Chapter

20

Understanding Child Development: A Biosocial Anthropological Approach to Early Life

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20.1 Introduction

A biosocial understanding of child development frames development as a dynamic process that influences, and is influenced by, childrearing environments [1]. This encourages a complex understanding of the determinants of development by considering both biological and socio-cultural factors, which in turn encourages cross/interdisciplinary approaches. There is strong evidence that the Developmental Origins of Health and Disease (DOHaD) is best understood from a biosocial perspective that acknowledges and seeks to better understand the dynamic interactions between the biological and social [1]; however, cross/interdisciplinary research often encounters barriers and challenges such as epistemological differences and misunderstandings [2]. Understanding how research around child development has been conducted may help inform and facilitate effective biosocial collaborations.

Anthropology, being a diverse discipline spanning biological and social-cultural studies, is well positioned to examine and inform biosocial approaches. There has been long-standing interest in the biosocial within and beyond anthropology [3] as well as established traditions such as biocultural approaches in US-based anthropology that have long sought to better align social and biological sciences [4]. Recently, there is an emerging biosocial agenda in anthropology, in particular, medical anthropology (cf. Singer et al. on 'syndemics' [5], Lock on 'local and situated biologies' [6], Roberts on 'bioethnography' [7], and Gibbon et al. on 'biosocial medical anthropology' [8]; see also Alvergne on 'evolutionary medicine' [9]). Anthropology is as a result particularly well placed to contribute to work within DOHaD to foster better biosocial frameworks of understanding child development.

Building on this previous work, in this chapter we reflect on how different disciplines have conceptualised 'early life' with particular insights from evolutionary, social, and medical anthropology to challenge and further expand the narrow framing of DOHaD focus and to show the scope of a biosocial perspective. First, we introduce how childhood and early life have been studied in anthropology, followed by a discussion on how early life has been conceptualised in public health, lifecourse, and development research. We then discuss how concepts of early life may impact caregiving practice and childhood environments, which in turn impacts research on early life itself, with longitudinal birth cohort studies as an example. While recognising that there are points of difference in approach and analysis in the disciplinary reflections brought together in this chapter, and also that our discussion and analysis are far from comprehensive, we nonetheless

highlight the need for critical and reflective thinking about the ways in which we do biosocial research, and the impact it has on our understanding of DOHaD. Overall, we suggest that a more reflexively engaged biosocial anthropological dialogue around research on early life helps to broaden the scope of cross-disciplinary work that can more fully engage with the complex and dynamic process of childhood development and present a more nuanced framework of early life for DOHaD informed research and health practice.

20.2 'Early Life' in Anthropology

Children, childhood, and child development have long been a focus of interest in anthropology, with some considering it as central to its foundation and disciplinary development [10]. By studying children across cultures, anthropologists in the early twentieth century directly challenged the notion of 'childhood' as universal or that child development is shaped solely by physiology, biology, or hormones, instead showing how early life is a period of both intense socialisation and cultural transmission [11–13]. Anthropologists continue to engage with early life by describing the variety of childhoods across cultures, examining how ecology and culture impact development, and testing processes of cultural transmission, to name a few [14–16].

At the same time, there is a great deal of heterogeneity in the way that children and childhood have been studied [17, 18], and how this period of the lifecourse is approached; a diversity that provides a particular resource for widening the lens of DOHaD research and perspectives on early life. This is reflected in a more psychologically informed focus on child development in US-based anthropology that draws from lifecourse theory [19]. A focus on childhood in anthropology is also informed by what is called 'four field' approaches that include physical and cultural anthropology as well as archaeology and linguistics [14, 16], as demonstrated, for example, in the classic work of Margaret Mead [12]. While European anthropology also attended to children's lives, this was by contrast more as part of an evolving ethnographic tradition that aimed to examine wider social structures rather than child development per se (cf. Malinowski [20] and Richards [21]). A more explicit focus on childhood, however, emerged within a constructivist-situated paradigm that highlights personhood and agency in examining early socialisation [18, 22, 23]. While there are differences in the historical evolution of research in anthropology on children and childhood development, it is true to say that diverse traditions of anthropology (including those beyond a Euro-American context – see, for instance, work in South Africa such as Reynolds [24] and Ross and Pentecost [25]) have collectively helped to show how child socialisation is variably influenced by both culture and ecology, while also recognising that there are some shared mechanisms and processes.

Notably this broad landscape of anthropological work has led to directly challenging Eurocentric ideas in developmental psychology and beyond, including Bowlby and Ainsworth's 'attachment theory', which not only fails to consider non-Western caregiving approaches [26] but sees intensive caregiving by a primary caregiver as biologically adaptive [27]. An evolutionary anthropological perspective highlights the importance of a wide range of caregivers beyond the mother, with humans evolving a cooperative childrearing system [28]. Cross-cultural, comparative research highlights how attachment to a single individual is not always observed nor optimal [26]. In summary, diverse

histories of engagement with early life across different traditions of anthropology provide an important basis and resource in widening biosocial dialogue. This enables us to consider how DOHaD-informed research, policies, and practices might be expanded to encompass a broader range of factors and contexts in childhood development.

20.3 Concepts of 'Early Life' and Optimal Developmental Environments

In contemporary public health research and practice, child development is typically viewed as a *process of growth* where individuals gain socio-emotional, physical, and cognitive traits until they reach their 'final state' in adulthood [29]. Development is often represented in terms of trajectories, where there is an expected and optimal path of growth, or in terms of milestones, where development is sequential and additive. Taking physical development as an example, anthropometric measures are commonly mapped onto the WHO's child growth standards, which describe 'normal child growth [trajectories] from birth to 5 years under optimal environmental conditions' [30]. Here, average development is often perceived as 'good development', and being under- or overdeveloped may potentially be problematic with an increased risk of negative health outcomes. Similarly, motor skills may be mapped onto expected milestones using the Ages and Stages Questionnaire, a threshold-based, age-specific global screening tool assessing developmental progress [31]. Here, development is conceptualised as hierarchical where later stages of development are 'more advanced' and often perceived as 'good development'. For both trajectories and milestones, development is underpinned by biology, interacts with the environment, and builds through time. What children experience and how they develop in early life act as foundations for later life, framing the lifecourse approach as critical for developmental research. Combined with this is the idea of sensitive and critical periods, particularly in the first few years of life where 'the brain is "tuned" by the input from the environment' [32].

This view of early life, by default, places children as immature beings on their journeys to adulthood, with implications for how we research and engage with children and caregivers, and what we consider as optimal childrearing practices and environments. For example, in 'Western' countries such as the United Kingdom, United States, and Australia where such views are normative, children are typically viewed as being different to adults, and as highly sensitive to caregiver input and external environments [33–35]. Research findings recommend sensitive parenting practices that focus on understanding and responding to the child's needs without frightening the child, and such parenting practices are argued to be crucial in constructing secure attachments to the caregiver, and a foundation for 'good development' across a range of socio-emotional and behavioural outcomes [33]. Consequently, there are social expectations to create child-centred, developmentally appropriate, and stimulating environments that are typically age specific and separated from the adult world, allowing 'children to be children' [33–36]. For instance, caregivers in England are encouraged to 'read and look at books together' because 'it will help [children] with their future learning . . . allows you to bond with them and is good for emotional wellbeing' [37], informed by evidence that 'books serve as inputs to influence an infant's visual, social and linguistic development' [32]. Here, the act of reading books together is framed as a scientifically recommended extra activity caregivers can carry out for the infant, independent of their day-to-day 'adult

activities', which serves as a developmentally appropriate stimulus to encourage 'good development'.

However, not all cultures share the view that childhood is foundationally a time of growth, conflicting with the dominant notions of 'early life' in contemporary public health, lifecourse, and development literature [38]. For example, Helen Kavapalu [39] describes how concepts of childhood in Tonga stemmed from how 'children are perceived as inherently *vale* (foolish, ignorant, "crazy")' where socially undesirable characteristics such as laziness, aggression, and disobedience were viewed as 'natural'. Punishment, including corporal, was commonly used by caregivers to remove such traits and instil socially desirable traits – a form of caregiving practice viewed as harmful, outdated, and often outlawed in high-income nations. In Tonga, however, 'good development' is dependent on *removing* traits, contrasting with the idea that development is necessarily a process of cumulative growth, with caregiver punishment being an effective tool to guide children away from socially undesirable characteristics.

Broadly, the belief that development requires removal of traits is not necessarily an incorrect one, from what might be seen as a traditional science perspective. Removal of traits occurs throughout childhood, with processes such as synaptic pruning (a process of development in the nervous system that eliminates synapses) being a core aspect of brain development and possibly later health [40]. Humans also possess a range of ontogenetic adaptations that are traits with specific functions for specific timepoints in development, to address the challenges associated with childhood and adolescence [41]. These traits may disappear before adulthood and are not immature versions of adult traits. A simple example is the newborn rooting reflex, where neonates turn their heads with an open mouth when touched around their cheek or mouth; a trait that disappears during infancy. High self-efficacy in early childhood, where young children aged 3–4 years tend to overestimate their abilities, has also been argued to be an ontogenetic adaptation to facilitate exploration and engagement with the external environment [42]. If focusing on these characteristics of development, children could be conceptualised as 'full beings' who are perfectly adapted to their socio-ecological niche of childhood.

The view that children are 'full beings' has been documented across cultural contexts outside of the Western world, reported by many anthropologists including Margaret Mead who described Samoans as viewing 'children as little adults' [12]. Reframing children as 'full beings' somewhat conflicts with the Western focus on early life as an immature period of growth – with potential implications for what might be considered as an optimal developmental environment. In contrast to the child-centred approach frequently championed in the West, Samoan children were not provided with tailored age-specific, developmentally appropriate environments: when describing their play, Mead states, 'For dolls they have real babies; at six they are expected to sweep up the real house and pick all the scraps off the floor' [12]. In Samoa, therefore, 'children being children' did not require children to be removed from the adult world; they were assumed to be competent in carrying out specific tasks, and play was incorporated into everyday life. Full societal participation was seen as key for children to develop the skills and knowledge they required for the future, meaning the child-centred approach promoted in the West may be seen as a poor caregiving practice.

Overall, the concept of early life as a period of growth, dominant in Western contexts, influences how we construct optimal childrearing practices and environments. The focus on growth frames children as immature and sensitive, reflected in the promotion of

child-centred sensitive parenting practices. However, in cultural contexts where early life is not strongly equated to be a period of growth and immaturity, there may be fundamental schematic conflicts, particularly around removing children from the adult world. While evidence shows sensitive parenting leads to 'good development' in the West [33], it does not come without cost: assuming children are immature and vulnerable can encourage containment of children within developmentally appropriate and safe environments, which may limit their freedoms, agency, and social participation, which in itself impacts their learning and development [34, 35]. The presumed significance of caregiver input for 'good development' may lead to excessive and intrusive caregiving, or helicopter parenting, which has been associated with poorer mental and physical health outcomes for adolescents and young adults [42]. It may also overburden common caregivers such as mothers, with the emergence of intensive mothering cultures that have implications for their health and well-being [36].

20.4 How Concepts of Early Life Impact Research

We have seen above how concepts of childhood and development impact how caregivers interact with and construct environments around children and how in turn these conceptual framings themselves impact practices of child development. We suggest that concepts of early life also inform research and subsequently the understanding of the DOHaD. Here, we examine this hypothesis by using longitudinal birth cohort studies as a paradigmatic broad terrain of research on early childhood and the lifecourse. Analysis of how early life research is framed and situated theoretically and methodologically in birth cohort studies further illuminates how cultural framings of early development shape research practices. We suggest that critical reflection on how this terrain of research on early life is culturally constituted within birth cohort studies may also help to inform future directions for biosocial research.

Longitudinal birth cohort studies that follow the social and biological aspects of people's lives have been an important methodological tool for different research communities, mainly epidemiological, for over 60 years [43]. These studies have been particularly useful for understanding developmental patterns and causal pathways [44], contributing to the DOHaD knowledge/evidence base. In this sense, birth cohort studies serve as a resource for and are also a 'technology of' biosocial research [45]. Recently, there has been an explosion of interest in birth cohort studies, with renewed efforts to maintain existing cohorts and new birth cohorts being established in many national contexts [46]). Detailed historical records that track the social context of intergenerational lives, while not always necessarily formulated as birth cohort studies as such, have been equally important. With public health and child development often underpinned by DOHaD frameworks, birth cohorts and other longitudinal studies have fuelled and facilitated an intense research focus on the 'early life stage' of pregnancy, infancy, and childhood and now also encompass the preconception period [47]. In turn, a range of 'life stages' have become 'critical windows' for public and global health interventions, with early interventions championed for their preventative approach and effectiveness [32, 48]. As Lappé and Landecker [49] point out, specific environments have become foregrounded in postgenomic and biosocial research, with consequences for how different stages of the lifecourse, including childhood and parenting, are temporally situated as being relevant to health. In this way, birth cohort research contributes not only to new

temporal framings of the lifecourse but also to its explicit periodisation, suggesting discrete and definable life stages.

While there is today an intensive contemporary research focus on early life, its environment, and its consequences, this is arguably far from comprehensive. Birth cohort studies do allow researchers to better understand the biological and social determinants of development, including in childhood development and also across the lifecourse of participants [44]. Nevertheless, these studies have traditionally focused on limited aspects of the childrearing environment, almost exclusively focusing on the 'microsystem' within the ecological system (i.e. the immediate environment experienced by the child) [50], and in particular relying on the concept of the nuclear family household. For example, the Avon Longitudinal Study of Parents and Children [51] reveals an impressively detailed account of parenting and the household environment, including the pets that were owned by the families of birth cohort participants, how much toothpaste was put on the toothbrush, and when children first ate a raw carrot. However, there is surprisingly little information from beyond the household, such as who children see outside of this social context and what activities they do with them. This household focus persists in recent British birth cohorts such as the Millennium Cohort Study [52], which continue to hold limited information on how families and children interact with potentially important caregivers such as grandparents and even siblings of cohort participants, who are not always included in such studies.

The prioritisation of the microsystem and the household arguably stems from biases in what is valued as important aspects of the childrearing environment, including by the DOHaD and birth cohort research community, with research focus (and funding) directed towards these topics. To date, researching 'early life' has been heavily influenced by norms such as intensive mothering and the perception that two-parent nuclear families are the 'default' family structure [36, 53]. However, it has long been established that the environments beyond the household matter [52], including non-parental caregivers who are essential in the human childrearing system [2, 53]. Disciplinary silos, with their own traditions and theories, not only limit the understanding of DOHaD but may also introduce monocultural biases [53] and perpetuate an ongoing tendency for dyadic thinking in foregrounding parent (mostly mother) and child relations [54]. We suggest therefore that biosocial collaborations require critical reflection on how early life and childhood environments are culturally framed and examined in research contexts such as longitudinal birth cohorts, including how this may vary depending on histories and genealogies that shape systems of public health, concepts of the biosocial, and the emergence and evolution of birth cohorts in diverse national contexts. Understanding how norms and assumptions are built into research on early life is the first step in both challenging these normative parameters and evolving new approaches that can more fully address both diversity and variability in childhood development.

20.5 Conclusion

The examples above evidence how societal views of childhood and development have implications for childrearing practices, and in turn, understanding children's developmental outcomes in DOHaD research, outlining how biology and society may interact to shape the DOHaD. Further, our cross-disciplinary and cross-cultural examinations show how our understanding of DOHaD is influenced by the meaning of childhood and

development. This also has consequences for the staging and framing of the current intense focus on early life and childhood in birth cohort studies, raising many questions about what 'good' development in childhood looks like and challenging the idea of this process as necessarily linear and additive.

Cross-disciplinary research initiatives such as the Biosocial Birth Cohort Research (BBCR) network (https://bbcrnetwork.com) provide an important infrastructure for widening the frame of research in DOHaD on child development. They also help create contexts for collaboration, such as that between our own sub-disciplinary expertise of biological and medical anthropology. Such collaborations while nascent and in dynamic formation also lead to new research questions and challenges. This includes other dimensions of a biosocial approach that we have not been able to fully address in this chapter and that also need further elaboration through more detailed, reflexive, and engaged cross-disciplinary dialogue. Exactly how the cultural politics of childhood are variously invoked and contested in the intense focus on this stage of the lifecourse in birth cohort studies and in the way that DOHaD is implemented in public and global health are just some of the areas for future investigation. Similarly how the figure of the child and childhood continues to symbolically represent future promise in these contexts is, as yet, relatively underexamined. Integrating analysis of the wider institutional contexts of research cultures (including funding priorities) that are manifest in and help sustain the infrastructure for DOHaD-focused and birth cohort studies would also further expand the scope of critical reflexive engagement. DOHaD research has much to gain from viewing developmental processes that shape childhood and health outcomes in highly context-specific ways; an understanding that is both underlined and strengthened through cross-disciplinary dialogues, such as those with biosocial anthropology outlined here.

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