The Child and the Anthropocene

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Human beings are like parts of a body,
created from the same essence.
When one part is hurt and in pain,
the others cannot remain in peace and be quiet.
If the misery of others leaves you indifferent
and with no feelings of sorrow,
You cannot be called a human being.

Moslih Eddin Sa'adi (1184 –1291) Persian poet

There is an eternal dispute between those who imagine the world to suit their policy, and those who correct their policy to suit the realities of the world.

Albert Sorel, (1842 – 1906) French historian,

"The Anthropocene," a term coined in 2000 by Dutch meteorologist and Nobel Laureate Paul Crutzen, is commonly defined as "the period of time during which human activities have had an environmental impact on the Earth regarded as constituting a distinct geological age." (Merriam-Webster Online Dictionary, 2018)

The *Encyclopedia of the Earth* states, "The Anthropocene defines Earth's most recent geologic time period as being human-influenced, or anthropogenic, based on overwhelming global evidence that atmospheric, geologic, hydrologic, biospheric and other earth system processes are now altered by humans." (2018)

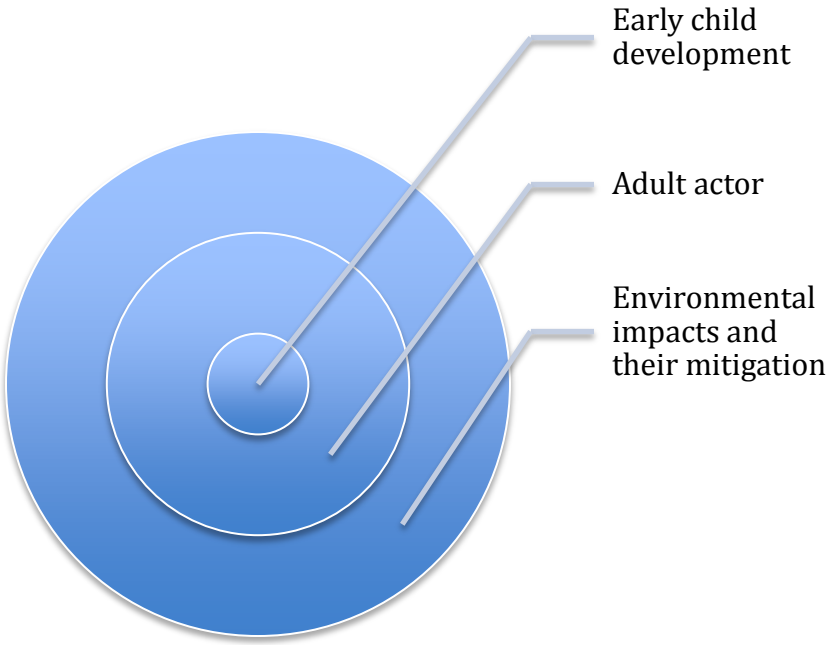
Upon reading these definitions, one would think that human development, and most especially child development, would be central themes in many if not most writings on the Anthropocene. However, a review of the literature reveals this is not the case. The few commentaries that include the child rarely address the status of the child and the child's potentially proactive role in the Anthropocene.

- **Where is the Developing Child?**

The World Economic Forum presented the graphic above that featured the young child. However, research and philosophical tracts on the Anthropocene have not focused on the child, as this artist would imply. Rather, they have mainly addressed geological, biological, environmental, spiritual, and quite fanciful topics. The operative half of the geological Anthropocene coin, “the human dimension,” has seldom been explored in any depth. And yet, the human is the fundamental “actor” causing major alterations of the air, land, and ocean!

Epistemologically, it is impossible to discuss the Anthropocene without beginning with the progenitor of change: the human being. And one cannot discuss humanity without beginning with the child!

Essentially, the child is at the center:



The child is rarely addressed in writings on the Anthropocene even though much research and several meta-analyses have revealed that without a good foundation of nurturing care and development in early childhood, specifically from preconception to 36 months of age, children will not develop well in life, learn how to learn, become skilled citizens, contribute positively to community and national economic systems, and ultimately, to the global economy (Heckman, 2006; Gertler et al, 2014).

- **Attention given to the child in the Anthropocene**

A small literature does exist on the child within the Anthropocene. It mainly addresses the impact of the Anthropocene on the child, and to some extent, the agency of the child (Malone, 2018). Others tackle the how children in the Anthropocene might remold the world and lead the coming generations or be so remolded by new biological realities that they become something else – perhaps the child of science fiction (Sheldon, 2016). Others discuss parenting in the Anthropocene – or whether or not to parent at all (Spett, 2017). Some writings are totally fanciful, such as the description of a futuristic videogame, supposedly for children, but strange in the extreme (Gordon, 2017).

In an inter-generational manner, some writings focus on the normative and ethical requirements of humanity, given geological changes that are occurring and the imperative of planning and collaborating together -- not as warring and competitive states but rather as a "single, total functioning system" for the wellbeing of our planet (Hamilton, 2017, p. 34).

Ultimately humanity, and basically our children and grandchildren, who are living in highly diverse circumstances, will be responsible for overcoming the depredations of our planetary environment, achieving ecological preservation, and initiating creative responses essential for effective planetary stewardship. For this, we shall need competent, innovative, dedicated, flexible and above all, well-educated children who will have the agency and capacity for exerting courageous leadership and working in teams.

Most readers will worry about how warring and competing nation states and significantly different ethnic groups will find a way to get along. I worry much more about how humanity will rear our next generation of children who must truly become citizens and stewards of the world and inventive and competent leaders. How will we ensure they gain the strength, endurance, intelligence and abilities to create the earth-saving systems that are so urgently needed?

The Global Crisis of Children

As human and ecological tragedies are increasingly occurring in all world regions caused by uncontrolled and perhaps largely uncontrollable "forces of nature," we are also facing a global crisis regarding the developmental status of our children in most if not all countries.

The recent Lancet series on early childhood development, *Advancing Early Childhood Development: From Science to Scale*, revealed the extent of the need for improving child development.

The Global Crisis of Children

"New estimates, based on proxy measures of stunting and poverty, indicate that 250 million children (43%) younger than 5 years in low-income and middle-income countries are at risk of not reaching their developmental potential. There is therefore an urgent need to increase multisectoral coverage of quality programming that incorporates health, nutrition, security and safety, responsive caregiving, and early learning. Equitable early childhood policies and programmes are crucial for meeting Sustainable Development Goals, and for children to develop the intellectual skills, creativity, and wellbeing required to become healthy and productive adults" (Black et al, 2017).

The rate of 43% of children who "are at risk of not reaching their developmental potential" due to stunting and moderate to severe poverty is exceedingly high. Most of these children who are living in 141 lower- and middle-income countries (LMIC) have high levels of developmental delay and disability (Lu, Black & Richter, 2016; Maulik & Darmstadt, 2007). From experience, I have found that in some LMIC with exceedingly high levels of poverty, over 55% of newborns are estimated to be at significant risk of becoming limited in their ability to think, plan and function adequately in society. No national economy would be able to advance well and at the same time deal with the many stresses and challenges of the Anthropocene with high levels of young children with delays and disabilities who will become unproductive adults and a burden to others in society.

Apart from genetic disorders, many of these children would have developed in a typical manner had they not been affected by severe poverty, malnutrition, natural disasters, war, migration, pollution and pestilence.

Most children in LMIC are born with adequate developmental status; however, within a period of nine to twelve months, many of them begin to fall rapidly behind in their development due to stunting, a lack of iron, iodine and other micronutrients, inadequate stimulation and care giving, a lack of basic primary health services, and chronic ill health.

If survival depended solely on the triumph of the strong, then the species would perish. So the real reason for survival, the principle factor in the "struggle of existence," is the love of adults for their young.

Maria Montessori, (1870-1952) Italian preschool educator

Abundant research in the fields of neuroscience and child development has revealed that Maria Montessori was profoundly correct. Parent-child bonding and good nurturing care given by parents and other caregivers is essential for good child development (World Health Organization, et al, 2018).

Children with developmental delays are slow learners and are greatly hampered in their ability to adapt and cope with change, and most especially to the types of life-threatening

changes that are expected to occur, intensify and increase further in the Anthropocene. They will be unlikely to be able to design creative solutions to major problems and challenges. These children rarely have “agency,” and they usually become a burden and a high cost to society over time. In primary school, they enter later than the expected age, have poor attendance records, repeat grades, have low achievement, and often drop out altogether between the second and fourth grades. Very few low-performing students are able to transition to and graduate from secondary school. Most are functionally illiterate and they lack numeracy skills. In addition, developmental delays are highly correlated with juvenile delinquency and later criminal behaviors.

To cope well with chronic and cyclical natural disasters, desertification and flood, war and community unrest, migration, refugees and internally displaced families, and rising tides of persons living in poverty, many of whom are rejected by ultra-nationalist groups, it will be essential reconsider national policies regarding investing in children. Now more than ever, nations must invest in improving the status of children and in improving the competencies of families who rear them. Countries must improve and expand essential services to prevent delays and to help parents empower themselves as competent caregivers.

The good news is that we know how to develop effective early childhood policies and programs for children and their families (Shonkoff & Phillips, 2000; Vargas-Barón, 2005, 2013, 2016; Nadeau, et al, 2011; Britto, Engle & Super, 2013). On the national programmatic level, although we have identified many of the essential principles, processes, infrastructures and activities for taking programs to scale, more research is needed (Vargas-Barón, 2009; Yoshikawa et al, 2018).

The bad news is that although we know well-prepared, evidence-based and comprehensive early childhood policies can bring about improved and expanded services for early childhood development and family functioning, the commitment and political will to provide sufficient financial and material resources and complete organizational infrastructures are not in place to enable taking effective early childhood programs to national scale, in upper-income countries to say nothing of lower- and middle-income nations.

Implications for the Anthropocene: the path forward

To respond creatively and effectively to the challenges of the Anthropocene, special attention must be given to children and families living in LMIC and those living in marginalized and impoverished populations of high-income countries, including migrants, excluded groups such as Roma, and ethnic minority groups.

Expanded investments in multisectoral and integrated services for young children and their families are urgently needed to reverse cyclical family poverty, dysfunctional child rearing practices, pervasive malnutrition and chronic illnesses.

Under the global Sustainable Development Goal (SDG) for Education established in 2015, Target 4.2 for early childhood development states:

Target 4.2

By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education (United Nations, 2015).
Indicator 4.2.1
Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial well-being, by sex (UNESCO Institute of Statistics, 2016)

Together, this SDG target and its indicator represent an important step forward because ALL children are to be included – not only those with typical levels of development. Early childhood development is to be measured in all nations to assess whether or not countries are developing their children well. In addition, child development is related strongly to future health, learning and psychosocial wellbeing.

Given the rapid pace of changes occurring during the Anthropocene, it may be too late to save the current generation of children growing up in LMIC and in depressed populations of highly populous upper-income countries. As soon as possible, it will be essential to target, identify, and serve children with at-risk situations, developmental delays and disabilities. Such services should include:

- Preconception and prenatal education and care to improve birth outcomes, reduce low birth weight, pre-term births and birth anomalies;

- Improved deliveries and neonatal screenings and services to identify and serve children with at-risk conditions, reversible micronutrient disorders, and children requiring neonatal intensive care;

- Universal and regular developmental screenings for infants and toddlers at least up to 36 months of age to find children with developmental delays, disabilities and behavioral and mental health needs at the earliest possible age and refer them to services for early childhood intervention;

- General “nurturing care” parenting programs for all families who do not meet eligibility criteria for early childhood intervention services but whose parents could profit from learning the most effective ways to rear their children well; and

- Inclusive initial and pre-primary education services for all children from 24 to 30 months of age to transition to inclusive primary school to ensue all children continue to achieve their full potential, do not fall back in their development, and are ready for achieving success in primary and secondary school.

Throughout early childhood, special attention should be given to promoting **c**reativity, innovation, critical thinking skills, and learning to learn. Exploratory, play-based and project-based learning should be featured, along with project activities focused on

problem solving and developing innovative approaches to environmental and social issues. Building positive values from the earliest months forward regarding diversity, equity, inter-personal relations, conflict prevention and resolution, and empathy for achieving peace will be essential.

Such high-quality learning environments must become generalized. Children become enthusiastically supportive of policy and programmatic efforts to prevent further environmental degradation. They build personal and group commitment for achieving an improved future. Ultimately, more children can become co-researchers, amazingly effective advocates for effective social and environmental policies, and ultimately they become articulate spokespeople for policy development and program implementation.

For this to happen, children must be enabled to achieve their full potential and allowed to become co-leaders in the transformation of the world.

If these initiatives were to be developed throughout the world, our little ones would not only become well developed as human beings, they would also save the oceans, restore the forests, reconstitute the aquifers, eliminate injurious carbon emissions, and end pollution.

If we do not make these changes in our policies and programs for children, then I must ask everyone: Who, who will save our planet?

If we are to teach real peace in this world, and if we are to carry on a real war against war, we shall have to begin with the children.
Mohandas K. Gandhi, (1869-1948) Indian philosopher

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