



Article  
scientifique

Revue de la  
littérature

2025

Published  
version

Open  
Access

This is the published version of the publication, made available in accordance with the publisher's policy.

---

## A scientometric review of the scientific literature on child effects on adults: Topics of interest and areas for development in psychological research

---

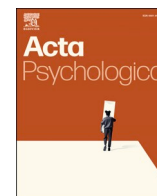
Kalogirou, Eleni; Gentaz, Edouard

### How to cite

KALOGIROU, Eleni, GENTAZ, Edouard. A scientometric review of the scientific literature on child effects on adults: Topics of interest and areas for development in psychological research. In: Acta psychologica, 2025, vol. 255, p. 104897. doi: 10.1016/j.actpsy.2025.104897

This publication URL: <https://archive-ouverte.unige.ch/unige:183896>

Publication DOI: [10.1016/j.actpsy.2025.104897](https://doi.org/10.1016/j.actpsy.2025.104897)



# A scientometric review of the scientific literature on child effects on adults: Topics of interest and areas for development in psychological research<sup>☆</sup>

Eleni Kalogirou<sup>a,\*</sup>, Edouard Gentaz<sup>a,b,c</sup> 

<sup>a</sup> Laboratory of Sensory-motor Affective and Social Development (SMAS), Faculty of Psychology and Educational Sciences (FPSE), University of Geneva, Switzerland

<sup>b</sup> Swiss Center of Affective Sciences (CISA), University of Geneva, Switzerland

<sup>c</sup> Centre National de la Recherche Scientifique (CNRS), Paris, Île-de-France, France

## ARTICLE INFO

### Keywords:

Child effects  
Child influence  
Child-parent relationship  
Review

## ABSTRACT

Considerable effort has been devoted to understanding how parents influence child development. Less attention has been given to the effects that children exert on their parents. This review aims to systematically survey the links between scientific articles exploring this question. Results of a document co-citation analysis reveal that research on this topic has been scarce and primarily concerned by how child and adolescent disruptive behaviour negatively impacts parents. Academic attention is directed to research that conceptualizes child effects as the outcome of genetic or temperamental predispositions. The implications of such a constrained view of child influence are discussed, highlighting the need for applied research on how children can actively contribute to positive behavioural change in parents and other adults.

## 1. Introduction

### 1.1. Child effects: origins and current perspectives

The idea that children can influence adult, and more specifically parental behaviour has its roots in Bell's (1968) review *A reinterpretation of the direction of effects in studies of socialization*. In this seminal paper, Bell initiated a paradigm shift in the study of socialization processes by simply stating that parental behaviour does not solely determine child outcomes, but it is also highly influenced by and dependent upon child characteristics and behaviour. According to his *Control-System Model*, both parent and child possess a set of behavioural manifestations that are activated in response to the other party's behaviour (Bell & Chapman, 1986). The goal being to maintain balance within the relationship, child and parent both try to regulate each other's responses and control excessive behavioural manifestations. Such behavioural sequences can be observed from the very first days of life, in parental reactions to the newborn's cry or to their long moments of silence (Bell & Harper, 2020). Usual parental responses include taking a crying newborn in one's arms to calm down, or checking on and stimulating a newborn that has been quiet for an unusual amount of time. Bell's work

became the springboard for a new line of research exploring the role of the child within the parent-child dyad. The first experimental studies focused on exploring adult or parental responses in the areas of dependence, discipline, and responsiveness by experimentally manipulating the child's behaviour (Bates, 1976; Buss, 1981; Osofsky & O'Connell, 1972).

*Social Relational Theory* (Kuczynski & De Mol, 2015) posits that parents and children are active agents who are developing in and equally contributing to a long-term relationship that exists within a certain cultural context. Even though researchers still try to determine the magnitude of each party's influence and the extent to which this influence is self-conscious, there is a consensus that the parent-child relationship is characterized by bidirectional influences on physiological and behavioural levels across both cognitive and affective dimensions (Paschall & Mastergeorge, 2016).

The way we perceive the child's role, whether as an active source of influence or a passive recipient of it, extends beyond the parent-child relationship and bears a stronger significance for society as well. This perspective profoundly influences our decision-making processes and shapes the design and implementation of educational and intervention programs. More than half a century after Bell's (1968) seminal paper, it

<sup>☆</sup> The authors would like to thank the Faculty of Psychology and Educational Sciences (FPSE), University of Geneva for the continuous support in their work.

\* Corresponding author at: Faculty of Psychology and Educational Sciences (FPSE), University of Geneva, Uni Mail, 40 Boulevard du Pont-d'Arve, 1211 Genève, Switzerland.

E-mail address: [eleni.kalogirou@unige.ch](mailto:eleni.kalogirou@unige.ch) (E. Kalogirou).

<https://doi.org/10.1016/j.actpsy.2025.104897>

Received 20 October 2024; Received in revised form 28 February 2025; Accepted 10 March 2025

Available online 13 March 2025

0001-6918/© 2025 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

seems worthwhile to reflect upon the progress made in the study of child effects within our discipline and contemplate future directions for research and practice.

## 1.2. The present review

The purpose of the present review is to provide a comprehensive overview of the current state of research on child effects. Our objective is to identify pivotal topics of interest, influential studies, as well potential areas for further development within the discipline. In pursuit of this objective, we decided to adopt a scientometric approach and conduct a Document Co-Citation Analysis (DCA) (Chen, 2016; Chen et al., 2010). The outcomes of this analysis are anticipated to offer insights into the most frequently referenced works and to unveil evolving thematic trends within the field of child effects by creating interlinked networks of co-cited references. With children assuming more and more active roles within both familial and societal contexts, it seems imperative to explore and reflect upon how child effects have been conceptualized and studied over the course of time and to illuminate the works that have received the greatest attention within the academic community.

## 2. Methods

### 2.1. Search strategy and data collection

The Web of Science Core Collection (WoSCC) has been recognized as a highly suitable database for conducting scientometric analysis (Mongeon & Paul-Hus, 2016). The database was accessed on the 21st of September 2023. The search encompassed all available sources within the WoSCC database, employing the search terms ‘child effects’ OR ‘child influence’ in ‘all fields’. We opted to narrow our search terms to these keywords, without including broader terms such as ‘bidirectionality’, in order to target research designed explicitly to examine child effects. Additionally, our focus was specifically on developmental periods beyond early infancy, which guided our decision to use search terms centered on “child” rather than “infant” influences. Publication types were limited to ‘article’, and language to ‘English’. The search resulted in a total of 229 citing records published between January 1964 and November 2023 which were extracted, along with cited references, to a plain text file.

### 2.2. Data import

Records were imported into CiteSpace (version 6.1.R2) to proceed with analysis (Chen, 2016). The software detected a total of 10'057 references cited by the 229 citing records. Of these, 9'852 (97.96 %) were considered as valid due to the presence of identifying information. Invalid references were excluded from the analysis.

### 2.3. DCA configuration parameters and metrics

When conducting a DCA, CiteSpace detects and visualizes clusters of documents that are frequently cited together by a third source (Small, 1980). The underlined theoretical assumption of DCA is that documents that are cited together regularly most probably explore the same concept (Chen et al., 2010).

The maximum number of links that a node (reference) is allowed to form (L/N), or time retention criteria about which cited references of source (citing) articles will be included (LBY) are parameters that will determine the network's nature and structure. Citespace provides default values for these parameters which can be modified in order to obtain better networks (Chen, 2016). For the final DCA, default values of such properties were maintained, as they provided the most balanced network structure while preserving meaningful co-citation relationships. Alternative configurations were tested, but they did not significantly improve the interpretability of clusters.

The criteria for selecting nodes are also crucial parameters that will determine which references will be included in the network. Citespace offers various criteria for node selection. We opted for the *g-index* as it does not solely concentrate on maximum citation counts within a certain time frame, but also considers the global distribution of citations in the dataset (Egghe, 2006). Publications are arranged in descending order according to their citation counts. The *g-index* equals the sum of the most cited *g* articles that have collectively received at least  $g^2$  citations. We conducted multiple DCAs with varying values of the scaling factor *k* for the *g-index*, specifically at 125, 100, 75, 50, 25 and 15. The optimal network was identified based on its metrics, and it was generated by setting *k* for the *g-index* to 75, as this value provided the best balance between cluster granularity and network cohesiveness.

Citespace uses three metrics to calculate the balance and significance of a network's structure. The *average silhouette score* (*S*) is an index of both the homogeneity within individual clusters (groups of nodes), as well as the distinction between clusters within a network. It is measured on a scale from −1 to 1, with values closer to 1 signifying a greater level of accuracy in clustering (Chen, 2016). The *modularity Q* indicates the extent to which a network can be deconstructed into clusters (Chen et al., 2010). Its values range from 0 to 1, with higher values suggesting better network structure. *Betweenness centrality* illustrates a node's importance in connecting two other random nodes in the network. Its values range from 0 to 1, with higher values denoting a paper's higher influence (Chen, 2022).

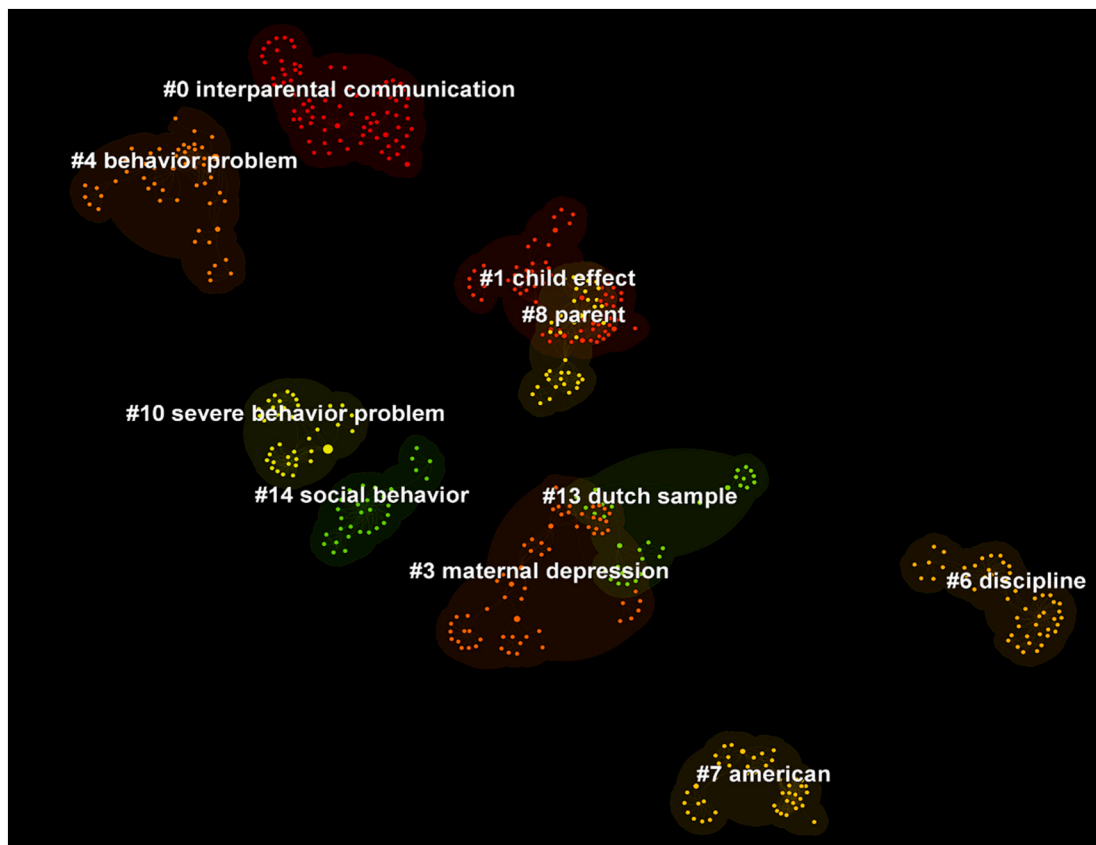
Citespace also uses several temporal metrics that outline research trends and concept evolution over time. *Sigma* ( $\Sigma$ ) is calculated using this equation  $(centrality + 1)^{burstness}$  and is an index of a publication's innovation. It has a minimum value of 1 and higher values indicate greater novelty (Chen et al., 2010). *Citation burstness* refers to sudden spikes in the number of citations a publication receives at a specific period, signifying more attention from the academic community (Chen et al., 2009).

## 3. Results

Our final network of 1'819 nodes (references) and 5'753 links contained citing articles from the WoSCC records, as well as cited work detected in their reference lists. The final network displayed very good metrics: an *average silhouette score* of 0.9865 and a *modularity Q* score of 0.9702. These values suggest that the network can be deconstructed into separate clusters characterized by both intra-cluster homogeneity and inter-cluster distinctiveness. In total, the final network revealed ten prominent clusters. Citespace also automatically generated log-likelihood ratio (LLR) labels for each cluster (Fig. 1). Metrics for each cluster are presented in Table 1. No reference in the final network exhibited a citation burst.

Due to space constraints, it is not feasible to comprehensively address all clusters in this review paper. Therefore, the following section will specifically focus on the four largest clusters (#0, #1, #3, #4). Table 2 displays metrics for the most representative source articles within the four major clusters. *Global Citing Score* (GCS) refers to the sum of citations that the publication has received in WoSCC. *Local Citing Score* (LCS) is the citation count of the publication in this study's dataset, while *Coverage* refers to the number of references cited by the source publication.

After reviewing the final database extracted from CiteSpace, we manually excluded certain cited literature from the cluster discussion to ensure that only references contributing to theoretical and empirical discussions on child effects were retained. For cluster #0, 1 cited document was excluded from discussion because it could not be identified ( $N = 1$ ; 1.22 %), 7 focused on statistical methods ( $N = 7$ ; 8.54 %), 1 was a software user guide ( $N = 1$ ; 1.22 %) and 1 was a diagnostic manual ( $N = 1$ ; 1.22 %). For cluster #1, 5 documents could not be identified ( $N = 5$ ; 7.04 %), 1 was a diagnostic manual ( $N = 1$ ; 1.41 %) and 2 referred to statistical methods ( $N = 2$ ; 2.82 %). For cluster #3, 1 document could



**Fig. 1.** Visual representation of the optimal DCA network of nodes, with prominent clusters arranged by color.

**Table 1**

Metrics of the DCA network's 10 prominent clusters.

Cluster ID	Size	Silhouette	Mean year	LLR label	Proposed label
0	82	0.99	2007	Interparental communication	Parental conflict
1	71	0.958	2002	Child effect	Parental negativity and behaviour
3	63	0.979	2007	Maternal depression	Parental depression and household chaos
4	53	0.997	2012	Behaviour problem	Parenting style and scaffolding
6	51	1	2002	Discipline	
7	46	0.999	2009	American	
8	41	0.984	2004	Parent	
10	38	0.986	1992	Severe behaviour problem	
13	33	0.99	2001	Dutch sample	
14	31	1	1995	Social behaviour	

not be identified ( $N = 1$ ; 1.59 %) and 1 was a statistical software guide ( $N = 1$ ; 1.59 %). For cluster #4, 2 documents could not be identified ( $N = 2$ ; 3.77 %) and 3 addressed statistical methods topics ( $N = 3$ ; 5.66 %).

#### 4. General discussion

##### 4.1. Cluster #0: parental conflict

Representative articles of this cluster explore parental conflict and its relationship to child disruptive behaviour (Amato & Cheadle, 2008; Hawkins et al., 2007; Wymbs, 2011). Longitudinal survey data support a socialization model in which parent-reported conflict and divorce

**Table 2**

Citing articles and metrics for clusters #0, #1, #3 and #4.

Cluster	Citing article	Year	GCS	LCS	Coverage
#0	Wymbs	2011	12	0	13
	Hawkings et al.	2007	103	0	12
	Amato and Cheadle	2008	75	0	12
#1	Jaffee et al.	2004	194	0	20
	Frye and Garber	2005	72	0	19
	Larsson et al.	2008	160	0	13
#3	Forbes et al.	2008	29	0	12
	Gross et al.	2008	80	0	15
	Choe et al.	2014	25	0	13
#4	Hanscombe et al.	2011	49	0	13
	Raposa et al.	2011	27	0	9
	Lansford et al.	2018	62	0	18
	Lippold et al.	2019	7	0	8
	Eisenberg and Vidmar	2010	62	0	7

individually predict child behavioural problems (Amato & Cheadle, 2008). Cited literature in this cluster suggests that child internal representations and emotional security with regard to the parental bond may explain this relationship (Cummings et al., 2006, 2008). Strict parenting practices have also been found to mediate the association between mother-reported marital relationship quality and other-reported child disruptive behaviour (Chang, Lansford, Schwartz, & Farver, 2004). During preschool, parental conflict seems to impact affective aspects of parenting, like maternal acceptance (Davies et al., 2004). In contrast, as children enter childhood, this conflict begins to influence child behavioural problems through the emergence of harsher disciplinary practices and increased parent-child arguments (Gerard et al., 2006). Similar explanatory processes have also been proposed for youth internalizing behaviours (Krishnakumar et al., 2003).

If parental conflict affects child externalizing behaviours through

more controlling parenting practices, then it is important to consider the possibility that such parental arguments are about the child. Indeed, [Jenkins et al. \(2005\)](#) found that, from childhood to late adolescence, it was child relevant - and not general - interparental conflict that predicted child behavioural problems; interestingly, the latter was also a significant predictor of child relevant parental conflict.

From a child effects perspective, results of early studies made clear that an infant's negative temperament may affect both mothers and fathers on an individual level, which in turn leads to self and partner representations that are menacing to the marital relationship ([Crockenberg & Leerkes, 2003](#)). [Wymbs \(2011\)](#) used partner-reported and observational data in an experimental paradigm where parents interacted with child-trained confederates. The study revealed that child disruptive behaviour influenced partner representations of parenting, primarily leading to negative parenting practices and subsequent negative inter-parent communication. Interestingly, in the unlikely case where disruptive behaviour elicited positive partner communication, the relation was mediated by parental positive perceptions of their partner's parenting, especially for parents of children with Attentional Deficit Hyperactivity Disorder (ADHD); yet observational data did not confirm that the partner engaged indeed in better parenting. Even though parental perceptions of partner's positive parenting may not always be accurate, in the context of a permanent condition that affects child behaviour such representations may reflect a supportive inter-parent relationship and can counteract the child disruptive behaviour effects on parental conflict.

When studying the parental conflict – child aggression interplay, it is easy to wonder whether there is a genetic component that could explain the association between the two. [Amato and Cheadle \(2008\)](#) found no significant differences between adopted and biological children, leaving uncertainty about the heritable or environmental factors behind the link between parental conflict and child behavioural problems. Adoptive parents have been found to report equal levels of disagreement, yet higher marital satisfaction and less stress than biological parents ([Ceballo et al., 2004](#)). Couples seeking adoption are typically older, more financially stable, and undergo a strenuous process to become parents, potentially strengthening their emotional bond, fostering positive partner representations, and shielding them from the negative impact of child aggression on parent communication ([Hamilton et al., 2007](#)).

Intense and prolonged parental conflict can sometimes lead to divorce, resulting in significant changes in family structure and living conditions. While disparities in well-being between children of divorced parents living with a stepparent and children living with married parents appear to diminish when considering parental and financial resources, this is not the case for adolescents. For them, living in a stepfamily is linked to lower levels of well-being and reduced school engagement ([Brown, 2004](#)). In [Jenkins et al. \(2005\)](#), adolescent disruptive behaviour significantly predicted higher rates of couple conflict, especially in stepfamilies. Maintaining a strong positive relationship with the biological non-resident father can act as a buffer for many negative internalizing, as well as externalizing outcomes for the adolescent, especially when the mother-adolescent relationship is disrupted as a result of the new stepfamily dynamics ([Fanti et al., 2008](#); [King & Sobolewski, 2006](#)). [Hawkins et al. \(2007\)](#) revealed how adolescent self-esteem, disruptive behaviour and academic achievement predict non-resident paternal engagement in the adolescent-father relationship. Adolescent disruptive behaviour and low self-esteem predicted less paternal contact and engagement in shared activities one year later, while contact and communication frequency from the father's side increased after the adolescent's academic success. Although there was no support for reciprocal or parent-to-adolescent effects in non-resident fathers, reciprocal effects were confirmed between adolescent self-esteem, as well as academic performance, and paternal engagement in resident fathers.

When studying parental conflict and child disruptive behaviour within a nuclear family structure, a transactional approach considering

both child and parent as potential sources of influence may be more suitable ([Kuczynski & De Mol, 2015](#)). Nevertheless, a child-effects approach might be more relevant when examining parental engagement in relationship to child wellbeing in families that present a structure other than the traditional one.

#### 4.2. Cluster #1: parental negativity and behaviour

The most cited articles in this cluster focus on how child disruptive behaviour affects parenting practices and to what extent such effects are determined by the child's genetic predispositions ([Forbes et al., 2008](#); [Frye & Garber, 2005](#); [Jaffee et al., 2004](#); [Larsson et al., 2008](#)). From a parent driven effects perspective, maternal depression has been associated with increased criticism towards the child and both have been found to individually predict child and adolescent maladjustment ([Bolton et al., 2003](#); [Brennan et al., 2000](#); [Nelson et al., 2003](#)). Even though the presence and severity of maternal depression have been associated with negative outcomes for offspring wellbeing in the long-term, physiological indices of a child's withdrawal affective tendency combined with frequent behavioural manifestations of negative affect have also been related to an increase of depressive symptoms in mothers with a long history of depression ([Forbes et al., 2008](#); [Frye & Garber, 2005](#)). In support of the child-effects approach, [Frye and Garber \(2005\)](#) suggest that adolescent aggression and delinquency mediate the relationship between maternal depression and maternal criticism. Since adolescent behaviour was measured through maternal self-report, and adopting a diathesis-stress approach of depression, it is possible that depressed mothers may have a greater tendency to perceive noticeable aggressive behaviours in their children, which in turn can immediately elicit responses of maternal criticism ([Hooley & Hiller, 2000](#)). Additive models in which maternal depression history was combined with either adolescent externalizing or internalizing symptoms, and which were tested for their effects on maternal criticism practices, were confirmed longitudinally; thus, supporting a reciprocal perspective in which child aggressive behaviour elicits immediate responses of maternal criticism and together they longitudinally and dynamically contribute to the course of depression. It cannot be concluded however that such child effects are due to a genetic component that predisposes children of depressed mothers to affective withdrawal and disruption.

Representative research in this cluster also explores to what extent child antisocial behaviour effects on parenting practices and affect are genetically or environmentally determined ([Jaffee et al., 2004](#); [Larsson et al., 2008](#)). Such variance decomposition of genetic and environmental effects can be carried out by studying monozygotic (MZ) and dizygotic (DZ) twins. Behaviour genetic research evidence provides an overall support for a strong genetic influence on child antisocial behaviour ([Arseneault et al., 2003](#); [Moffitt, 2005](#)). Nonetheless, even after controlling for the influence of the genetic component, maternal negativity and absence of warmth are still significant predictors of child antisocial behaviour, suggesting that environmental factors can causally contribute to child maladjustment ([Caspi et al., 2004](#)).

Heritable characteristics in children significantly contribute to the association between negative parental affect towards the child and the child's antisocial behaviour, both over time and in the short term. The relationship between parental negativity and child antisocial behaviour seems to be bidirectional and strongly influenced by genetics ([Larsson et al., 2008](#)). [Knafo and Plomin \(2006\)](#) discovered that low child prosocial behaviour is related to harsher parenting through genetic factors, while high child prosocial behaviour is linked to positive parenting practices, primarily through shared environmental experiences. Thus, it could be assumed that harsher parenting and negative affect is the result of the child's genetically determined antisocial behaviour, while child prosocial behaviour results from positive parenting practices. It seems contradictory however that, a genetic predisposition would explain one extreme of the phenotypic expression continuum and not the other within the same sample. Likewise, aggressive antisocial behaviour,



which is known for its consistent developmental trajectory, exhibits a primarily genetic influence during childhood. However, during adolescence, it becomes evident that the phenotype results from an interplay of both shared environmental factors, such as negative parenting practices, and genetic predisposition (Eley et al., 2003). A simple interpretation could be that aggressive children will elicit negative parenting practices due to their genetic makeup early in development, and these will in turn further contribute to adolescent aggression. An alternative interpretation however could be that, genetically predisposed to aggression children will present better behavioural outcomes during adolescence after exposure to positive parenting practices.

Genetic predispositions may be activated in certain environmental conditions and not in others. This gene – environment interaction results in big, confounded estimates of genetic influence especially when behaviour is measured during childhood. In Jaffee et al. (2004), antisocial heritable characteristics in 5-year-old children partially explained (along with shared environments) parental practice of corporal punishment, but not maltreatment. Variation in maltreatment, which results in severe physical injury for the child, was almost entirely explained by shared environmental factors in the study. Nevertheless, these findings describe a specific, high-risk sample of early childbirth mothers and need to be generalized with caution (Trouton et al., 2002). Early childbirth has been associated with more financial difficulties and mental health challenges (Moffitt and E-Risk Study Team, 2002). In the case of corporal punishment, big estimates of genetically determined child influence may result from its interaction with risky environmental factors. In the case of maltreatment, the ‘risky environment’ may overshadow genetic influences that may protect the child from engaging in antisocial behaviour (Caspi et al., 2002). Within this context however, children are either passive emitters of influence through their genes or receptors of parent shaped environmental influences that could also be genetically determined to a certain extent (Neiderhiser et al., 2004; Wade & Kendler, 2000).

An important limitation of the cluster's behavioural genetics studies is that information on child and parent behaviours was collected through parental self-report measures (Jaffee et al., 2004; Larsson et al., 2008). Therefore, results only reflect parental perceptions of twin similarity. In Larsson et al. (2008), parents did not even fill the questionnaires for the younger twin; they only had to answer to questions about the older twin and were simply asked whether they felt similarly for the younger one.

#### 4.3. Cluster #3: parental depression and household chaos

Most representative articles in this cluster focus on the effects between parental depression and child psychopathology (Choe et al., 2014; Gross, Shaw, & Moilanen, 2008; Raposa et al., 2011). Determining the direction of effects between the two, across development, is not a simple task since the relationship is dynamic. Toddlerhood can be a particularly stressful period for parents, who are trying to impose boundaries on their toddler's growing physical activity. In Gross, Shaw, Moilanen, Dishion, & Wilson, 2008, toddler non-compliance at the age of two years old was positively associated to maternal depression; a similar trend was present for paternal depression, thus providing support for reciprocal influences. Bidirectional effects were also found for maternal depression and five- to six-year-old children's aggressive behaviour. Similar effects between maternal depression and toddler oppositional behaviour from two to three years old were also found in Choe et al. (2014).

From a developmental perspective of child effects, toddler non-compliance at 18 months significantly predicted the trajectory of maternal depression over an eight-and-a-half-year period (Gross et al., 2009). Similarly, other-rated child oppositional behaviour at two years old predicted maternal depression three years later, with the effect being mediated by the child's ability of inhibitory control at the ages of three and four (Choe et al., 2014). When it came to mother ratings though, the

same ability, at age three, mediated the effect of maternal depression at two years old on child oppositional behaviour at age four. Interestingly, there was no association between changes in both behaviours over the three-year period.

Analogous child influences on maternal depression have also been found in adolescent samples. Adolescent number of diagnoses at the age of fifteen predicted the presence of maternal depression and the number of depressive episodes five years later, with child-related acute and chronic stress individually fully mediating the former relationship (Raposa et al., 2011). Adolescent aggression at eleven years old has been found to influence maternal depression one year later; yet the inverse pattern was confirmed between the ages of ten and eleven (Gross, Shaw, & Moilanen, 2008). Earlier in development, the presence of maternal depression up to three months postpartum predicted child violent behaviour, which was associated with ADHD symptomatology and self-regulation problems, at eleven years old; and this, especially in the presence of additional depressive episodes during these years (Hay et al., 2003). Finally, chronic and severe maternal depression appears to predict adolescent antisocial and externalizing symptoms, while this is not the case for internalizing symptomatology (Gross et al., 2009).

Adolescents with mothers presenting a history of depression have a greater risk of developing depression themselves, with severity of maternal depression being more important than chronicity, and timing of exposure being unimportant (Hammen & Brennan, 2003). For toddlers, other-reported paternal depression symptoms have been associated with concurrent child internalizing behaviours at four years old (Gross, Shaw, Moilanen, Dishion, & Wilson, 2008). Overall, the presence of parental depression symptomatology increases the risk for child non-compliant and adolescent externalizing problems, which in turn have an impact on parental depressive trajectories. Alternately, parental depression appears to either precede or occur simultaneously with child/adolescent internalizing psychopathology.

As previously mentioned, the phenotypic expression of a genotype heavily relies on environmental experience. In the case of depression, having a specific 5HTT gene variant will increase the risk of developing depression for an individual only after exposure to childhood trauma (Caspi et al., 2003). A child or adolescent that might be genetically predisposed to develop a sort of psychopathology will actively engage in a certain way with a safe and stable environment, and differently with a risky and unstable one. For example, parental depression has been associated to marital conflict, which can result to noisy fights, interruption of routines and a generally unstable environment (Cumplings et al., 2005; Elgar et al., 2004). A genetically predisposed child may perceive this environment as menacing and either passively respond to it by occasionally retracting (internalizing), or actively react to it in aggression (externalizing); actions that will inevitably counter impact the marital relationship and depressive symptoms (Cui et al., 2007). Thus, creating a vicious circle. However, in the presence of a safe environment such genetically determined child-driven mechanisms that contribute to the development of psychopathology may not be activated.

One of the most cited articles in this cluster explores how chaotic circumstances in the household relate to children's academic performance (Hanscombe et al., 2011). Cited literature suggests that a lack of daily routine and structure, which is usually provided by parents, negatively impacts young children's performance in academic tasks, as well as parent reported adjustment, through bad sleep (Brown & Low, 2008; Coldwell et al., 2006). Extending these findings, Hanscombe et al. (2011) reported that perceptions of household chaos in twin pairs was a negative predictor of teacher-reported academic performance and remained stable over a three-year period. Furthermore, one third of the variance in this association seemed to be explained by genetic factors, the rest being explained by shared environment.

Gene-environment correlation refers to the notion that individuals actively select or passively experience environments in a way that is consistent with their genotype (Kendler & Baker, 2007). From that perspective, genetic influence in chaos-academic performance

associations could be partly explained by a child being genetically predisposed and passively accepting parental tendencies to live in chaos, which in turn undermine academic achievement. Alternatively, children's genetic predisposition to non-compliance could lead them to actively create disorder in their environment by not cooperating with adults, who ultimately accept chaotic living circumstances in order to avoid conflict.

Even though the concept of gene-environment correlation remains deterministic in nature, with genetic predisposition shaping environmental experience, it allows some room for reflection on the gene-environment interplay considering associations between parental depression, child psychopathology, household chaos and academic achievement. Shared environments in twin studies seem to explain approximately one sixth of internalizing and externalizing symptomatology in children and adolescents. In support of children's active role in experiencing their environments, no difference has been identified between adopted and biological children (Burt, 2009).

#### 4.4. Cluster #4: parenting style and scaffolding

Toddler self-regulatory abilities seem to influence the way that mothers provide verbal guidance during task resolution (Eisenberg et al., 2010), while child and adolescent behavioural problems seem to impact central dimensions of parenting styles (Lansford et al., 2018; Lippold et al., 2019).

Voluntary processes of emotion self-regulation seem to develop at a fast rate in toddlers and young children, while they also manifest a relative stability in individual differences across development after the first year of life (Eisenberg, Spinrad, & Eggum, 2010). Effortful control refers to a child's ability to direct attention and intentionally activate or inhibit a behaviour; it describes a dispositional tendency that grows rapidly during toddlerhood. Combining a multi-reporter with an observational approach, Eisenberg et al., 2010 found that perceived levels of toddler's effortful control at 18 months strongly predicted frequency of different verbal strategies used by mothers in helping their child complete a task. Specifically, high initial levels in child effortful control predicted a more frequent use of maternal questions and verbalizations that assisted the child's comprehension of the task, and less direct instructions about what the child should do. Evidence of the importance of a child's early regulatory skills on parenting have also been found during infancy, with parents of infants who experience difficulties during the first year of life engaging in more negative parenting practices at 18 months (Bridgett et al., 2009).

Evidence in support of mother-directed effects principally refer to dimensions of parenting styles. In older children, starting primary school, low levels of effortful control have been associated with lower levels of maternal responsiveness at the age of two years old; extreme levels of maternal control were also found to negatively affect the growth rate of involuntary processes of self-regulation (Graziano et al., 2010). Regarding the dimension of control, pre-schoolers with parents who scored high on psychological control (favoured suppression of emotion in their children) were more restrained in their affective reactions in a series of emotion-elicitation tasks (Louie et al., 2013).

Taken together, there seems to exist a particular moment early in development where child temperamental emotion regulation ability will strongly shape initial parental perceptions and behavioural responses. For infants who experience more difficulties, there is a greater probability for aversive parental responses, which will in turn result in negative affective experiences that the toddler finds difficult to manage. Consequently, parents will respond negatively to this behaviour, thus creating a vicious circle that can, in the long-term, shape parental behaviour across dimensions which define the general parenting approach/style. It is likely though that the quality of initial parental responses could be improved with education and developmentally appropriate interventions. For example, pre-schooler's emotion regulation abilities and maternal scaffolding emerged as the best predictors of

social competence measured two years later in children with a developmental delay; even though, this was not the case for typically developing children (Baker et al., 2007). It seems like although genetically predisposed children will suffer negative outcomes within adverse environmental circumstances, at the same time they can benefit the most from growth fostering environments. We could hypothesize that parents of children with developmental delay tend to seek for and receive more parental support and training, which could result in better behaviour and emotion management skills. In designing and implementing such interventions, it is important to consider both parents (fathers are massively underrepresented in early childhood research) and how the different ways that they engage in emotional talk with their toddlers interact with child temperamental trends in shaping emotion regulation patterns later, in childhood and adolescence (Denham et al., 2010).

Low emotion self-regulation ability has been associated with concurrent and future externalizing problematic behaviours in childhood and adolescence (Eisenberg, Spinrad, & Eggum, 2010). While at the beginning of schooling, there seem to be reciprocal effects between parenting practices and child disruptive behaviour, the latter emerges as a consistent predictor of parental hostility until the age of 8 years old (Besnard et al., 2013). Child behavioural problems have also been found to predict an authoritarian parenting style (low warmth and high control) between the ages of 8–13 years old across nine different countries (Lansford et al., 2018). The only parent-driven effects observed in this study coincided with child-effects at approximately 9 years old. Specifically, low parental warmth and high parental control were predictive of subsequent child internalizing and externalizing problems one year later. These reciprocal effects seem to be specific to this time of development and to these parenting dimensions. De Haan et al. (2012) also found that high parental over-reactivity and low warmth at 9 years old predicted late adolescent aggression and vice versa.

Even though parenting style does not seem to determine child problematic behaviour in early and middle childhood, its significance becomes more pronounced during late childhood, and its effects become evident during adolescence. It is parental harshness exerted around the age of 10 years old that significantly predicts adolescent externalizing behaviours at 15 years old; not parental harshness exerted during adolescence (Bradley & Corwyn, 2013). As externalizing behavioural patterns stabilize during the transition from childhood to adolescence and as adolescents become more and more independent, child driven effects become prominent and result in increases in parental harshness, as well as in decreases in monitoring and productive activity opportunities offered by parents (Bradley & Corwyn, 2013). However, it seems that parental monitoring can positively impact concurrent adolescent externalizing problems, as well as risky sexual behaviour (Bradley & Corwyn, 2013; Dittus et al., 2015).

The notion of consistency within the parenting style dimensions was recurrent in their relationship with adolescent aggression and delinquency. Perceived changes in parental warmth and hostility predicted higher delinquency and substance use in adolescents over a two-year period, especially for girls (Lippold et al., 2018). In support of the proposition that adolescent behavioural challenges can negatively impact parental affect and result in inconsistency in parenting practices, there is also some evidence of young adolescent exerted effects on parental lability two years later (Bornstein & Leventhal, 2015; Lippold et al., 2019). The relationship between concurrent changes in parental warmth and adolescent delinquency appears to be moderated by parental internalizing symptomatology (Lippold et al., 2019). Inconsistency is not solely relevant to the affective aspects of parenting, but also to the behavioural ones, such as monitoring, and particularly knowledge of the adolescent's daily activities, whereabouts, friendships, and worries. Stressed parents report higher inconsistency in knowledge, which is in turn associated with higher risky behaviour for girls, but higher levels of psychological wellbeing for older male adolescents (Lippold et al., 2015). In terms of direction of effects, preliminary results

are in support of parent driven effects, with higher parental knowledge liability during early adolescence predicting higher alcohol and tobacco consumption two years later, as well as higher delinquency and internalizing behaviour for girls (Lippold et al., 2016).

Unfortunately, the cluster did not contain much information on the relationship between parenting approach and child internalizing behaviour, apart from a general association between inconsistent and unresponsive parenting with adolescent internalizing symptoms (Johnson & Greenberg, 2013). Inconsistency in parental acceptance-rejection patterns appears to be associated with both internalizing and externalizing symptomatology in middle childhood and early adolescence (Putnick et al., 2015).

## 5. General conclusion and perspectives

Over the years, research has made a significant effort not only to identify potential child effects within the family structure, but also to discern the specific developmental moments when these effects are more important than parent directed effects. An infant's challenging temperament seems to negatively impact new parent representations of each other and lead to more conflict. Likewise, a child's aggressive behaviour can elicit negative parenting practices, thus reinforcing negative partner representations and contributing to impaired communication and conflict. Finally, adolescent externalizing behaviour appears to significantly influence paternal engagement in the context of divorce. However, it seems that researchers have been less concerned about how such effects impact other adults in the child's life. For example, a preschooler's aggressive behaviour effects may extend beyond the family sphere and impact their interactions with other adults in their proximal environment, such as teachers (Doumen et al., 2008). Such publications have not received much attention from the academic community.

When it comes to how child aggressive behaviour can evoke parental negativity towards the child or specific parenting practices such as criticism and corporal punishment, there seems to be a prevailing perspective that such child effects have a strong genetic component. Even though behavioural genetic designs allow researchers to disentangle bidirectional effects between parenting practices and child behaviour that could be - to a certain extent- genetically determined, they do not take into consideration nonheritable child characteristics that can explain variation in child-effects. Furthermore, from a developmental standpoint, the notion of additive genetic effects suggesting greater similarity in MZ twins compared to DZ twins is incomplete and does not take into consideration gene-environment interactions that may explain and contribute to variations in the phenotype (Briley et al., 2019; Purcell, 2002). Another important consideration is that the data in most behavioural genetics studies mainly come from extensive national surveys, using parent-reports to assess child behaviour. Parental perceptions of twin similarity have been found to be biased for MZ twins (Saudino et al., 2000).

Child externalizing symptoms affect the course of pre-existing parental depression by eliciting additional stress. Taking into consideration, along with the cited literature, that the efficacy of interventions which target child externalizing behaviours depends on maternal depression and child internalizing symptoms, it seems that externalizing symptomatology results from a pre-existing environmental setup (Beauchaine et al., 2005). Thus, child effects that impact the course of parental depression are considered as the result of children's maladaptive reaction to a non-ideal environment created by the adult. Even though it may not seem so, the observation that the relationship between household chaos and child academic performance has a strong genetic component is relevant to the discussion since parental depression can often create chaotic circumstances at home (Elgar et al., 2004). If genetics determine an important part of variability on how children will be affected by or react to a particular environment, child effects are always resulting from either that gene-environment interaction or correlation.

A similar conclusion can be drawn regarding infant and toddler

effortful control effects on parent scaffolding strategies, or child disruptive behaviour negative effects on parental control, warmth, and the consistency of the parenting style. Predominantly evaluating parenting and child behaviours within the overarching concepts of parenting style and temperament, and not through specific behavioural sequences, constrains our perception of child effects (Eisenberg, Spinrad, & Eggum, 2010). Identifying specific verbal scaffolding responses elicited in mothers by toddlers with varying levels of effortful control is important, but it still does not provide information on which specific toddler behaviour elicited a maternal response (Eisenberg, Vidmar, et al., 2010). Acquiring such information is vital in designing interventions and educational programs for parents and/or children that specifically address these effects.

This consideration similarly applies to the effects of disruptive child behaviour on all parenting constructs addressed in this review. Studies employ broad definitions of disruptive behaviour, often using interchangeable terms such as antisocial, disruptive, aggressive, or externalizing behaviour. Furthermore, there is huge variability in the measures used to assess this construct. Another limitation is the heavy reliance on parental—predominantly maternal—reports to assess child behaviour.

It is crucial to highlight that contemporary research on child effects has predominantly focused on the adverse impact of child externalizing behaviours on the overall parental experience and parenting practices. Such effects are mainly conceptualized as passive, stemming from genetic/temperamental predispositions which either interact with adverse preexisting environments or lead children to construct their environments in a way that impels them to behave maladaptively. This narrow perspective could also explain the absence of citation burstness in this review. There is a lack of research, compounded by a paucity of academic focus on the few available articles addressing the question, on how intentional child behaviours can positively impact the parental experience, fostering positive behavioural changes in adults within the family, as well as in the broader societal context (Correa, 2014; Van Den Bulck et al., 2016).

Over the past decade, many educational interventions have been designed for children with the aim of indirectly influencing adult attitude, decision-making and behaviour. Such interventions are based on dialectical models of intergenerational learning which presume that children, as well as parents, can contribute to a common cognitive understanding within the relationship by bringing in information from their own experience (Kuczynski & Parkin, 2007). These programs have yielded noteworthy results in important issues such as, wetland conservation (Damerell et al., 2013), wildlife preservation (Marchini & Macdonald, 2020), as well as breast cancer awareness (Soto-Perez-de-Celis et al., 2017). Nevertheless, these studies primarily rely on self-report measures to assess parental shifts in attitudes and behavioural intentions, without directly testing child effects on adult behaviours. Hence, it is imperative to conduct experimental studies that observe child-parent/other adult behavioural sequences in the transmission of such information with the purpose of creating such educational or prevention programs.

Future research on child effects should consider the role of child intentionality and how children can actively influence parent or other adult thought, affect and behaviour in a positive way. Child attempts of influence are often perceived as accidental outcomes of involuntary reactions, associated with a perceived lack of self-control, and are not recognized as intentional and purposeful behavioural expressions.

To conclude, while our article selection process aimed to isolate child effects as independent variables, the co-citation clustering inherent in our analysis reveals an important methodological constraint: the literature continues to conceptualize child effects alongside parent-driven or dyadic processes. Despite focusing on studies of child influence, the clustering process highlighted the persistence of broader contextual factors—such as parental conflict or maternal depression—that suggest child effects are often framed within the parent-child dynamic. This



tendency to view child effects as fully dependent on parental factors can constrain the scientific understanding by narrowing the focus to variables related to the parent, rather than exploring the developmental abilities of the child that may contribute to initiating positive behavioural changes. To better capture the complexity of child effects, future research should employ mixed methodological approaches that not only consider the influence of parents and other adults but also focus on identifying the developmental variables relevant to the child. These variables, which enable children to positively influence their environment and the behaviour of adults, deserve further attention to help design interventions and educational programs that support children's proactive contributions to family and societal dynamics.

### CRedit authorship contribution statement

**Eleni Kalogirou:** Writing – original draft, Visualization, Methodology, Formal analysis, Conceptualization. **Edouard Gentaz:** Writing – review & editing, Supervision.

### Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this work the first author used Claude 3.7 Sonnet and ChatGPT-4 in order to refine the phrasing of specific methodological explanations and the general conclusion in the discussion section. After using this tool/service, the author reviewed and edited the content as needed and takes full responsibility for the content of the publication.

### Declaration of competing interest

We have no known conflict of interest to disclose.

### Data availability

Data will be made available on request.

### References

- Amato, P. R., & Cheadle, J. E. (2008). Parental divorce, marital conflict and children's behavior problems: A comparison of adopted and biological children. *Social Forces*, 86(3), 1139–1161. <https://doi.org/10.1353/sof.0.0025>
- Arseneault, L., Moffitt, T. E., Caspi, A., Taylor, A., Rijdsdijk, F. V., Jaffee, S. R., ... Measelle, J. R. (2003). Strong genetic effects on cross-situational antisocial behaviour among 5-year-old children according to mothers, teachers, examiner-observers, and twins' self-reports. *Journal of Child Psychology and Psychiatry*, 44(6), 832–848. <https://doi.org/10.1111/1469-7610.00168>
- Baker, J. K., Fenning, R. M., Crnic, K. A., Baker, B. L., & Blacher, J. (2007). Prediction of social skills in 6-year-old children with and without developmental delays: Contributions of early regulation and maternal scaffolding. *American Journal on Mental Retardation*, 112(5), 375. [https://doi.org/10.1352/0895-8017\(2007\)112\[0375:POSSIJ\]2.0.CO;2](https://doi.org/10.1352/0895-8017(2007)112[0375:POSSIJ]2.0.CO;2)
- Bates, J. E. (1976). Effects of children's nonverbal behavior upon adults. *Child Development*, 47(4), 1079–1088. <https://doi.org/10.2307/1128445>
- Beauchaine, T. P., Webster-Stratton, C., & Reid, M. J. (2005). Mediators, moderators, and predictors of 1-year outcomes among children treated for early-onset conduct problems: A latent growth curve analysis. *Journal of Consulting and Clinical Psychology*, 73(3), 371–388. <https://doi.org/10.1037/0022-006X.73.3.371>
- Bell, R. Q. (1968). A reinterpretation of the direction of effects in studies of socialization. *Psychological Review*, 75(2), 81–95. <https://doi.org/10.1037/h0025583>
- Bell, R. Q., & Chapman, M. (1986). Child effects in studies using experimental or brief longitudinal approaches to socialization. *Developmental Psychology*, 22(5), 595–603. <https://doi.org/10.1037/0012-1649.22.5.595>
- Bell, R. Q., & Harper, L. V. (2020). *Child effects on adults*. Routledge, Taylor & Francis Group.
- Besnard, T., Verlaan, P., Davidson, M., Vitaro, F., Poulin, F., & Capuano, F. (2013). Bidirectional influences between maternal and paternal parenting and children's disruptive behaviour from kindergarten to grade 2. *Early Child Development and Care*, 183(3–4), 515–533. <https://doi.org/10.1080/03004430.2012.711597>
- Bolton, C., Calam, R., Barrowclough, C., Peters, S., Roberts, J., Wearden, A., & Morris, J. (2003). Expressed emotion, attributions and depression in mothers of children with problem behaviour. *Journal of Child Psychology and Psychiatry*, 44(2), 242–254. <https://doi.org/10.1111/1469-7610.00117>
- Bornstein, M. H., & Leventhal, T. (2015). Ecological settings and processes in developmental systems. In R. M. Lerner (Editor-in-chief), *Handbook of child psychology and developmental science* (7th ed., Vol. 4). Hoboken, NJ: Wiley.
- Bradley, R. H., & Corwyn, R. (2013). From parent to child to parent...: Paths in and out of problem behavior. *Journal of Abnormal Child Psychology*, 41(4), 515–529. <https://doi.org/10.1007/s10802-012-9692-x>
- Brennan, P. A., Hammen, C., Andersen, M. J., Bor, W., Najman, J. M., & Williams, G. M. (2000). Chronicity, severity, and timing of maternal depressive symptoms: Relationships with child outcomes at age 5. *Developmental Psychology*, 36(6), 759–766. <https://doi.org/10.1037/0012-1649.36.6.759>
- Bridgett, D. J., Gartstein, M. A., Putnam, S. P., McKay, T., Iddins, E., Robertson, C., ... 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>
- Briley, D. A., Livengood, J., Derringer, J., Tucker-Drob, E. M., Fraley, R. C., & Roberts, B. W. (2019). Interpreting behavior genetic models: Seven developmental processes to understand. *Behavior Genetics*, 49(2), 196–210. <https://doi.org/10.1007/s10519-018-9939-6>
- Brown, E. D., & Low, C. M. (2008). Chaotic living conditions and sleep problems associated with children's responses to academic challenge. *Journal of Family Psychology*, 22(6), 920–923. <https://doi.org/10.1037/a0013652>
- Brown, S. L. (2004). Family structure and child well-being: The significance of parental cohabitation. *Journal of Marriage and Family*, 66(2), 351–367. <https://doi.org/10.1111/j.1741-3737.2004.00025.x>
- Burt, S. A. (2009). Rethinking environmental contributions to child and adolescent psychopathology: A meta-analysis of shared environmental influences. *Psychological Bulletin*, 135(4), 608–637. <https://doi.org/10.1037/a0015702>
- Buss, D. M. (1981). Predicting parent-child interactions from children's activity level. *Developmental Psychology*, 17(1), 59–65. <https://doi.org/10.1037/0012-1649.17.1.59>
- Caspi, A., McClay, J., Moffitt, T. E., Mill, J., Martin, J., Craig, I. W., ... Poulton, R. (2002). Role of genotype in the cycle of violence in maltreated children. *Science*, 297(5582), 851–854. <https://doi.org/10.1126/science.1072290>
- Caspi, A., Moffitt, T. E., Morgan, J., Rutter, M., Taylor, A., Arseneault, L., ... Polo-Tomas, M. (2004). Maternal expressed emotion predicts children's antisocial behavior problems: Using monozygotic-twin differences to identify environmental effects on behavioral development. *Developmental Psychology*, 40(2), 149–161. <https://doi.org/10.1037/0012-1649.40.2.149>
- Caspi, A., Sugden, K., Moffitt, T. E., Taylor, A., Craig, I. W., Harrington, H., ... Poulton, R. (2003). Influence of life stress on depression: Moderation by a polymorphism in the 5-HTT gene. *Science*, 301(5631), 386–389. <https://doi.org/10.1126/science.1083968>
- Ceballo, R., Lansford, J. E., Abbey, A., & Stewart, A. J. (2004). Gaining a child: Comparing the experiences of biological parents, adoptive parents, and stepparents. *Family Relations*, 53(1), 38–48. <https://doi.org/10.1111/j.1741-3729.2004.00007.x>
- Chen, C. (2016). CiteSpace: A practical guide for mapping scientific literature. Nova Science Publishers, Inc.
- Chang, L., Lansford, J. E., Schwartz, D., & Farver, J. M. (2004). Marital quality, maternal depressed affect, harsh parenting, and child externalising in Hong Kong Chinese families. *International Journal of Behavioral Development*, 28(4), 311–318. <https://doi.org/10.1080/01650250344000523>
- Chen, C., Chen, Y., Horowitz, M., Hou, H., Liu, Z., & Pellegrino, D. (2009). Towards an explanatory and computational theory of scientific discovery. *Journal of Informetrics*, 3(3), 191–209. <https://doi.org/10.1016/j.joi.2009.03.004>
- Chen, C., Ihekwe-SanJuan, F., & Hou, J. (2010). The structure and dynamics of cocitation clusters: A multiple-perspective cocitation analysis. *Journal of the American Society for Information Science and Technology*, 61(7), 1386–1409. <https://doi.org/10.1002/asi.21309>
- Choe, D. E., Shaw, D. S., Brennan, L. M., Dishion, T. J., & Wilson, M. N. (2014). Inhibitory control as a mediator of bidirectional effects between early oppositional behavior and maternal depression. *Development and Psychopathology*, 26(4pt1), 1129–1147. <https://doi.org/10.1017/S0954579414000613>
- Coldwell, J., Pike, A., & Dunn, J. (2006). Household chaos – Links with parenting and child behaviour. *Journal of Child Psychology and Psychiatry*, 47(11), 1116–1122. <https://doi.org/10.1111/j.1469-7610.2006.01655.x>
- Correa, T. (2014). Bottom-up technology transmission within families: Exploring how youths influence their parents' digital media use with dyadic data. *Journal of Communication*, 64(1), 103–124. <https://doi.org/10.1111/jcom.12067>
- Crockenberg, S., & Leerkes, E. (2003). Infant negative emotionality, caregiving, and family relationships. In A. C. Crouter, & A. Booth (Eds.), *Children's influence on family dynamics: The neglected side of family relationships* (pp. 57–78). Lawrence Erlbaum Associates Publishers.
- Cui, M., Donnellan, M. B., & Conger, R. D. (2007). Reciprocal influences between parents' marital problems and adolescent internalizing and externalizing behavior. *Developmental Psychology*, 43(6), 1544–1552. <https://doi.org/10.1037/0012-1649.43.6.1544>
- Cummings, E. M., Keller, P. S., & Davies, P. T. (2005). Towards a family process model of maternal and paternal depressive symptoms: Exploring multiple relations with child and family functioning. *Journal of Child Psychology and Psychiatry*, 46(5), 479–489. <https://doi.org/10.1111/j.1469-7610.2004.00368.x>
- Cummings, E. M., Schermerhorn, A. C., Davies, P. T., Goeke-Morey, M. C., & Cummings, J. S. (2006). Interparental discord and child adjustment: Prospective investigations of emotional security as an explanatory mechanism. *Child Development*, 77(1), 132–152. <https://doi.org/10.1111/j.1467-8624.2006.00861.x>

- Cummings, E. M., Schermerhorn, A. C., Keller, P. S., & Davies, P. T. (2008). Parental depressive symptoms, children's representations of family relationships, and child adjustment. *Social Development*, 17(2), 278–305. <https://doi.org/10.1111/j.1467-9507.2007.00425.x>
- Damerell, P., Howe, C., & Milner-Gulland, E. J. (2013). Child-orientated environmental education influences adult knowledge and household behaviour. *Environmental Research Letters*, 8(1), Article 015016. <https://doi.org/10.1088/1748-9326/8/1/015016>
- Davies, P. T., Sturge-Apple, M. L., & Cummings, E. M. (2004). Interdependencies among interparental discord and parenting practices: The role of adult vulnerability and relationship perturbations. *Development and Psychopathology*, 16(03). <https://doi.org/10.1017/S0954579404004778>
- De Haan, A. D., Prinzie, P., & Deković, M. (2012). Change and reciprocity in adolescent aggressive and rule-breaking behaviors and parental support and dysfunctional discipline. *Development and Psychopathology*, 24(1), 301–315. <https://doi.org/10.1017/S0954579411000848>
- Denham, S. A., Bassett, H. H., & Wyatt, T. M. (2010). Gender differences in the socialization of preschoolers' emotional competence. *New Directions for Child and Adolescent Development*, 2010(128), 29–49. <https://doi.org/10.1002/cd.267>
- Dittus, P. J., Michael, S. L., Becasen, J. S., Gloppen, K. M., McCarthy, K., & Guilamo-Ramos, V. (2015). Parental monitoring and its associations with adolescent sexual risk behavior: A meta-analysis. *Pediatrics*, 136(6), e1587–e1599. <https://doi.org/10.1542/peds.2015-0305>
- Doumen, S., Verschueren, K., Buyse, E., Germeijs, V., Luyckx, K., & Soenens, B. (2008). Reciprocal relations between teacher–child conflict and aggressive behavior in kindergarten: A three-wave longitudinal study. *Journal of Clinical Child & Adolescent Psychology*, 37(3), 588–599. <https://doi.org/10.1080/15374410802148079>
- Egghe, L. (2006). Theory and practise of the g-index. *Scientometrics*, 69(1), 131–152. <https://doi.org/10.1007/s11192-006-0144-7>
- Eisenberg, N., Spinrad, T. L., & Eggum, N. D. (2010). Emotion-related self-regulation and its relation to children's maladjustment. *Annual Review of Clinical Psychology*, 6(1), 495–525. <https://doi.org/10.1146/annurev.clinpsy.121208.131208>
- Eisenberg, N., Vidmar, M., Spinrad, T. L., Eggum, N. D., Edwards, A., Gaertner, B., & Kupfer, A. (2010). Mothers' teaching strategies and children's effortful control: A longitudinal study. *Developmental Psychology*, 46(5), 1294–1308. <https://doi.org/10.1037/a0020236>
- Eley, T. C., Lichtenstein, P., & Moffitt, T. E. (2003). A longitudinal behavioral genetic analysis of the etiology of aggressive and nonaggressive antisocial behavior. *Development and Psychopathology*, 15(2), 383–402. <https://doi.org/10.1017/S095457940300021X>
- Elgar, F. J., McGrath, P. J., Waschbusch, D. A., Stewart, S. H., & Curtis, L. J. (2004). Mutual influences on maternal depression and child adjustment problems. *Clinical Psychology Review*, 24(4), 441–459. <https://doi.org/10.1016/j.cpr.2004.02.002>
- Fanti, K. A., Henrich, C. C., Brookmeyer, K. A., & Kuperminc, G. P. (2008). Toward a transactional model of parent-adolescent relationship quality and adolescent psychological adjustment. *The Journal of Early Adolescence*, 28(2), 252–276. <https://doi.org/10.1177/0272431607312766>
- Forbes, E. E., Shaw, D. S., Silk, J. S., Feng, X., Cohn, J. F., Fox, N. A., & Kovacs, M. (2008). Children's affect expression and frontal EEG asymmetry: Transactional associations with mothers' depressive symptoms. *Journal of Abnormal Child Psychology*, 36(2), 207–221. <https://doi.org/10.1007/s10802-007-9171-y>
- Frye, A. A., & Garber, J. (2005). The relations among maternal depression, maternal criticism, and adolescents' externalizing and internalizing symptoms. *Journal of Abnormal Child Psychology*, 33(1), 1–11. <https://doi.org/10.1007/s10802-005-0929-9>
- Gerard, J. M., Krishnakumar, A., & Buehler, C. (2006). Marital conflict, parent-child relations, and youth maladjustment: A longitudinal investigation of spillover effects. *Journal of Family Issues*, 27(7), 951–975. <https://doi.org/10.1177/0192513X05286020>
- Graziano, P. A., Keane, S. P., & Calkins, S. D. (2010). Maternal behaviour and children's early emotion regulation skills differentially predict development of children's reactive control and later effortful control. *Infant and Child Development*. <https://doi.org/10.1002/icd.670> (n/a–n/a).
- Gross, H. E., Shaw, D. S., Burwell, R. A., & Nagin, D. S. (2009). Transactional processes in child disruptive behavior and maternal depression: A longitudinal study from early childhood to adolescence. *Development and Psychopathology*, 21(1), 139–156. <https://doi.org/10.1017/S0954579409000091>
- Gross, H. E., Shaw, D. S., & Moilanen, K. L. (2008). Reciprocal associations between boys' externalizing problems and mothers' depressive symptoms. *Journal of Abnormal Child Psychology*, 36(5), 693–709. <https://doi.org/10.1007/s10802-008-9224-x>
- Gross, H. E., Shaw, D. S., Moilanen, K. L., Dishion, T. J., & Wilson, M. N. (2008). Reciprocal models of child behavior and depressive symptoms in mothers and fathers in a sample of children at risk for early conduct problems. *Journal of Family Psychology*, 22(5), 742–751. <https://doi.org/10.1037/a0013514>
- Hamilton, L., Cheng, S., & Powell, B. (2007). Adoptive parents, adoptive parents: Evaluating the importance of biological ties for parental investment. *American Sociological Review*, 72(1), 95–116. <https://doi.org/10.1177/000312240707200105>
- Hammen, C., & Brennan, P. A. (2003). Severity, chronicity, and timing of maternal depression and risk for adolescent offspring diagnoses in a community sample. *Archives of General Psychiatry*, 60(3), 253. <https://doi.org/10.1001/archpsyc.60.3.253>
- Hanscombe, K. B., Haworth, C. M. A., Davis, O. S. P., Jaffee, S. R., & Plomin, R. (2011). Chaotic homes and school achievement: A twin study: Chaotic homes and school achievement. *Journal of Child Psychology and Psychiatry*, 52(11), 1212–1220. <https://doi.org/10.1111/j.1469-7610.2011.02421.x>
- Hawkins, D. N., Amato, P. R., & King, V. (2007). Nonresident father involvement and adolescent well-being: Father effects or child effects? *American Sociological Review*, 72(6), 990–1010. <https://doi.org/10.1177/000312240707200607>
- Hay, D. F., Pawlby, S., Angold, A., Harold, G. T., & Sharp, D. (2003). Pathways to violence in the children of mothers who were depressed postpartum. *Developmental Psychology*, 39(6), 1083–1094. <https://doi.org/10.1037/0012-1649.39.6.1083>
- Hooley, J. M., & Hiller, J. B. (2000). Personality and expressed emotion. *Journal of Abnormal Psychology*, 109(1), 40–44. <https://doi.org/10.1037/0021-843X.109.1.40>
- Jaffee, S. R., Caspi, A., Moffitt, T. E., Polo-Tomas, M., Price, T. S., & Taylor, A. (2004). The limits of child effects: Evidence for genetically mediated child effects on corporal punishment but not on physical maltreatment. *Developmental Psychology*, 40(6), 1047–1058. <https://doi.org/10.1037/0012-1649.40.6.1047>
- Jenkins, J., Simpson, A., Dunn, J., Rasbash, J., & O'Connor, T. G. (2005). Mutual influence of marital conflict and children's behavior problems: Shared and nonshared family risks. *Child Development*, 76(1), 24–39. <https://doi.org/10.1111/j.1467-8624.2005.00827.x>
- Johnson, L. E., & Greenberg, M. T. (2013). Parenting and early adolescent internalizing: The importance of teasing apart anxiety and depressive symptoms. *The Journal of Early Adolescence*, 33(2), 201–226. <https://doi.org/10.1177/0272431611435261>
- Kendler, K. S., & Baker, J. H. (2007). Genetic influences on measures of the environment: A systematic review. *Psychological Medicine*, 37(05), 615. <https://doi.org/10.1017/S0033291706009524>
- King, V., & Sobolewski, J. M. (2006). Nonresident fathers' contributions to adolescent well-being. *Journal of Marriage and Family*, 68(3), 537–557. <https://doi.org/10.1111/j.1741-3737.2006.00274.x>
- Knafo, A., & Plomin, R. (2006). Parental discipline and affection and children's prosocial behavior: Genetic and environmental links. *Journal of Personality and Social Psychology*, 90(1), 147–164. <https://doi.org/10.1037/0022-3514.90.1.147>
- Krishnakumar, A., Buehler, C., & Barber, B. K. (2003). Youth perceptions of interparental conflict, ineffective parenting, and youth problem behaviors in European-American and African-American families. *Journal of Social and Personal Relationships*, 20(2), 239–260. <https://doi.org/10.1177/02654075030202007>
- Kuczynski, L., & De Mol, J. (2015). Dialectical models of socialization. In W. F. Overton, P. C. M. Molenaar, & R. M. Lerner (Eds.), *Handbook of child psychology and developmental science: Theory and method* (pp. 323–368). John Wiley & Sons, Inc.. <https://doi.org/10.1002/9781118963418.childpsy109>
- Kuczynski, L., & Parkin, C. M. (2007). Agency and bidirectionality in socialization: Interactions, transactions, and relational dialectics. In *Handbook of socialization: Theory and research* (pp. 259–283). The Guilford Press.
- Lansford, J. E., Rothenberg, W. A., Jensen, T. M., Lippold, M. A., Bacchini, D., Bornstein, M. H., ... Al-Hassan, S. M. (2018). Bidirectional relations between parenting and behavior problems from age 8 to 13 in nine countries. *Journal of Research on Adolescence*, 28(3), 571–590. <https://doi.org/10.1111/jora.12381>
- Larsson, H., Viding, E., Rijdsdijk, F. V., & Plomin, R. (2008). Relationships between parental negativity and childhood antisocial behavior over time: A bidirectional effects model in a longitudinal genetically informative design. *Journal of Abnormal Child Psychology*, 36(5), 633–645. <https://doi.org/10.1007/s10802-007-9151-2>
- Lippold, M. A., Fosco, G. M., Hussong, A., & Ram, N. (2019). Child effects on lability in parental warmth and hostility: Moderation by parents' internalizing problems. *Journal of Youth and Adolescence*, 48(5), 963–978. <https://doi.org/10.1007/s10964-019-00983-7>
- Lippold, M. A., Fosco, G. M., Ram, N., & Feinberg, M. E. (2016). Knowledge lability: Within-person changes in parental knowledge and their associations with adolescent problem behavior. *Prevention Science*, 17(2), 274–283. <https://doi.org/10.1007/s11121-015-0604-5>
- Lippold, M. A., Hussong, A., Fosco, G. M., & Ram, N. (2018). Lability in the parent's hostility and warmth toward their adolescent: Linkages to youth delinquency and substance use. *Developmental Psychology*, 54(2), 348–361. <https://doi.org/10.1037/dev0000415>
- Lippold, M. A., McHale, S. M., Davis, K. D., & Kossek, E. E. (2015). Day-to-day inconsistency in parent knowledge: Links with youth health and parents' stress. *Journal of Adolescent Health*, 56(3), 293–299. <https://doi.org/10.1016/j.jadohealth.2014.11.017>
- Louie, J. Y., Oh, B. J., & Lau, A. S. (2013). Cultural differences in the links between parental control and children's emotional expressivity. *Cultural Diversity and Ethnic Minority Psychology*, 19(4), 424–434. <https://doi.org/10.1037/a0032820>
- Marchini, S., & Macdonald, D. W. (2020). Can school children influence adults' behavior toward jaguars? Evidence of intergenerational learning in education for conservation. *Ambio*, 49(4), 912–925. <https://doi.org/10.1007/s13280-019-01230-w>
- Moffitt, T. E. (2005). The new look of behavioral genetics in developmental psychopathology: Gene-environment interplay in antisocial behaviors. *Psychological Bulletin*, 131(4), 533–554. <https://doi.org/10.1037/0033-2909.131.4.533>
- Moffitt, T. E., & the E-Risk Study Team. (2002). Teen-aged mothers in contemporary Britain. *Journal of Child Psychology and Psychiatry*, 43(6), 727–742. <https://doi.org/10.1111/1469-7610.00082>
- Mongeon, P., & Paul-Hus, A. (2016). The journal coverage of Web of Science and Scopus: A comparative analysis. *Scientometrics*, 106(1), 213–228. <https://doi.org/10.1007/s11192-015-1765-5>
- Neiderhiser, J. M., Reiss, D., Pedersen, N. L., Lichtenstein, P., Spotts, E. L., Hansson, K., ... Elthammer, O. (2004). Genetic and environmental influences on mothering of adolescents: A comparison of two samples. *Developmental Psychology*, 40(3), 335–351. <https://doi.org/10.1037/0012-1649.40.3.335>
- Nelson, D. R., Hammen, C., Brennan, P. A., & Ullman, J. B. (2003). The impact of maternal depression on adolescent adjustment: The role of expressed emotion.

- Journal of Consulting and Clinical Psychology*, 71(5), 935–944. <https://doi.org/10.1037/0022-006X.71.5.935>
- Osofsky, J. D., & O'Connell, E. J. (1972). Parent-child interaction: Daughters' effects upon mothers' and fathers' behaviors. *Developmental Psychology*, 7(2), 157–168. <https://doi.org/10.1037/h0033016>
- Paschall, K. W., & Mastergeorge, A. M. (2016). A review of 25 years of research in bidirectionality in parent-child relationships: An examination of methodological approaches. *International Journal of Behavioral Development*, 40(5), 442–451. <https://doi.org/10.1177/0165025415607379>
- Purcell, S. (2002). Variance components models for gene-environment interaction in twin analysis. *Twin Research*, 5(6), 554–571. <https://doi.org/10.1375/136905202762342026>
- Putnick, D. L., Bornstein, M. H., Lansford, J. E., Malone, P. S., Pastorelli, C., Skinner, A. T., ... Oburu, P. (2015). Perceived mother and father acceptance-rejection predict four unique aspects of child adjustment across nine countries. *Journal of Child Psychology and Psychiatry*, 56(8), 923–932. <https://doi.org/10.1111/jcpp.12366>
- Raposa, E. B., Hammen, C. L., & Brennan, P. A. (2011). Effects of child psychopathology on maternal depression: The mediating role of child-related acute and chronic stressors. *Journal of Abnormal Child Psychology*, 39(8), 1177–1186. <https://doi.org/10.1007/s10802-011-9536-0>
- Saudino, K. J., Cherny, S. S., & Plomin, R. (2000). Parent ratings of temperament in twins: Explaining the 'too low' DZ correlations. *Twin Research* (2000), 3(4), 224–233. <https://doi.org/10.1375/136905200320565193>
- Small, H. (1980). Co-citation context analysis and the structure of paradigms. *Journal of Documentation*, 36(3), 183–196. <https://doi.org/10.1108/eb026695>
- Soto-Perez-de-Celis, E., Smith, D. D., Rojo-Castillo, M. P., Hurria, A., Pavas-Vivas, A. M., Gitler-Weingarten, R., ... Chavarri-Guerra, Y. (2017). Implementation of a school-based educational program to increase breast cancer awareness and promote intergenerational transmission of knowledge in a rural mexican community. *The Oncologist*, 22(10), 1249–1256. <https://doi.org/10.1634/theoncologist.2017-0063>
- Trouton, A., Spinath, F. M., & Plomin, R. (2002). Twins early development study (TEDS): A multivariate, longitudinal genetic investigation of language, cognition and behavior problems in childhood. *Twin Research*, 5(5), 444–448. <https://doi.org/10.1375/136905202320906255>
- Van Den Bulck, J., Custers, K., & Nelissen, S. (2016). The child-effect in the new media environment: Challenges and opportunities for communication research. *Journal of Children and Media*, 10(1), 30–38. <https://doi.org/10.1080/17482798.2015.1121897>
- Wade, T. D., & Kendler, K. S. (2000). The genetic epidemiology of parental discipline. *Psychological Medicine*, 30(6), 1303–1313. <https://doi.org/10.1017/S0033291799003013>
- Wymbs, B. T. (2011). Mechanisms underlying the influence of disruptive child behavior on interparental communication. *Journal of Family Psychology*, 25(6), 873–884. <https://doi.org/10.1037/a0025372>