Parenting and infant cry

Esposito, Gianluca; Bornstein, Marc H.

2019

Esposito, G., & Bornstein, M. H. (2019). Parenting and infant cry. *Parenting: Science and Practice*, 19(1-2), 1-4. doi:10.1080/15295192.2019.1555415

<https://hdl.handle.net/10356/83544>

<https://doi.org/10.1080/15295192.2019.1555415>

This is an Accepted Manuscript of an article published by Taylor & Francis in *Parenting: Science and Practice* on 01 Feb 2019, available online:
<http://www.tandfonline.com/10.1080/15295192.2019.1555415>.

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Parenting and Infant Cry

Gianluca Esposito and Marc H. Bornstein

SYNOPSIS

This Special Issue collects five empirical studies from around the world that use diverse methodological approaches and focus at different levels to investigate how behavioral, hormonal, prenatal and postnatal factors, brain functioning, and environment regulate early interactions of parents with distressed infants and young children.

Cry represents the first and initial form human (and nonhuman) infants use to communicate with the external world (Esposito, Hiroi, & Scattoni, 2017). This form of communication is so important that its abnormal developmental trajectory may signal atypical development (Esposito, Nakazawa, Venuti, & Bornstein, 2012; Esposito & Venuti, 2009).

Across mammalian species, cry specifies infant needs and fulfils the important role of attracting caregiver attention and proximity. Reciprocally, caregivers instinctively seek and respond to their infants' crying, using a wide but universally common repertoire of behaviors (Bornstein et al., 2017; Esposito et al., 2012). Infant and caregiver actively interact in a dance that is biologically rooted, and development proceeds through their continuous exchanges. Child and caregiver development are thus associated with dynamic reciprocal relations among multiple structures (Bornstein & Esposito, 2014; Esposito, Setoh, & Bornstein, 2015). Interactions in general, and interactions during infant cry in particular, follow a multilevel organization, extending from hormones to brain to environment.

For this Special Issue, we collected five empirical studies from around the world that use diverse methodological approaches and focus at different levels to investigate how behavioral, hormonal, prenatal and postnatal, neural, and environmental factors regulate early interactions of parents with distressed infants and young children. Before proceeding to descriptions of the articles collected in this Special Issue, we briefly digress to describe the structure of the Special Issue. We designed this Special Issue to promote discussion and exchange. Each of the five featured empirical articles was independently peer-reviewed; we then invited three scholars to add constructive commentaries; finally, the authors of the empirical articles prepared a rejoinder to the commentaries.

In the first paper of the Special Issue, Hirooka and colleagues (2019a) demonstrate the moderating role of attachment anxiety on spousal presence in determining salivary

Alpha Amylase (sAA, an enzyme that is correlated with stress) level during infant cry.

Signature changes in concentration of sAA were utilized as a biomarker of physiological stress. Amongst mothers with high attachment anxiety, sAA level was reduced, and so they were calmer when their spouse was present. This paper reveals, in the context of cry, interactions across biological and social domains (see commentaries from Borrelli, 2019; Truzzi & Ripoli, *in press*; Bentenuto & Venuti, 2019; and the authors response; Hiroaka et al. 2019b). Zeifman and colleagues (*in press*) focus on the changes in testosterone levels in men after a caregiving simulation. Men who increase in testosterone after a caregiving simulation provide less sensitive care compared to those who decrease. These results point to a potential role of cry in provoking physiological reactions among men that may set the stage for hostile or aggressive responses (see commentaries from Lingle, 2019; Green, 2019; Setoh & Esposito, 2019; Zeifman's, *in press*, response). Using fMRI, Rigo et al. (2019a) assess Default Mode Network activity in mothers and nulliparous women. Mothers are prone to process infant cry and emotional sounds and are less distracted from doing so in situational contexts demonstrating their greater sensitivity to emotional sounds such as cry. By contrast, situational context influences brain responses to infant sounds in nulliparas (see commentaries from Ablow & Maselle, *in press*; Zeifman & Baird, *in press*; Laurent, 2019; Rigo et al.'s, 2019b, response). In the fourth paper of the Special Issue, Hechler and colleagues (2019a) focus on stability of caregiving from the prenatal to the postnatal period. For both mothers and fathers, caregiving quality for a simulator infant during pregnancy predicts postnatal quality of caregiving toward their own infant (see commentaries from Lin, Bisson, & Sanborn, 2019; Wong & Esposito, *in press*; Lee, 2019; Hechler et al.'s, 2019b, response). In the fifth and final paper, River et al. (2019) investigate the impact of exposure to work-family conflict on work-family guilt and behavioral responses to infant crying as a function of parent attachment anxiety (see commentaries from Parish-Morris, 2019; Senese, Azhari, & Cataldo, 2019; Bolten, 2019; River & Borrelli's, 2019, response).

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ARTICLE INFORMATION

Conflict of Interest Disclosures: Each author signed a form for disclosure of potential conflicts of interest. No authors reported any financial or other conflicts of interest in relation to the work described. The two authors (GE, MHB) are also editors of the current Special Issue.

Ethical Principles: The authors affirm having followed professional ethical guidelines in preparing this work. These guidelines include obtaining informed consent from human participants, maintaining ethical treatment and respect for the rights of human

or animal participants, and ensuring the privacy of participants and their data, such as ensuring that individual participants cannot be identified in reported results or from

publicly available original or archival data.

Funding: This report was supported by the NAP-SUG program of the Nanyang Technological University (GE). Research was also supported by the Intramural Research Program of the NIH/NICHD, USA, and an International Research Fellowship in collaboration with the Centre for the Evaluation of Development Policies (EDePo) at the Institute for Fiscal Studies (IFS), London, UK, funded by the European Research Council (ERC) under the Horizon 2020 research and innovation program [grant agreement No 695300-HKADeC-ERC-2015-AdG]; NAP SUG [2015].

Role of the Funders/Sponsors: None of the funders or sponsors of this research had any role in the design and conduct of the study; collection, management, analysis, and interpretation of data; preparation, review, or approval of the manuscript; or decision to submit the manuscript for publication.

Acknowledgments: The idea for this Special Issue on infant cry was born during the 13th International Infant Cry Workshop, titled: “Neurobiology of Infant Crying: Integrating Genes, Brain, Behavior, and Environment,” held in July 2017 in the medieval Castel Noarna, Trento, Italy. The International Infant Cry Workshop is a meeting entirely dedicated to the study of infant cry, its causes, mechanisms, and effects. The meeting, usually attended by a small dedicated group of about 50 researchers from different continents with different scientific backgrounds, has a tradition that goes back to four decades (the first Cry workshop was held in 1971, in Lavenham, UK). The authors of this Special Issue wish to thank all the participants of the 13th International Infant Cry Workshop, as well as all those who have supported all the previous workshop convocations creating a legacy that has deeply influenced many scholars who study infant cry. The ideas and opinions expressed herein are those of the authors alone, and endorsement by the authors’ institutions is not intended and should not be inferred.

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