Data Request form YOUth (version 6.0, February 2020)

Introduction

The information you provide here will be used by the YOUth Executive Board, the Data Manager, and the Data Management Committee to evaluate your data request. Details regarding this evaluation procedure can be found in the Data Access Protocol.

All data requests will be published on the YOUth researcher's website in order to provide a searchable overview of past, current, and pending data requests. By default, the publication of submitted and pending data requests includes he names and institutions of the contact person and participating researchers as well as a broad description of the research context.

After approval of a data request, the complete request (including hypotheses and proposed analyses) will be published. If an applicant has reasons to object to the publication of their complete data request, they should notify the Project Manager, who will evaluate the objection with the other members of the Executive Board and the Data Management Committee. If the objection is rejected, the researcher may decide to withdraw their data request.

Section 1: Researchers

In this section, please provide information about the researchers involved with this data request.
- Name, affiliation and contact information of the contact person
- Name and details of participating researchers (e.g. intended co-authors)
- Name and details of the contact person within YOUth (if any)

Contact person for the proposed study:	
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Contact person within YOUth (if any)	
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Institution:	
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Section 2: Research context

In this section, please briefly describe the context for your research plans. This section should logically introduce the next section (hypotheses). As mentioned, please note that this section will be made publicly available on our researcher's website after submission of your request.

Please provide:

- The title of your research plan
- A very brief background for the topic of your research plan
- The rationale for and relevance of your specific research plan
- The specific research question(s) or aim(s) of your research (Please also provide a brief specification)
- A short description of the data you request

References can be added at the end of this section (optional).

Title of the study
Who Regulates Whom? Longitudinal Transactional Relationships Between Parental Support, Parental Stress and Self-Regulation in Early Childhood

Background of the topic of your research plan, rationale, relevance (max. 500 words)

According to Bronfenbrenner's bioecological model of human development (Bronfenbrenner, 1979), child development is most affected by proximal processes, such as parenting. During the first years, when parents are the primary environmental factor in a child's life, development of self-regulation develops rapidly (Moffitt et al., 2011). Self-regulation can be defined as "the exercise of control over oneself, which involves efforts to regulate one's own inner states or responses, including thoughts, feelings, impulses, desires or attention" (Kerig et al., 2012). It is an important developmental task of early childhood with critical consequences for later development, such as academic performance, social competence, psychological adjustment, and mental and physical health (Moffitt et al., 2011; Rodriguez et al., 2005). This study aims to investigate the longitudinal transactions between family processes and child self-regulation to identify targets for prevention and intervention efforts.

Associations between parenting and the development of self-regulation in early childhood are widely studied. For example, maternal support has repeatedly been found to predict self-regulation in early childhood (Bernier et al., 2010). Yet, while studies demonstrate how parenting predicts child development, some studies find a reversed relationship as well, where child characteristics elicit reactions from parents (Collins et al., 2000). Such transactional models have been studied in other fields of developmental psychology but have received little attention in research on self-regulation. However, some effects of child characteristics related to self-regulation on parenting have been found. For instance, hyperreactivity, impulsivity and difficult temperament at age 4 have been found to elicit harsh parenting (Collins et al., 2000). Similarly, low levels of infant regulatory capacity have been found as a strong predictor of negative parenting in the first year (Bridgett et al., 2009). What remains unclear is whether these bidirectional relationships are present between child self-regulation and parenting in early childhood. Of particular interest here is parental support, which has been found to predict self-regulation over time, but for which a reciprocal effect has not yet been studied (Geeraerts et al., 2021; Valcan et al., 2018).

Another important factor in child self-regulation development is parental stress (Goodrum et al., 2021). High parental stress is an influential environmental risk factor that can lead to a myriad of negative outcomes, like child behaviour problems and less effective parenting (Cappa et al., 2011; Neece et al., 2012). For example, parental stress can negatively affect child self-regulation development: Early exposure to continuous parental stress can lead to lasting changes in neurobiological and psychosocial factors that contribute to self-regulation development (Deater-Deckard & Panneton, 2017). Moreover, children who lack self-regulation might in turn increase parental stress, as hard-to-manage behaviours create challenges for parents (Cappa et al., 2011). However, to date, it is unclear whether this bidirectional relationship is present for parental stress and child self-regulation. In addition, given that parental stress affects not only child self-regulation, but also parental support, the effect of parental stress on child self-regulation might be mediated via parental support (Deater-Deckard & Panneton, 2017).

The specific research question(s) or aim(s) of your research
How are parental support, parental stress and child self-regulation reciprocally related to one another over time in early childhood?   1. Is the relationship between parental support and child self-regulation bidirectional over time?

2. Is the relationship between parental stress and child self-regulation bidirectional over time?
3. Is the effect of parental stress on child self-regulation mediated by parental support?

Summary of the data requested for your project: Please indicate which data you request to answer your research question.

We would like to use the data that has been previously requested by Marissa Hofstee, Jorg Huijding and Maja Deković:

Self-regulation
- Parent-reported self-regulation will be assessed at wave 1 and 2 (around 5- and 10-months) using the Infant Behavior Questionnaire - revised - short form (Putnam et al., 2014) and at wave 3 using the Early Childhood Behavior Questionnaire (for children < 3 years at T3; Putnam et al., 2006) and Children's Behavior Questionnaire - very short form (for children ≥ 3 years at T3; Putnam & Rothbart, 2006).

Parental support
- Self-reported: The Comprehensive Early Childhood Parenting Questionnaire (CECPAQ; Verhoeven et al., 2017) will be used to assess reported parenting behaviors.
- Observed: The PCI video tasks will be used to assess parental support during structured tasks and unstructured free play.

Parental stress
- Self-reported parental stress will be assessed using the Nijmeegse Ouderlijke Stress Index (De Brock et al., 1992)

References (optional)

Bernier, A., Carlson, S. M., & Whipple, N. (2010). From external regulation to self-regulation: Early parenting precursors of young children's executive functioning. *Child Development*, *81*(1), 326–339. https://doi.org/10.1111/j.1467-8624.2009.01397.x

Bridgett, D. J., Gartstein, M. A., Putnam, S. P., McKay, T., Iddins, E., Robertson, C., Ramsay, K., & Rittmueller, A. (2009). Maternal and contextual influences and the effect of temperament development during infancy on parenting in toddlerhood. *Infant Behavior and Development*, *32*(1), 103–116. https://doi.org/10.1016/j.infbeh.2008.10.007

Bronfenbrenner, U. (1979). *The ecology of human development: experiments by nature and design.* Harvard University Press.

Cappa, K. A., Begle, A. M., Conger, J. C., Dumas, J. E., & Conger, A. J. (2011). Bidirectional Relationships Between Parenting Stress and Child Coping Competence: Findings From the Pace Study. *Journal of Child and Family Studies*, *20*(3), 334–342. https://doi.org/10.1007/s10826-010-9397-0

Collins, W. A., Maccoby, E. E., Steinberg, L., Hetherington, E. M., & Bornstein, M. H. (2000). Contemporary research on parenting: The case for nature and nurture. *American Psychologist*, *55*(2), 218–232. https://doi.org/10.1037/0003-066X.55.2.218

De Brock, A. J. L. L., Vermulst, A. A., Gerris, J. R. M., & Abidin, R. R. (1992). *NOSI-Nijmeegse Ouderlijke Stress Index, Handleiding experimentele versie [NOSI-Nijmegen Parenting Stress Index, Manual experimental version]*. Swets en Zeitlinger.

Deater-Deckard, K., & Panneton, R. (2017). *Parental Stress and Early Child Development: Adaptive and Maladaptive Outcomes* (K. Deater-Deckard & R. Panneton (eds.)).

Spinger, Cham. https://doi.org/10.1007/978-3-319-55376-4

Geeraerts, S. B., Endendijk, J. J., Deković, M., Huijding, J., Deater-Deckard, K., & Mesman, J. (2021). Inhibitory Control Across the Preschool Years: Developmental Changes and Associations with Parenting. *Child Development*, *92*(1), 335–350. https://doi.org/10.1111/cdev.13426

Goodrum, N. M., Armistead, L. P., Masyn, K., Schulte, M., & Murphy, D. A. (2021). Longitudinal Bidirectional Relations among Parenting Quality, Parenting Stress, and Child Functioning in HIV-affected Families. *Journal of Youth and Adolescence*, *50*(8), 1663–1678. https://doi.org/10.1007/s10964-021-01444-w

Hamaker, E. L., Kuiper, R. M., & Grasman, R. P. P. P. (2015). A critique of the cross-lagged panel model. *Psychological Methods*, *20*(1), 102–116. https://doi.org/10.1037/a0038889

Kerig, P. K., Ludlow, A., & Wenar, C. (2012). *Developmental Psychopathology* (6th ed.). McGraw-Hill Education.

Moffitt, T. E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R. J., Harrington, H. L., Houts, R., Poulton, R., Roberts, B. W., Ross, S., Sears, M. R., Thomson, W. M., & Caspi, A. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of the National Academy of Sciences of the United States of America*, *108*(7), 2693–2698. https://doi.org/10.1073/pnas.1010076108

Muthén, L. K., & Muthén, B. O. (2017). *Mplus User's Guide* (8th ed.). Muthén & Muthén.

Neece, C. L., Green, S. A., & Baker, B. L. (2012). Parenting stress and child behavior problems: A transactional relationship across time. *American Journal on Intellectual and Developmental Disabilities*, *117*(1), 48–66. https://doi.org/10.1352/1944-7558-117.1.48

Putnam, S. P., Gartstein, M. A., & Rothbart, M. K. (2006). Measurement of fine-grained aspects of toddler temperament: The Early Childhood Behavior Questionnaire. *Infant Behavior and Development*, *29*(3), 386–401. https://doi.org/10.1016/j.infbeh.2006.01.004

Putnam, S. P., Helbig, A. L., Gartstein, M. A., Rothbart, M. K., & Leerkes, E. (2014). Development and assessment of short and very short forms of the infant behavior questionnaire-revised. *Journal of Personality Assessment*, *96*(4), 445–458. https://doi.org/10.1080/00223891.2013.841171

Putnam, S. P., & Rothbart, M. K. (2006). Development of short and very short forms of the Children's Behavior Questionnaire. *Journal of Personality Assessment*, *87*(1), 102–112. https://doi.org/10.1207/s15327752jpa8701_09

Rodriguez, M. L., Ayduk, O., Aber, J. L., Mischel, W., Sethi, A., & Shoda, Y. (2005). A contextual approach to the development of self-regulatory competencies: The role of maternal unresponsivity and toddlers' negative affect in stressful situations. *Social Development*, *14*(1), 136–157. https://doi.org/10.1111/j.1467-9507.2005.00294.x

Valcan, D. S., Davis, H., & Pino-Pasternak, D. (2018). Parental Behaviours Predicting Early Childhood Executive Functions: a Meta-Analysis. *Educational Psychology Review*, *30*(3), 607–649. https://doi.org/10.1007/s10648-017-9411-9

Verhoeven, M., Deković, M., Bodden, D., & van Baar, A. L. (2017). Development and initial validation of the comprehensive early childhood parenting questionnaire (CECPAQ) for parents of 1–4 year-olds. *European Journal of Developmental Psychology*, *14*(2), 233–247. https://doi.org/10.1080/17405629.2016.1182017

Section 3: Hypotheses

In this section, please provide your research hypotheses. For each hypothesis:

- Be as specific as possible
- Provide the anticipated outcomes for accepting and/or rejecting the hypothesis

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Hypotheses

1. We expect a bidirectional relationship between parental support and child self-regulation, such that more parental support will predict better child self-regulation over time and vice versa.
2. We expect that there is a bidirectional relationship between parental stress and child self-regulation, such that higher levels of parental stress will predict lower levels of child self-regulation over time and vice versa.
3. We expect that the effect of parental stress on child self-regulation is mediated by parental support.

Section 4: Methods

In this section, you should make clear how the hypotheses are tested. Be as specific as possible. Please describe:
- The study design and study population (Which data do you require from which subjects?)
- The general processing steps (to prepare the data for analysis)
- The analysis steps (How are the data analysed to address the hypotheses? If possible, link each description to a specific hypothesis)
- Any additional aspects that need to be described to clarify the methodological approach (optional)

Study design, study population and sample size (e.g. cross-sectional or longitudinal; entire population or a subset; substantiate your choices)

Study design:
A longitudinal design.

Study population:
All available children and parents from the YOUth baby & child cohort who participated at the 'around 3 years old' wave.

Sample size:
All available participants for which this data has been collected and PCI videos have been coded by Marissa Hofstee, Jorg Huijding and Maja Deković (expected *N* = ± 250).

General processing steps to prepare the data for analysis

The Parent-Child Interaction videos (PCI) have already been coded by trained and reliable coders. For coding the PCI videos, an adapted version of the Erickson scales (Erickson, Sroufe, & Egeland, 1985) was used to code supportive presence. Supportive presence of the parent was scored on a 7 point Likert scale.

Specific processing and analysis steps to address the hypotheses

Data will be analysed in M*plus* version 8 (Muthén & Muthén, 2017) in a structural equation modelling framework. The hypotheses will be evaluated using a random intercept cross-lagged panel model (RI-CLPM). Using the RI-CLPM makes it possible to separate between- and within-person stability, so that within-person patterns of change can be detected (Hamaker et al., 2015).

Additional methodological aspects (optional)

Section 5: Data request

In this section, please specify as detailed as possible which data (and from which subjects) you request.

Data requested

We would like to use the data that has been requested by Marissa Hofstee, Jorg Huijding and Maja Deković, consisting of:
 	
5 months
    - Parent Child Interaction videos
    - CECPAQ
    - NOSI
    - Demographics questionnaire
    - IBQ-R-SF
 	
10 months
    - Parent Child Interaction videos
    - CECPAQ
    - NOSI
    - Demographics questionnaire
    - IBQ-R-SF
 	
Around 3 years
    - Parent Child Interaction videos
    - CECPAQ
    - NOSI
    - Demographics questionnaire
    - ECBQ-SF / CBQ -SF