Jacobs Center for Productive Youth Development
Further Development and Expansion

The mission of the Jacobs Center will be to understand how social, psychological, biological, and economic factors interact in creating opportunities and overcoming obstacles in child and youth development. The proposed Jacobs Center expansion will be devoted to understanding these interactions by integrating the different theoretical and methodological perspectives necessary to comprehensively address challenges to productive youth development – challenges that are magnified by the rapid pace at which all areas and stages of life change in modern societies. Globalization and population growth increase the competition for education and employment, and, without appropriate interventions and social institutions, can lead to large inequalities in opportunities and resources. These inequalities can cause further disparities in access to education, healthcare, and jobs, creating a cycle that compromises the chances of productive development for many children and adolescents (Currie 2011). However, just as there are inequalities in opportunities and resources that can accumulate and compound over the life course, there are also individual differences in cognition, motivation and health that affect the degree to which children are able to overcome disadvantages and develop resilience to setbacks (Luthar et al. 2000; Goldstein & Brooks 2013). In addition, social and institutional factors can be designed to support positive child and youth development or help compensate for early disadvantages. In order to adequately address the complex processes underlying productive youth development and the design of intervention programs, an interdisciplinary approach spanning from the individual to the institutional and societal levels is essential.

This interdisciplinary approach should incorporate the increasing evidence for the crucial role of children’s motivational and self-regulatory skills in lifelong success. Work by Walter Mischel (Mischel et al. 1989; Mischel 2008), as well as studies by Nobel prize winner James Heckman (Heckman 2007; Cunha & Heckman 2009) and Jacobs Prize winners Avshalom Caspi and Terrie Moffitt (Moffitt et al. 2011), stress the importance of motivational and self-regulatory skills such as delay of gratification, emotion regulation, goal persistence, and social cooperation: Across levels of socio-economic status, children and adolescents more proficient in these abilities develop better physical and mental health, more educational
success, and higher salaries as adults, while those less adept at self-regulation are more likely to have drug addictions, unwanted pregnancies, and criminal convictions. These findings highlight the important role of motivational and self-regulatory skills in productive youth development. However, relatively little is known about individual differences in the development of these skills and their interactions with the socio-economic environment and underlying biological factors (e.g. brain structure and function, genetics, endocrinology, metabolism and body composition, etc.) (Nelson et al. 2002; Hackman et al. 2010). Lastly, beyond the welfare of youth themselves, the benefits to society at large of increasing self-regulatory, motivational, and cognitive skills in children and adolescents (Heckman et al. 2010; Almond & Currie 2011) are just beginning to be understood and, equally important, quantified in terms of returns on investments.

A comprehensive understanding of the factors leading to productive child and youth development will require the examination of behavioral, biological, and environmental factors. In addition to self-regulatory skills, general intelligence, memory, attention, reading, number processing, and even perception also strongly depend on the intensity and quality of experience in early childhood and adolescence as well as the developmental trajectories of the underlying neural systems (Ghetti et al., 2010; Ghetti & Bunge, 2012; Shaw et al., 2006; Raschle et al., 2012, 2013; Knudsen et al., 2006; Leuner et al., 2010). In the cognitive domain, substantial research has shown that early experiences and stimulation exert strong influences on brain development and cognitive function (e.g., Hyde et al., 2009). Notably, these findings suggest a close association between changes in skills and abilities and transformations of the underlying neural networks (neural plasticity), further highlighting the importance of combining behavioral and biological measures (Knudsen et al. 2006). Clearly, access to these important early experiences will vary across socio-cultural, economic, and family environments and one aspect of the Jacobs Center’s mission will be to develop methods and interventions that facilitate the productive development of children from all backgrounds.
Key Questions

The prevalence of socio-economic inequality, differences in the neural underpinnings of social behavior and cognition, as well as differences in parental styles and their relation to the development of critical cognitive, motivational, and self-regulatory skills in early life prompts several key, but as yet insufficiently addressed questions:

- **Understanding advantages and disadvantages:** How do individual biological and psychological characteristics, families, peers, educational institutions, and societal contexts affect the course of child and youth development? How do early advantages or disadvantages translate into later life outcomes?

- **Correcting disadvantages:** What roles do social, biological, and institutional factors play in correcting early underachievement and in providing the necessary resources to cope with poor social environments in order to bring children ‘back on track’?

- **Building self-regulatory skills:** How do parenting, educational programs, early childhood environments, and biological factors contribute to the acquisition of the necessary motivational and self-regulatory skills that are central aspects of productive development and coping strategies in children and adolescents? How effective are programs that aim at improving interactions within the family itself compared to programs that support children outside the family?

- **Assessing the benefits for society:** How efficient are specific interventions at different stages from early childhood to adolescence in terms of fiscal and human capital output, and how can intervention programs best be adapted to local cultures in order to increase their acceptance and effectiveness?

All four of these central questions span the boundaries of individual scientific disciplines and are best addressed through the integration of multiple viewpoints and research techniques. It is, for example, impossible to successfully address these questions without reliable measurement of individuals’ self-regulatory, motivational, and cognitive skills using tools and insights from psychology. On the other hand, it is equally impossible to understand the social and economic processes behind cumulative advantage/disadvantage or the social benefits of education interventions without the tools and insights from economics and sociology. Moreover, a comprehensive understanding of interactions between individual
characteristics and socio-economic contexts clearly requires an integrated, interdisciplinary approach. Thus, we propose to expand the existing Jacobs Center in such a fashion that it transcends the traditional boundaries of single disciplines by integrating approaches and methodologies from economics, psychology, and sociology and applies them for the interdisciplinary study of productive youth development. This synergistic integration of different theoretical and methodological perspectives will greatly enhance the impact of the Jacobs Center in research, teaching, and the implementation of practical measures to enhance productive youth development.

The University of Zurich has had great success with interdisciplinary projects in the recent past and the combined efforts of the economics, psychology, and sociology departments in addressing the topic of productive youth development will continue this tradition. Therefore, the expanded Center will devote its efforts to conducting outstanding research not only through interdisciplinary projects among the research groups within the Center, but also by engaging in more extensive research and teaching collaborations across departments at the University of Zurich as well as with leading international researchers in these fields.

A Unique Role for the Jacobs Center

Given the critical importance of productive child and youth development, it is unsurprising that multiple centers exist to study aspects of productive child and youth development. One common feature of successful existing centers such as the Institute for Child Development at the University of Minnesota, The Fraser Mustard Center, The Centre for Child and Family Studies at Leiden University, The Center on the Developing Child at Harvard University, the IDeA center at DIPF and Goethe University, The Center for Health and Wellbeing at Princeton University, or The National Center for Children and Families at Columbia University is the combination of multidisciplinary research methodologies and perspectives. Ground-breaking research from these institutions and individual researchers across the globe approaches questions about the development of concrete skills (e.g. language, reading) and more abstract characteristics of morality, executive function, and self-regulation using
carefully constructed behavioral experiments and interventions combined with neuroimaging, genetics, and endocrine and other biological measurements. Laboratory and field experiments of this type yield substantial increases in our understanding of the factors and processes leading to healthy and productive development. They also show which biological or environmental variables may lead to mental and physical health problems as well as poor academic and social outcomes.

Cleary, the expanded Jacobs Center should and will utilize similar psychological, biological, and sociological techniques and approaches to investigate novel questions and further our knowledge of productive youth development. However, the Jacobs Center can also distinguish itself from existing centers in two important ways. First, long range experimental intervention programs with large, representative samples that can determine the causality of social, economic, and biological factors in developmental outcomes have proven to be extremely informative, but also remain extremely rare. A central goal of the Jacobs Center will be the creation and maintenance of such long-term projects. A second unique contribution of the Jacobs Center will be the economic quantification of the gains to societies from improvements in parenting techniques, school programs, and other institutions that promote productive development. Providing the best possible environments and opportunities for children and adolescents is universally desirable. Yet, realistically, there are constraints on the resources (e.g. time, money, manpower) available to invest in these endeavors. Therefore, knowing which intervention techniques or institutional designs yield the most efficient benefits for youth development and later life success is crucial to the goal of creating and promoting improvements at the broad national and international levels. Here the unique combination of economics, psychology, and sociology planned for the Jacobs Center has a distinct advantage. All of the existing centers mentioned above use multidisciplinary techniques, but a rigorous economic cost-benefit analysis of the outcomes is almost never carried out. Such information is a crucial tool for convincing schools, governments, and other policy makers to adopt measures promoting productive youth development. Thus, the Jacobs Center will position itself as a leading international institution in striving not only to gain a basic understanding of the mechanisms of productive child and youth development, but also to promote meaningful improvements in educational and social institutions.
Structure of the expanded Jacobs Center

To take the Jacobs Center to the next level and build a world-class Center, we propose to install three competence areas covering economic, psychological, and sociological aspects of productive youth development (details of each chair below). This substantial expansion of the Jacobs Center’s resources will allow considerable strengthening of the research on productive youth development by achieving a critical mass of interdisciplinary researchers. We will seek to fill the professorships for each competence area with excellent and internationally renowned researchers to achieve the best possible scientific results and international visibility. Note that we would not seek a direct one-to-one correspondence between any of the three units and any one of the central questions listed in the bullet points above. Rather, we anticipate that the various members of the Jacobs Center would all contribute to multiple aspects of productive youth development.

Early influences on the development of children have strong consequences for later developmental phases (e.g., school, professional education). It is, therefore, desirable to obtain data from the entire development span starting prenatally, extending to infancy, childhood, adolescence and adulthood. Collecting these data will enable the researchers to delineate the foundations and constraints of cognitive and social development. Thus, it is important to find an experienced researcher who is capable of supervising multimodal longitudinal research, suggesting that one of the three professors should be an experienced longitudinal researcher. A further point for consideration when designing the new center is the desire that at least one member of the Center have expertise in the utilization of “experience sampling” methodologies that can help to understand what children and adolescents are doing in “real” environments outside the lab.
Descriptions of competence fields

Here we outline our vision for the competence fields in each of the three disciplines that will make up the Jacobs Center. These fields represent novel additions to the departments of economics, psychology, sociology, and the University of Zurich as a whole. Existing members of each department, and the wider UZH community (from the medical faculty but also other researcher in economics, psychology and sociology), have some overlap in terms of skillsets and interests and there are many who would greatly benefit from collaborations with the Jacobs Center and the individuals who will be hired for these fields. Likewise, the new hired professors for the Jacobs Center are likely to benefit from collaborations with researchers from UZH.

Economics of Child and Youth Development

The skill set of the professor, the assistant professor, and postdocs hired in this field should include the following:

- Program/institution design and evaluation
- Causal econometrics
- Laboratory experiments and field interventions with children and adolescents
- Interdisciplinary collaboration and multimodal assessment (e.g. behavior, neuroscience, genetics measures)

Potential candidates should also have a track record of applying these skills to questions such as:

- How can family, school, and society at large assist children in acquiring the necessary motivational and self-regulatory abilities?
- What types of nurturing or educational approaches are most appropriate for developing these abilities?
- How can public policy and educational institutions help children who are located at the bottom edge of the distribution of the abilities gain these abilities?
- What are the social costs and benefits of various interventions and institutions in early childhood education, and how can they best be adapted to local cultures in order to increase their acceptance and efficiency?
**Psychology of Child and Youth Development**

The skill set of the professor, the assistant professor, and postdocs hired in this field should include the following:

- Supervising and managing longitudinal psychological and cognitive neuroscience research
- Brain and/or behavior developments in infants and children
- Brain plasticity and how experience shapes these developmental pathways

Potential candidates should also have a track record of applying these skills to questions such as:

- How do early biological and psychosocial adversities influence brain and behavior development?
- How do babies, infants, and adolescents develop their memory, language, executive control, and learn to process the social information that other humans convey?
- How do goal-directed behavior and self-control develop across childhood and adolescence, and are there critical periods where experience exerts strong influences on these skills?
- How can the brain and behavior development be positively influenced by psychological and/or social interventions?

**Sociology of Child and Youth Development**

The skill set of the professor, the assistant professor, and postdocs hired in this field should include the following:

- Profound background in sociological life-course theories with focus on child and youth development
- Profound knowledge in quantitative empirical research methods; in particular longitudinal designs, event history analysis, and experimental methods (e.g. survey experiments, field experiments)
- Experience in interdisciplinary collaboration and interest in multimodal assessment (attitudes, behavior, biomarkers)
Potential candidates should also have a track record of applying these skills to questions such as:

- How does the social background of parents and peers influence the behavior, the educational performance, and the productive development of children and adolescents?
- How do critical events in the life-course of children and adolescents influence transitions in the educational system and their later occupational history?
- How do the social background and the educational system influence and interplay with children’s and adolescents’ social norms, flexibility, and ability to cope with pressure, and what are their consequences for the life-course?

We will seek to recruit leading experts in all three fields for the chairs in economics, psychology, and sociology and expect that the world-class research conducted by these individuals will enable them to obtain third party funding to cover research costs associated with the Center beyond the generous funding provided by the Jacobs Foundation and University of Zurich.

The individuals selected to fill these chairs will drive the future success and contributions of the Jacobs Center. Given the common interests of all three departments in recruiting and hiring the best possible researchers in each area to build and promote the Center, we propose interdisciplinary hiring committees consisting at least of two members from economics, psychology, and sociology as well as two external experts in child and youth development. These hiring committees can ensure that from the outset the holder of the chairs in economics, psychology, and sociology are individuals who demonstrate a convincing openness to and excitement about interdisciplinary research utilizing tools and ideas from the social and biological sciences. Although all disciplines are deemed to operate on the basis of their own scientific backgrounds we emphasize that even the typically non-biological disciplines (sociology and partly psychology and economics) should take into account the growing fields of neuroscience, endocrinology, and immunology.
The competence field descriptions above further highlight an important aspect of the Jacobs Center expansion, the creation of super additive synergies in addressing common questions through separate, but complementary, methodologies. It can be seen above that the questions and topics addressed in the various fields are interrelated and partially overlapping. However, the expertise and methodologies of each field and professorship will be unique and complementary to one another. This combination of common questions and diverse skillsets will create productive synergies between the researchers within the Center. Moreover, additional synergistic relationships will be developed with existing researchers at the University of Zurich, providing significant added value to the University at large. The proposed competency descriptions and professorships represent important additions to the departments of economics, psychology, and sociology and there are obvious points of contact for collaboration with existing faculty in those departments. In addition, we foresee productive interactions between the Jacobs Center and researchers in areas such as the biosciences, education, medicine, child psychiatry, and political science at UZH and in the broader European and international communities.

Collaboration with external researchers

Beyond filling an important niche in the European, and indeed international, landscape on child and youth development, the Jacobs Center will be integrated into the wider international research community. The issue of productive youth development is a worldwide concern and research expertise in this area is distributed around the globe. The Jacobs Center should become a melting pot for international researchers already working on this topic and those desiring to do so. The international role of the Jacobs Center will facilitated by an advisory board of top researchers drawn from the institutes on child development mentioned above and individual leaders in the field.

Many of the leading institutes for child development have formal programs to encourage and support extended stays (12-18 mths) for visiting scholars. Once established and staffed, the Jacobs Center should also create a formal visiting scholar program to maintain existing and promote new and innovate international collaborations. It is easy to foresee productive cooperation between the Jacobs Center and external researchers who may wish to make use of data from the existing COCON longitudinal panel and future experiment based
intervention studies conducted by the Jacobs Center. Furthermore, it is equally obvious that researchers within the Jacobs Center would greatly benefit from research partnerships with other research institutions, for example those specializing in biomedical analysis of measures like genes or hormone levels.

Training and dissemination

As part of its core mission, the Center will promote young scholars at the doctoral and postdoctoral level. This will include courses taught by the Jacobs Center faculty that are available to students in all disciplines at UZH, including but not limited to economics, psychology, sociology, biology, and neuroscience. In the long-term, the Center might establish an interdisciplinary PhD program in productive youth development. However, it would be more practical for the Jacobs Center faculty to fill gaps in the existing economics, psychology, and sociology PhD programs in the immediate future. There is already an existing process at UZH for cross-listing courses between disciplines. Taking advantage of these established procedures will allow the Jacobs Center faculty to effectively promote and convey its expertise with regard to productive youth development without imposing the administrative burdens of running a separate program. This process would then maximize the time available for high quality teaching and conducting world-class research. Finally, at the applied level, the Center will not only disseminate the research findings to the broader public and policy makers through scholarly publications and public lectures, but also devote one facet of its research to applied settings such as translational and intervention projects and the quantification of their benefits.

Conclusion

With this multidisciplinary approach that adopts perspectives from economics, psychology, and sociology and continues to build on the strengths of the existing research program, the Jacobs Center will contribute in a unique and novel way to fundamental and unanswered questions in the field of productive youth development. This research will help to better
understand the processes that lead to cumulative advantages and disadvantages and how to promote and support positive child and youth development through appropriate interventions. It will establish a fundamental understanding of how individual competencies such as cognitive, self-regulatory and motivational skills affect life course transitions, and vice versa, how coping with specific life events impacts the further development of these competencies. Finally, it will provide knowledge into the social and economic benefits of interventions – knowledge that is sorely needed to facilitate a rational public discourse about the measures necessary to facilitate productive youth development.

References


