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Bringing nuanced parent-child observation to scale

Bonamy R. Oliver & Alison Pike

Childhood socio-emotional and behavioural problems have severe consequences for individuals, families, schools and services (e.g., Costello & Maughan, 2015; Tejerina-Arreal, Parker, Paget, Henley, Logan, Emond & Ford, 2020). Improving our understanding of the mechanisms associated with the onset and maintenance of these adjustment problems is crucial. The important role of the relationships between parents and their children is undisputed over decades of research, and parents are considered primary change agents (e.g., World Health Organisation, 2009). Broadly speaking, a parenting environment characterised by warmth, responsiveness and consistent and sensitive discipline is associated with increased child behaviour regulation and social competence, while children experiencing parental negativity, criticism, and inconsistent and harsh discipline are at increased risk for a range of psychological difficulties (Maccoby, 2015). However, parent-child relationships are complex, and there remains much to learn about their characterisation in the contemporary context (e.g., Lunkenheimer & Leerkes, 2015).

Two commonly used methods to capture parent-child processes are self-reports and observations of parents with their children. Self-reports yield ostensibly similar parenting constructs to those gleaned from observing parents with their children (e.g.,

parental warmth, sensitivity, harshness). However, these different methods show distinct associations with children's adjustment and weak associations with each other (Hendriks, Van der Giessen, Stams, & Overbeek, 2018; Schofield, Parke, Coltrane, & Weaver, 2016), such that multiple-method approaches are preferable. Self-reports have the advantage of being relatively easily and cheaply collected even on a global scale, the more so now that it is possible to distribute questionnaires online. In contrast, parent-child observations are expensive because the rigorous, fine-grained assessments currently available require home or lab visits that are costly in terms of time, travel and equipment, as well as having a less than friendly carbon footprint. Naturally, these restrictions are particularly significant for large and diverse studies, and they commonly rely on self-report since the resource-efficient and scalable observation methods needed are in short-supply. Technological advance may hold the key. Yet, while the opportunities afforded by the Internet and by ubiquitous screen use are increasingly capitalised on in science and practice alike, so far, parent-child observation research has lagged behind.

We introduce to the field a novel approach for observing parents with their children -- Etch-a-Sketch Online (ESO; Oliver & Pike, 2019). ESO is an innovative, online direct-observation tool, grounded in well-established and widely-used methodology (Deater-Deckard, 2000; Jaekel, Pluess, Belsky, & Wolke, 2015; Scott, Nelson, & Dix, 2018), but administered and recorded through the Internet. Using Internet-hosted communication software, ESO allows researchers to observe and record parents and their children interacting using a game-like technological interface. For the first time, ESO affords the observation of parent-child interactions in the family home, whilst removing the need for specialised equipment and travel, maximising resources,

reducing researcher time and improving the carbon footprint of research. The richness of the arising data allows numerous approaches to coding and may open the door to online assessment of parent-child processes, facilitating scale and reach for the study of families in contemporary contexts.

A key aim of our work was to make ESO freely available, and, as such, the tool is open-source. In our paper (Oliver & Pike, 2019), we present how to access ESO, as well as full protocol information. In addition, in two connected studies, we aim to demonstrate ESO's practical and scientific potential, presenting preliminary convergent and predictive validity using brief interactions, standard drawing stimuli, and a global coding scheme (Deater-Deckard, 2000). Importantly, the flexibility of the tool means that, depending on individual study aims, ESO can be used for any length of parent-child interaction, any drawing stimuli, and any chosen global or detailed coding scheme.

We encourage researchers interested in parent-child dynamics to use ESO. We are ambitious to augment and shape ESO to individual research need, and are currently using collaboration with interested colleagues to develop, extend and modify the methodology to ensure it is appropriate for a range of study designs and objectives. If you are interested, please see Oliver & Pike, 2019, and contact the first author (Twitter: @bonamyoliver; Email: b.oliver@gold.ac.uk)

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