

Special Issue Article

The Future of Developmental Psychopathology: Honoring the Contributions of Dante Cicchetti

Beyond developmental psychopathology: Positive child development

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Abstract

The field of developmental psychopathology has made significant contributions to our understanding of both typical and atypical development. However, while there are established theories for developmental psychopathology with detailed criteria for pathological outcomes, there is less agreement regarding development under optimal conditions and the definition of positive outcomes. In this conceptual paper, I make the case that a better understanding of positive child development is crucial because it will not only advance our general knowledge on human development but also complement current work on developmental psychopathology. After defining positive development as the development of positive functioning in children, such as skills, strengths, competencies, and wellbeing, rather than the absence of problems, current concepts with relevance for positive development are reviewed, before highlighting gaps in our knowledge on positive development and suggestions for future research. Although several of the reviewed frameworks provide important contributions to the conceptualization of positive development, most of them focus on positive functioning in adults with limited consideration of development in the early years. More research is needed that specifically targets the development of positive outcomes from early childhood onward in order to develop a more comprehensive and holistic theory of positive child development.

Keywords: Developmental psychopathology; positive development; positive psychology; positive mental health; positive youth development; resilience

(Received 9 January 2024; revised 22 January 2024; accepted 26 January 2024; First Published online 22 February 2024)

The last 50 years have been characterized by significant progress in our understanding of human development, much of which has been published in the journal *Development & Psychopathology*. As a result, we now know a lot more about the effects of early adversity on development as well as the role of individual and environmental risk factors, among many other aspects of development. Going beyond the study of adverse experiences and psychopathology, the field also advanced our understanding of positive developmental outcomes and the protective function of supportive contexts which have been shown to prevent the development of problematic outcomes when experiencing adversity (i.e., resilience). However, while many conceptual models for developmental psychopathology and criteria for pathological outcomes (i.e., when things go wrong) have been established and are well defined, there is less agreement regarding development under optimal conditions and positive developmental outcomes (i.e., when things go well). In this paper I will make a case for a more targeted and integrative focus on *Positive Child Development*, defined as the development of desirable, useful, and adaptive competences and skills rather than just the absence of problems. Importantly, I propose that such a perspective should consider positive

development holistically across all domains of functioning rather than narrowly focusing on specific domains or single competencies (e.g., social skills). In addition to advancing our general knowledge of development, a better understanding of positive development may also be crucial to counteract recent increases in mental health problems among young people. A deeper conceptual understanding of what positive development entails may help us better *promote* the positive development that we want children to experience rather than exclusively focusing on trying to *prevent* negative development. After defining basic terms and reviewing the valuable contribution of work in the field of developmental psychopathology for our understanding of positive development, I will present and evaluate existing perspectives on positive development and functioning, before discussing current gaps in our knowledge and proposing future steps for research on positive development. Importantly, rather than providing a comprehensive and detailed review of all available literature, this paper will provide a big picture view drawing on selected theories and studies in order to highlight the general potential of a stronger focus on positive development.

Definition of terminology

Before examining positive development in more detail, it is important to delineate the conceptual understanding of positive development as proposed in this paper from typical and atypical

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Cite this article: Pluess, M. (2024). Beyond developmental psychopathology: Positive child development. *Development and Psychopathology* 36: 2127–2135, <https://doi.org/10.1017/S0954579424000294>

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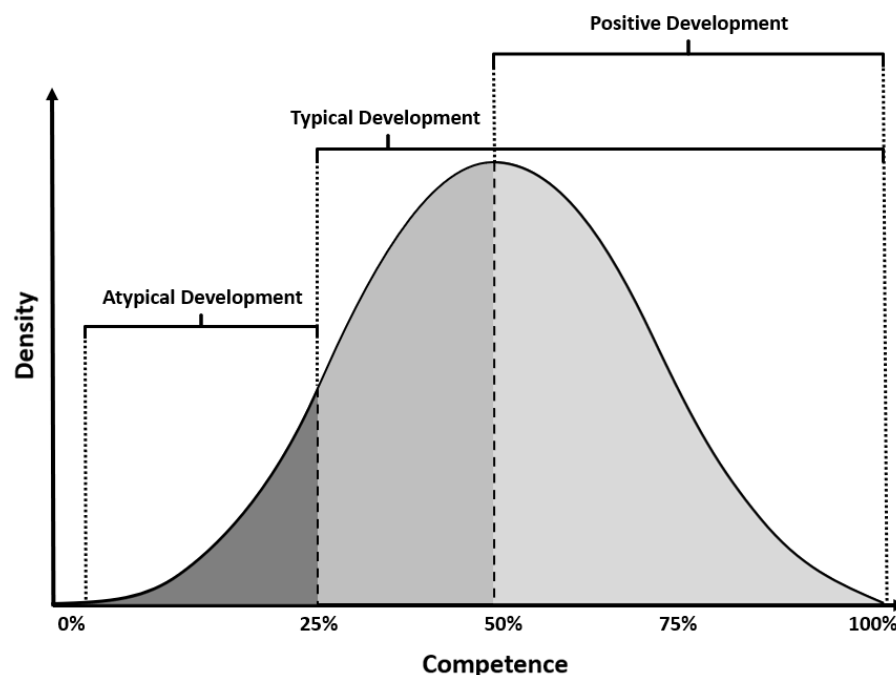


Figure 1. Illustration of atypical and typical development versus positive development for competence. Whereas atypical development describes the lower end of the distribution (i.e., lower competence than normal), the rest of the distribution is considered typical development. Positive development, on the other hand, reflects levels of competence at the higher end of the distribution.

development. Traditionally, the field of developmental psychopathology has focused primarily on *atypical development*, broadly defined as patterns of development that differ from what is considered normative for a given age or developmental stage. This includes problematic behaviors (e.g., psychological disorders), developmental deficits (e.g., reduced cognitive ability), and delayed developmental milestones (e.g., walking, talking, etc.), all of which represent deviations from the norm. In contrast, *typical development* refers to normal and typical patterns of growth, maturation, and behavioral changes that most children attain within a given age range (Zubler et al., 2022). For example, most children will learn to walk between the ages of 10–14 months (Adolph et al., 2014). In this sense, typical development covers everything that is not considered atypical, including children that develop at the lower end of the normative range. *Positive development*, on the other hand, while overlapping with typical development, refers to the higher end of the range with a specific focus on the positive functioning of children (i.e., thriving, flourishing), including the development of skills, strengths, competencies, and wellbeing (see Fig. 1 for a graphic illustration of atypical, typical, and positive development). In other words, positive development, as proposed here, reflects an optimal pattern of development, indicated by the steady and continuous increase in competence over time across multiple domains of functioning (i.e., physical, cognitive, social, emotional, behavioral). Although various definitions, concepts, and models for specific competencies exist (for review, see Lerner et al., 2011; Masten et al., 2015; Weissberg & Greenberg, 1998), these tend to be scattered across different fields of inquiry with the majority focusing on social and emotional competence (Berg et al., 2017; Waters & Sroufe, 1983). Rather than reviewing these specific models, broader conceptualizations of positive development will be presented and evaluated further below.

Important concepts of developmental psychopathology for positive development

Although the field of developmental psychopathology originally set out to investigate developmental predictors and processes implicated in psychological and behavioral problems (i.e., atypical

development), many of its principles, theories and empirical findings are highly relevant for our understanding of typical development, and therefore also positive child development. This includes the understanding that *early experiences* can significantly impact upon individual development with long-lasting effects across the life course (O'Connor, 2015). Related to this, research has shown that the various exposures and experiences in childhood tend to have *cumulative effects* across development (Evans et al., 2013). Hence, it is important to consider how the sum of events across childhood impact development rather than focusing narrowly on the effects of individual life events. Building on this notion that exposures accumulate across childhood, work in developmental psychopathology has also shown how early exposures tend to influence the nature and quality of subsequent experiences from early childhood through to adulthood, setting off chain reactions described as *developmental cascades* (Masten & Cicchetti, 2010). A further important concept is that development occurs in multiple nested contexts or systems as proposed in Bronfenbrenner's *Ecological Systems Theory* (Bronfenbrenner, 1977), with children being impacted most directly by proximal microsystems such as family and school which themselves are influenced by more distal systems such as the economic situation and cultural norms. Similar to the notion that the developmental context reflects multiple layers from more immediate to more distal (like an onion), a *multilevel* perspective has also been applied to developmental outcomes which can be investigated at the observational level (i.e., behavior), the underlying physiological level (e.g., brain structure and activity), down to the basic genetic level (Cicchetti, 2008). The understanding that an outcome can be investigated at these different levels of analysis is closely related to the *biopsychosocial model* according to which the consideration of biological, psychological, and social factors as well as the interconnections and interplay between these levels is crucial in order to comprehend development (Dodge & Pettit, 2003). The adoption of multilevel perspectives and biopsychosocial models explains the frequent application of *interdisciplinary approaches* in developmental psychopathology, going beyond a traditional

psychological focus by also including perspectives and contributions of biological, medical, and sociological disciplines (Cicchetti, 2013). Furthermore, a lot of work in the field of developmental psychopathology has been geared toward the investigation of *individual differences*, based on the consistent observation that children differ substantially in their response to the quality of their developmental context. Of particular relevance here is the phenomenon of *resilience*, according to which some children do not seem to develop problems despite exposure to adverse experiences. Importantly, resilience has been found to be the function of *protective* and *promotive factors* of the individual and/or the environment which buffer or counteract the negative impact of adversity and risk factors (Cicchetti et al., 1993). Established work on individual differences also includes a broader focus on *person–environment interaction*, emphasizing that the interplay between characteristics of the individual and features of the developmental context, such as child temperament and parenting practices (Kiff et al., 2011), is the norm rather than the exception. Research on this interplay provides consistent evidence that different children respond differently to the same experiences. A key framework for such differences is *Differential Susceptibility Theory* (Belsky & Pluess, 2009), according to which some children are generally more affected developmentally by both negative and positive environmental influences. Recently, individual differences in response to positive exposures have been conceptualized more specifically in the framework of *Vantage Sensitivity* (Pluess & Belsky, 2013). Vantage sensitivity captures the positive end of differential susceptibility and describes the phenomenon that some individuals tend to benefit especially strongly from supportive experiences (e.g., psychological intervention) whereas others fail to do so (de Villiers et al., 2018). Related to individual differences more generally is the consideration of *behavioral* and *molecular genetics* in developmental psychopathology. This includes the investigation of *gene–environment interaction* and *correlation*, two key aspects of the interplay between genes and environments. Going beyond classic twin studies, more recent approaches feature measured molecular variation in the DNA across the whole genome (i.e., genome-wide association studies), often summarized in so-called polygenic scores (Plomin et al., 2022). In addition to these well-known concepts and approaches in developmental psychopathology that are equally applicable and relevant for positive child development, the field of developmental psychopathology has already considered and investigated specific aspects of positive development. This includes research on clear-cut positive developmental outcomes (e.g., self-control, social competence, altruistic behaviors, etc.) which reflect the presence of competences rather than the absence of problems as well as work on strengths-based interventions that target the promotion of positive outcomes beyond the prevention of negative outcomes (Masten et al., 2015; Waters, 2011).

In summary, many of the theories, concepts, and processes that have been discovered and developed in the field of developmental psychopathology (and more traditional developmental psychology) are also of great relevance and utility to describe and explain positive development. The main difference is that when applied to positive child development, the exposures and experiences of interest are those thought to promote positive development instead of atypical development (e.g., high quality care, social support etc.), with a focus on positive outcomes such as competences, skills, abilities, and wellbeing, rather than pathology.

Why is a perspective of positive development important for the future of developmental psychopathology?

A stronger focus on positive child development will advance our understanding of development more generally and therefor also benefit the field of developmental psychopathology in multiple ways.

First, in order to determine when something goes wrong in development and what should be considered pathological, it is important to have a clear understanding of how development looks like under optimal conditions. Hence, a stronger conceptualization of positive child development will clarify what should be considered atypical or pathological development. In other words, without having a clear understanding of ideal processes and outcomes of development (i.e., what developmental processes are aiming to achieve), it is difficult to define deviation and pathology in the first place. In this way, a clear definition of positive child development should serve as the theoretical goalpost of development.

Second, as mentioned earlier, work in the field of developmental psychopathology has contributed valuable concepts and knowledge that can be equally applied to positive child development. For example, just as research has shown that *adverse child experiences* (ACEs) predict all sorts of pathological outcomes (Hughes et al., 2017), recent studies demonstrate that the counterpart to ACEs, *benevolent childhood experiences* (BCEs; Narayan et al., 2018), or *protective and compensatory experiences* (PACES; Morris & Hays-Grudo, 2023), are associated with less psychological problems. These findings provide evidence that the widely accepted notion that early experiences shape the course of development applies to both atypical and positive development. However, most research on ACEs does not account for the role of BCEs or PACES even though effects of BCEs have been found to be at least partially independent of ACEs (Merrick et al., 2019). Hence, it is crucial to consider both negative and positive experiences in childhood to obtain a more comprehensive understanding of how early experiences shape development even when focusing on pathological outcomes. In this sense, the consideration and inclusion of aspects pertaining to positive development will provide a broader and more accurate perspective of development and likely enrich and improve models of developmental psychopathology. This has been shown already most clearly in work on resilience. While it is widely accepted that various characteristics of the individual and environment can act as risk factors for the development of pathological outcomes, the discovery that some individuals do not develop problems despite the presence of risk factors, has led to the emergence of theories and a large body of research on *resilience*, a concept which has become a central tenet of developmental psychopathology (Luthar & Cicchetti, 2000). A key component of resilience theory that reflects aspects of positive development is that certain individual characteristics and environmental influences have a *protective* function which buffers or neutralizes the negative impact of adversity and risk factors (Rutter, 1985). These protective factors usually represent positive traits such as a less reactive infant temperament, high self-esteem, and high optimism, as well as supportive experiences such as a close relationship to a caring adult or affiliation with a supportive religious community (Werner, 2000). In addition to protective factors, defined as characteristics of the individual or environment that exert a positive effect (i.e., buffer) when exposed to adversity, factors that have a positive effect even in the absence of adverse exposures have been described as

promotive factors (Zimmerman et al., 2013). Hence, just as the consideration of protective and promotive factors significantly advanced our understanding of individual differences in response to adversity, stronger consideration of positive child development in work related to developmental psychopathology and developmental psychology more generally is likely to advance our understanding of both typical and atypical development by providing a more holistic, comprehensive, and balanced view of development.

Third, a stronger consideration of positive development might also enrich practical application of developmental psychopathology by encouraging the design of interventions that focus more clearly on the promotion of positive development. For example, according to a recent exploratory trial of a short group-based intervention informed by positive psychology and aimed at fostering the wellbeing of vulnerable children living in Greek refugee camps, the program was found to significantly improve wellbeing, self-esteem, and optimism whilst also reducing depression symptoms (Foka et al., 2020). In this sense, the practical application of knowledge on positive child development in intervention programs may improve the efficacy of existing interventions by adding promotive components to preventative programs.

Finally, despite significant progress in our understanding of developmental psychopathology, psychological disorders, and the treatment thereof, rates of mental health problems keep rising, especially among young people in high-income countries (Thapar et al., 2022). This suggests that current approaches are not sufficiently effective in preventing the development of mental health problems and that the field may benefit from new ideas and methods. A more targeted and systematic exploration of the factors and processes implicated in positive child development might provide new insights that will not only result in a more holistic and comprehensive understanding of development but also inform new strategies and approaches to prevent mental health problems through the targeted and effective promotion of positive development before mental health symptoms emerge.

However, despite the great potential of a better understanding of positive child development, a clear consensus regarding what positive development constitutes does currently not exist. In work on developmental psychopathology, positive development has often been equated with not developing problems (i.e., resilience) rather than the development of clearly defined positive characteristics such as competences, skills, and wellbeing. In addition, existing theoretical and empirical contributions to different aspects and concepts of positive development tend to be scattered across different fields of inquiry (e.g., social and emotional competence; see Berg et al., 2017) and an integrated broad theoretical model of positive child development is missing. In what follows I will review and evaluate some of the most relevant existing broad frameworks and models for positive development and functioning in chronological order to summarize current knowledge on positive development. Important to acknowledge, while some of these concepts have a strong developmental component many are focusing more on positive functioning in adulthood.

Existing concepts with relevance for positive development

One of the first developmental theories to include a clear focus on positive development is actually Erik Erikson's classic *Theory of Psychosocial Development* (Erikson, 1950), which represented a significant departure from the prevailing psychoanalytic theories at

the time that focused primarily on how adverse early experiences explain pathological outcomes in adulthood. According to Erikson's theory, there are eight stages across the whole life course within each individuals are facing the challenge to resolve a normative *conflict* (or "crisis") between their psychological needs and the social environment. Erikson proposed that the successful negotiation of these conflicts results in the development of so-called "virtues" defined as strengths or positive qualities that contribute to individual wellbeing and fulfillment. For example, in the first stage (i.e., the first year of life) individuals are facing the conflict between developing *trust* versus *mistrust* regarding whether their caregivers are reliable and consistent in meeting their basic needs, such as affection and nutrition. If caregivers succeed in meeting these needs, the child learns that other people are generally dependable and reliable. On the opposite, if caregivers are neglectful, infants learn that people tend to be unreliable or even dangerous. In other words, Erikson suggested that children's early experience of whether their basic needs are met results in long-lasting mental representations of the world, somewhat similar to *Internal Working Models* in attachment theory (Bowlby, 1969). Consequently, Erikson's theory proposes that successful negotiation of the conflict between trust versus mistrust results in the virtue of *hope*. Children that emerge out of Erikson's first stage of development with such hope believe that other people, and the world more generally, are genuinely good and trustworthy. In the second stage (second year), children develop the virtue of *will* if successfully negotiating the conflict between *autonomy* versus *shame*. In the third stage (years 3–6), resolution of the conflict between *initiative* versus *guilt* leads to the development of the virtue of *purpose*, and in the fourth stage (7–10 years), the virtue of *competence* emerges when successfully negotiating *industry* versus *inferiority*. In adolescence (11–19 years), individuals are confronted with the conflict between *identity* and *role confusion* which, when successfully resolved, results in the virtue of *fidelity*. The remaining stages concern adulthood and include the virtues of *love*, *care*, and *wisdom*. Although Erikson's theory may no longer represent a central framework for contemporary research on development, it is important to acknowledge that he was probably the first to clearly conceptualize strengths, competences and positive characteristics as the outcome of optimal development rather than the absence of problematic behaviors or developmental deficits. Furthermore his theory suggests that competences emerge when the social environment meets the needs of the individual and, consequently, that positive development is primarily shaped by the quality of the developmental context with a particular focus on social aspects.

Another important early contribution with relevance for positive development is Marie Jahoda's (1958) theorizing on *positive or ideal mental health*. Making the case that mental health must be more than the absence of psychological disorders, Jahoda reviewed the literature at the time in order to identify criteria or key components of positive mental health. Her work challenged the prevailing deficit model and argued for a more comprehensive and holistic approach to mental health that recognizes the importance of positive functioning and wellbeing, taking into account the context individuals find themselves in. According to her review of the literature, Jahoda identified six dimensions that indicate positive mental health. The first indicator titled "*attitudes of an individual towards his own self*" refers to having an accurate and positive self-concept and self-esteem. The second indicator labelled "*growth, development, or self-actualization*" goes beyond self-perception and captures an individual's active engagement in

regards to the realization of their full potential, maximizing capabilities and talents. The third criteria refers to a central synthesizing psychological function incorporating aspects of the first two criteria and was named “*integration*”. This integration reflects a sense of balance and harmony across different aspects of the individual’s life, manifested in the ability to manage and integrate various facets of life such as work, relationships, and personal goals. The second set of criteria concentrates more specifically on individual’s “*relation to reality*”. This includes the criteria of “*autonomy*” which captures the degree of self-determination and independence from social influences in decision-making, accuracy of an individual’s “*perception of reality*” that is constructive and free of distortions, and, finally, “*environmental mastery*”, the ability to effectively navigate and control the environment, including the adaptation to challenges and demands which promotes a sense of competence and mastery. Regarding the specific conditions that lead to the development of positive mental health, Jahoda acknowledged the complexity of an “*unending number of conditions*” that may affect the degree to which people display any of the six attributes of positive mental health, from genetic factors to early socialization. However, although her conceptualization of ideal mental health was not focusing much on developmental aspects, she suggested four important conditions for the development of positive mental health, including close relationships, the wider social context (e.g., group membership), situational factors (i.e., standardized behavior elicited in certain situations and institutions), and change in environmental conditions.

A further early framework with relevance for positive development is the concept of *salutogenesis* developed by Aaron Antonovsky (1979), initially inspired by the observation that some survivors of nazi concentration camps did not seem emotionally impaired by their traumatic experience. Consequently, Antonovsky concluded that these individuals were able to draw on resources that helped them cope with the extreme adversity. Opposite to the traditional pathogenic approach to health in medicine which emphasizes the study of the causes of disease, Antonovsky’s framework of salutogenesis focuses specifically on the understanding of factors and conditions that promote and maintain good health. According to Antonovsky’s salutogenic model, it is individuals with *generalized resistance resources* (GRRs), such as financial or social support, that are able to remain healthy when confronted with stressors. A key component of the model is people’s *sense of coherence* which helps mobilize resistance resources in order to cope with and manage stressful experiences (Antonovsky, 1993). Antonovsky suggested that this sense of coherence has three components: (1) *comprehensibility*, the belief that there is an order and logic to all that happens, (2) *manageability*, the belief that one has what it takes to deal with challenges, and (3) *meaningfulness*, the belief that life and one’s experiences are inherently meaningful. Although Antonovsky’s model is not a developmental theory per se, he suggested that child rearing and life experiences build up generalized resistance resources which contribute to the development of a sense of coherence reflecting a mindset shaped by optimism and self-efficacy (i.e., psychological competences). A strong sense of coherence then mobilizes available generalized and specific resistance resources when faced with stress and tension, eventually resulting in health if adverse experiences can be managed successfully. Although much of Antonovsky’s work overlaps with the concept of psychological resilience, one of the key contributions is that he provided terminology and a framework for the

conceptualization of factors and processes that are implicated in the development of health and wellbeing.

In the last 20 years, additional concepts emerged with a focus on wellbeing and positive mental health. This includes work by Corey Keyes, who developed the *Two Continua Model* (Keyes, 2002). This model suggests that mental health and mental illness are best understood as separate dimensions rather than opposite ends of a single continuum. Keyes also proposed a more comprehensive conceptualization of “*complete mental health*” which is reflected in emotional, psychological, and social wellbeing (Keyes, 2005). Furthermore, he emphasized the concept of *flourishing*, which represents the highest level of positive mental health where people are free of mental illness but also experience high wellbeing manifested in a sense of fulfillment, purpose, and life satisfaction (Keyes, 2002). The opposite of flourishing is described as *languishing* defined as a state where individuals may not necessarily meet criteria for a psychological disorders, but experience low levels of wellbeing. While the work of Keyes focused mainly on adults, a similar dual factor perspective of mental health has also been applied to children (Greenspoon & Saklofske, 2001) and adolescents (Suldo & Shaffer, 2008), providing empirical support for the proposition that psychological wellbeing and psychopathology reflect two separate dimensions rather than one continuum in young people. However, most of the existing frameworks that propose such a dual factor structure of mental health lack a strong developmental perspective and theorize little regarding the specific developmental predictors and processes involved in the development of positive mental health.

Probably one of the most impactful recent impulses for a focus on positive development has been the launch of the field of *Positive Psychology* in the late 1990s, a relatively new domain in psychology with a specific emphasis on wellbeing, strengths and positive individual attributes, as well as interventions aimed at improving positive outcomes. Originally introduced by Seligman and Csikszentmihalyi (2000), the field of Positive Psychology provided an opportunity to gather existing research lines on wellbeing under one umbrella and inspire new targeted research and theoretical work on positive aspects of psychology. The intent of the field was to focus on “*what is strong*” rather than “*what is wrong*” in order to counteract psychology’s long-standing focus on psychopathology (Seligman, 2002). Work in the field of Positive Psychology has contributed substantially to the conceptual development of what represents strengths and positive outcomes, including the construction of new measures of various aspects of positive attributes such as a catalog of individual strengths (Peterson & Seligman, 2006). Furthermore, different aspects of wellbeing have been identified, including hedonic (i.e., feeling well), eudaimonic (i.e., perception of meaning), and evaluative wellbeing (i.e., satisfaction with life), to mention the most relevant ones. In addition, the field went beyond descriptive research by developing and evaluating interventions aimed at promoting positive outcomes and wellbeing. For example, a simple exercise of writing a gratitude letter to someone that has had a significant positive impact on one’s life has been shown to improve wellbeing (Toepfer et al., 2012). Another common Positive Psychology intervention is to reflect on three positive experiences at the end of each day which has been shown to not only improve wellbeing but also significantly reduce depression symptoms (Seligman et al., 2005). However, although various wellbeing measures and positive interventions have been applied to young people and found to be effective, the majority of work in the field of Positive Psychology has focused on adults with limited consideration of more general

developmental aspects in childhood (Coffey, 2020). Hence, even though the field of Positive Psychology has significantly advanced our understanding of flourishing across the life span, it has not yet produced a strong developmental theory for positive child development.

The currently most comprehensive and detailed perspective on positive development is found in the concept of *Positive Youth Development*. Although sometimes considered a Positive Psychology framework, Positive Youth Development (PYD) has its own history with early roots in academic research as well as applied youth work going back to the 1950s. Challenging Stanley Hall's perspective of adolescence as a period of "storm and stress" (Hall, 1904), the different contributors to the field of Positive Youth Development emphasized that youth should be seen as a resource with potential for various strengths, abilities, and competences that can be promoted in a nurturing environment and result in significant contributions to society. Although there is no single theory of Positive Youth Development, different concepts, theories and ideas have emerged over the decades and been consolidated and integrated in the late 1990s and early 2000s into a comprehensive framework for the positive development of young people (Lerner et al., 2005). The integrated perspective can be defined as an approach to fostering the potential and wellbeing of young individuals by emphasizing their strengths, positive attributes, and the creation of supportive environments. Generally, it focuses on promoting the holistic development of youth, including their cognitive, social, and emotional wellbeing, while also recognizing and nurturing their unique strengths and capacities. Positive Youth Development applies a developmental systems theory approach (Ford & Lerner, 1992) which emphasizes developmental plasticity of the individual and the complex interplay between the individual and various developmental contexts, from family, to school, to society. Different perspectives exist regarding the specific outcomes of positive development. The most common approaches are Lerner's (Lerner et al., 2011) 5 C's, and Benson's (Benson et al., 2011) 40 internal and external developmental assets as well as 15 indicators of thriving. The 5 C's stand for *Confidence* (self-worth, self-efficacy), *Competence* (social, cognitive, academic), *Character* (morality, integrity, values), *Connection* (positive relationships), and *Caring* (empathy). All five then result in the 6th C which is *Contribution* (e.g., civic engagement). The developmental assets framework refers to 40 assets, 20 of which are *external* assets such as support (family, caring schools and neighborhoods), opportunities (useful roles in the community) and relationships (adult role models, positive peer influence) that foster positive development. The other 20 assets are *internal* and represent personal skills (decision-making, social competence, conflict resolution), commitments (achievement motivation, school engagement), and values (integrity, responsibility). Similarly, the 15 indicators for *Thriving* include characteristics of the young person (sense of purpose, prosocial orientation, positive emotionality), aspects of their developmental context (opportunities and support from family, school, neighborhood), the young person's active role in fulfilling their potential, as well as the frequency of actions from adults that motivate and enable young people to develop their "sparks" (Benson & Scales, 2009). However, whilst the field of Positive Youth Development contributed significantly to the conceptualization of positive outcomes in young people and identified environmental and individual characteristics that are relevant for the development of these outcomes, it focuses exclusively on adolescence rather than early and middle childhood. Furthermore, given its origins in the

United States, the Positive Youth Development perspective is at risk of being biased by Western cultural values and ideals.

A more recent framework that is highly relevant for a better understanding of positive development is the aforementioned model of *Vantage Sensitivity* (Pluess & Belsky, 2013), which describes individual differences in response to positive experiences and exposures. Derived from Differential Susceptibility Theory (Belsky & Pluess, 2009), the Vantage Sensitivity perspective suggests that not all individuals benefit to the same degree from positive and supportive aspects of their environment with some benefitting disproportionately more and others less or failing completely to do so. Whereas individual differences in response to adverse and traumatic experiences are well established in theory (i.e., Diathesis-Stress) and supported by strong empirical evidence, individual differences in response to positive experiences have not been considered to the same degree. This may be due to the assumption that positive and supportive experiences would benefit all individuals equally. However, Differential Susceptibility (Belsky & Pluess, 2009) and other theories on individual differences in environmental sensitivity (Pluess, 2015) propose that children differ fundamentally in their sensitivity to all exposures, both negative and positive ones. Supporting this claim, a growing number of empirical studies provide evidence that some children benefit indeed substantially more from a supportive and caring environment due to heightened vantage sensitivity, whereas others respond less (showing vantage resistance), as a function of psychological, physiological and genetic markers of sensitivity (Pluess & Belsky, 2013). Interestingly, the possibility of substantial individual differences in response to positive exposures is generally not considered in most of the reviewed concepts and frameworks on positive development, despite the widely acknowledged importance of individual differences in response to adverse experiences in more traditional models of developmental psychopathology.

General discussion

This paper set out to explore current knowledge on positive child development and to consider how a better understanding of positive development may complement the field of developmental psychopathology. While there has been significant progress in our general knowledge on human development over the last 50 years, much of this work focused on investigating the development of problematic behaviors and often defined desirable outcomes as the mere absence of maladaptive or pathological behaviors. However, positive development is fundamentally *more than not developing problems*, as emphasized by the reviewed theories and concepts which all suggest in one way or another that positive development refers to processes that lead to the emergence of actively positive, desirable, socially valuable and beneficial outcomes such as various competences, skills, and wellbeing. An important contribution of many of the reviewed concepts with a specific focus on mental health, is that good and bad mental health are better understood as two related but different dimensions. Hence, good mental health does not simply reflect the opposite of poor mental health which also suggests that positive development may be predicted by a different set of factors than mental health problems. As mentioned earlier, the fields of developmental science and developmental psychopathology have contributed important developmental concepts and approaches which are just as applicable to positive development as they are to pathological development. However, despite the existence of several established theories and

frameworks that clearly reflect aspects of positive development, there are significant gaps in our current knowledge of positive child development.

What are current gaps in our understanding of positive child development?

Although several theories aimed to describe positive child and youth development as well as positive mental health and wellbeing in adulthood, most of them fail to provide a strong developmental rationale that takes important theoretical perspectives into account, such as evolutionary-developmental considerations. In other words, while current concepts may describe putative outcomes of positive development and propose relevant predictors thereof, the basic and overarching question of what development tries to achieve in the first place (i.e., “What is the fundamental objective of development?”) is rarely discussed in depth. For example, is the purpose of development the attainment of wellbeing, good health, wealth, achievement and status, or long life? None of the concepts above really address this question directly or fail to provide a strong theoretical rationale for the assumption that the goal of development is to achieve positive outcomes (beyond the proposition that positive outcomes are good for the individual). Evolutionary considerations may be particularly helpful here in order to work out a strong developmental rationale for positive child development and may also help to avoid simplistic explanations that divide developmental outcomes in either good or bad, without considering the developmental context and the longer-term developmental sequelae of these outcomes. In short, evolutionary theory suggests that reproductive fitness, the passing on of genes to the next generation, is the key objective of successful development (Buss, 1995). Hence, even behaviors that are considered by most as problematic and undesirable could theoretically be considered adaptive, as long as these behaviors eventually promote reproductive fitness. However, it is likely that many of the reviewed outcomes of positive development, such as good mental health, social competence, and emotion regulation are not only benefiting the individual (and the community) but are also particularly powerful in promoting reproductive fitness. More work is needed to address this more conceptual but fundamental gap.

Another limitation of current knowledge on positive development is that most existing frameworks focus on adulthood or adolescence with only few considering positive development in early childhood. To the best of my knowledge, the only theory that considered early childhood more specifically is Erikson's Theory of Psychosocial Development (Erikson, 1950). Of course, there are many existing developmental concepts that describe development in the early years and that have specific relevance for positive child development, such as Attachment Theory (Bowlby, 1969), and Ecological Systems Theory (Bronfenbrenner, 1979), to name just a few. However, most of these are more general frameworks and not specifically formulated from a perspective of positive child development. Generally, there has been very little conceptual work with a strong focus on positive development in the first 10 years of life.

A further issue is that current conceptualizations of positive development often focus narrowly on wellbeing and socio-emotional or behavioral outcomes while other important domains of development, such as motor and cognitive development, tend to be considered less in regards to positive child development. In addition, although there is a wealth of knowledge on

developmental science with specific relevance for positive development in childhood, this work tends to be scattered across different fields of inquiry. As a result, the different domains of development, such as physical, cognitive, social, emotional, and behavioral domains, are often investigated separately with limited considerations of how development in one domain is related to development in other domains. As a result, current conceptualizations of positive development or development science more generally lack a holistic and comprehensive perspective that integrates all domains of development.

Somewhat related to the previous point, there is currently no clear consensus regarding the specific outcomes that might reflect key indicators of positive child development. Although there are established markers and milestones for the different developmental domains, more work is needed to identify indicators of positive development that cut across domains and clearly reflect aspects of positive development rather than the absence of problems or developmental delays. Similarly, due to the traditional focus on developmental psychopathology, outcomes that reflect positive development more specifically, such as empathy, creativity, and optimism have not been investigated to the same degree as behavioral and psychological problems. Hence, more work is needed to investigate outcomes of positive development more broadly, but also to identify meaningful key indicators of positive development at different ages across childhood.

Furthermore, in contrast to developmental psychopathology, where individual differences have been a key area of inquiry for a long time, interindividual variability has been less central when it comes to positive development. Individual differences are not only reflected in the fact that children vary in their levels of positive outcomes, but also in their response to positive influences that promote and facilitate the development of such outcomes (i.e., Vantage Sensitivity, Pluess & Belsky, 2013). Indeed, most of the positive development frameworks reviewed earlier don't comment on or consider individual differences in depth. To some degree this may reflect the implicit assumption that positive and supportive experiences will benefit all individuals to the same degree. As a consequence, relatively little is known regarding individual differences in positive development and pertaining to predictors of such variation.

Finally, as is the case with much of developmental science, the overwhelming majority of current conceptualizations of positive development originate from Western cultures and high-income contexts. Consequently, current understanding of positive development is likely biased by Western ideals and it is not clear what aspects of existing models apply across different cultural contexts. It may not be surprising that the attempt to identify developmental outcomes that are considered positive results in a selection of criteria that reflect whatever is valued and appreciated in the respective society and culture. This is a further reason why it is so important to apply strong theoretical considerations, such as evolutionary theory suggested in the first point of the listed knowledge gaps in positive child development when conceptualizing positive child development. A strong foundation in developmental theory will prevent the conceptualization of positive development as simply whatever society values and appreciates.

Directions for future research

Although concepts on positive development started emerging as early as the 1950s, clearly more research is needed to advance our

understanding of positive child development. Most importantly, future work should focus on the development of a *grand theory of positive development* that includes the early years and integrates all domains of development to provide a holistic and comprehensive perspective. Such a theory should build on established developmental concepts with relevance for positive development and be carefully designed to avoid cultural biases. Related to this, future research should also focus on exploring and identifying *key indicators of positive child development*. These indicators of positive development should go beyond the absence of pathology or developmental delays and describe the presence of specific, measurable and age-appropriate competencies. Given that much work in developmental science is somewhat fragmented into different areas of inquiry, future research on positive development should *consider relationships between the different domains of development* and investigate how development in one domain impacts development in other domains (e.g., is motor development independent of social development?). More work is also needed to identify the specific *predictors of positive development*. This requires well-powered and carefully designed longitudinal studies with repeated assessments of identified indicators of positive development to track change over time. In order to *identify causal relationships*, future studies should also explore application of causal inference methods to longitudinal observational data (Biazoli et al., *In Press*) given that experimental studies are difficult to implement in developmental research due to ethical and practical constraints. A better understanding of the causal nature of identified predictors of positive child development will be of particular importance for the design of social policies aimed at promoting positive child development. Related to this, future work should also make use of the availability of genome-wide genetic data from multiple generations in current cohort studies (Magnus et al., 2006) in order to *disentangle genetic and environmental influences on positive child development*, considering both gene-environment correlation and interaction. Importantly, access to genetic data will also facilitate testing for causal relationships (e.g., Mendelian Randomization, Smith & Ebrahim, 2004). Furthermore, future research should consider and investigate *individual differences in positive child development*. This includes the observation and description of differences in positive developmental outcomes between children but also a better understanding of whether and how children differ in their response to established predictors of positive development. In other words, studies should investigate empirically whether some children are more likely to develop along a positive trajectory than other children due to being more sensitive to positive and supportive aspects of their developmental context. Finally, future research should explore the nature of the *relationship between positive development and developmental psychopathology*, such as the degree to which they differ or share commonalities and whether the promotion of positive development could be as or even more powerful than efforts aimed at the prevention of pathological development.

Conclusion

Developmental science has a long and rich history describing and investigating both typical and atypical development. However, while there have been exerted and focused efforts to uncover the processes and dynamics involved in the development of pathological outcomes, less attention has been given to the study of development under optimal conditions and the development of

positive outcomes. As a consequence, we know a lot more about developmental psychopathology than positive development. Although there are several concepts and frameworks that describe positive development and positive mental health, many of them focus on adults or adolescents with less consideration of early childhood and early predictors of positive development. Hence, more work is needed to develop strong conceptual frameworks for positive child development that focus on clearly positive outcomes, integrate different developmental domains, take individual differences into account, and avoid cultural biases. Better knowledge on positive child development will not only advance our general understanding of developmental science but will also complement important work in developmental psychopathology.

Acknowledgments. I would like to thank Mark Greenberg and John Coffey for their helpful comments and feedback on an earlier version of this manuscript. I acknowledge the use of ChatGPT (version 3.5) to supplement and support literature review.

Funding statement. There is no specific funding associated with this paper.

Competing interests. I have no conflicts of interest to declare.

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