, studies of parental history of psychosocial wellbeing or positive development as a predictor of offspring behaviour are rare. This represents a significant gap in the literature as approaches to policy planning for prevention and intervention may be

enhanced by taking a broader strengths-based intergenerational perspective which focuses on factors that may strengthen families from one generation to the next (Olsson et al, 2020). Here we propose to draw on data from two large-scale prospective intergenerational Australasian studies to explore the effect of maternal and paternal preconception wellbeing/positive development on offspring behaviour problems and competencies.

In bringing together these two studies, we have the unique opportunity to explore protective effects of psychosocial wellbeing/positive development measured across the preconception years in both adolescence (Dunedin Study) and young adulthood (ATP), indicated by competencies, social connectedness, community contribution, and life satisfaction. Parental life histories of wellbeing/positive development may not only contribute to thriving during adolescence and young adulthood but may also have the capacity to reduce risk and promote optimal development in the next generation.

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