

## **Position Paper for the Interim Evaluation of Horizon 2020: Investing in childhood development research and innovation.**

*The Consortium on Individual Development (CID) unites the best that the Netherlands has to offer in child developmental research, encompassing seven different universities and a wide range of behavioral and social disciplines, including behavioral genetics, developmental (neuro)biology, psychiatry, cognitive neuroscience, developmental psychology, pedagogical sciences, communication science, and mathematics.*

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### **Key messages**

- Focus on childhood development has been notably absent in Horizon 2020 calls.
- Greater knowledge of childhood development and the causes and origins of individual differences in susceptibility to environmental influences is important.
- Creation of evidence-based responses, interventions and prevention strategies to risks and threats facing childhood development, can play a major role in solving societal challenges.
- Attention to childhood development is a long-term investment that needs to be researched more intensively.
- Childhood development should be given high priority in future national and international R&I programming
- An integrated approach (different disciplines and different sectors) is needed if we are to create real impact and contribute to providing a healthy, inclusive, and secure society for our children and future generations.

### **Introduction**

Most children develop well and find their way in society without major problems, but too many do not. A combination of children's disposition and the environment in which they are raised underlies these developmental differences. When childhood development is not optimal due to, for example, prenatal threats, illness or abuse, huge consequences in adult life result, negatively contributing to many of the societal challenges Horizon 2020 wishes to address. It is therefore striking that childhood development does not have a much more prominent place in the Horizon 2020 Work Programmes. This position paper wishes to argue that we need to recognize that our children deserve every chance to develop and thrive and become constructive, engaged citizens, contributing to society. By gaining insight into children's development and by creating evidence-based responses to risks and threats, we may truly contribute to providing a healthy, inclusive, and secure society for current and future generations. Only by integrating science and policy regarding children's wellbeing will we achieve impact.

## Children in Horizon 2020

Looking at the Work Programmes that have so far been published under Horizon 2020, children are mentioned in one call: and a limited number of call topics in different Societal Challenges. Most prominent is the *YOUNG Call -the Young Generation in an Innovative, Inclusive and Sustainable Europe* under Societal Challenge 6: *Europe in a changing world: inclusive, innovative and reflective societies*. This call predominantly takes an economic approach and limits the scope of research to issues such as youth employment and mobility. Although these issues are important, the call does not tackle the deeper issues of childhood development. The expectation that these deeper issues would be sufficiently addressed under Societal Challenge 1: *Health, demographic change and well-being* is unfortunately not met.

## Why childhood development?

There are several compelling arguments to no longer treat childhood development as a side issue, but to place it as a high priority area in future national and international R&I programming.

There is growing evidence from experts in disciplines as diverse as neuroscience, epidemiology, genetics and epigenetics, healthcare, economics and social sciences that investing in children and families results in improved health and education outcomes in adulthood, higher income, less crime and reduced welfare spending. Nobel laureate James Heckman identifies four big benefits for investing in childhood development<sup>1</sup>:

1. It can prevent the achievement gap.
2. It can improve health outcomes.
3. It can boost earnings.
4. It makes dollars and sense.

A recent cohort study used childhood risks, including familial socioeconomic characteristics, maltreatment, IQ and self-control, and poor brain health at three years of age, to describe a small population segment that placed a proportionately large burden on economic and social costs. The identified segment comprised 22% of the cohort and accounted for 36% of the cohort's injury insurance claims; 40% of excess obese kilograms; 54% of cigarettes smoked; 57% of hospital nights; 66% of welfare benefits; 77% of fatherless child-rearing; 78% of prescription fills; and 81% of criminal convictions.<sup>2</sup>

Investing in childhood development also has the potential to significantly contribute to the 2030 Agenda for Sustainable Development and the linked Sustainable Development Goals (SDGs) that the EU is committed to implementing both internally and globally. Childhood development is specifically mentioned in SDG Target 4.2 which states that by 2030 countries should: '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'. But SDG commitments to childhood development are much broader than this education-focused target. Strengthening childhood development is key to achieving at least seven of the SDGs, on poverty, hunger, health (including child mortality), education, gender, water and sanitation and inequality.

<sup>1</sup> <http://heckmanequation.org/content/4-big-benefits-investing-early-childhood-development>

<sup>2</sup> Caspi, A. *et al.* Childhood forecasting of a small segment of the population with large economic burden. *Nat. Hum. Behav.* **1**, 0005 (2016).

Several other SDGs, notably responsible consumption and production, and peace, justice and strong institutions, critically depend on whether sufficient self-regulatory skills have been acquired in childhood. In being so pivotal in achieving the SDGs, research on childhood development encourages international cooperation, thus fitting very well within the Horizon 2020 vision for European research and innovation to be 'Open to the world'.

### **An integrated approach**

How children (from conception to early adulthood) develop is in part determined by their environment, be it the local environment or the wider culture in which they are raised – parents, peer groups, schools, clubs, the media and other institutions, physical and digital neighbourhoods, and societal factors. However, how children develop is also affected by biological factors, such as their genotype. To gain a true understanding of child development, one needs to recognize the continuous, intricate interplay between various environmental and genetic factors, which in turn necessitates the integration of expertise in a broad range of research areas.

Childhood development is an area in which true interdisciplinarity is vital in order to answer complex research questions and improve the understanding of pressing societal challenges. As such we share the vision written in a recent League of European Research Universities (LERU) paper, recognizing interdisciplinarity as a powerful driver of knowledge creation, scientific progress and innovation.<sup>3</sup> We welcome the fact that Horizon 2020 has provided unprecedented support to interdisciplinary research. It is recommended that this focus continues and is strengthened by, for example, making sure that funding is effectively allocated to truly interdisciplinary research projects and by creating specific interdisciplinary research opportunities with earmarked funds. Collaboration with sectors outside of academia such as business, governments, schools and other non-state actors, is also crucial in creating impact in the area of childhood development. Horizon 2020 should continue to emphasize the value of such collaboration.

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<sup>3</sup> [http://www.leru.org/files/publications/Interdisciplinarity\\_and\\_the\\_21st\\_century\\_research-intensive\\_university.pdf](http://www.leru.org/files/publications/Interdisciplinarity_and_the_21st_century_research-intensive_university.pdf)

This initiative is supported by CID Principle Investigators:

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Prof. Henning Tiemeier  
Prof. Marian Joëls  
Prof. Wim Meeus  
Prof. Maja Deković  
Prof. Albertine J. Oldehinkel  
Prof. Johan Ormel  
Prof. René Kahn  
Prof. Patti Valkenburg  
Prof. Frank Verhulst  
Prof. Wilma Vollebergh

