

## Proposal for Core Hypothesis

### I. Proposed Hypothesis:

- a. Parental efforts to facilitate competence\* will reduce the risk of exposure to chemical agents , physical conditions and social circumstances connected to cognitive, social, emotional, sensory-motor, and health disorders.
- b. Parental efforts to facilitate competence\* will reduce the downstream adverse consequences of exposures to chemical agents , social circumstances, and physical environmental conditions; and they will reduce the risk of co-morbidities related to disorders arising from such exposures.
- c. Parental efforts to facilitate competence\* , interacting with genes and the social conditions children encounter, will determine the course of cognitive, social, emotional, and sensory-motor development in children exposed to adverse environments. As well they will improve health related behaviors (including the reduction of risky behaviors).
  - \* in the form of: (a) the number and richness of social encounters between parent and child, (b) direct efforts to teach the child concepts and skills, (c) providing toys and materials for learning, (d) scaffolding and otherwise structuring encounters for learning so as to maximize attention and engagement, (e) permitting and encouraging exploration and mastery, (f) providing opportunities for enriched cultural experiences, (f)providing lessons and memberships in organizations that promote knowledge and skill-building, (g) interacting with social institutions whose purpose it is to promote learning, (h) discouraging excessive involvement in marginally productive activities (e.g., watching TV, playing video games, hanging out), and (i) providing protected and organized physical spaces for learning.

### II. Workgroup: Development & Behavior

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#### IV. Public Health Significance:

- a. Prevalence – since the question being addressed in this hypothesis pertains to parental efforts aimed at promoting competence broadly speaking, the outcomes of concern span the full array of cognitive, social, emotional, health, and sensory-motor conditions of interest to the entire study.
- b. Morbidity – this figure is hard to estimate in that the hypothesis is concerned with the promoting competence. The assumption is that the promotion of competence will help reduce the number and severity of morbidities connected to a wide array of health and developmental conditions.
- c. Quality of Life – this hypothesis directly addresses quality of life pertaining to a vast array of health and developmental conditions and the promotion of quality of life per se.
- d. Mortality – this hypothesis is not directly concerned with mortality. However, the literature suggests that people with greater competence are less likely to be engaged in activities and be subject to conditions that increase the likelihood of mortality. They are also likely to be healthier in general.
- e. Cost – not able to estimate
- f. Perceived importance – For young children in particular, parents are the primary agents of learning. Knowing what they do to promote competence across many domains has been of high scientific interest for decades. There is particular relevance to studying how parental efforts to promote competence may serve to compensate for the negative impacts of exposures to adverse circumstances and how failure to promote competence may exacerbate conditions stemming from early exposures to chemical agents, physical conditions, and social circumstances that hinder child well-being. Further clarification of what parental actions promote competence and reduce long-term risk is of public health significance in that it can lead to productive preventive interventions.

#### V. Justification for Large, Prospective Study:

Although there is evidence that parental efforts to promote competence seem to enable children to function within the normal range even if they experience some types of early adversity (e.g., prematurity, interuterine exposure to certain drugs and chemicals), there is almost no information on how protective these parental actions are in regard to the vast majority of chemical, physical, and social conditions that children are exposed to. Whether the findings that have emerged in relation to a few adverse conditions are generalizable to the large majority of adverse conditions children experience cannot be known until the same set of parental behaviors is examined for many more conditions. Relatedly, it cannot be assumed that the “protective effect” of competence promotion will be the same for all these conditions. The importance of competence to human well-being is widely acknowledged but the exact role it plays in the lives of children who encounter most adverse circumstances is not known, nor is there a theory that integrates the information about these relations. Only a very large and diverse sample can help develop the data base and the theory of how parental efforts to promote competence actually leads to competence in such a diverse set of circumstances and whether competence then plays a productive role in moving children exposed to adverse circumstance on adaptive trajectories. That issue is compounded when one considers that decisions to take particular actions are likely to be affected by a diversity of cultural, geographic, socio-economic, and family circumstances. There is no basis for assuming that either the decisions regarding parental actions, the nature of those actions, or their consequences for children’s well-being will be the same across widely divergent groups. In effect, the availability of a large, diverse sample should increase the probability of understanding something about the nature of health disparities as they are connected to parental actions in different groups. Planning effective public health strategies for reducing risk of exposure requires the kind of precision of information that can only be obtained from a very large prospective study. Since this hypothesis deals with the long-term consequences of competence promotion, with uncertainties related to conditions that may have negative consequences in the second and third decades of life (even further in some cases), it is not just a large sample that is required but a prospective, longitudinal design.

#### VI. Scientific Merit:

There is a vast literature indicating that competence (intellectual, social, even psychomotor) is central to adaptive functioning. It is associated with achievement of goals, a sense of agency, and positive self-esteem, even better health. Competent individuals make better decisions and life choices. They involve themselves in more productive activities, form connections with more supportive groups and maintain involvement with life-enhancing social institutions. Persons with limited competence are more likely to follow maladaptive life patterns and show limited ability to recover from adversity -- the resilience literature consistently finds that competence is protective against adversity. Consequently, the promotion of competence has been accorded high social and scientific value.

There is substantial support from both theory and research that parental efforts to promote competence in children is associated with higher levels of competence. The association obtains even when controlling for socioeconomic status and parental intelligence. The literature also suggests that parental efforts to promote intelligence interact with genes to affect intellectual and social competence (the evidence is less clear on psychomotor competence, but anecdotal evidence points in the same direction). That said, both the empirical and theoretical literatures are somewhat weak in terms of the details of the relations. There remains many issues unresolved regarding the impact of parental efforts to promote competence in children: (a) questions about the timing of particular parental efforts, (b) questions about which specific efforts may be most promotive of competence at different points in the life course, (c) questions about whether the different types of efforts are effectively substitutable or whether certain specific ones are key to the promotion of specific competencies, (d) questions about whether a particular combination of efforts is required to promote a particular type of competence or whether any of several combinations might be equally effective, (e) questions about interactions between specific classes of efforts as regards certain areas of competence, (f) questions about whether consistency across time is important for certain types of efforts, (g) and so forth. Even less clear is whether different types of efforts become more salient when children have experienced certain types of adversities (of the types to be studied as part of the NCS). In sum, with a few exceptions, there tends to be the belief that most all efforts to promote competence operate similarly as regards the actual promotion of competence; that is, there is a rather holistic view about competence promotion rather than a view that sees somewhat different mechanisms operative as a function of the different types of parental input. Again, there are exceptions, both with regard to certain areas of competence and for parental efforts that set the stage for competence (e.g., reducing the time a child spends in non-productive activity) versus parental efforts that directly promote competence (e.g., teaching specific concepts or skills). The literature is also weak in terms of understanding how generalizable the impact of particular competence promoting efforts are across gender, ethnic groups, geographic areas, and socioeconomic groups. What literature there is suggests that differences exist. To some extent these differences are consistent with cultural and systems theory and known variability in access to certain types of learning opportunities. However, some of the findings are inconsistent with theories of learning and motivation. To better understand racial, socioeconomic and gender disparities in competence, it is important to further delineate what is known in regard to the full array of parental efforts aimed at competence promotion -- a major problem with most studies is that they tend to focus on a relatively narrow range of those efforts and do not assess or analyze the full range.

There is a small, but compelling literature, that suggests that children exposed to some adverse conditions (e.g., malnutrition, prematurity, interuterine exposure to certain drugs and chemicals) tend to function in the normal range if exposed to a stimulating environment. But the total number of studies is small and there is almost no literature on most adverse conditions. Thus, there is need to examine the potentially protective effect of parental efforts to stimulate learning in children for a diversity of conditions. Not only will such a study be helpful in terms of generalizability but it should be useful in refining theories pertaining to some conditions (i.e., if parental efforts help in some conditions but not others, it may help clarify the nature of the insult itself). It should certainly set the stage for some more penetrating studies of those conditions where competence promotion seems to have no salutary effect.

#### VII. Potential for Innovative Research:

As the preceding section (VI -- Scientific Merit) tries to convey, there are almost no instances of the kind of study envisioned as part of the NCS that have ever been mounted, even on a very small scale. For instance, there are no known studies covering the range of parental efforts to promote competence that are

envisioned for this study. Not only will the NCS be breaking new scientific ground with the inclusion of this hypothesis, but it will offer the field new measurement technologies in the process.

VIII. Feasibility:

- a. Critical period for exposure and outcomes – This component will continue throughout the duration of the study (as some of the potential for downstream adverse consequences will continue and there is a specific interest in understanding the impact of consistency of parental efforts through time).
- b. Sampling Needs – the entire sample will be used (meaning every significant demographic subgroup) for some aspects of this substudy.
- c. Contact – a brief set of questions will be used for each contact point throughout the study. For those whose children manifest certain problems, additional follow-up questions will be given that pertain to specific efforts to promote competencies needed for those problems.
- d. Nature of Measurement – almost certainly questionnaire. However, this could be done in person, over the phone, or via mail.
- e. Burden on Family – should be relatively small. There will be a number of questions, but the questions pertain to very concrete actions and circumstances. Assuming that a visit will be made to the child's home for purposes of ascertaining exposure to various chemical agents and physical hazards, part of the data on parental actions will be gathered via direct observations at the time of the visit. There are good, relatively easy to use measures available for those who study family environments. These measures tend not to be burdensome.
- f. Ethical considerations – The required protections for privacy would obviously have to be adhered to given that the parents will be revealing what they do. It would probably be advisable to have Certificates of Confidentiality to prevent access to their responses for issues pertaining to custody, etc. In the event that a parent would reveal an action that requires reporting for abuse, they would have to be made aware in advance that such actions would have to be reported to the appropriate authorities. It is almost certain that some parents would, by their responses, suggest that they may be neglectful with respect to protecting their children. This issues need to be discussed. It is probably manageable but does need the attention of appropriate committees.