FRAME WORKS INSTITUTE

"Anyone Can Do It … Wake up, Rise up and Get Some Gumption":

Mapping the Gaps Between Expert and Public Understandings of Resilience and Developmental Outcomes

A FRAMEWORKS RESEARCH REPORT

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About FrameWorks Institute:

The FrameWorks Institute is an independent nonprofit organization founded in 1999 to advance science-based communications research and practice. The Institute conducts original, multi-method research to identify the communications strategies that will advance public understanding of social problems and improve public support for remedial policies.

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INTRODUCTION

The research presented here was conducted by the FrameWorks Institute and sponsored by the Center on the Developing Child at Harvard University. As part of a larger, multi-year effort to translate the science of early child development, this particular report examines the ways that both experts and members of the general public talk and think about the issue of resilience and more general concepts related to developmental outcomes and child well-being. We focus particular attention on the deep and implicit patterns of understanding — what psychological anthropologists refer to as "cultural models"[1] — that members of the general public rely upon to reason about fundamental questions such as how to assess whether a child is doing well or poorly and how to explain the occurrence of such states.

In addition, the report compares the ways that experts and members of the general public talk and think about developmental outcomes, and resilience more specifically, to locate and examine gaps in understanding that exist between these groups. Future phases of the project will seek to fill these gaps and address problematic aspects of public understanding by designing and testing reframing tools and strategies. Such prescriptive devices can be employed to more effectively communicate science to the public, providing information that can help inform the public's perspective on realistic opportunities to improve child outcomes in the United States through evidence-based programs and policies.

> *I think it's something that everybody is born with and I think we are given a measure of it and it's what we do with it that matters … I think we're all given an equal measure of it and we're all responsible for using it. You have to use it or that resilience is going to wear off.*
>
> **- Cultural Models Participant**

Our research suggests that Americans have access to, and apply, a rich set of shared assumptions and implicit understandings when thinking about child well-being and the results of development — what we here refer to as "developmental outcomes." Many of the assumptions documented in this and past FrameWorks research[2] impede public access to key components of the science of early child development.[3] In this way, the documentation of some of these models in the current research corroborates past descriptions of the American cultural terrain on the issue of child development.

Starting from an understanding of the cultural models that exist, and of the ways that they are applied to understand a specific target domain, is essential in identifying the particular translational challenges associated with a specific area of the developmental sciences. In much the same way that translating the science of executive function[4] required analysis of the

specific patterns of culture applied in understanding skills and abilities rather than relying on those more general patterns of thinking about "early child development," understanding the particular challenges of communicating about developmental outcomes required targeted, issue-specific cultural models work. Without such domain-targeted elicitations of cultural models, translational efforts are forced to go out on a limb, making dangerous assumptions of their own about the assumptions Americans make.

Expecting Americans to draw on some of the same cultural assumptions to understand resilience and well-being as they do in understanding, say, of gene-environment interaction or neuro-development, seems a reasonable bet; however, a bet it nevertheless remains. This expectation assumes that the scientific understandings of taxonomic and definitional aspects of phenomena are the same as the cultural understandings of such connections and definitions. We know from extensive research that this science-public consonance assumption is frequently erroneous and can lead to mischaracterizations of cultural patterns of the relationships, and lack of relationships, that culture supports between concepts.[5] Acting on this unverified expectation, then, results in breakdowns in the communication of science topics and public misinterpretations of such translations.

A more empirical (and admittedly phenomenological) approach requires that we eschew such assumptions by focusing on the domain in question, discerning the understandings that are brought to bear on an issue-by-issue basis. The theory of cultural models also obviates such an approach, as these structures frequently neither proceed nor are applied in "logical" or "rational" ways. In short, the only way of knowing the assumptions that people use to think about a given issue is to examine that particular issue.

Perhaps the best evidence of the utility of the issue-by-issue approach, and the danger of borrowing findings from one issue to another, is that the research conducted here revealed cultural models that had not previously emerged from FrameWorks' research on early child development. Several of these emergent understandings appear promising as translation tools and, more specifically, may constitute perspectives with the power to burst the "family bubble."[6]

With this perspective in mind, we first present the results from a multi-method investigation undertaken to identify the foundational themes and concepts in how experts understand, explain and talk about resilience and the more fundamental scientific concepts on which explanations of this phenomenon rest. We then present the results of a series of "cultural models interviews" conducted with members of the American public. These interviews were conducted and analyzed to examine how Americans think about developmental outcomes, child well-being and the specific concept of resilience. The analysis of these data resulted in the identification of a set of "cultural models" that Americans consistently employ in

reasoning, understanding and making sense of these subjects. Finally, we "mapped the gaps" by comparing the expert science account to the cultural models employed by Americans. This comparison revealed gaps and overlaps that exist between these understandings. With improved knowledge of the substance, contours and spaces between these public and expert understandings, we are able to move toward the second stage of Strategic Frame Analysis™, which involves identifying communications strategies that build on these overlaps and serve to close the gaps. In so doing, the larger goal of this research is to give Americans access to new ways to think about science explanations for positive developmental outcomes in the face of significant adversity. This report lays the cornerstone of this larger endeavor by establishing: 1) the science account to translate, 2) the milieu into which this account will be told, and 3) the specific places and points at which this milieu is likely to cause the science account to break down, morph and assume alternative, unintended meanings.

SUMMARY OF FINDINGS

Expert Interviews

Communicating the science of resilience requires clarifying a set of more basic concepts. Research with experts revealed a clear account of resilience as situations in which children experience positive outcomes in the face of adversity. Experts also agreed that the way to explain such phenomena was by invoking concepts and processes that explain developmental outcomes more generally.

The interaction between contextual quality and individual competence explains resilience. Scientists advocated the importance of communicating the idea that contexts are invested with both *protective* factors that facilitate positive outcomes, as well as *risk* factors that threaten positive states. They explained that, taken together, these factors determine the quality of a given context and that such contextual quality influences developmental outcomes. However, experts explained that there is marked variation in the ways that individuals *respond* to contexts, and that this responsiveness is a function of individual "competencies." Such competencies are the result of an individual's genetic constitutions that are molded by experiences — particularly *early* experiences.

Cultural Models Interviews

The public brings a complicated set of cultural assumptions to bear in thinking about child well-being and developmental outcomes. Furthermore, when issues of unexpected outcomes and the specific concept of "resilience" are added to the mix, the cognitive terrain becomes even more complex. Most importantly, however, the public's thinking on these issues is characterized by several promising features that are new to FrameWorks' observations of public thinking about child development. Specifically, the emergence of a dominant cultural

model through which Americans understand *communities* as a vital component in a child's well-being, and model these communities as *layers of relationships*, holds considerable promise for the translation of developmental science. The fact that such patterns have not previously emerged with the strength or dominance with which they were documented in the current research suggests that communicating about child development through a concept of "well-being" may confer advantages in positioning Americans to interpret the science of early child development and realize its policy and programmatic implications.

More specific findings that emerged from analysis of data gathered from interviews with members of the general public include:

Informants confused and conflated cause and effect. As informants discussed developmental outcomes and child well-being, there emerged a pervasive, but highly implicit, pattern in which *evidence* of well-being was indistinguishable from the *causes* of such states. For example, poor physical hygiene was explained as a sign that a child was doing poorly and was also attributed a strong causal role in explaining why children experience negative outcomes. In this way, informants had difficulty seeing any distinction between the factors that precipitate outcomes and the evidence of such states.

Informants described two "types" of outcomes. The content of lay informants' discussions of outcomes and well-being fell into two highly consistent, if implicit, categories — *external* and *socio-behavioral*.

- In thinking about **external dimensions** of developmental outcomes and child well-being, informants drew on several highly patterned assumptions:
    - The *you can see it in the way they look* cultural model. Informants assumed that well-being, more specifically a lack of well-being, could be discerned through cursory examinations of physical hygiene, and employed an implicit proposition in which the cleanliness of a child's hair, clothes and teeth were integral causal and evidentiary components of child well-being.
    - The *poor nutrition = poor well-being* cultural model. Employing this implicit understanding, informants continually emphasized the importance of nutrition in reasoning about, and explaining, external signs and causes of developmental outcomes.
    - The *safety determines outcomes* cultural model. Finally, in discussing those aspects of well-being that fell into the external category, informants had a strong tendency to gravitate to, and get stuck on, notions of *safety*. Such patterns in talk revealed a highly standardized way of thinking about external aspects of well-being: that unsafe environments — primarily those characterized by gangs, drugs and violence — explain lack of well-being and poor developmental outcomes.

- A closer examination of informant discussions of the **behavioral and relational dimensions** of developmental outcomes revealed a second set of underlying assumptions.
    - The *do they follow directions?* cultural model. Employing this assumption, informants reasoned that a child's well-being is both a function of, and apparent in, the degree to which they obey directions and follow instructions from adults.
    - The *confidence is key* cultural model. Across the sample, there was a strong emphasis on confidence, revealing a dominant implicit proposition in which self-esteem was assumed to be integral, both as an outcome and causal factor, to developmental outcomes.
    - The *doing well is doing well in school* cultural model. Overwhelmingly, the first answer to the very open-ended question, "How would you know that a child is doing well?" was, "Look at how they're doing in school." Such responses evidenced a strong implicit linkage between measured scholastic performance and more general developmental outcomes.
    - The *community is relationships* cultural model. Finally, analysis of discussions of socio-behavioral components of well-being and outcomes revealed two linked propositions about community. First, informants assumed that the community a child lives in is integral to their outcome, and, secondly, that "community" is modeled as a series of networks and layers of *relationships*.

- Finally, while discussions of child well-being and developmental outcomes consistently fell into one of the two categories described above, and to a large extent the assumptions used to explain these outcomes were tied to the outcome being discussed, there were two *ultimate* cultural models which were evoked as ways to explain *both* external and socio-behavioral aspects of well-being. In this cross-domain application, these models can be seen as truly foundational American conceptualizations of child well-being and developmental outcomes.
    - The *power of will* cultural model. The willpower model is the assumption that a child's internal drive, motivation and perseverance are the most important factors in explaining and evidencing developmental outcomes.
    - The *it's all about their parents* cultural model. As documented in past FrameWorks research, the current research evidenced a strong implicit tendency to see a child's parents as the *sole* determinants of well-being and developmental outcomes.

There were interesting patterns in *how* informants used the models in reasoning.

- *There was a powerful hierarchical structure that guided the use of the cultural models.* Not all of the available cultural models were evoked with equal strength or

frequency in informant reasoning about developmental outcomes. *Willpower* and *parents* were implicitly afforded an ultimate role in reasoning, and all other factors were accorded roles as proxies for these ultimate explanatory factors.

- *Positive states and outcomes were connected to specific factors; negative outcomes to a separate set of factors.* One of the most striking findings from this research was that, when informants were asked to think about a child who was not doing well, they overwhelmingly evoked external factors, and the assumptions that undergirded these factors. By contrast, asked to talk about positive well-being and outcomes (a child "who is doing well"), the same informants tended to focus on socio-behavioral aspects and employed the implicit understandings that underlay these factors. This suggests that positive and negative states of child well-being are modeled using different sets of propositions, assumptions and understandings.

- *Thinking about positive outcomes and states of well-being was more coherently and dominantly modeled than negative states.* Our research suggested a noticeably greater ease in discussing, explaining and justifying positive states as compared to negative states of child well-being.

Informants' discussion of *unexpected* outcomes was shaped by two patterns of thinking.

- *Informants fell back on the ultimate factors in the hierarchy.* When outcomes were unexpected, informants fell back, in highly patterned and predicable ways, on the two ultimate explanatory assumptions that dominated thinking about outcomes and well-being more generally — willpower can overcome *anything* and parent are *all* that matters.

- *Thinking about unexpected outcomes is shaped by deeper American cultural models of "children."* Informant discussion, especially of unexpected outcomes, was informed by two clear definitional assumptions about "children" — on the one hand that they are "little adults," and on the other that they incapable of even basic emotions and are thus in a category quite separate from "the adult world."[7]

When asked directly about the term "resilience" as it pertains to children, informants employed two dominant assumptions.

- The *resilience is a substance* cultural model. Employing this implicit understanding, informants discussed resilience as if it were a *substance* that all individuals are born with, and that individuals must use to maintain.

- The *resilience is yours if you want it* cultural model. Thinking about resilience was heavily flavored with the notion of willpower. In this way, informants voiced opinions

that were shaped by the underlying assumption that "willpower" was directly, and entirely, synonymous with "resilience." This assumption structured notions that people can, and should, use their resilience to overcome any situation or adversity.

Informants drew on two more recessive cultural models in making sense of the target concepts. In addition to the dominant cultural models, two less dominant patterns of thinking emerged from our analysis.

- The *exposure to a variety of activities is key* cultural model. When employing this model, informants emphasized the importance of children having access to activities and experiences in their communities. This model also assumes that it is the *number* of activities in which a child is involved that is the independent variable of significance in explaining well-being and outcomes.

- The *work and time constrain families* cultural model. In one of the more sociological and systems-oriented assumptions that FrameWorks has uncovered in cultural models research, analysis revealed an implicit emphasis on the importance of employment patterns as determinants that shape family quality and, in turn, developmental outcomes.

Overlaps in Understanding:

Research identified the following overlaps between the ways that the general public and developmental scientists understand issues related to developmental outcomes. These overlaps suggest ripe areas to explore in future prescriptive communications research:

- *A focus on relationships.* Both experts and members of the general public focused on the relationships that children have with those around them — both in and outside of the family — as key determinants of child well-being and developmental outcomes.

- *Quality of communities and contexts is a function of relational resources.* Furthermore, both groups shared a common focus on the quality of communities as determinants of child outcomes. Not only did they both view communities as important, both saw "community" in similarly relational terms — they assessed the quality of a community largely in terms of the degree to which it was invested with supportive personal relationships.

- *Competence and confidence.* While different in several key respects, the experts' notion of *competence* as a cultivatable, buffering skill very closely approximated what lay informants described as *confidence*.

Gaps in Understanding:

In addition to overlaps, a set of conspicuous gaps emerged between expert and public understandings. These gaps are likely to impede the public's ability to access and understand science explanations of developmental outcomes.

- *Genes: A key determinant versus missing from the mix.* Experts posited a major role for genes in explanations of outcomes and states of child well-being. In such explanations, genes were viewed as establishing a set, or starting, point with respect to the effect of context on individual outcomes. In our interviews with members of the general public, genes were conspicuously absent.

- *Cause and effect: Cause precipitates effect versus cause as effect.* The account proposed by scientists was characterized by a clearly articulated causal sequence, with a set of determinants that are connected through a causal process, to a set of outcomes. The patterns of thinking that emerged from the analysis of lay cultural models interviews revealed a "mushing" of cause and effect, such that informants had difficulty distinguishing the cause of an outcome from the outcome itself.

- *Categories of cause: Connected versus distinct.* Experts articulated an account in which the same factors that cause positive outcomes, in the opposing valence, precipitate negative outcomes. In short, a story in which the causal factors *are* the causal factors, independent of the specific outcomes they precipitate. In lay cultural models, certain factors were linked strongly to positive outcomes, while others were evoked in patterned ways to reason about negative outcomes. Explaining positive outcomes involved a different set of factors than thinking about negative outcomes.

- *Children: Relative versus absolute.* Experts held a highly nuanced, developmentally relative perspective on children and childhood. Our interviews with members of the general public suggest that Americans toggle between conceptualizations of children as little adults, and notions of children as lacking the fundamental emotional capacities required for basic human functions.

- *Responsibility for outcomes: Policies and programs that support relationships versus willpower of the child and morals of the family.* Experts saw programs and policies as powerful means of improving developmental outcomes and child well-being. The picture of responsibility from the public's vantage point is quite different, with the onus placed on individual children in the form of greater gumption, and on parents in maintaining strong moral values.

- *What is resilience: Outcome versus substance.* Experts discussed resilience as an outcome — *a positive result in the face of considerable contextual adversity.* The public, on the other hand, hold a clear, powerful and highly shared conception of

resilience as a substance that all individuals are endowed with at birth, and that is only maintained through its application in situations of significant adversity.

- *What causes resilience: Context modified by genetic susceptibility versus resilience.* Experts employed the larger science story of genetic susceptibility modified by experience to explain why some individuals experience relatively positive outcomes in contexts that would not predict such states. The public, on the other hand, assumed that resilience *was* the cause of resilience. Quite simply, "Resilient kids are resilient because they have resilience." Informants saw no apparent tautology in such explanations.

- *How to cultivate resilience: Supportive relationships versus significant adversity.* The expert account stressed contextual quality — specifically, the presence of supportive relationships. By contrast, the public's cultural model of resilience led to ideas that there was nothing a person *couldn't* overcome on their own and, furthermore, that the more significant the adversity the individual overcomes, the greater the maintenance and development of resilience. The latter part of this assumption has been documented in previous FrameWorks research on how Americans understand the relationship between stress and development.[8]

Communications Implications:

- **Missing genes is problematic.** The most significant implication from this research derives from the most conspicuous of the gaps it identified. The fact that genes and biology were almost entirely absent from the over 40 hours of interview data with members of the general public about outcomes and well-being, when compared to the pivotal role that genes play in the expert account of these same issues, was striking. This suggests that considerable communications work lies ahead in creating a scientifically consonant role for genes in the way the public thinks about, and explains, how well or poorly a child is doing.

- **Cause/effect conflation points to need for causal sequence.** The way the public conflates cause and effect suggests the need for communications to clearly and powerfully lay out a concrete sequence that represents the complexity of the science understanding in a simple and straightforward causal sequence.

- ***Willpower* and *parents* remain derailing forces in translating the science of development.** The application of the *willpower* and *parental responsibility* cultural models is problematic in facilitating an appreciation that systems-level factors *also* play important roles in shaping developmental outcomes, and are thus key in improving child well-being.

- **The term "resilience" is immediately engaging, but riddled with perceptual pitfalls.** Informants had no problem engaging in and discussing the concept of "resilience." This ease was notable, given the lack of informant facility that other FrameWorks research on development has encountered in response to similar terminological elicitations. For example, issues such as executive function, gene-environment interaction, or even child mental health, are relatively less-modeled and are difficult for Americans to engage in and respond to.[9] The discussions that followed the introduction of the term "resilience" were shaped at a cognitive level by two dominant cultural models. Both of these models are powerful, and impede translation of the science account.

- **There are several promising, scientifically consonant, cultural models.** While there are many causes for concern that emerge from this research, there are also reasons for optimism. The emergence of a strong model in which the public sees communities as important to developmental outcomes, and assumes communities are constituted of both individuals and relationships, is a promising implicit understanding to invoke in translating the science. The similarity between expert concepts of competence and the public's notion of confidence is also encouraging. Finally, the presence of two highly promising, but latent, cultural models — an assumed importance of a child's involvement in activities, and a near-sociological appreciation of the connection between patterns of employment and family and experiential quality — suggests that tools exist in the public's current understanding that can be recruited to translate the science and frame its policy implications.

- **The research yields several preliminary communications recommendations.** In light of these implications, and the results of this research more generally, FrameWorks suggests the following initial recommendations for translating the science of developmental outcomes and child well-being:
    - Activate and invigorate the *communities as relationships* model.
    - Use the *work as a constraint* recessive model to expand a systems/resources perspective that highlights the shaping force of policy on various levels of context and outcomes.
    - Link a set of causal factors to positive, negative and intermediate outcomes.
    - Focus on the development of skills, but expand by positing supportive relationships as the means through which such skills are developed.
    - Build a new concept of "child" to supplant the existing unproductive cultural dichotomy.
    - Focus attention at the community level and the patterns of resource availability therein.

- Connect resources in communities to successively more specific layers of context through the basic sequence of "community resources affect families and child well-being."
- Clarify the process that connects determinants to outcomes as a first step in communicating the science of resilience.

RESEARCH METHODS

I. Establishing the Science "Story"

Establishing a science story is an essential starting point in FrameWorks' approach to science translation. Delineating and distilling a clear set of science messages serves several key functions. First and foremost, as the goal of any translational effort is the successful communications of *something*, such efforts must begin by clarifying what the "it" is that is to be translated. Second, establishing the science story is important in clarifying the desired *outcomes* of a successful translational effort. Empirical translational work requires a set of dependent variables against which the success of recommendations can be judged and held accountable.

In the case of the current project, the "science story" was conceptualized as the set of messages and findings about the concept of resilience that scientists determine to be most essential for the public to understand — those components of the science without which a public understanding of the science is not possible.

To arrive at this account, FrameWorks gathered three streams of qualitative data. First, FrameWorks' researchers conducted and analyzed data from 11 one-on-one expert interviews with researchers in fields related to resilience. Second, a FrameWorks researcher attended several meetings at which developmental scientists discussed these concepts. Finally, FrameWorks researchers led two "feedback sessions" — meetings where the story emerging from the previous methods was fed back to scientists, and where the scientists were charged with arriving at a finite set of messages to be translated.

A. Expert Interviews

To locate experts on resilience, FrameWorks elicited a list of leading researchers in this field from the Center on the Developing Child at Harvard University. A total of 11 one-on-one interviews were conducted over the telephone with these experts by two FrameWorks researchers in late winter 2011. Interviews lasted approximately one hour and, with each participant's permission, were recorded and transcribed for analysis.

Interviews consisted of a series of probing questions designed to capture expert understandings about the science of resilience and its core ideas, definitions, principles and

findings, as well as the perceived policy and programmatic implications of this work. The interviewer went through a series of prompts and hypothetical scenarios designed to challenge expert informants to explain their research, experience and perspectives, and to break down complicated relationships and simplify concepts and findings. In addition to preset questions, the interviewer probed for additional information throughout the interview. In this way, the interviews were semi-structured, collaborative discussions with frequent requests from the interviewer for further clarification, elaboration and explanation.

B. Participant Observation

In addition to these expert interviews, a FrameWorks senior anthropologist attended several scientific meetings at which the concept of resilience was discussed. At these meetings, the anthropologist listened to and participated in discussions of the science of resilience and took careful field notes, in keeping with methods of anthropological participant observation.[10] These field notes were added to the transcripts from the interviews described above to comprise an initial data set. Analysis of these data employed a basic grounded theory approach.[11] Common themes from the data were identified, categorized and refined throughout the analysis process, resulting in a refined set of themes that synthesized the substance of the interview and observational data.

C. Feedback Sessions

The expert story presented below is also derived from data gathered at two meetings of developmental scientists. At both of these meetings, a FrameWorks researcher led sessions in which participants were tasked with considering what had emerged from expert interviews and observational research, and arriving at a set of refined messages that constituted the message deliverable to which any translational effort would be held accountable. During these meetings, the FrameWorks researcher presented the results of the analysis of the expert interviews and asked meeting attendees to respond to the emerging science accounts and themes — refining existing elements, adding important components that had not emerged from the previous research, and winnowing out messages that were judged less-than-essential for the public to understand.

II. Cultural Models Interviews

To complete the other side of the comparison, FrameWorks conducted 20 in-depth cultural models interviews with members of the American general public in Philadelphia, Penn., Lawrence Kans., and Chico, Calif. The interviews were conducted by three FrameWorks researchers in March 2011.

Informants were recruited by a professional marketing firm through a screening process developed and employed in past FrameWorks research. Informants were selected to represent variation along the domains of ethnicity, gender, age, educational background and political

ideology (as self-reported during the screening process). Individuals working in fields related to child development, or who could be reasonably assumed to have expert knowledge of resilience and developmental outcomes more generally (e.g., teachers, social workers, child therapists, psychologists), were screened out of the sample to avoid biasing the sample and impeding our ability to gather data about how the general public, as non-experts, reason about target concepts.[12]

Efforts were made to recruit a broad range of informants in terms of age, political identity, residential location and level of education. All in all, 12 women and eight men were recruited. Twelve of the 20 participants were Caucasian, four were African American and four were Hispanic. Seven participants self-identified as "conservative," five as "liberal" and the remaining eight as "middle-of-the-road." Eight participants resided in urban areas, nine in suburban locations and three in rural environs. The mean age of the sample was 40 years old, with an age range from the early 20s to the late 60s. We must note here that, although the sample was constructed to include as much variation as possible, it is not, nor was it meant to be, nationally representative in any statistical way. However, issues of demographic variability and representativeness of the findings presented here are important, and are taken up in a subsequent online experiment where large sample size, statistically rigorous sampling procedures and regression analysis can more appropriately address such issues.

Informants participated in one-on-one, semi-structured "cultural models interviews," consistent with methods employed in psychological anthropology.[13] These interviews were designed to elicit ways of thinking and talking about issues — in this case, issues of child well-being, developmental outcomes, unexpected outcomes and, specifically, the concept of "resilience." All interviews were recorded and transcribed with the participants' written consent.

Elements of social discourse analysis, cultural models analysis and grounded theory were applied to identify cultural models.[14] First, patterns of *discourse*, or common, standardized ways of talking, were identified across the sample, using a basic grounded theory approach to thematic analysis. These discourses were then analyzed to reveal any tacit organizational assumptions, relationships, propositions and connections that were commonly made, but taken for granted, throughout each interview and across the sample. In short, our analysis looked at patterns both in what *was* said (how things were related, explained and understood) as well as what was *not* said (shared, but taken-for-granted, assumptions). More detailed information about the specific methodology and format of these interviews can be found in Appendix 2.

In line with the way that grounded theory and cultural models analysis is typically presented,[15] quotes are provided as exemplars of the themes and assumptions that emerged

from analysis. In this way, findings are representative *of* the data set, but are represented *by* a small number of quotes.

In addition to describing cultural models, this paper draws implications from the content and application of these models. These implications are largely interpretative, but are key in moving communications forward, generating hypotheses and provoking future communications research.

FINDINGS

I. Research with Experts

A major finding from the research with issue experts was a strong consensus around a definition of resilience. Furthermore, and with equal consensus, experts agreed on the importance of viewing resilience as a *specific phenomenon that is explained by a set of more basic and general concepts* that explain child well-being and developmental outcomes more generally.

It is important to note, however, that in our initial set of expert interviews, analysis suggested a lack of consensus about the specific underlying concepts that were of most importance and utility in explaining resilience.[16] Analysis of data from interviews and observations suggested neither one clear concept to be communicated, nor an apparent way of reconciling and synthesizing what were emerging as divergent concepts. Because communications tools such as simplifying models are designed to concretize a specific "how does it work" element of a concept, FrameWorks' researchers concluded that additional expert guidance was required in order to arrive at one coherent conceptual account that could be communicated. We sought this additional guidance in the form of two expert feedback sessions, where FrameWorks researchers challenged scientists to prioritize one of the initial stories or, alternatively, to winnow and synthesize what, from thematic analysis, appeared to be three distinct conceptual accounts. Below, we present the results of this iterative process.

A Science Account of Positive Outcomes in the Face of Adversity

How does it work?

1. Environments contain factors that either threaten or facilitate positive developmental outcomes. Experts emphasized that a key to explaining developmental outcomes generally is understanding environmental contexts as assemblies of factors that both threaten and

facilitate positive outcomes. Conceptualizing environments as being constituted of risk/protective factors was a key assumption and starting point in this expert account.

2. Different environments have different risk and protective factors. Experts not only conceptualized environments as being *composed* of risk and protective factors, but explained that *not all contexts are invested equally* with such factors. Environments therefore, they explained, can be seen as varying compositional blends of risk and protective factors.

3. The quality of an environment can be assessed by comparing risk factors relative to protective factors. Furthermore, experts used the notion of variable risk/protective factor environmental compositions to compare and assess the quality of environments. Experts frequently employed, at both literal and more metaphorical levels, the notion that the quality of an environment can be discerned by stacking up its constituent risk factors on one hand and those that are protective on the other and determining which way the scale tips. In this way, the *number* of risk versus protective factors was emphasized as the key to understanding and explaining outcomes — resilience being one.

4. Individuals vary in the degree to which they are susceptible to such environmental quality. Experts agreed that outcomes are not only the product of environmental quality, but are mediated by characteristics of the individual — what experts referred to as an individual's sensitivity or susceptibility to the quality of a context. Experts explained that this biological sensitivity mediates the effect of the contextual quality in determining outcomes.

5. This variability originates in the body's genetic instructions, but early experiences shape whether, and how fully, those genes are expressed. However, biological sensitivity to environment was not the end of the story, as experts explained that such sensitivity is mediated by a set of skills and abilities referred to as "competence." In this way, "competence," or "contextual competence," was described as the ability to manage "the plate you're given," and to manipulate and navigate environmental contexts and the available resources therein. These skills were seen as a way of modifying or making adjustments to, or on top of, genetic differences between individuals' environmental sensitivities. In this way, individuals vary in their sensitivity to environments, but this sensitivity is further moderated by the development of skills (or the lack of development of these skills) to manage environments to an individual's advantage. Thus, while susceptibility is a feature of, and varies between, individuals at a genetic level, the environment and experiences a child has can modify this predisposition by adding a cultivatable set of skills to the mix.

7. Experiences adjust susceptibility. Not only did the experts emphasize the fact that adjustments to susceptibility were possible through skill development, they also spoke to the mechanism through which such skills were developed. They explained that it was through the

experiences that children have, primarily in terms of relationships with peers and adults, that they develop these environmental manipulation skills and competencies. In short, competencies develop through the interactions and experiences that children have in their environments — specifically, through the relationships that constitute such environments.

What does this account say about "resilience"?

1. Resilience is a positive outcome in the face of adversity. Experts explained that resilience is, most basically, positive developmental outcomes in the presence of factors that pose significant risk to positive development. In these explanations, the concept of resilience is not *just* doing well, nor is it *just* the presence of risk, but, rather, resilience is positive outcomes in the presence of risk factors that would predict otherwise.

2. Resilience is explained by some individuals' low biological susceptibility to context and experiences that facilitate compensational skills. Experts explained that resilient outcomes result from genetic responsiveness to context, which they saw as a set point that could slide based on an individual's experience. As such, resilient outcomes are attributable to a genetic predisposition towards low environmental sensitivity and the buttressing effect of experience-shaped contextual competence.

3. There are three factors most strongly associated with resilience: IQ, temperament and supportive relationships. Experts focused on three specific factors as being most strongly associated with resilient outcomes. They explained that an individual's IQ, temperament and exposure to supportive relationships are the three single factors most predictive of positive outcomes despite adversity.

What are the solutions suggested by the science account?

1. Better outcomes can be cultivated by promoting protective factors and reducing risk factors. A powerful intervention came through across all the methods employed in the expert side of this research. Experts focused on *assessments* of risk and protective factors, and moved easily between employing this relationship to explain the occurrence of outcomes, and invoking it to create an intervention message in which adding and shoring up existing protective factors in a context was an effective way of improving outcomes and addressing child well-being.

2. Supportive relationships are a key protective factor. Experts overwhelmingly focused on *relationships* in accounting for positive outcomes — in particular with reference to resilience. They explained that positive outcomes in the face of adversity are best facilitated through the provision of supportive and caring relationships.

3. Skills can be cultivated that mitigate subsequent vulnerability to risk factors. Experts, regardless of the relative emphasis they placed on genes or competence, emphasized the importance of programmatic efforts to improve developmental outcomes. The group that focused more on the genetic part of the story emphasized the need to develop programs to identify various sensitivity types and create interventions that matched services to a given child's sensitivity to context. These experts also emphasized the importance of prenatal care from the perspective that early experiences, through epigenetic modifications, affect subsequent sensitivities to context. The more contextual camp emphasized a slightly later set of developmental windows and focused on skill development and the power of such skills to improve outcomes. In short, regardless of their particular emphasis, all experts saw resilience as "something you can make happen," a capacity and outcome that "can be built."

Positive Outcomes in the Face of Adversity

How does "it" work?

- Environments contain factors that either threaten or facilitate positive outcomes to various degrees.
- Environments vary in the degree to which they are invested with such factors.
- Environmental quality can be understood by comparing risk and protective factors.
- Individuals vary in susceptibility to environmental factors.
- That variability originates in the body's genetic instructions, but early experiences shape whether, and how fully, genes are expressed.
- Experiences can adjust susceptibility by building competency.

What are the solutions?

- Better outcomes can be cultivated by promoting protective factors and reducing risk factors.
- Supportive relationships are a key protective factor.
- Skills can be cultivated that mitigate vulnerability to risk factors.

With this summation of expert thinking in mind, we now turn to the results of the cultural models interviews that were conducted with members of the American general public.

II. Cultural Models Interviews

A central task in our cultural models interviews was to elicit discussion that, upon analysis, would reveal the shared cultural models that informants applied in understanding the target concepts — developmental outcomes, child well-being, unexpected outcomes and resilience. In this way, our interviews were designed specifically to answer the following question: *What shared assumptions do Americans apply when they think about developmental outcomes and specific combinations of factors and outcomes (for example, resilience as adverse determinants, yet positive outcomes)?*

The interview's focus on outcomes was based on the expert story described above, which at its most fundamental level is an account that addresses developmental outcomes across individuals and contexts. In translating this science, it was essential that we understand the cultural tools that Americans apply in reasoning about how well or poorly a child *should* be doing, as well as how deviations from such expectations are justified and explained.

In the following section, we lay out both the content of the assumptions that emerged from our analysis, as well as the patterned ways in which informants connected and employed these shared mental models in thinking and talking about developmental outcomes.

DOMINANT CULTURAL MODELS

The dominant cultural models informants brought to bear in discussing developmental outcomes and child well-being can be grouped into categories based on the questions they were evoked to answer. Informants applied one set of models in thinking generally about child well-being and developmental outcomes. Research revealed that in thinking about *unexpected* outcomes, informants drew on a subset of these more-general outcome models. An additional, but related, set of cultural models was apparent in informant discussion of the more specific concept of "resilience." We discuss these groupings of models below with specific reference to their implications for efforts to translate the science account presented above.

I. Cultural Models Used to Think About Child Well-Being

When lay informants talked about developmental outcomes and states of child well-being ("how a child is doing"), their discourse fell, in a highly patterned way, into two categories — *external/physical* and *socio-behavioral*. That is, there was a clear pattern in the explicit *content* of our interviews with members of the general public. The cognitive power of this distinction is evident in the fact that, with a few rare exceptions, all factors mentioned across all interviews were accounted for, and could be assigned to, one of these two categories.[17]

This remarkably consistent organizational heuristic suggests a deeper cognitive structure that shapes Americans' thinking about developmental outcomes and child well-being — that a child's well-being is conceptualized in physical and socio-behavioral dimensions. This suggests that individuals divide outcomes of development into two discrete mental bins — outcomes are classified as either physical or socio-behavioral.

Perhaps the most significant aspect of this finding is what is *left out* of this model. There was an almost total absence of genes and biology in discussions of developmental outcomes and

child well-being. For example, the word "gene(s)" appeared only 15 times in over 1,000 pages of transcripts, "genetics" only seven times, "biology" and "biological" only three times. On the other hand, "parent(s)" appeared in these same transcripts over 1,000 times, "behavior" over 200 times, "social" over 200 times, and "try" and "willpower" combined for over 400 mentions. The implications of what is left un-modeled by the external physical and socio-behavioral cognitive dichotomy is monumental for translational efforts, and is discussed in greater detail in the implications sections that follow.

Another pattern that became evident during analysis was the way that informants frequently glossed over the distinction between *cause* and *effect*. When informants talked about developmental outcomes, the same factors that they discussed as causes of such states were also cited as evidence. In this way, informants' assumptions about how to evaluate how well a child was doing were the very same as those assumed to cause the outcomes. This conflation in the modeling of developmental outcomes and child well-being is discussed more specifically below in the descriptions of each of cultural models that emerged from analysis of these data.

Analysis offered a potential explanation for this cause-effect conflation phenomenon. There was a deeply implicit and powerful assumption that informants used to think about why children do what they do and are doing as they are. We call this assumption "monkey see, monkey do," as this was a term used by several informants to explicitly describe what emerged more generally as a powerful implicit trend across the data. According to this highly shared assumption, children turn out the way they do because of what is going on around them, which they, very simply, mimic and internalize. This explains, in part, the patterned lack of ability to pull apart cause and effect. In the *monkey see, monkey do* model, the cause *is* the effect — violence is both the manifestation of not doing well, as well as the cause of poor well-being; and following directions is both the sign of well-being and its cause. This pattern of conflation is described in greater detail below, but analysis suggests that, at least in part, this lack of distinction stems from the fact that informants across the sample understood outcomes, and development more generally, through a model of mimicry — in which children simply "do and are what they see going on around them."

> If they see shit going on around them, they are going to emulate shit — if they see good things, they're going to do well.
> —
>
> Typically, a child will do whatever they're raised in. They do what they see, they say what they've heard. Typically, they are much like a chameleon; all we do is mimic our surroundings. If they see things that are oppositional, or they see things that are hateful or if they see things that are just inappropriate, then they're going to do

inappropriate things. And they won't do well. If they see things that are appropriate and if they see things, like treating others well, then they'll do well and they'll follow that same model that they're seeing.
—

Kids, they only do what they see others do. They do whatever other people do, especially when you see a grown person doing something wrong, you're gonna do it, too.

A. Cultural Models Used in Thinking About External/Physical Outcomes

When informants engaged in thinking about this physical, external category of outcomes, they made use of a set of implicit assumptions. We focus immediately below on the *content* of the assumptions, in terms of what people implicitly understood and assumed, and subsequently we examine the patterned ways in which informants drew on and employed these assumptions in discussing developmental outcomes and child well-being.

1. The *you can see it in the way they look* cultural model

In thinking about child well-being and developmental outcomes, outward physical appearance was used as a way to both discern a child's well-being and think about the causes of such states. Things like having "hair that's greasy and stinky," "yellow teeth," "dull eyes" and "filthy clothes" were cited as the ways that you could tell if a child was not doing well. The implicit assumption employed here was, quite simply, if a child looks unkempt, they must be doing poorly. In other words, a child's well-being was assumed to be manifest in their outward physical appearance. Weight and dress were particular issues of focus.[18] Informants expressed great confidence that they could tell how well or poorly a child was doing simply by "seeing if they're fat, or thin, or too thin," or by looking at if "they're wearing shoes with holes in them" or a "shirt that smells like crap."

Interviewer: How would you know that a 3-year-old or a 5-year-old was not doing well?

Informant: He hasn't washed his face, brushed his teeth …
—

Maybe like girls are wearing their older brothers' hand me down clothes and they don't have good hygiene. Like I'm picturing this little girl I knew that had like literally a matted mess of hair. So I'm thinking about cleanliness.
—

Informant: Obviously, if the kids look like they aren't being taken care of, they

> probably aren't. Like they went around splashing in a mud puddle a week ago and still have the mud on them … That's how you would know.
>
> **Interviewer:** So they look like they're unkempt?
>
> **Informant:** Yeah like dirty clothes, hair is not brushed.
> —
>
> **Interviewer:** How do you know they're not doing well?
>
> **Informant:** Attire. Not necessarily what they have, but their presentation. How they're put together.

Physical appearance was cited not only as evidence of well-being, but also as *the reason for* outcomes. Informants explained that a child's inappropriate dress, or lack of cleanliness, was a cause of childhood impairment. In this way, they explained that physical hygiene and appearance shaped social interaction by keeping, as informants said, "them from fitting in" and "getting them made fun of and harassed."

2. The *poor nutrition = poor well-being* cultural model

In a related way, informants emphasized the importance of nutrition as an explanation of developmental outcomes. Tropes on the importance of "not eating crap" were dominant features of these discussions. Informant discourse tended to focus on *poor* nutrition as a cause of *poor* outcomes — explaining that a poor quality diet was an explanation for poor well-being, as it influenced a wide range of related factors such as a child's ability to concentrate — "If they don't get that breakfast, how they gonna focus and think about school?" — as well as more physical growth developmental outcomes — "A child that eats crap can't have strong bones or a healthy body." In addition, as was the pattern more generally, informants explained that you could look at a child's nutrition and get a good idea of how they were doing. In this case, nutrition was viewed as a proxy for parental quality and the rationale had a decidedly negative valence, such that informants focused on poor nutrition as a sign of poor parenting — "If they're eating crap all the time, I mean what does that say about the people who are feeding them?"

> And another thing I've noticed is the nutrition … they give these children crap! Some parents are really strict on what they give the children. Other parents are like "Oh, you want Sonic [a fast food chain], that's good." I don't think Sonic's good for a little baby; you know what I'm saying? But that's what they believe is right.
> —

> If they don't have fruits and vegetables, whole grains and proteins at every meal …

3. The *physical safety determines outcomes* cultural model

An additional dominant cultural model that emerged from analysis was the implicit, but powerful, notion that outcomes are both evident in, and contingent upon, a child's physical safety. Informants emphasized that negative outcomes are the result of children growing up in unsafe conditions, where they are subjected to a barrage of affronts to their physical safety in the form of violence and accidents. Informants explained that poor outcomes result from children having been physically abused, or having suffered injury incurred from growing up in an unsafe environment. Informants saw these threats to safety coming in many forms: predators "lurking" on corners; abusive parents; contexts rife with physical dangers like "broken glass on the streets," "ghetto-ass playground equipment that just isn't safe to play on or be near"; and exposure to physical pollutants and toxins — "There might be just chemicals around them — like waste and stuff that they just shouldn't be getting into contact with." In short, physical safety was accorded a strong role in explaining the occurrence of negative developmental outcomes.[19]

> The specific thing that pops up, of course, is that they are just not physically safe. So that includes crime, and violence. I think that's actually the most important thing.
> —
>
> You know, kids who live in really unsafe neighborhoods, that's got to have a huge influence on how safe they feel. Whether they want to try activities if they're gonna be getting home after dark.
> —
>
> Well, the clichéd idea, I suppose, is what you see on television — where you have the ghettos and the slums and the gangs and all that sort of thing — you grow up in that. And your brother was a gang member, so you become a gang member. Or you're living in tenement housing and the mother has four or five children, is on welfare and the dad's never there. If you grow up into that, it's very difficult to get out of it.

In addition, informants employed the idea of physical safety as a way of *discerning* a child's well-being, and as evidence of developmental outcomes. Informant discussion of outcomes was shaped by the underlying assumption that you could see how well a child was doing by looking at his or her level of safety. When asked to explain why assessing the safety of a child's environment was evidence of how s/he was doing, informants explained that a child's safety was a sign of the quality of its parents. To put it simply, informants across the sample cited the absence of a physically safe environment as a sign that a given child was not doing well and assumed that such an environment evidenced, at a deeper level, the presence of

deficient parents who were unable and unwilling to maintain a safe environment for their child.

B. Cultural Models Used in Thinking About <u>Behavioral/Relational Outcomes</u>

Whereas a good part of the data from our interviews with members of the general public was analytically accounted for by the external aspects of developmental outcomes, the remainder of this discourse fell into what we here call a *socio-behavioral* category. Deeper analysis of these types of discussions evidenced a set of underlying organizational assumptions. Below, we describe these cultural models.

1. The *do they follow directions?* cultural model

When informants discussed socio-behavioral outcomes, they drew on an underlying assumption that a child's ability to follow direction was both evidence and cause of positive outcomes. Informants reasoned that "listening," "doing what they are told" and "not misbehaving" were signs of positive developmental outcomes. In other words, informants assumed that a child's well-being could be seen in the way that s/he obeyed and followed directions.

> I think that kids who develop good skills, as far as listening, respect and honesty when they're young, carry those into everything in their lives as they get older and it makes other relationships less difficult because you have those good skills.
> —
>
> **Interviewer:** How do you know a child is doing well — that they're developing well?
>
> **Informant:** He concentrates on what you told him to do.
> —
>
> Paying attention would be a sign of doing well! The child should be quiet, speak when spoken to, answer, contribute, raise your hand, speak to someone, voice their opinion. Not with foul language. Not with animosity.

Following direction was also implicitly evoked and accorded a strong place in informant explanations of what causes positive developmental outcomes. In this way, informants asserted that a child who follows direction will be well-liked, will get attention, will learn, will be successful and "won't create trouble for themselves and others."

> If the child steps out of line, the teacher punishes or whatever, I'm happy. Because you're putting my kid back in line and it's doing me a favor. Parents complain but

your kid's not paying attention, you're not getting the respect, how's he going to make it in life? You think when this child grows up he's going to be able to get a job? He's running around screaming, jumping on tables and yelling, and doing whatever he wants to do — you think he's going to make it? Not going to happen!

2. The *confidence is key* cultural model

In discussing socio-behavioral outcomes, informants also attributed a great deal of importance to the idea of self-confidence. In this way, informants assumed that self-confidence was evidence of positive well-being. Informants explained that such confidence was most readily apparent in how a child interacted with others — in their "comfort with themselves and their abilities." In line with the general cause/effect conflation, informants also accorded confidence a causal role in precipitating positive states of well-being, explaining that the more confidence a child has, the less susceptible they are to being negatively affected by adverse interactions and circumstances.

Confidence is something that each person has to have themselves. They have to build it within themselves and I think that you foster it by surrounding your child with all kinds of different things and letting them try. If they fail, you show them how to do it again and again and the child will [eventually] be able to say, "well I can do this by myself." That's key.

—

[In describing a child who is doing well] They feel that they're worthwhile. Maybe self-confidence goes with self-worth. But they feel their role in the household — that they're important to the family. That they're important in this classroom or wherever they are. I think that's important to build confidence in them and then, if you build the confidence, then they will have motivation to go for their goals. Confidence is really related a lot to motivation. So you gotta have confidence and have that self-worth. So to me that self-worth is really important to instill in children.

—

Interviewer: What explains why a child is doing well?

Informant: Confidence building. Children have to have confidence. They have to know that they can do all things if they put their mind to it. They need to have high self-esteem.

—

—

Interviewer: What would you point to as evidence of her doing well?

> **Informant:** Confidence! A child doing well, you can always see they're confident, and they're not worried. Kids that are worried make me worry. I think kids shouldn't have worries as children, you know?

Again, confidence was seen to evidence what we describe below as a more ultimate factor of *parents*.

> Children who are cared for well will feel that they're worth something. That they're worthwhile. They're not treated like a second-class citizen.
> —
>
> **Interviewer:** Which specific things are you going to point to as evidence, or as indication that a child is doing well?
>
> **Informant:** Self-esteem. Confidence. Definitely self-esteem, definitely confidence. These are things where we can tell that they have some reinforcement, some positive reinforcement at home, which is key.

3. The *doing well is doing well in school* cultural model

Discussions of developmental outcomes were structured by comparisons and evocations of school achievement. Again and again, in talking about how you could tell how well a child was doing, informants assumed that you can discern the general well-being of a child by looking at how they are performing *in school*. In this way, scholastic performance was modeled as synonymous with a child's general well-being. Furthermore, these discussions of school performance were heavily behavioral — and referenced such issues as "are they trying," "are they behaving well," "are they giving the teacher problems," and "are they paying attention."

> **Interviewer:** So what does it mean for a child, a very young child, to be doing well? What does that mean?
>
> **Informant:** I would presume that it means the child is doing well at school, because their focus is tied down to school. So as a young child, if they're doing well, they're probably doing well at school.
> —
>
> **Interviewer:** What does it mean for a child to be doing well?

Informant: It means that they're doing well in school. What I would want to know is how are they doing socially? I mean there are those children who have all A's but socially at school they're very sad. So, there's lots of different ways of doing well. But ultimately it means you are satisfied with things and that [they] feel happy here at school.

—

She's doing well because she loves school, she strives to show that she is excelling in her classes and in her studies because she wants good grades, she does everything she can for the good grades, she participates at school in student government, and other organized activities.

—

Interviewer: How would you know that a child was doing well — that they're developing well?

Informant: Their grades at school, their behavior. Maybe if they are getting sent home or suspended because of fights or talking back to the teacher or showing up late, you know? Their attitude in school. Children that are doing well generally show some respect for their elders and teachers.

—

To be doing well, in general, would be to be academically achieving. Basically, to simplify that, to be getting good grades in school. Basically just following general rules.

And when asked more causational questions ("How would you explain what causes a child to be doing well?"), informants again went back to scholastic performance — explaining that how a child does in school shapes their well-being by establishing a path towards more ultimate positive outcomes — which informants assumed to be an individual's financial security.[20]

4. The *community as relationships* cultural model

Informants also focused on "things in communities" to explain socio-behavioral aspects of developmental outcomes. When pushed to explain what it was in communities that matters for child outcomes and well-being, there was a strikingly predictable pattern by which informants conceptualized communities as *relationships between people*. Put another way, when informants evoked the idea of communities to talk about developmental outcomes, they employed a mental model in which communities consisted exclusively of people: peers, the clerk at the local grocery, the volunteer at the Y, the guy in the house down the block and the

small business owner around the corner. In this way, informants explained that a child experiences positive outcomes, at least in part, because she is surrounded by "a supportive community of individuals." This cultural model not only implicated community in understanding outcomes, but it powerfully anthropomorphized the concept of community. Thus, the cultural model we describe here can be boiled down to the basic proposition of *communities = people and the relationships among them*.

> It's [the outcomes and well-being a child experiences] 50/50 and it has to be nurtured and fed from the other outside, other than the parents. It has to be. It can't just be one. It has to be two out of three. I've never thought of it like that, but yeah. Two out of three. Home, school, community. Two out of three, you know? Would help to make an effective or productive child.
>
> —
>
> A "good community" means that we all have good relationships with one another in the community.
>
> —
>
> Statistics is what it is. You have other people spending all this time with your child. And hopefully, a lot of times, children learn that this person is someone that I confide in. This person is someone that I can lean on. This person is someone that I can talk to. This person is someone that I look up to, who is a role model and a mentor to me. And they give me advice that I actually find genuine and I want to listen to. And a lot of times it's not necessarily a parent. I remember myself, I had coaches, and my grandfather was fairly influential.
>
> —
>
> **Interviewer:** Is "community" similar or different from "surroundings"?
>
> **Informant:** Yes. From my understanding, surroundings are *physical*. Like, your house … the buildings. Whereas community is more the relationships and the contacts between people that you have.

C. A Deeper Level of Explanation: Models that Straddle the External/Socio-Behavioral Divide

There was another set of powerful assumptions that structured discussion of developmental outcomes and child well-being. While the specific factors that informants discussed remained distinct — factors were *either* external *or* socio-behavioral, and informants failed to see connections between these factors — there were several assumptions that were evoked in explaining *both* external and separate socio-behavioral dimensions. For example, when

talking about external aspects of well-being, such as hygiene, informants evoked the importance of parents (one of the ultimate assumptions discussed below). These same informants, meanwhile, when discussing more socio-behavioral dimensions of well-being, employed the same parental importance model in explaining why these socio-behavioral dimensions matter. That the distinction between categories remained, despite the fact that the same underlying patterns of reasoning were used in thinking about both categories, is further evidence of the external/socio-behavioral distinction as a key cognitive structure in this domain.

1. The *power of will* cultural model

Consistent with past FrameWorks research on how Americans think about individual differences and gene-environment interaction[21], informants to the current research assumed that a primary determinant of developmental outcomes was the presence and degree of a child's willpower. In keeping with the general pattern of cause/effect conflation, informants evoked willpower as both cause and evidence of well-being. Informants explained that children with willpower will do well because they will be able to overcome (any and all) obstacles and "won't let anything stand in their way."

> **Interviewer:** What is the most important thing in explaining how a child is developing and how they are doing?
>
> **Informant:** Determination! Just really wanting it. *Wanting* to succeed, to rise above, whatever the situation is. And I don't know where you get it, but it's just pride and determination!
> —
>
> You gotta have the ability to accept that some circumstances just aren't gonna be the way you wanted them, and then you have to power through it in some way.
> —
>
> **Interviewer:** And what explains why some kids do well and others don't?
>
> **Informant:** Your determination. You have to be determined to get into a situation where you want to be. "This is what I want you to do," so study so you can rise out of here and be something in your life. You got to have that thing going on. There's a lot of poor kids who have achieved.

2. The *it's all about their parents* cultural model

Consistent, if not surprising, based on FrameWorks' past research on early child development and child mental health,[22] is that informants were quick to become narrowly preoccupied

with the assumption that, as one informant delineated explicitly, "parents are really the only factor that matters in how well a child is doing." As with those factors discussed above, parents were ascribed a role both as causal mechanism and as indicator of child outcomes. The simple proposition, according to this assumption, was that if a child has responsible parents with strong morals and values, they will have positive well-being and outcomes (causal) and, furthermore, that parental quality is a direct and absolute indication of a child's state of well-being.

> **Interviewer:** So, what would it mean for a young child *not* to be doing well? A 5- or a 6-year-old?
>
> **Informant:** I would say that the parents at home aren't helping the child. The parents have to push the child.
> —
>
> **Interviewer:** Tell me why a child might not be doing well.
>
> **Informant:** Well look at the kids living in the ghetto and their parents just aren't choosing to keep 'em in school and they aren't making sure they're not running around with a neighborhood gang … I mean that makes a big difference.
> —
>
> **Interviewer:** If you had to explain to me why this child is doing well, what would you say?
>
> **Informant:** It's really just because they have a supportive, loving environment and home.
> —
>
> **Interviewer:** Why does a child do well?
>
> **Informant:** Depends on if their parents have good morals and values to pass on to their kids. That pretty much determines it — I mean their development. Because discipline pretty much goes hand in hand with the morals in teaching the children.

In documenting this assumption, we are by no means claiming that it is *incorrect* — parents are surely important in shaping child well-being. However, the cognitive effect of the application of this assumption is an issue that deserves comment. When informants found their way, and they always did, to parents as the explanation for, and evidence of, developmental outcomes, other factors tended to drop out of thinking and conversation. In

this way, once this model became active, it was powerful in crowding out other ways of thinking about what might affect and evidence a child's well-being. It reduces people's ability to reason about a wide range of causes and solutions.

A prime example of this tunnel-vision cognitive effect was that, when in "parents as the ultimate factor" mode, informants were largely unable to provide explanations of factors that would shape parental quality. This effect of the family bubble is rendered even more problematic because of the ultimate cognitive positioning of the model. The fact that, so to speak, all roads to well-being lead through the family suggests that this is an assumption that will inevitably become active, and when it does, it functions as a powerful cognitive trap.

How informants <u>used</u> the cultural models of child well-being and developmental outcomes:

The theory of cultural models draws an important distinction between the *content* of models (i.e., *what* is assumed) and patterns in the *application* of such implicit propositions. In the literature, this distinction is discussed as the difference between the *structure* and the *agency* of cultural models.[23] Above, we have laid out the structure of the cultural models that informants brought to bear in thinking about developmental outcomes and child well-being. Below, we address the agency of these models.

1. There was an implicit hierarchy of propositions.

Informants recognized that child well-being and developmental outcomes involve "a lot of stuff" — and they drew on the models discussed above in reasoning about such states. However, the factors they recognized and the assumptions that underlay these factors were not accorded equal cognitive weight or perceptual significance in informant reasoning. Analysis revealed *a two-tiered hierarchical relationship* between available assumptions.

At one level were the factors and assumptions that informants used in reasoning specifically about external and socio-behavioral aspects of well-being — these can be thought of as proximate factors and assumptions. Our analysis suggests that these more proximate factors and assumptions, such as nutrition or following directions, were also conceptualized in the minds of informants as proxies for two deeper factors — willpower and parents. This was evident in the way that the factors of assumed importance described in the previous two sections were frequently used as evidence of these deeper factors. All conversations of outcomes and well-being eventually found their way down to, and got stuck in, these deeper cultural explanations.

2. Informants implicitly connected specific outcomes to specific models.

There was also a highly patterned connection between the valence of the outcomes that were being discussed (positive, negative) and the specific cultural models evoked. When

informants were thinking and talking about positive well-being and outcomes, their reasoning tended to be structured by a specific set of models that differed from the models that became active when they were talking about negative developmental outcomes and poor well-being.

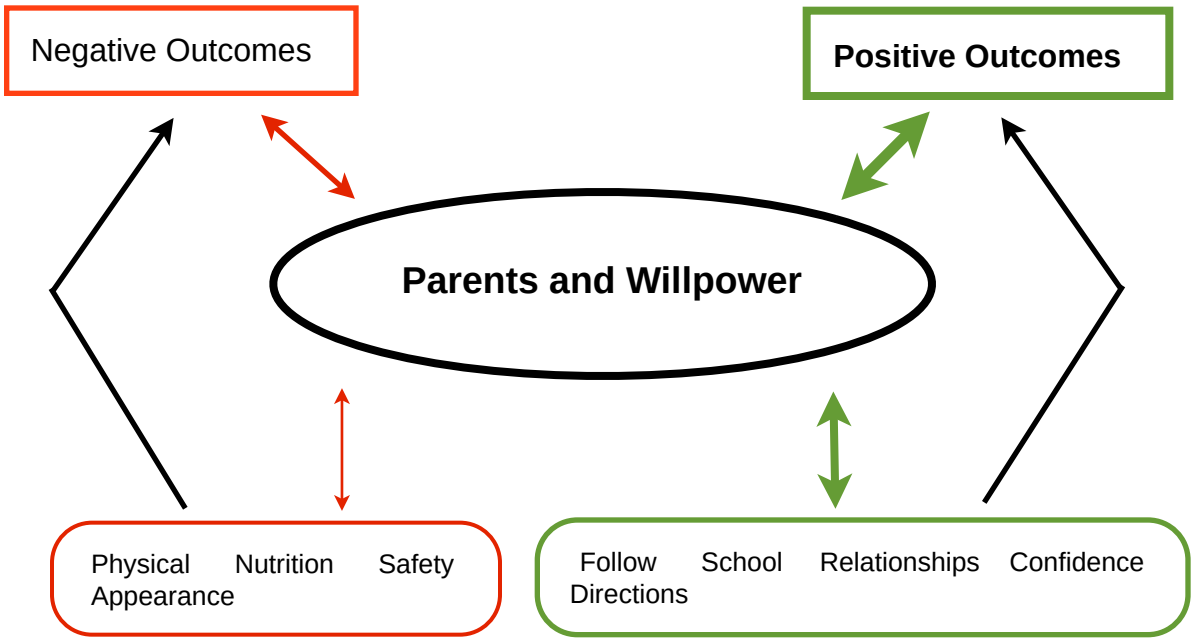
Analysis showed a highly predictable pattern in which the subset of models used to think about external outcomes — *it's in the way they look, poor nutrition = poor well-being* and *safety is as safety does* — were consistently applied when reasoning about *negative* outcomes and were infrequently employed in reasoning about positive developmental outcomes. When informants reasoned about negative outcomes, they tended to focus on physical and external dimensions and used the two models that were connected to these aspects to justify their opinions and support their thinking. From a counter-factual perspective, external and physical aspects of well-being tended not to occur in the context of discussions of children who were doing well. In other words, when informants talked about children who were doing well, they did not focus on the fact that they had good nutrition, were well-groomed or experienced a safe environment. On the other hand, discussions of children who were doing well were structured by the cultural models related to socio-behavioral dimensions. When discussing children who were doing *well*, informants overwhelmingly focused on behavior ("They have good behavior … they pay attention, sit still and do what they're told"), relationships with parents and peers ("They get along with people and have the right people around them … people who love and support them"), and behavior-related performance in school ("They are doing well in school … not getting into trouble with the principal"). Likewise, these factors and assumptions tended *not* to occur in discussions of negative outcomes.

In keeping with this pattern, and as further evidence of their ultimate hierarchical position, assumptions of the importance of willpower and parents that were employed to discuss *both* physical and non-physical aspects of well-being were also evoked as explanations for *both* positive and negative outcomes.

3. Positive states were more coherently and dominantly modeled.
In addition to the patterned ways in which assumptions were used to discuss specific valences of well-being, there was an even more general finding about the *relative strength* of the modeling of various outcomes. In general, informants were more articulate and confident in their opinions and views when discussing positive compared to negative outcomes — as evidenced by the fact that they were decidedly more articulate, confident, convincing and at ease when they talked about and explained positive, rather than negative, outcomes. While there certainly are many explanations for this characteristic of the data,[24] one hypothesis is that the models that structure thinking of positive outcomes are more available, stronger and have more cognitive utility relative to those that structure thinking about negative states. Another related hypothesis is that thinking about children is shaped by an even deeper optimistic model in which all children are assumed to be destined to succeed, and it is those

who don't who are exceptional. This idea is discussed in greater detail below in the section on resilience.

The following diagram depicts both the content of the models, and the patterns in how they were brought to bear in thinking about developmental outcomes and child well-being.



Implications of cultural models and their patterns of application:

1. **Some outcomes and causes are "easy to think."** When asked to think about developmental outcomes, informant explanations fell neatly into two distinct categories. The presence of a socio-behavioral perceptual "bucket," in particular, suggests that Americans will have little trouble thinking about key aspects of the science. This is positive for several, more specific, reasons. First, this is an understanding that other FrameWorks research on child development has suggested is under- (or at least thinly) modeled. The current research suggests that, on the specific issues of outcomes and well-being, relational and social explanations are highly available to Americans. Second, and relatedly, the "easy to think" quality of social relationships as a determinant of developmental outcomes suggests that communicating elements of the science that similarly emphasize the importance of such factors will entail careful activation and cuing of operative and available features of the cognitive terrain.

2. **Genes and biology are conspicuously absent from the public's understanding of well-being and developmental outcomes.** The operative and highly accessible cultural models described above suggest that reframing developmental outcomes will

entail shifting and strategically activating specific understandings from within a larger set of available cognitive structures. However, there remains an entire set of factors to which the science accords significant importance that were almost entirely missing from our interviews. This suggests that such factors are very weakly modeled as part of a larger cultural model of child well-being and outcomes. There was almost no implication of genes or biology as factors explaining or accounting for child well-being or developmental outcomes in our interviews with members of the general public. The absence of genes from the understanding that Americans most easily and readily employ in thinking about states of well-being and developmental outcomes poses a major hurdle to communicating the science account presented earlier in this report — a story which is fundamentally concerned with the role of genes in shaping and explaining outcomes.

3. **Cause and effect are problematically conflated in public thinking about process aspects of the science.** While the conflation of cause and effect may seem a subtle nuance, it presents a substantial implication for communications. The public's confusion over cause and effect is revealing in light of past FrameWorks research, which has consistently documented the public's difficulty in thinking about process elements (i.e., "how does it work") of developmental concepts, including (but not limited to) executive function, brain development, gene-environment interaction, learning and child mental health. In the case of developmental outcomes, the cause and effect confusion will likely occlude a productive understanding of science's story by glossing over, rather than training attention on, notions of process that connect determinants to outcomes. Put another way, our research shows that the public does not have a discrete slot for "causal process" in its story of development or well-being. The lack of this slot in their meaning-making machine will mean that science explanations that focus centrally on notions of causation in discussing outcomes and well-being will literally "have nowhere to go." This highlights the need for careful work to develop causal sequences, which create a space for a causal mechanism between determining factors and outcomes, and make the connections and relationships between cause and effect clear.

4. **The *monkey see, monkey do* model is unproductively simple in thinking about cause.** The *monkey see, monkey do* model is further evidence of the limited process components of the public's model of development and well-being This model is problematic both in its depth and implicitness in culture, and because of its cognitive effect. It offers a simple and neat way of thinking about how factors are connected to, and shape, outcomes. The tidiness and explanatory power of this model is its greatest liability in translating the science. The science laid out earlier in this report turns centrally on a much more complex causal story — a very different way of connecting determinants to outcomes. For the science to be translated, communications must

replace the unproductively simple visual osmosis understanding with something equally simple but with the conceptual capacity to convey the causal elements of the science story.

5. **The fact that different models are used to think different outcomes poses conceptual problems for communications.** The public's current tendency to see certain factors as explanations for positive well-being, with a different set of factors as responsible for negative states is an imposing challenge for communications. This cognitive distinction will make it difficult to communicate about factors and processes that explain *both* positive *and* negative states of child well-being. Furthermore, the binary-ness suggested by this categorical, rather than gradient, modeling — as either "good" or "bad" — stands in contrast to the decidedly "spectrum-ized" science view of outcomes and well-being. In addition, this cognitive partitioning suggests the significance of considering the specific valance of outcomes referenced in communications. Our research shows that messaging about positive states will activate propositions about the importance of a specific set of factors and explanations, while discussions of negative states will evoke a different set of explanations. In short, the way the public models developmental outcomes (binary) and the causes of such states (categorically different factors shaping categorically different states) constitutes a major barrier for communications.

6. **Models of *community* and their connection to child well-being and outcomes hold promise.** The emergence and strength of the two-layered assumption that informants employed in thinking about community — first, that communities matter in a child's well-being, and second, that communities are constituted of people and the relationships between them — is promising. This perspective has the potential to pop what throughout FrameWorks' research has become perhaps the most persistent and pernicious perceptual barrier to science translation — the *family bubble*. The research here presented suggests that by activating the understanding that 1) communities matter, and 2) communities consist of people and relationships, communications may be able to get public understanding out of the *family bubble* and into wider environments of relationships. The emergence of these models of community creates a decidedly more expansive view of context through which people can think about outcomes and well-being. In short, whereas the *family bubble* model narrows contextual influences, the *communities as people and relationships* conception expands the perception of factors that determine outcomes and shape a child's well-being. As one informant said, "If they live in a world with just their parents, fine. But our world is not a bubble."

7. **However, thinking about *communities as relationships* also leaves out important elements of context.** While the *communities as relationships* understanding is

particularly promising in its potential to perforate the *family bubble*, it is, from another perspective, limiting. The assumed constitution of *communities as relationships* focuses attention squarely on "people," and supports the omission of other key aspects of context that influence outcomes both directly and indirectly through their shaping effect on people. In short, a focus on people, even if such a focus includes extra-familial actors, occludes an appreciation of the "causes of causes" — or the physical, social, cultural, political and economic factors that define and set parameters around the actions of, and relationships among, individuals.[25]

8. **The finding that willpower and parents are co-ultimate is concerning, but largely expected.** Past FrameWorks research has shown the dominance of willpower and parents as the most cognitively visible factors in understanding issues of development.[26] While the research presented here suggests that a more well-rounded slate of cultural understandings exists around well-being and developmental outcomes relative to other concepts related to development, it also speaks to the dominance of the now-familiar cultural players in the cognitive space. The position of willpower and parents as ultimate factors in the explanatory hierarchy of assumptions is not surprising, given the pan-domain dominance of these models and their fundamental role as implicit constructs in American culture. However, the fact that our expectations have been validated here does not make the presence and application of these models any less problematic for science communications. As these challenges have been discussed elsewhere in great detail, we will only briefly refer to perhaps the most problematic of the effects of these models in relation to the task of science translation.[27] Most importantly, the application of both of these assumptions creates a neat and tidy explanatory structure in which other causal factors and explanations can easily be explained away as extraneous or, as informants did on our interviews, attributed a role as proxies or stand-ins for what are assumed to occupy the top slots in the explanatory hierarchy.

9. **The relative coherence of models of positive well-being suggests promise in *promotion* propositions.** The ease, comfort and fluency that informants displayed in discussing positive developmental outcomes in relation to more negative states suggests that communications would be wise to message around promotion of positive states, rather than beginning with discussions of how to "deal with" or "treat" negative outcomes. While challenges to well-being are surely vital aspects of communications, the relatively more modeled nature of positive states suggests that these are good places to start when translating the science account. Once members of the public are comfortably thinking from a positive perspective, messages about challenges to such states and interventions to address such challenges can be more effectively introduced because the positive models are then more likely to map onto the negative conditions.

10. **Confidence comes close to competence but warrants caution.** The assumed importance of "confidence" in informant understandings is promising in communicating the target science. Confidence, as described and conceptualized by informants, comes close to the science's emphasis on "competence" as a means of assuaging and buffering adversity, and explaining positive outcomes. However, and this is a significant caution, our lay informants modeled confidence as an internally derived trait rather than as a skill contingent upon, and developed in response to, contextual factors and experiences. In this way, "confidence," as can be seen in several of the quotes above, veers dangerously in the direction of willpower. Therefore, to be effectively deployed by communications, there must be considerable attention paid to confidence *as a skill* that is (at least partially) *the product of a child's environments of experiences*.

II. Thinking about <u>unexpected</u> outcomes

While our interviews with lay informants aimed to elicit thinking about the general domains of outcomes and well-being, the interview protocol was also designed to gradually dig deeper and probe more specific questions about various situations and permutations of determinants and outcomes. For example, lay informants were asked questions such as: How would you explain a situation in which a child you would not expect to do well actually was doing well and experiencing positive outcomes? Imagine a child whom you would expect to experience negative outcomes — how would explain it if this child were actually doing well? When would you expect a child to be doing well and how would you explain it if this child were not doing well? These questions were designed to elicit additional data about how informants reasoned about the factors and processes that shape developmental outcomes, by problematizing expectations and eliciting reasoning about unexpected outcomes. This expectation-violation strategy is a commonly employed technique in anthropology that is designed to bring cultural models into relief by observing their boundaries.[28] In this way, seeing how informants reasoned about *unexpected* outcomes was valuable in helping us understand how they reasoned about outcomes more generally.

In addition, such violation-of-expectation questions were essential in eliciting understandings of resilience without directly asking about the term — a term that, as described below, carries its own conceptual baggage.[29] In this way, we were interested in hearing not only what informants thought specifically about the idea of "resilience," but also how they reasoned about the science concept that underlies this terminology (positive developmental outcomes in the face of significant adversity). In this section, we present results from that latter line of inquiry.

In asking people to reason about unexpected outcomes, several interesting patterns emerged — the first deals with the way the more-general outcome models described above were

evoked to reason about such scenarios, while the second reveals a deeper connection between these outcome models and those that structure Americans' thinking about "children."

1. In explaining unexpected outcomes, informants evoked those cultural models that dominated the more-general outcome explanatory hierarchy. Analysis suggested that, when informants were asked to think about *unexpected* outcomes (where there was a mismatch between determinants and outcomes), there was an implicit distillation of the larger set of models used to think about outcomes. The result was that only the most dominant models from this hierarchy were operative in thinking about unexpected outcomes — *family bubble* and *willpower*.

When a child was explained to be doing well despite factors that informants had earlier in the interview associated with negative outcomes (lack of physical safety, poor physical hygiene and nutrition, for example), informants reasoned either that such a child "must have a *really* good set of parents," or that they must "have a real strong drive." In short, informants employed propositions of the importance of parents and/or willpower in making sense of unexpectedly positive outcomes.

In addition, when the interviewer problematized either of these factors ("Well, what if I tell you this child who is doing well has parents whom we would not consider 'good'?" or "What if I told you this child who is doing well actually doesn't have a lot of the willpower that you mentioned before?"), informants evoked the other explanation from this dominant pair — explaining positive outcomes in the face of "bad parents" by evoking notions of incredible tenacity and willpower, and explaining positive outcomes despite a lack of willpower with the notion of "super-parents." As additional evidence of the ultimate nature of these factors in the explanatory hierarchy, when the interview problematized both parents *and* willpower (a child who was doing well despite both "bad" parents and a lack of willpower), informants were stumped, and struggled, largely unsuccessfully, to generate explanations.

When presented with the reverse scenario — a child doing poorly despite the presence of factors that would otherwise predict positive outcomes — informants evoked similar models to explain unexpectedly negative outcomes. These trends in the data all point to the fundamental nature of cultural propositions regarding the importance of willpower and parents as ways of explaining outcomes. Further, it triangulates the results presented in the previous section as to the ultimate position of these factors in a meta model that Americans use in making sense of issues of child well-being and developmental outcomes.

> [In response to a question about a child who was doing well despite a set of factors that the informant had previously described as being associated with poor outcomes] Some kids are just determined to learn no matter what. They're just determined. They

want to get better. Like I said, you can be in the ghetto for a long time, but sooner or later, if you grab everything that's there, you can come to the top.
—

Well, even the baddest person in the world has had opportunities to do better. So you can't blame it on society. "Oh, nobody gave you a chance." Hell yes they did! You just didn't take advantage of the opportunities that were presented to you! 'Cause even in those situations, kids have achieved. It has to be in you. You can't just say, well, I never had somebody to motivate me. No. Somewhere along the line, you got to wake up and motivate yourself.
—

It's [positive outcomes in the face of adversity] the parents. There's a lot of poor families where the kids have actually achieved, and you know that.
—

I would say it's a parental thing at home that causes that [negative outcomes in the face of factors associated with positive outcomes]. Parents don't tell their kids that [not to steal]. They'll say, "Oh, Johnny stole a piece of candy at the store, oh well." You can't let it go, you gotta chastise him.
—

You know, my mom and dad were like this. You got to want to take a — a rise up to the — to the top yourself. You got to want to. Somewhere along the line, you must want to. You got to have determination within yourself. And some kids have it, and some don't.
—

Interviewer: How likely do you think that is? So, say you've got 10 kids and they're all living in the ghetto, they have bad schools, they have all of these things that you said: bad communities, their parents are under stress, bad peer groups. So you have 10 kids in that same environment. How many of them do you think are gonna be able to do well?

Informant: I would probably say at least 50 percent of them probably would come out of that doing well. Most children, no matter how poor they are, they're gonna do OK.

Interviewer: So, what separates those five from these five?

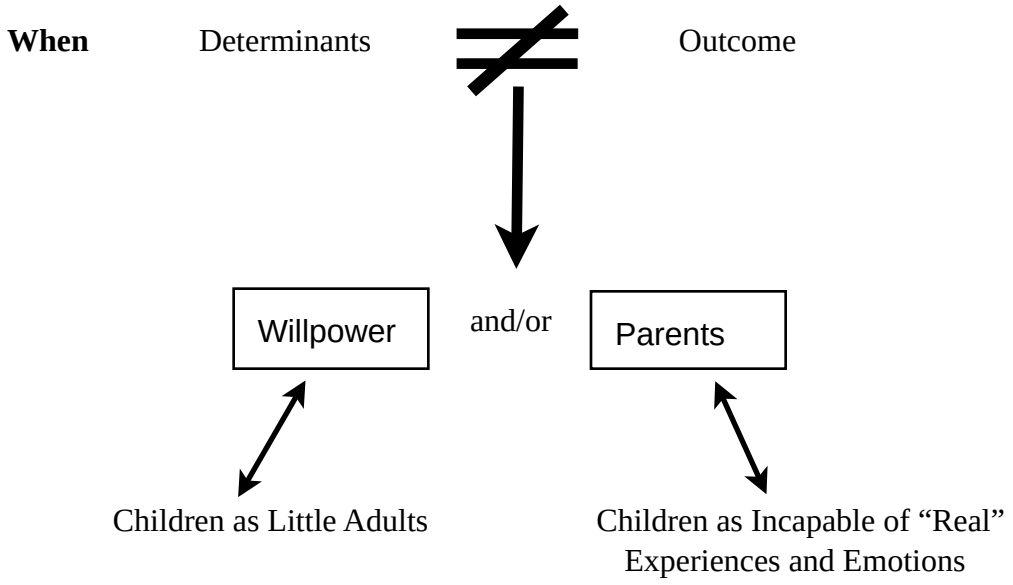
Informant: Well, it's determination. You got to have that thing going on.

2. Thinking about unexpected outcomes recruits cultural models of "children." Lying under informant discussion of unexpected outcomes were two conflicting cultural assumptions about children.[30] First, that children are "just little versions of you and me" — what we call the *children are just little adults* cultural model — and second, that children are fundamentally *undeveloped* agents — that "they don't even remember or really know what they're doing" — what we call the *children as liminal agents* cultural model.[31]

When given open-ended latitude in explaining unexpected outcomes (i.e., when the interviewer did not propose specific scenarios), the model of "child" that was evoked was connected to a way of thinking about unexpected outcomes. When informants thought about children as little adults, they conceptualized children as willful, and employed the *willpower* model to explain unexpected outcomes. On the other hand, when informants reasoned from the more liminal positioning of children as "not understanding their actions," "not remembering things" and "not having real emotions," informants evoked families and parents as the primary explanations for unexpected outcomes.

While directionality is difficult to establish from these data (i.e., if the model of "child" precipitates the specific outcome model with which it is correlated, or vice versa), this connection between models suggests that, when Americans think about children as willful and responsible agents, they see the child's willpower as the explanation of both unexpectedly positive and unexpectedly negative outcomes. Meanwhile, when Americans employ the other equally operative way of understanding a child's agency, they rely more strongly on the idea that parents are the responsible agents in justifying unexpected outcomes.

The following schematic summarizes the findings regarding patterns of thinking about unexpected outcomes.



Implications of patterns in thinking about unexpected outcomes

1. **The way people think about unexpected outcomes brings the dominance and danger of *willpower* and *parents* into even clearer relief.** Patterned responses to questions about unexpected outcomes provide further evidence of the dominance of *willpower* and *parental responsibility* in the way that Americans understand developmental outcomes. This dominance further emphasizes the dangers that the application of these models poses for communications, cautions that have been discussed both above and elsewhere in FrameWorks' research on early child development and child mental health.[32]

2. **The difficulty of generating explanations for unexpected outcomes, once *willpower* and *parents* have been exhausted, is cause for further concern in communicating the role of genes and biology.** When the interviewer pushed informants beyond their most operative cognitive conventions for explaining unexpected outcomes, not one informant implicated genes as an explanation for unexpected outcomes. This, again, shows the lack of implicit connections between genes and outcomes/well-being, and is cause for concern in light of the science account, in which genes and biology play a prominent role.

3. **Communications about outcomes must carefully consider how "children" are presented.** Findings suggest that messages about developmental outcomes must consider, and attend to, the patterned ways in which Americans conceptualize "children." Unfortunately, neither of the two dominant American models of children is promising in light of the science to be communicated. This suggests that, to be successful, translational efforts must provide Americans with an alternative, more developmentally appropriate, conception of children — one that falls between the

> notion of *complete individual responsibility for outcomes* on the one hand, and the idea of *children as emotionally unable* on the other. From a more optimistic perspective, the connections between models of children and developmental outcomes suggests that, by reframing the concept of "children," communications may be able to create room for new ways of thinking about outcomes — ways that ascribe a role for genes in the outcomes equation.

III. Cultural models used to think about "resilience"

As described above, our interviews elicited explanations of both the conceptual underpinnings of resilience (unexpected outcomes) as well as the specific term "resilience." We now turn our attention to this latter task and look at two highly patterned understandings that informants employed to reason about the term "resilience."

1. The *resilience is a substance* cultural model

In discussing the term resilience, informants operated under the assumption that resilience *is a substance* — some mysterious quantity that humans come equipped with at birth. Informants explained that "everyone is born with some of it." Interestingly though, informants did not see this quantity as being connected to genes, but rather as a basic reserve with which *all* humans are born.

> I think you have a certain amount of resilience. And I think little kids definitely have that resilience.
>
> —
>
> So you're born with it, but if you don't develop it, then you might not [keep it].
>
> —
>
> I think it's something that everybody is born with and I think we are given a measure of it and it's what we do with it that matters … I think we're all given an equal measure of it and we're all responsible for using it. You have to use it or that resilience is going to wear off.

As can be seen in the quotes above, there was a more specific assumption nested in the *substance* understanding. Informant discussions of *resilience as a substance* frequently evidenced a more nested "use it or lose it" understanding. In this way, informants frequently discussed resilience as something that all individuals are born with, but something that, in the absence of its use, atrophies over time. Informants talked about how you have to "use your resilience if you want to keep it." In this way, informants saw that, when in environments where they were not forced to use their resilience, children gradually lost their stores of this

substance. On the other hand, in contexts in which they were forced to apply it, children retained, and even honed, their native resilience.

2. The *resilience is yours if you want it* cultural model

Informants also drew from the *willpower* model described above to understand the term "resilience." Informants reasoned that resilience is a function of whether or not a given child, as one informant said, "gives a shit" or is "motivated to really push themselves." Informants explained that resilience is just "another word for the determination to bounce back" — in short, that resilience and willpower were direct synonyms. In this way, willpower found its way again into conversations, as informants reasoned that any child could be resilient, since willpower and the motivation to "persevere " through, "triumph" over, and "bust through" the challenges and obstacles is inherent in all of us.

> You know that Dwayne Wade commercial? Fall down seven times, get up eight. That's resilience. Being able to persevere. Perseverance and resilience, to me, are pretty much the same thing. Stick-to-it-ness.
> —
>
> You got to have some resilience — no matter how tough it gets, you got to keep going.
> —
>
> **Interviewer:** Where does resilience come from?
>
> **Informant:** I don't know, just a sense of pride, just determination. *Wanting* to put your life back together. Wanting to do well, to thrive in spite of whatever difficulty you've had to deal with.
> —
>
> **Interviewer:** How do we get resilience?
>
> **Informant:** Determination. Wanting to succeed. Wanting to rise above … whatever the situation is. And I don't know where you get it. It's just pride and determination.
> —
> **Interviewer:** Do you think that all children are resilient?
>
> **Informant:** Most of them want to be resilient. Most of the kids are gonna rise up if they've been in a poor environment, if they've been in poverty. Most of them are, oh yes.

Implications of cultural models of resilience:

1. **The *born with it* understanding obfuscates the notion of resilience as something that can be cultivated.** The innate-store-of-a-substance understanding stands in stark contrast to the expert notion of resilience as a skill that can be at least partially cultivated through supportive experiences and relationships. This discrepancy will make the science account difficult for the public to comprehend.

2. **If left to run its course, *use it or lose it* generates an unproductive conclusion.** Taken together, the propositions of: 1) you have to use it or you lose it; 2) "it" is good; and 3) using it means being exposed to significant adversity, creates a powerful logical sequence. The outcome of these models is that resilience requires ongoing exposure to significant adversity. This pattern of reasoning is highly logical and makes communicating about the development of resilience through *positive and supportive* relationships and experiences difficult.

3. **However, the *use it or lose it* model may have potential if its propositional structure can be appropriated and redefined.** While the *use it or lose it* notion is dangerous for the reasons discussed immediately above, there is another way in which the assumption hints at promise. If the "use it" part of this proposition can be redefined to focus on positive interactions and supportive environments (rather than significant adversity), this assumption may assist scientists in communicating the notion that, to some degree, resilience is a skill that can be cultivated through policy and programmatic attention to the contexts in which children develop. FrameWorks' upcoming prescriptive research will test whether this assumption, through reframing, can be re-appropriated as a tool in translating the science.

4. **That resilience is seen as normal explains the relative difficulty in thinking about context as a causal factor in child well-being and outcomes.** A key finding from direct elicitation on the term "resilience" was that informants viewed this concept as *something that everyone has*. Informants explained that, equipped with an innate store of gumption, all individuals can prevail over even the most challenging circumstances. From this perspective, it is actually those who don't "rise up" who are the exception to a more general proposition that *humans are resilient.* This has major communications implications. Most importantly, it explains willpower's high positioning in the hierarchy of outcome explanations. If everyone is assumed to have resilience, context becomes relatively unimportant in understanding questions of differences in outcomes. Any variations in well-being within and across contexts, then, boil down to the individual's will to apply their resilience. In short, the assumption of resilience as internal tenacity is seriously problematic in light of the

science translation task, a key component of which is the role of context in interacting with constitutional factors to shape outcomes.

Recessive developmental outcomes models:
There were several other shared and patterned assumptions that informants drew on in thinking about outcomes. Although these models were not as frequently employed and were not used with the same degree of automaticity as the dominant models described above, they are nonetheless important extant features of the cognitive landscape on this issue and are, therefore, important considerations in communications attempts. We call these "recessive" models, as they can be thought of as ways that are *available* to the public to think about developmental outcomes but not *readily* employed. Put another way, these recessive models require specific cuing to become active in the mind. If they can be activated to become operative perspectives through which to think about and understand developmental outcomes, several of these recessive models offer considerable promise in translating the expert account. We therefore view these recessive models as promising avenues of thinking for future communications research to explore.

1. The *exposure to a variety of activities is key* cultural model
Some of our informants, at some points in their interviews, responded to questions by relying on an assumption in which a child's outcomes and well-being are shaped by the *activities* in which they participate. Informants explained that participation in a wide variety of activities (e.g., sports, art, drama) both evidences ("You know a child is doing well when they are doing lots of different things") and explains ("In order for a child to do really well, they have to have all those experiences") positive outcomes.

> [In discussing how to improve child outcomes] I think I would try to offer extra-curricular activities for kids to participate in because I think that would give them a positive outlet to maybe help get them out of the mindset that they're stuck in.
> —

> I think a child that's doing well shows that they're doing well by the things and the activities that they're doing.
> —

> [In discussing how to improve child outcomes] More involvement. You don't have to be the smartest kid in the world, or the best sports player, as long as you're involved in something positive …

2. The *work and time constraints shape family quality* cultural model
While, for the most part, informants modeled contexts in terms of *people and relationships*, there was occasionally another, more recessive, assumption of context. When informants

talked about outcomes, they sometimes implicated context in a more sociological way — pointing to the importance of patterns of employment as an explanation for family quality and, through family quality, a child's well-being. In such explanations, family was still accorded a prominent role, but family quality was seen to hinge to some degree on the work demands placed on its members. When explaining child outcomes, informants implicated parents in a more balanced way and were able to see that the quality of parenting was dependent on a wider set of contextual factors. In these explanations, informants could see that the work demands placed on parents were important in understanding the quality of their parenting, which in turn was important in understanding child outcomes.

> Evidence [of a child not doing well] would be that his mother isn't around all the time because she's gotta work three jobs to support her family.
> —
>
> We've always just felt like family is everything. If you can't spend your life and your valuable time with your family, then I feel like you are really missing out on something.
> —
>
> I think that, growing up, children need to have a relationship with their parents and their siblings, that it's important for them to develop those relationships because it shapes who they grow up to be versus if a child's parents have to work all the time, it makes them a loner kid.

Implications of recessive outcome models:

1. **The *activity participation* model gets close to the expert notion of contextual competence.** If communications can find an effective way of activating the "activity participation" model, public understanding may be brought into alignment with the expert notion that outcomes and well-being are shaped and defined by the connections that an individual has to institutions in communities. Thus, designing and testing strategies that activate this model should be a priority for prescriptive communications research.

2. **The *quantity* aspect of the *activity* model may occlude considerations of *quality*.** While the *activity* model was promising for the reasons outlined above, there is one possible entailment of this model that tempers our enthusiasm in recommending its deliberate activation as a communications tool. If communications are not effective in clearly asserting the importance of the *quality* of experiences and activities, the activity involvement model has the potential to create a powerful *more is better* conception. Put another way, seeing the *quantity* of activities that a child is involved with as the factor shaping positive outcomes may obfuscate the importance of

considerations of the *quality* of such experiences in shaping developmental outcomes. Attention, therefore, must be paid to creating clear and concrete notions of the importance, not only of *access* to activities and experiences in communities as facilitators of positive development, but of the importance of the *quality* of such activities and exposures.

3. **Understanding work demands as a factor shaping developmental outcomes is promising.** The fact that some informants recognized and appreciated at least an indirect role for employment is a finding of considerable importance. If communications can find a way of leveraging this extant, but recessive, understanding, the role of public policy as a solution to developmental issues has the potential to become more apparent to the general public. In short, we suspect that this understanding may be another tool to use in popping the *family bubble*. Future communications research needs to find the lever that is most effective in activating this way of thinking and experiment with tools that lead Americans to consider the connections between such factors as employment, family quality and developmental outcomes.

OVERLAPS AND GAPS IN UNDERSTANDING

The goals of this analysis have been to: 1) document the way experts talk about and explain developmental outcomes and resilience more specifically; 2) establish the way the American public understands these and related issues; and 3) compare and "map" these explanations and understandings to reveal the overlaps and gaps between the perspectives of these two groups. We now turn to this third task.

Comparative analysis suggests key areas of overlap between expert and public understandings of developmental outcomes and child well-being. As areas of confluence, these overlaps represent features of the cognitive landscape that communications can strategically leverage to improve the accessibility of expert information. Future communications research will empirically test how to undertake this activation, and the degree to which the activation of these common patterns of thinking facilitates the translation of developmental science.

Overlaps in Understanding:

- **A common focus on relationships.** Both experts and members of the general public focused on the relationships that a child has as a key factor in explaining developmental outcomes.

- **Quality of communities and contexts is a function of relational resources.** Furthermore, the two groups shared a common perception of communities. They both saw community through a personal and relational lens, in which the community quality was largely understood and assessed (explicitly by experts, and more implicitly by our lay informants) in terms of the degree to which it was invested with personal relationships.

- **Competence and confidence.** While different in several key respects, the experts' notion of "competence" as the cultivatable component that explains positive outcomes very closely approximated what lay informants described as "confidence" and positioned as a key factor in shaping and evidencing positive developmental outcomes.

In addition to the more productive overlaps discussed above, our comparative analysis revealed a key set of gaps between the ways that experts and the American public think about developmental outcomes. Below, we describe each of these gaps and discuss its communications implications.

Gaps in Understanding:

- **Genes: A key determinant versus missing from the mix.** Experts posited a major role for genes as a key determinant in their explanations of developmental outcomes. In our interviews with members of the general public, genes were conspicuously absent from discussions about outcomes. As has been discussed throughout the paper, this gap has major implications for communicating about outcomes, and resilience more specifically.

- **Cause and effect: Cause precipitates effect versus a cause as effect.** Expert explanations of developmental outcomes were characterized by clearly articulated determinants, causal processes and outcomes. In short, the science account was articulated as a causal sequence, with a set of determinants that were connected in a clear causational process to a set of outcomes. The patterns of thinking that emerged from the analysis of interviews with members of the general public were characterized by the opposite of such causal sequences. These interviews revealed a deep conflation of cause and effect, such that informants had difficulty recognizing the cause of an outcome from the outcome itself. Again, as with the genes gap discussed above, the presence and dominance of cause-and-effect conflation, in light of the conceptual distinction of these components in the expert account, complicates the translational task that lies ahead.

- **Categories of determinants: Connected versus distinct.** In addition, there was a considerable expanse between the ways that experts and non-experts thought about connections between determinants. Experts articulated an account in which the same

factors that cause positive outcomes, in the opposing valence precipitate negative outcomes. Lay cultural models of outcomes contained a strong association between specific determinants and specific outcomes — one group of factors was linked with positive outcomes, while a second group was evoked to reason about negative outcomes. This difference between the cognitive terrain that Americans navigate in understanding outcomes of development and the understandings of these issues proposed by scientists suggests that the former group may have difficulty in thinking about the power of *one* set of determinants to influence *all* outcomes.

- **Children: Relative versus absolute.** Another area of serious discrepancy between experts and members of the general public existed with respect to the underlying concepts of "children" which these groups evoked. Experts employed a nuanced developmental perspective on children and childhood, characterized by critical periods and the importance of considering both the individual's position in the developmental trajectory, as well as developmental differences between children. Interviews with members of the general public suggested a dramatically different way of understanding children — one characterized more by binary distinction between two operative models than by the temporal nuance afforded in the expert account. Our lay informants toggled rapidly between conceptualizing children as little adults and seeing them as lacking fundamental emotional capacities required for basic human functions. This gap suggests that scientists have considerable work to do in providing the public with clear accounts of the developmentally relative nature of childhood, both within and across individuals.

- **Responsibility for outcomes: Policies and programs that support relationships versus willpower of the child and morals of the family.** Experts saw programs as having the power to improve developmental outcomes and child well-being. In this way, contexts could be improved to shore up protective factors and reduce risk factors, which would improve developmental outcomes. Improving contexts was also seen as a powerful means of exerting effects on the epigenetic level that might improve outcomes regardless of subsequent developmental contexts. The picture of responsibility from the public's vantage point is quite different, with the onus placed squarely on the shoulders of individual children in the form of greater gumption, and on their parents by way of strong morals and values. This gap represents a fundamental impasse in the perspectives of these groups that imposes a major challenge to communicating developmental science and, more importantly, of creating an appreciation for the programmatic implications of this science.

- **What is resilience: Outcome versus substance.** Analysis revealed three important gaps in relation to the concept of resilience. The first of these gaps was apparent in the question of what resilience *is*. Experts discussed resilience as an outcome — *a*

positive outcome in the face of significant adversity. The public, on the other hand, held a clear, powerful and highly shared conception of resilience as a substance that all individuals are endowed with at birth. Furthermore, the public held a coherent understanding of this substance's use-it-or-lose-it quality. This gap is fundamental and expansive. The power, depth and clarity of the public's side of this gap suggests that there will be considerable difficulty in moving from a *substance* to an *outcome* understanding. It is this gap, and its expanse, which leads to our recommendation that priming outcome discussions with the term "resilience" will make it hard for the public to understand the science.

- **What causes resilience: Genetic susceptibility modified by context versus resilience.** Experts employed the science account of genetic susceptibility modified by competence to explain why some individuals experience relatively positive outcomes in contexts that would not predict such states. The public, on the other hand, in the same way they conflated causes and effects more generally, assumed that resilience *was* the cause of resilience. Quite simply, in the words of one informant, "Resilient kids are resilient because they have resilience." Informants saw no apparent tautology in such explanations.

- **How to cultivate resilience: Supportive relationships versus significant adversity.** While the expert account stressed contextual quality — specifically, the presence of supportive relationships — the public's cultural model of resilience led to the conclusion that there was nothing a person *couldn't* overcome on their own and, furthermore, that the more significant the adversity, the greater the resilience. In short, the expert account emphasized the notion of support as the means through which resilience could be cultivated while, for members of the public, successfully dealing with significant adversity in the absence of support facilitated resilience.

CONCLUSIONS

The research described in this report presents several key recommendations for communications, but its most significant contribution is in deepening science communicators' appreciation of the challenges inherent in reframing issues of child development — more specifically, of the features of public understanding that will lead to misinterpretations if science is translated through direct and literal means.

To use FrameWorks' working analogy, this report has laid out the cognitive landscape that Americans travel when faced with the issue of child well-being and the outcomes of child development. There is considerable work to be done to make the science on this issue accessible to the public, but this research, perhaps more than FrameWorks' previous cultural models work, suggests that there are powerful, existing understandings that can be leveraged

in creating improved understanding of the science of positive developmental outcomes and child development more generally. It is with this optimism that we approach future prescriptive research that will build on promising parts of this cognitive terrain, and establish clarity around concepts that are currently without productive cultural models.

A strong assumed importance of context as an outcome determinant, and the construction of such contexts as relational, are promising elements of the cognitive landscape. Through empirical reframing work, we will work to find effective ways of cuing these understandings. Exposing these more eco-social assumptions suggests that the science of developmental outcomes and resilience can be effectively translated, and that finding ways to leverage these understandings will also be of great utility in communicating about other areas of developmental science. These models are, in short, tools of conceptually targeted utility as well as of more global promise in translating the science of early child development.

With this map of the cognitive terrain and its enumeration of both promising and perilous paths of public understanding in hand, FrameWorks is prepared to move forward with developing communications tools to help scientists better communicate about their work and its implications for creating better child policies. While this research admittedly represents the first phase of a much larger investigation, several preliminary recommendations and future directions have become apparent. We present these here as *preliminary communications recommendations*:

- Activate and invigorate the *communities as relationships* model.
- Use the *work as a constraint* recessive model to expand a systems/resources perspective that highlights the shaping force of policy on various levels of context and outcomes.
- Link a set of causal factors to positive, negative and intermediate outcomes.
- Focus on the development of skills, but expand by positing supportive relationships as the means through which such skills are developed.
- Build a new concept of “child” to supplant the existing, unproductive cultural dichotomy.
- Focus attention at the community level and the patterns of resource availability therein.
- Connect resources in communities to successively more specific layers of context through the basic sequence of “community resources affect families and child well-being.”
- Clarify the process that connects determinants to outcomes as a first step in communicating the science of resilience.

APPENDIX 1: FOUR INITIAL EXPERT STORIES

1. Resilience as a specific concept.

What is "it"?

- **Positive developmental outcomes despite significant adversity.** Across the sample of experts, there was overwhelming consensus and clarity on the definition of "resilience." Experts explained that resilience is, most basically, the experience of positive developmental outcomes in the face of factors that pose significant risk to positive development. In these explanations, experts emphasized that the concept of resilience is reliant on the fulfillment of both clauses of the definition — that it is not *just* doing well, nor is it *just* the presence of risk, but, rather, resilience is positive outcomes in the presence of factors that science has shown to precipitate negative developmental outcomes.

- **Resilience is NOT an individual character trait.** Experts uniformly expressed concern over what they saw to be the public perception of resilience — that resilience is a predetermined trait that an individual either has or does not have. Experts explained that this "trait-based" understanding obscures the "transactional nature of resilience and developmental outcomes more generally." In short, experts defined resilience by clarifying what it is *not* — resilience is *not* an innate characteristic of the individual. Rather, it is better thought of as an outcome.

- **The myth of indestructibility.** Despite the focus on resilience as the occurrence of positive outcomes in the face of adversity, most experts were measured and tempered in their enthusiasm for this phenomenon. They felt it important to point out that one of the dangers of focusing on resilience is the resulting perception of "un-breakability." These experts were therefore careful to acknowledge that "no child is indestructible." They explained that there are very real limits to the resilience concept — that there are risks and adversities from which *no* child can experience positive outcomes. In the words of one expert informant, "Indestructibility is for comic books, not kids."

- **Resilience is but one of many outcomes and permutations of a larger "transactional phenomenon."** Most experts strongly emphasized the fact that "resilience" is *not* the whole story. Rather, it is one particular result of one particular combination of individual and contextual variables. Experts explained that adopting a narrow focus on resilience conscribes the conceptual focus, exceptionalizes, and leaves the vast majority of outcomes unexplained. Most experts advocated, therefore, the need to "pan out" and look to a larger concept that allows for the explanation of resilience along with other context/biology permutations and outcomes. Experts

expressed qualitatively different views about what this more global concept would be (see below), but by and large did agree that the concept of resilience was of limited utility as the focus of a translational effort. **In this way, most experts advocated communicating a larger concept into which resilience could be fitted as a more specific phenomenon, and that clarity around resilience would be a collateral outcome of explaining this larger concept.** Stories 2, 3 and 4 below offer various ways of situating resilience in wider constructs. This is where the divergence of opinion requires priority-setting, if not outright choices, among the variants.

How does "it" work?

- **It's complicated …** Experts warned that understanding the causes and explanations of resilient outcomes is complex. They emphasized the fact that resilient outcomes are not "uni-dimentional," but instead are shaped by the confluence of multiple factors that, at the broadest level, can be categorized as either contextual or biological/ genetic.

- **The causes of resilience are the same as those of positive development.** Experts were quick to point out that the factors that explain resilient outcomes are the very same factors that support and account for positive developmental outcomes more generally. Furthermore, experts explained that resilience *derives from* positive development, such that solid brain architecture shapes processes — such as executive function — which in turn mitigate risk and adversity. In short, the simple but incredibly powerful take-away message from such conversations was that "when you address development and functioning more generally, you promote and increase the likelihood of resilient outcomes."

- **"Resilience rests on relationships."** Experts overwhelmingly focused on relationships as the primary factor in accounting for resilient outcomes. They explained that resilience is best understood and explained through the presence of, or access to, supportive and caring relationships.

- **A history of resilience.** Experts also emphasized that resilient outcomes are the result of experiences and exposures *over time.* In this way, patterns, trajectories, and histories of experiences and exposures are key in explaining resilience at any one point in time. According to experts, resilience is a temporally deep phenomenon, rather than one that can be understood by examining any specific "snapshot" or "slice" of time.

- **"It's like a balance sheet."** Experts frequently employed, at both literal and more metaphorical levels, the notion that resilient outcomes occur when the number of protective factors outweighs the number of risk factors. Put another way, the *number*

of risk and protective factors and their balance, again over time, are key in understanding and explaining resilient outcomes.

What are the solutions?

- **Resilient outcomes can be cultivated.** Expert interviews revealed, both in explicit discussions and more implicitly in views of intervention, the notion that "resilience is something you can make happen," an outcome that "can be built."

The Expert Story of "Resilience"

What is "it"?

- Positive developmental outcomes despite significant adversity.
- Resilience is NOT an individual character trait -- it's an outcome.
- The myth of indestructibility -- "resilience within reason."
- Resilience is but one of many outcomes and permutations of a larger "transactional phenomenon."

What are the solutions?

-Resilient outcomes can be cultivated.

How does "it" work?

- It's complicated...
- The causes of resilience are the same as those of positive development
- "Resilience rests on relationships."
- A history of resilience -- a diachronic outcome.

While the above points were aspects of the specific concept of resilience agreed upon by experts, beyond these points of consonance were considerable differences about the larger concept to which resilience belonged. **To continue with the story metaphor, experts agreed that resilience was a subplot and were in accord about the content of this part of the story, but diverged when it came to thinking about a larger, more general and conceptual overarching narrative of which resilience was but one element.**

Analysis of the expert interviews revealed three of these more general conceptual narratives. There was a group of experts who felt that the more useful umbrella concept was the story of context, competence and developmental outcomes. Another group of expert informants nested resilience into a more general story of differential biological susceptibility to context. And, finally, a third group focused on the resilience of neurological systems — a concept they referred to as neuro-plasticity. We present these three more-general stories below.

2. Resilience is no great mystery: The story of context, competence and developmental outcomes.

What is "it"?

- **Explanations for outcomes lie in context.** Experts in this camp emphasized the fact that developmental outcomes, to a large extent, can be explained by the availability and accessibility of contextual resources. In this way, children who experience positive outcomes in adverse circumstances are those with some specific contextual access or support that is lacking in children who do not experience positive outcomes in similar contexts. These experts emphasized that resilient outcomes *can be explained* if you look carefully enough at context and the specific patterns of access to, and availability of, resources.

- **Context is key to all children.** Remember that a point in the more specific story of resilience was that focusing on the concept of resilience conscribes the discussion and scope of concern to what experts described as, largely, exceptional cases. Focusing on context was, to experts who advocated the contextual story, a way of expanding the populations included in the discussion. If the focus is more broadly on the role of context as a determinant of outcomes, the discussion effectively includes *all* children, rather than a narrow slice of the population that experiences positive outcomes when we would expect otherwise.

How does "it" work?

- **Competence in contexts is key.** In speaking about the larger concept of contextual importance of which resilience was but one articulation, discussion from this sub-group of our expert sample focused heavily on the idea of "competence." According to these experts, resilience is an outcome that involves resources, but also *skill*. They used the term "competence," or "contextual competence," to discuss the ability to manage "the plate you're given." In this way, competence was described as the ability to manipulate or navigate contexts and available resources. They explained that resilient outcomes are the result of having some contextual supports in an otherwise adverse environment at the time of the adversity (buffers), but also that having such positive contexts and supports creates a positive feedback loop in which the presence of such resources enables the development of skills early that help an individual compensate and manage in subsequent adverse situations. The importance here was still placed on the context — both as the source of the skill, as well as the thing to be navigated through the application of the skill.

- **Contact points.** When explaining resilience as part of the story of contextual importance, these experts homed in on the idea of "contact points," or "access points." They explained that the number of points of connection that a child has in his or her community is significant in explaining positive outcomes in adverse circumstances. Experts explained that the children who do well in risky environments are those who have multiple connections to community institutions (e.g., sports, mentoring organizations, extra-curricular activities, places of faith). According to this explanation, those children who succeed are those who have relatively good access to the resources that *do* exist in otherwise resource-sparse contexts. This idea also was invoked in discussions of intervention, in that programs that seek to increase these contact points should improve outcomes.

- **"It's got a lot to do with culture."** In the story of context, culture is key. These experts saw clearly that culture shapes the way that contexts and constituent risk and protective factors are organized and structured. Culture was also seen to shape the ways that individuals can access these resources, by ascribing or enabling interactions, behaviors and engagements between individuals and with contexts. In this way, culture is essential for understanding contextual challenges (risks), positive factors (protective factors), interaction and potentials for change through intervention.

What are the challenges?

- **The danger of contextual risk factor accumulation.** These experts explained that negative developmental outcomes are best understood as the results of an accumulation, or "pile-up," of multiple contextual risk factors. Experts explained that predicting a negative outcome becomes increasingly easy with the accumulation of each additional risk factor that a child experiences. In this way, any one risk factor in isolation is likely insufficient to shift the outcome scale, but when such factors "pile up on top of each other," negative outcomes become increasingly likely.

What are the solutions?

- **Address poverty.** The group of experts who focused on context and outcomes as the larger story emphasized poverty as a meta-risk factor. They explained that poverty encapsulates multiple risk factors that have a "cascading" effect as they "seep into," "impinge" and exert negative effects on almost all aspects of development. These experts focused heavily on policy and programmatic intervention — perhaps to a greater extent than they did on causal mechanisms and determinants. To these experts, and as a primary element in their larger narrative, context was not only the primary factor in understanding outcomes, but was the lever to manipulate in order to improve developmental outcomes. At points in these conversations it was implicit, and in some

cases was even explicitly stated, that the focus on context as causal explanation was *because* contextual factors are most amenable to being immediately and effectively addressed by programs and policies. In other words, these experts did not hide the fact that their focus on context as cause was driven by their beliefs about effective and feasible solutions.

- **Windows of intervention opportunity: Periods of transition as effective times to address resilience.** The context story was also characterized by a focus on windows of programmatic opportunity. Experts explained that programs seeking to address resilience through context are most effective when they target specific periods in the course of development. These points were described as those during which children are "in flux," or "transitioning" between stages, and are thus likely to experience greater-than-normal stress that may lead to poor outcomes. Experts explained that these points are strategic intervention windows for direct, as well as indirect, reasons. Directly, providing and shoring up support, primarily in the form of relationships, can help children avoid the negative outcomes that might result from such periods of "relative chaos." More indirectly, support and buffering provided at these times may facilitate the development of "contextual competence," which in turn may become a tool that children can draw on and employ during subsequent periods of risk. As such, experts explained that targeting such periods offers "double benefit" in avoiding both immediate consequences of the experience of risk, as well as more long-term "protection" against such experiences.

- **You need not change the entire system to improve outcomes.** These experts felt it important for the public and policymakers to realize a message of pragmatism and feasibility — that interventions can address *specific* aspects of context and, in so doing, improve outcomes. Put another way, improving and addressing developmental outcomes does not require "eradicating poverty" or "demolishing the current social system." Rather, the effects of negative contexts can be addressed through targeted interventions that home in on specific factors, buttressing specific risk factors and increasing the accessibility of relational resources and supports.

"Resilience is no great mystery":
The story of context, competence and developmental outcomes.

What is "it"?
- Explanations for outcomes lie in context.
- Context is key to all children.

What are the challenges?
-The danger of contextual risk factor accumulation

How does "it" work?
- Competence in contexts is key.
- Contact points
- "It's got a lot to do with culture."

What are the solutions?
- Address poverty.
- Windows of intervention opportunity: periods of transition as effective times to address resilience

3. Resilience is one type of "fit": The story of differential biological susceptibility to context.

What is "it"?

- **Differential susceptibility to context.** The experts who panned out to an evolutionary explanation explained that resilience is the result of individuals with low biological sensitivity developing in an adverse context. In short, the larger story that these experts emphasized was of the variability between "types" of sensitivity to context: high and low sensitivity. They explained that all children fall into these categories and that, therefore, communicating the concept of differential susceptibility to environments allows you to address and elucidate a concept that includes all children.

How does "it" work?

- **A four-scenario matrix, with resilience as but one outcome.** The experts who used this story as the larger narrative implicitly employed a matrix to depict the interaction between biology, context and outcomes, but emphasized that, in reality, there are likely continuums between types rather than absolute phenotypic distinctions. According to this matrix of interaction, resilience is the outcome of a low-sensitivity type developing in or experiencing a resource/experience-poor environment.

	High Quality Environment	**Low Quality Environment**
High Environmental Sensitivity	Very Positive Developmental Outcomes	Very Negative Developmental Outcomes
Low Environmental Sensitivity	Reasonably Positive Developmental Outcomes	Reasonably Positive Developmental Outcomes (*Resilience*)

- **It's all relative.** From the evolutionary approach advocated by this group of experts, low sensitivity to environmental quality is only adaptive or advantageous under specific environmental conditions, and is disadvantageous in other contexts. In other words, resilience is a positive outcome, but the trait that underlies this outcome is not necessarily so. In this way, the story was essentially one of genotypic/contextual *fit*. In challenging environments, the low sensitivity to environmental characteristics can lead to relatively positive outcomes, but in high-quality environments it can lead to less positive outcomes than its more contextually sensitive counterpart. These experts therefore explained that the opposite of resilience is "not necessarily a bad thing" — but instead, and in line with a more general evolutionary approach, the advantages conferred by any characteristic are a function of that characteristic's fit relative to a given context. These experts felt it very important for the public to know that children who don't respond well to adversity "are not broken" — but rather are functioning in ways that have been selected-for over time by the conference of advantage in specific contexts.

What are the solutions?

- **The lowest common denominator approach to intervention.** Experts explained that viewing resilience as one type of genotypic-environmental fit provides a clear message to policymakers with respect to interventions and programs. Programs that provide those supports that benefit the children who are *most* sensitive to the quality of an environment benefit *all* children. This type of "a rising tide lifts all boats" explanation is a direct policy implication of this science story.

Resilience is one type of "fit":
The story of differential biological susceptibility to context

What is "it"?
- Differential susceptibility to context.

What are the solutions?
- The lowest common denominator approach to intervention.

How does "it" work?
- A four-scenario matrix, with resilience as but one outcome.
- It's all relative ... outcomes can be good or bad, but the value of "type" is contingent upon fit relative to context.

4. The resilient brain: The story of neuro-plasticity.

What is "it"?

- **Brains and componential neural systems.** The experts who advocated a brain story of resilience worked from a "neural systems" perspective — that neurological systems and the brains they constitute can be viewed and studied as resilient. These researchers tended to focus on aging rather than child development as a way to study the brain's resilience.

How does "it" work?

- **Resilience is the maintenance of ability.** For these researchers, resilience was seen as the *maintenance* of positive neurological functioning and performance.

- **Resilience is a feature of all brains.** Related to, and stemming from, the point directly above, the brain-as-resilience story also conceived of resilience as a property of all brains — that the neurological organ has, built into its workings and properties, the capacity for resilience. They emphasized that such capacities are not divorced from, but rather are dependent on, environmental contexts and the experiences they facilitate. They explained, therefore, that the capacity for resilience is built into the brain and shaped by early experiences, but that such capacitates and capabilities are not finite and continue into old age to be a fundamental property of brains. On the other hand, they explained that this potential for resilience in the brain can be damaged by adverse experiences, especially when such experiences occur in critical developmental windows.

- **Resilience as a compensatory process.** These experts also focused heavily on the idea of compensation, and explained that positive outcomes in the face of adversity (to the brain, in the case of their story) are at least partially due to the ability of other

functions to be "trained up" to compensate for the stressed or challenged system. In this way, the brain story of resilience emphasizes the flexibility and responsiveness of the brain's compensational abilities and systems to maintain function.

What are the challenges?

- **The ultimate adversity: Age and aging.** For these experts, aging was conceptualized as the risk and adversity from which positive outcomes can emerge as resilience. These experts focused on the changes that occur in the brain as a process of aging, and how these changes constitute a risk to neural functioning. In this way, resilience was the maintenance of positive outcomes in the face of this risk to the brain.

What are the solutions?

- **Engagement in specific activities and tasks.** This account had a strong intervention focus, but from a decidedly different bent than those stories presented above. The scientists who advocated the brain resilience perspective focused on specific tasks and operations that individuals could perform to increase the resilience of their neurological functions and systems. In this way, resilience was positioned as something to be increased and cultivated through deliberate modifications in behaviors and the performance of specific tasks and activities.

- **Novelty is key.** Extending from the previous point, these experts emphasized challenge and novelty as key in cultivating resilience in the brain. In this way, challenging both the brain and other systems can improve neurological outcomes and performance, and create resilience.

The resilient brain:
The story of neuro-plasticity

What is "it"?
- Brains and componential neural systems.

What are the challenges?
-The Ultimate adversity: age and aging.

How does "it" work?
- Resilience is the maintenance of ability.
- Resilience is a feature of all brains.
- Resilience is a compensatory process.

What are the solutions?
- Engagement in specific activities and tasks.
- Novelty is key.

APPENDIX 2: RESEARCH METHODS

We were careful to recruit a sample of civically engaged persons for this project in order to increase the likelihood that our informants could speak to the issues at hand with some degree of knowledge and opinion. Because cultural models interviews rely on our ability to see patterns of thinking — the expression of models in mind — through talk, it is important to recruit informants who are more likely to actually talk about the issues in question, but who are not experts or practitioners in the field. Moreover, to help ensure that participants were likely to have ready opinions about these issues without having to be primed by asking them directly about the target issue[33] — in this case, developmental outcomes and child well-being — the screening procedure was designed to select informants who reported a strong interest in news and current events, and an active involvement in their communities through participation in community and civic engagements.

Cultural models interviews require gathering what one researcher has referred to as a "big scoop of language."[34] Thus, a sufficiently large amount of talk, taken from each informant, allows us to capture the broad sets of assumptions that informants use to make sense of information. These sets of common assumptions and understandings are referred to as "cultural models." Recruiting a wide range of people allows us to ensure that the cultural models we identify represent shared, or "cultural," patterns of thinking about a given topic.

As the goal of these interviews was to examine the cultural models Americans use to make sense of and understand issues of outcomes, well-being, unexpected outcomes and resilience, a key to this methodology was giving informants the freedom to follow topics in the directions they deemed relevant, and not in directions the interviewer believed most germane. Therefore, the interviewers approached each interview with a set of general areas and topics to be covered, but left the order in which these topics were covered largely to the informant. In this way, researchers were able to follow the informant's train of thought, rather than interrupting to follow a set and pre-established course of questions.

A central task in our interviews was to elicit discussion from informants that would allow us to analyze the shared cultural models that they were bringing to, and applying in understanding, the concept of "outcomes." In this way, we were interested in understanding how informants were reasoning and making sense of issues such as: what are the results of development; what causes these results; and what is the significance of such outcomes. This focus on outcomes was guided by the story emerging from our research with experts that positioned the notion of how well kids are doing as the dependent variable in causal explanations. In other words, in the expert story, how well a child does or is doing is the outcome to be explained by the science. It was therefore essential to the task of translating this science to arrive at an understanding of the cultural tools that Americans bring to bear in understanding such issues related to outcomes. Gaining a view of what cultural models exist

around this question of developmental outcomes, and of how such cognitive structures are applied to thinking about children and development, is essential to the task of communicating about resilience, as the concept is fundamentally about the factors that shape and explain the products, outcomes and results of development processes. For these reasons, we looked not only at how informants were thinking about and discussing outcomes, but at how they used these ideas to reason about why children might be experiencing different outcomes.

Informants were first asked to respond to a general issue ("What do you think about X?") and were then asked follow-up questions — or "probes" — designed to elicit explanation of their responses ("You said X, why do you think X is this way?" or "You said X, tell me a little bit more about what you meant when you said X," or "You were just talking about X, but before you were talking about Y, do you think X is connected to Y? How?"). This pattern of probing leads to long conversations that stray (as is the intention) from the original question. The purpose is to see where and what connections the informant draws from the original topic. Informants were then asked about various valences or instantiations of the issue at hand and were probed for explanations of these differences ("You said that X is different than Y in this way, why do you think this is?"). In this way, the pattern of questioning began very generally and moved gradually to differentiations and more specific topics.

APPENDIX 3: THEORETICAL FOUNDATIONS

The following are well-accepted characteristics of cognition and features of cultural models that figure prominently into the results presented in this report and in FrameWorks' research more generally.

1. Top-down nature of cognition

Individuals rely on a relatively small set of broad, *general* cultural models to organize and make sense of information about an incredibly wide range of *specific* issues and information. Put another way, members of a cultural group share a set of common general models that form the lens through which they think and make sense of information pertaining to many different issues. Or, as Shore notes, "Culture doesn't determine reality for people. It provides a stock of conventional models that have a powerful effect on what is easily cognized and readily communicated in a community. Cultural codes socially legitimate ways of thinking and acting. They also affect the cognitive salience of certain experiences."[35]

This feature of cognition explains why FrameWorks' research has revealed many of the same cultural models being used to think about seemingly unconnected and unrelated issues — from education to health to child development. For example, FrameWorks' research has found that people use the *mentalist* model to think about child development, and food and fitness — seemingly unrelated issue areas. For this reason, we say that cognition is a "top-down" phenomenon. *Specific* information gets fitted into *general* categories that people share and carry around with them in their heads. Or, again, as Shore notes, "You could reason from the part to the whole."[36]

2. Cultural models come in many flavors but the basic ingredients are the same

At FrameWorks, we often get asked about the extent to which the cultural models we identify in our research, and that we use as the basis of our general approach to social messaging, apply to ALL cultures. That is, people want to know how inclusive our cultural models are, and to what extent we see/look for/find differences across race, class or other cultural categories. Because our aim is to create messaging for mass media communications, we seek out messages that resonate with the public more generally and, as such, seek to identify cultural models that are most broadly shared across society. We ensure the models are sufficiently broad by recruiting diverse groups of informants in our research, who help us to confirm that the models we identify operate broadly across a wide range of groups. Recruiting diverse samples in our cultural models interviews often confuses people who then think we are interested in uncovering the nuanced ways in which the models take shape and get communicated across those groups, or that we are interested in identifying different models that different groups use. To the contrary, our aim is to locate the models at the broadest possible levels (i.e., those most commonly shared across *all* cultural groups within a large social group) and to develop reframes and simplifying models that advance those

models that catalyze systems-level thinking. The latter does not negate the fact that members of different cultural groups within a larger cultural group may respond more or less enthusiastically to the reframes, and this is one of the reasons why we subject the reframes that we recommend to our clients to rigorous experimental testing using randomized controls that more fully evaluate their mass appeal.

3. Dominant and recessive models

Some of the models that individuals use to understand the world around us are what we call "dominant," while others are more "recessive," or latent, in shaping how we process information. Dominant models are those that are very "easy to think." They are activated and used with a high degree of immediacy and are persistent, or "sticky," in their power to shape thinking and understanding — once a dominant model has been activated, it is difficult to shift to or employ another model to think about the issue. Because these models are used so readily to understand information, and because of their cognitive stickiness, they actually become easier to "think" each time they are activated — similar to how we choose well-worn and familiar paths when walking through fields, and in so doing these paths become even more well-worn and familiar. There is, therefore, the tendency for dominant models to become increasingly dominant unless information is reframed to cue other cognitively available models (or, to continue the analogy here, other walking paths). Recessive models, on the other hand, are not characterized by the same immediacy or persistence. They lie further below the surface, and while they *can* be employed in making sense of a concept or processing information about an issue — they *are* present — their application requires specific cues or primes.

Mapping recessive models is an important part of the FrameWorks approach to communication science and a key step in reframing an issue. It is often these recessive patterns of thinking that hold the most promise in shifting thinking away from the existing dominant models that often inhibit a broader understanding of the role of policy and the *social* aspect of issues and problems. Because of the promise of these recessive models in shifting perception and patterns of thinking, we discuss them in this report and will bring these findings into the subsequent phases of FrameWorks' iterative methodology. During focus group research in particular, we explore in greater detail *how* these recessive models can most effectively be cued, or "primed," as well as how these recessive models *interact* with and are *negotiated* vis-à-vis emergent dominant models.

4. The "nestedness" of cultural models

Within the broad foundational models that people use in "thinking" about a wide variety of issues lay models that, while still general, broad and shared, are *relatively* more issue-specific. We refer to these more issue-specific models as "nested." For example, in our past research on executive function, when informants thought about basic skills, they employed a

model for understanding where these skills come from, but research revealed that this more specific model was nested into the more general *mentalist* cultural model that informants implicitly applied in thinking this issue. Nested models often compete in guiding or shaping the way we think about issues. Information may have very different effects if it is "thought" through one or another nested model. Therefore, knowing about which models are nested into which broader models helps us in reframing an issue.

[1] Quinn, N. (2005). *Finding culture in talk: A collection of methods* (1st ed.). New York, NY: Palgrave Macmillan.
Holland, D., & Quinn, N. (1987). *Cultural models in language and thought*. New York, NY: Cambridge University Press.
D'Andrade, R. (1990). Some propositions about the relations between culture and human cognition. In W. Stigler & R. Shweder (Eds.). *Culture psychology: Essays in comparative human development*. Cambridge, England: Cambridge University Press.

[2] See http://www.frameworksinstitute.org/ecd.html for access to the full set of FrameWorks' research reports and communications recommendations on early child development.

[3] Weber, E., & Stern, P. (2011). Public understanding of climate change in the United States. *American Psychologist, 66*(4), 315-328.

[4] See: Kendall-Taylor, N., McCollum, C., & Manuel, T. (2009). *Caught between osmosis and environments: Mapping the gaps between the expert and the public understandings of the role of executive function.* Washington, DC: FrameWorks Institute. And Kendall-Taylor, N., Erard, M., Simon, A. & Davey, L. (2010). *Air traffic control for your brain: Translating the science of executive function using a simplifying model.* Washington, DC: FrameWorks Institute.

[5] Kempton, W. (1987). Two theories of home heat control. In D. Holland & N. Quinn (Eds.). *Cultural models in language and thought*. Cambridge, England: Cambridge University Press.
Linde, C. (1987). Explanatory systems in oral life stories. In D. Holland & N. Quinn (Eds.). *Cultural models in language and thought*. Cambridge, England: Cambridge University Press.

[6] The FrameWorks Institute (2009). *Framing early child development: A FrameWorks MessageBrief.* Washington, DC: FrameWorks Institute.

[7] For more on these models of children and how they influence Americans' thinking on developmental issues, see: Kendall-Taylor, N. (2009). *Conflicting models of mind in mind: Mapping the gaps between the expert and the public understandings of child mental health as part of Strategic Frame Analysis*™. Washington, DC: FrameWorks Institute.

[8] See: Bales, S. (2005). *Talking early child development and exploring the consequences of frame choices: A FrameWorks MessageMemo*. Washington, DC: FrameWorks Institute.

[9] Kendall-Taylor, N., McCollum, C., & Manuel, T. (2009). *Caught between osmosis and environments: Mapping the gaps between the expert and the public understandings of the role of executive function.* Washington, DC: FrameWorks Institute; Kendall-Taylor, N., & McCollum, C. (2009). *Determinism leavened by willpower: The challenge of closing the gaps between the public and expert explanations of gene-environment interaction.* Washington, DC: FrameWorks Institute; Kendall-Taylor, N. (2009). *Conflicting models of mind in mind: Mapping the gaps between the expert and the public understandings of child mental health as part of Strategic Frame Analysis*™. Washington, DC: FrameWorks Institute.

[10] Bernard, H.R. (2006). *Research methods in anthropology: Qualitative and quantitative approaches* (4th ed.). Lanham, MD: Altamira Press.

[11] See: Glaser, B.G., & Strauss, A.L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago, IL: Aldine Publishing; and Strauss, A.L., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage Publications.

[12] The occupational screening measure rests on a fundamental relationship between personal experience and cultural models that Shore describes, "… cultural models are brought to life in relation to personal experiences. My concept will be a pastiche of personal and cultural models. In many cases my personal models of marriage are likely to be more salient to me than any conventional representations. This is especially true when one understands a concept through long and deep experience." Shore, B. (1998). *What culture means, how culture means* (p. 38). Worchester, MA: Clarke University Press.

[13] Quinn, N. (2005). *Finding culture in talk: A collection of methods*. New York, NY: Palgrave Macmillan.

[14] For description of grounded theory analysis, see: Glaser, B.G., & Strauss, A.L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago, IL: Aldine Publishing; and Strauss, A.L., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage Publications. For description of social discourse analysis, see Strauss, C. (2005). Analyzing discourse for cultural complexity. In N. Quinn. (Ed.). *Finding culture in talk: A collection of methods*. New York, NY: Palgrave Macmillan; and Strauss, C. *Who belongs here and what do we all deserve? Americans' discourses about immigration and social welfare*. Unpublished manuscript. For description of cultural models analysis, see Quinn, N. (1987). Convergent evidence of a cultural model of American marriage. In D. Holland & N. Quinn (Eds.). *Cultural models in language and thought* (pp. 173-194). Cambridge, England: Cambridge University Press.

[15] See: Glaser, B.G. (1993). *Examples of grounded theory: A reader.* Mill Valley, CA: Sociology Press; and Kempton, W. (1987). Two theories of home heat control. In D. Holland & N. Quinn (Eds.). *Cultural models in language and thought*. Cambridge, England: Cambridge University Press.
Newman, K.S. (1986). Symbolic dialects and generations of women: Variations in the meaning of post-divorce downward mobility. *American Ethnologist, 13*, 230-252.
Strauss, A.L. (1987). *Qualitative analysis for social scientists*. New York, NY: Cambridge University Press; and Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory.* Thousand Oaks, CA: Sage Publications.

[16] We present these more general conceptual stories, as well as the specific story of resilience which emerged from the analysis of the data from expert interviews, in Appendix 1.

[17] There were 10 brief mentions in more than a thousand pages of transcription from almost 2,400 minutes of interview data of factors that do not fit this scheme.

[18] For more information on how Americans think about issues of weight, see FrameWorks' body of research on Community Health and Food and Fitness at: http://www.frameworksinstitute.org/communityhealth.html

[19] This theme of safety is discussed further in the following FrameWorks eZine: Gilliam, F. (2003). *A new dominant frame: "The imperiled child."* Washington, DC: FrameWorks Institute.

[20] Kendall-Taylor, N. (2010). *Experiences get carried forward: How Albertans think about early child development*. Washington, DC: FrameWorks Institute.

[21] Kendall-Taylor, N., & McCollum, C. (2009). *Determinism leavened by willpower: The challenge of closing the gaps between the public and expert explanations of gene-environment interaction.* Washington, DC: FrameWorks Institute.

[22] See: Kendall-Taylor, N. (2009). Conflicting models of mind in mind: Mapping the gaps between the expert and the public understandings of child mental health as part of Strategic Frame Analysis™. Washington, DC: FrameWorks Institute; and The FrameWorks Institute (2009). *Framing early child development: A FrameWorks MessageBrief*. Washington, DC: FrameWorks Institute.

[23] Quinn, N., & Holland, D. (1987). Culture and cognition. In D. Holland & N. Quinn (Eds.). *Cultural models in language and thought* (pp. 3-40). Cambridge, England: Cambridge University Press.

[24] The hypothesis that it is socially, rather than cognitively, more comfortable in certain settings (such as an interview with a stranger) to discuss positive rather than negative states of child well-being is a plausible social alternative to the cognitive hypothesis suggested here. However, hundreds of hours of past FrameWorks research on related issues of child development do not show similar differences in the comfort of discussing positive rather than negative valences of development, and actually suggest that Americans have *little* trouble assigning blame and explaining the incidence of negative developmental processes. This triangulation suggests the plausibility of the explanation offered here — that the relative difficulty of discussing negative states of well-being is a function of the relatively less robust cultural models that undergird thinking about negative states of well-being.

[25] See: Rose, G. (1992). *The strategy of preventive medicine*. Oxford, England: Oxford University Press.; and Evans, G. (2006). Child development and the physical environment. *Annual Review of Psychology, 57*, 423-51.

[26] See the following reports: Kendall-Taylor, N., McCollum, C., & Manuel, T. (2009). *Caught between osmosis and environments: Mapping the gaps between the expert and the public understandings of the role of executive function.* Washington, DC: FrameWorks Institute; Kendall-Taylor, N. & McCollum, C. (2009). *Determinism leavened by willpower: The challenge of closing the gaps between the public and expert explanations of gene-environment interaction.* Washington, DC: FrameWorks Institute; Kendall-Taylor, N. (2009). *Conflicting models of mind in mind: Mapping the gaps between the expert and the public understandings of child mental health as part of Strategic Frame Analysis*™. Washington, DC: FrameWorks Institute.

[27] See the following reports: Kendall-Taylor, N., McCollum, C., & Manuel, T. (2009). *Caught between osmosis and environments: Mapping the gaps between the expert and the public understandings of the role of executive function.* Washington, DC: FrameWorks Institute; Kendall-Taylor, N., & McCollum, C. (2009). *Determinism leavened by willpower: The challenge of closing the gaps between the public and expert explanations of gene-environment interaction.* Washington, DC: FrameWorks Institute; Kendall-Taylor, N. (2009). *Conflicting models of mind in mind: Mapping the gaps between the expert and the public understandings of child mental health as part of Strategic Frame Analysis*™. Washington, DC: FrameWorks Institute.

[28] Quinn, N. (2005). *Finding culture in talk: A collection of methods* (1st ed.). New York: Palgrave Macmillan.

[29] As a method, cultural models interviews try to separate semantic from more conceptual associations — in other words, differences in the ways that people think about a term as compared to the concept underlying the term. In our interviews, we tried to do just that: explore both the more semantic associations that individuals make with the term "resilience" — the fruits of which are presented later in this paper — as well as the associations used to think about the underlying concept divorced from the semantic packaging — the results of which are presented in this section.

[30] It is critical to keep in mind that the existence of seemingly contradictory models is by no means exceptional — conflicting and contradictory assumptions applied in understanding the same issue are relatively normal in the "swamps" of cultural models. These apparent contradictions demonstrate a basic feature of how we make sense of information: we apply existing categories and mental structures to process, and make sense of, incoming information. These mental models are often activated by specific contextual cues such that in a given conversational, physical and sensory context, individuals apply one strategy of meaning-making, while in another context with slightly different cues, the other, apparently conflicting, model becomes active (see Appendices 2 and 3 for more detailed discussion of features of cultural models and cognition).

[31] The existence and application of these two cultural assumptions about children have been documented elsewhere in FrameWorks' research: Kendall-Taylor, N. (2009). *Conflicting models of mind in mind: Mapping the gaps between the expert and the public understandings of child mental health as part of Strategic Frame Analysis*™. Washington, DC: FrameWorks Institute.

[32] See the following reports: Kendall-Taylor, N., McCollum, C., & Manuel, T. (2009). *Caught between osmosis and environments: Mapping the gaps between the expert and the public understandings of the role of executive function.* Washington, DC: FrameWorks Institute; Kendall-Taylor, N. & McCollum, C. (2009). *Determinism leavened by willpower: The challenge of closing the gaps between the public and expert explanations of gene-environment interaction.* Washington, DC: FrameWorks Institute; Kendall-Taylor, N. (2009). *Conflicting models of mind in mind: Mapping the gaps between the expert and the public understandings of child mental health as part of Strategic Frame Analysis*™. Washington, DC: FrameWorks Institute.

[33] Priming informants with the content can be problematic in these interviews, as the ability to identify and describe cultural models relies on getting "top-of-mind" answers and explanations from informants, rather than carefully thought-out and pre-constructed responses to the issue in question. If primed with the focus of the interview, informants tend to "prepare" by doing "research" on the subject, yielding results that are actually not representative of their own understandings and explanations of issues.

[34] Quinn, N. (2005). *Finding culture in talk: A collection of methods* (p. 16). New York, NY: Palgrave Macmillan.

[35] Shore, B. (1998). *What culture means, how culture means* (p. 31). Worchester, MA: Clarke University Press.

[36] Shore, B. (1998). *What culture means, how culture means* (p. 32). Worchester, MA: Clarke University Press.