



MOVING NORTH: Translating Child Mental Health Values and Models to Canada

A FrameWorks Research Report

Prepared for the FrameWorks Institute

by

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October 2010

EXECUTIVE SUMMARY

The research presented here was conducted by the FrameWorks Institute for the Alberta Family Wellness Initiative supported by Norlien Foundation. The report is the latest iteration of quantitative work in a multi-year, multi-disciplinary investigation of how communications choices in framing child mental health and early child development more generally can influence public attitudes and policy preferences. The report represents the first in a series of papers detailing the results of experimental research that explores the effects of alternative ways of talking about child mental health and the impacts of these frames on public support for child mental health policies.

The findings in this paper come from an experimental survey among a representative sample of Albertans designed to inform communications about a wide range of child development issues. The purpose of this paper is to present the key findings, examine the implications of those findings with respect to current communications practice on the issue, and conclude with information about communications strategies that appear promising in increasing support for children's mental health and development policies.

In particular, we focus here on the experimental tests of frame elements that emerged as promising in earlier rounds of qualitative work on this project—more specifically, on two categories of frame elements, values and simplifying models—that demonstrated potential in moving the public conversation about children's mental health and development in more constructive and policy-productive directions. Here we test the impact of these frame elements (as independent variables) against public support for policies (as dependent variables).

We tested the effects of values across three sets of dependent variables, scales charting support for policies—what we call here “policy batteries”—around early childhood development, child mental health and addiction. For Albertans, the values treatments exerted the strongest effects on the addiction battery. Each of the four values treatments—Prosperity, Ingenuity, Prevention and Interdependence—exerted strong effects on support for policies designed to address addiction as a public problem. Prevention proved the strongest value, with this relatively brief treatment—less than 200 –words—increasing support for programs to combat addiction by over 4 percent.

Less strong effects were observed in the effect of the values on support for policies addressing child mental health; here, two treatments—Interdependence and Ingenuity—exerted marginally statistically significant effects.

In terms of early childhood development policies, none of the values treatments exerted significant effects. We speculate that this means that the default positions on addiction and, to a lesser extent, child mental health are largely individual in orientation and that the implicit default position is that these are not social problems. This makes these issues more volatile in response to values assertions that establish more social ways of thinking about issues of responsibility.

While our qualitative work suggests that Albertans “toggle” easily between assertions of private and collective responsibility for young children's well-being, it has become equally clear that

they are no more scientifically literate than their U.S. counterparts when it comes to understanding how development works. We interpret the strong showing from the simplifying models tested in Alberta as underscoring the fact that increasing support for early child development policy will require the assistance of other frame elements—namely, simplifying models that concretize the “how does it work” component of the concept.

The experiment also tested three sets of simplifying models for their ability to build more functional and productive understandings of child mental health. The best performing model was Toxic Stress, which indicated that negative childhood experiences negatively impact mental health. Brain Architecture, another pillar of the U.S. core story, also performed well in Alberta in increasing understanding of the science of child mental health.

Simplifying models for two related aspects of early childhood development were also tested. With respect to executive function, the ability of the brain to set task priorities, the model of Air Traffic Control prevailed, as it had in the U.S. The model uses the metaphor of an airport control tower to communicate the key features of the science of executive function. Simplifying models designed to explain aspects of the science of epigenetics were also tested in the experiment. With this concept—the idea that environments and genes interact and affect gene expression—“Edits” was the most effective metaphor. This model contends that environments edit the gene’s expression, emphasizing the importance of positive environments in successful development. While this metaphor represents a slightly different nuance of the most effective simplifying model in U.S. testing—the “Signature Effect”—it is also conceptually consistent with this concept. Further qualitative research in Alberta will look to further explore and explain the effectiveness of the “Edits” simplifying model in the province.

INTRODUCTION

The last two decades have brought an avalanche of new scientific research on brain development. As early as 2003, FrameWorks began to work with the National Scientific Council to identify a core scientific story of development.ⁱ By this we mean the enumeration of the fundamental scientific principles that one must understand in order to achieve a rough appreciation for the process of early child development.ⁱⁱ Comparing the core scientific story established by the experts with the public “folk” understanding of child development revealed specific gaps in understanding between experts and lay publics regarding *what* develops, and *how* and in *what contexts* development is facilitated or derailed. Based on this analysis, we identified, developed and tested frame elements that have proven to redirect public thinking about early child development in more productive directions.ⁱⁱⁱ In other words, the core scientific story has been translated, with evidence-based communications strategies, into a “Core Story of Child Development” that is accessible and understandable to lay publics.

As part of the overall research into early childhood development, there is a growing interest in the role of mental health in a child’s overall health and development. Our qualitative research suggests that child mental health represents one of the more difficult topics for the public to hold in its consciousness because of a general difficulty conceptualizing the notion that children experience “mental health.” People are profoundly skeptical of attempts to diagnose mental health problems in children; more likely to see mental illness as determined by genetic predisposition divorced from any external life experiences; and regard diagnosis and treatment as inherently private issues.^{iv} As a result, it is difficult for child development experts to create a constructive public conversation about the efficacy of policy innovations that promote mental health in young children. With support from the Center on the Developing Child at Harvard University,^v FrameWorks began a long-term project in the United States to assist experts in constructing such a conversation. An experimental survey investigating whether exposure to key frame elements of the core story heightens public support for child mental health policies formed a critical part of this project.^{vi} As detailed below, the two framing elements tested were values, used to establish the overarching goal of child mental health programs, and simplifying models, metaphors that have the potential to bridge expert and folk understandings of child mental health.

This study attempts to determine whether FrameWorks’ findings from the United States, regarding which values and simplifying models produce the optimal communication, are also salient with Canadians. Our qualitative research indicates that there may be some reason to believe that the United States’ findings will not generalize to Canadian settings; for example, Canadians showed less willingness to “put a price” on children’s well-being, while Americans had no such qualms. However, to be able to apply these results, findings must be empirically confirmed. With funding from the Alberta Family Wellness Initiative supported by Norlien Foundation, we launched a series of experimental surveys with Canadian respondents from the province of Alberta, designed to assess whether or not the findings from the United States could successfully cross the border and be effective in Canada. In the first part of this report, we assess the effect of values on raising Albertans’ support in these three areas. This report also assesses the ability of simplifying models to successfully communicate three key aspects of the early

childhood development core story to Albertans; the models we tested formed metaphors for child mental health, executive function and epigenetics.

METHODS

Data

The findings reported here are drawn from two separate experimental online surveys administered by YouGov Polimetrix.^{vii} The primary experiment reported on here was conducted between May 25 and June 3, 2010. The study included a sample of 4,513 Albertans weighted on the basis of age, gender, education level and party identification to statistically represent all adults in the province. Of these, 394 respondents were randomly assigned to the control group, which saw no treatment but answered all the questions while the remainder was randomly assigned to one of the experimental conditions, in which case they saw either a values treatment or a simplifying model as described below. The second study examined simplifying models concerning epigenetics and executive function. This study was conducted between March 22 and March 28, 2010, with 1,382 participants, who were drawn from the same online panel of Albertans.

Dependent Measures

The dependent variables used in the studies detailed below vary according to whether the experimental treatment addresses a value or a simplifying model. With values, we used three policy batteries. The first policy battery covers policies related to early childhood development. For example, should we offer sliding fee scales to families to allow more children access to early childhood education and care?^{viii}

The nine items from this battery, as well as the items from the two other policy batteries, were formed into a single scale using principle component analysis (PCA). This analysis allows us to examine the value treatments' impact on support for programs along a single dimension, such as early child development, child mental health or addiction. **This scale runs from zero to one hundred, where one hundred indicates maximal support for the policies in the specific issue domain and zero indicates no support at all.**

The second battery included five questions on child mental health policy. These questions measured respondents' reactions to policies designed to improve child mental health. For example, a policy question within this battery was, should we encourage involvement and collaboration between primary care physicians, parents, and caregivers/teachers?

A third battery concerning addiction policies was created to address a primary concern of the Alberta Family Wellness Initiative and Norlien Foundation. This policy battery included the following question, should the capacity of existing addiction treatment services be increased to treat more people in need?

The effectiveness of the simplifying models was measured in a different way as theory purports different cognitive functions of these concepts.^{ix} After reading one of the models, respondents

were asked six questions designed to assess the model's understandability as well as its success in being applied in specific ways in thinking about the target concept (i.e., child mental health). There was one additional question that was designed to gauge the respondents' own assessment of the appropriateness or "aptness" of the metaphor.^x The Appendix contains examples of the questions used to assess overall effectiveness of the simplifying models.

A measure of "overall effectiveness" was constructed by summing all the correct answers with the last (aptness) question, after it was weighted to count as much as each of the other items. **The net result is a seven-point scale, where seven means the metaphor performed its job perfectly on all respondents and zero, where the metaphor was entirely unsuccessful.**

RESULTS

Values

Four values were tested for their ability to influence support for child mental health policies. The values tested were Prevention, Interdependence, Prosperity and Ingenuity.

The value of Prevention suggests that it is better to anticipate child mental health problems before they happen in order to keep them from doing any damage. The Prevention value was included due to a review of expert materials, which indicated that scientists and advocates are currently featuring this value prominently in their communications and translational practices. The Prevention value was also effective in increasing support for child mental health in a previous U.S. experimental survey.^{xi}

The value of Interdependence was included in this experiment because qualitative interviews showed that Albertans conceptualized the goal of development in very different ways than their American counterparts.^{xii} Whereas Americans talked about healthy development as producing financially independent individuals, developmental goals for Albertans were more focused on a person's ability to contribute to society. We therefore hypothesized that Interdependence would be a successful value for Albertans.

The value of Prosperity suggests that the economic well-being of the province depends on strong mental health programs for children. Prosperity (and the value of Ingenuity) was included because it performed well in qualitative and quantitative testing in the U.S. across early childhood issues.^{xiii}

Participants in the values experiment were randomly assigned to read one value online and then answer questions relating to the three dependent variable policy batteries discussed above. We first discuss the results of the values on the early child development policy battery. Table One presents the regression estimates for the performance of the four values on this battery. In this table, and all that follow, the estimate reflects the increase in the value of that scale due to the treatment relative to the control condition. This regression model also produced estimates that account for variation in political party identification, education, gender, marital status and race of respondent.

Table One: Regression Estimates of Value’s Effect on Early Childhood Development in Alberta

Value	Estimate
Interdependence	-0.005
Prevention	-0.003
Prosperity	-0.010
Ingenuity	-0.004
Adj. R squared	.03

As Table One shows, none of the treatments reached levels of statistical significance on early child development policies. A statistically significant result is one that is large enough to be reliably distinguishable from zero at a certain probability. None of the four value treatments had an effect that was separable from no effect at all. **In other words, none of the values moved attitudes on the early childhood development scale relative to the control condition, which received no value treatment.**

Table Two presents the regression estimates for the performance of the four values on the child mental health policy battery.

Table Two: Regression Estimates of Value’s Effect on Child Mental Health in Alberta

Value	Estimate
Interdependence	0.014 +
Prevention	0.009
Prosperity	0.003
Ingenuity	0.015 +
Adj. R squared	.04

“+” indicates the estimate of the value’s effect is statistically significant at the .15 level

With respect to child mental health, the effects of two treatments reached statistical significance. This suggests that exposure to the values of Interdependence and Ingenuity improves support for child mental health policies by one and half percentage points. These effects are significant at the .15 level, meaning that the chance that these results are actually zero is less than three times in twenty. In other words, this estimate would be reliably not zero 85 percent of the time.

Addiction

The final set of dependent variables in the experiment reflects a core concern of the Alberta Family Wellness Initiative and Norlien Foundation. Specifically, we tested the four values to see how well they would do in increasing support for a range of addiction policies. Table Three presents these results.

Table Three: Regression Estimates of Value’s Effect on Addiction in Alberta

Value	Estimate	
Interdependence	0.029	**
Prevention	0.041	**
Prosperity	0.029	**
Ingenuity	0.030	**
Adj. R squared	.05	

“**” indicates the estimate of the value’s effect is statistically significant at the .05 level

Three of the values tested increased the support for addiction policy measures by a statistically significant 3 percent. One of the models, Prevention, increased support by 4 percent. Given the high level of statistical significance, there is less than one chance in twenty that these results are due to chance.

Child Mental Health Simplifying Models

The next set of findings report the results of simplifying models in improving understanding of child mental health and the related areas of executive function and epigenetics. Here, we tested several simplifying models for child mental health (Game Plan, Roadway, Leveling, Engine and Electric Power) and also revisited models from the core story that had shown traction in the qualitative stages of research on child mental health (Toxic Stress and Brain Architecture).

This first set of models tested concentrates on the ability of the metaphor to capture and convey the core story of child mental health. Based upon research conducted in the United States, a rigorous methodology winnowed the models to produce one winner, known as “Leveling.”^{xiv} The exact wording of the models tested appears in the Appendix. Table Four presents the results of each child mental health model on the overall effectiveness measure discussed above.^{xv}

Table Four: Overall Effectiveness of Child Mental Health Simplifying Models in Alberta

Model	Overall Effectiveness
Toxic Stress	6.33
Game Plan	6.32
Brain Architecture	6.29
Roadway	6.2
Signature	6.2
Leveling	6.18
Engine	6.15
Electric Power	6.08

The model with the highest overall effectiveness score was Toxic Stress. Brain Architecture also performed well. These two centerpieces of the U.S. core story of early child development, then,

appear to be translating appropriately to the Albertan context and seem to be similarly effective in structuring and concretizing the science. Leveling, the model developed in the U.S. research specifically to translate child mental health processes, also performed reasonably well in Alberta, being .15 points behind the two leaders on the overall effectiveness scale. This is, however, not a statistically significant difference.^{xvi}

Executive Function and Epigenetics Simplifying Models

Next we report on an Albertan experiment on two other sets of simplifying models. These sets of models were tasked with concretizing and increasing public understanding of the scientific concepts of executive function and epigenetics. While these two sets of models do not address child mental health directly, they are important components of the early childhood development story and, therefore, there is a need to explore their effectiveness in Alberta, a cultural context that our research has shown is both similar to and different from the U.S. context in important ways. These differences and similarities are crucial to understand in crafting communications on early child development in Alberta.

Table Five presents the results of the executive function simplifying models. The term *executive function* refers to a set of related cognitive abilities that develop early in childhood—abilities that control and regulate a broad range of important life skills, competencies and behaviors. In short, executive functions are the abilities that allow individuals to “function” and that make a wide range of critical skills possible—including attention, memory and motor skills. When the development of these skills is muted in childhood, successful adaptation, flexibility and performance in real-life situations can be impaired and with long-term consequences. While scientists in the area of early childhood development understand the critical importance of proper development of executive function abilities, a notion of this concept and its constituent skills are largely absent from both the public consciousness and the policy debates regarding the developmental needs of young children.

Table Five: Overall Effectiveness of Executive Function Simplifying Models in Alberta

Model	Overall Effectiveness
Air Traffic Control	5.37
Rope	4.94
Lazy Susan	4.87
Switchboard	4.86
Gate	4.67
Weaving	4.55
Electronics Kit	4.4
Software	4.21

In the United States, Air Traffic Control was, by a wide margin, the most effective metaphor for communicating the expert story on how children’s brains develop to handle tasks related to the oversight of cognition. Table Five suggests that the same holds true in Alberta, Canada. Albertan science communicators can use this model with confidence.

Table Six presents the performance in Alberta of seven simplifying models designed to communicate the core story on epigenetics.^{xvii} When scientists talk about epigenetics, they are referring to the relationship between an individual’s DNA and the wide range of factors that shape the environments they live in and the experiences they have. The science of gene-environment interaction helps us understand, in part, differential developmental outcomes—including physical characteristics, behaviors, personality, skills and abilities. However, because of the complexity and technical nature of how genes and environments interact, it has been difficult for experts to effectively communicate both the science of this interaction and its importance. In the United States, FrameWorks’ research process produced two simplifying models, “Signature Effect” and “Genetic Memory.” Both of these metaphors had significant strengths in helping people think about gene-environment interactions.

Table Six: Overall Effectiveness of Epigenetic Simplifying Models in Alberta

Model	Overall Effectiveness
Edits	5.12
Waterway	4.94
Genetic Memory	4.79
To-Do List	4.74
Waterway 2	4.7
Signature	4.57
Board Game	4.39

Whereas Signature was most powerful in the U.S., the most effective model in Alberta was Edits. This divergence from the results in the United States is not as large as it appears, however, because the Edits and Signature models both stem from the same conceptual category of writing. The models, therefore, share most features and differ only in the instantiation of these underlying ideas. Future qualitative research with Albertans will explore the nuance and expression of this idea.

DISCUSSION

The impacts of each of the four values treatments—Prosperity, Ingenuity, Prevention and Interdependence—differ dramatically depending on the domain in question. Across the Albertan respondents, the values treatments exerted the strongest effects on the addiction battery. Here, every single value caused a strong and statistically significant effect on the level of public support for policies designed to address addiction as a public problem. Perhaps unsurprisingly, Prevention was the most salient value on addiction.

Part of the reason can be gleaned from the constants reported in the tables above. The estimates provided in the tables above represent support relative to a control condition, after accounting for the effects of party, gender, race, education and marital status like the estimates of the treatment effect. This estimate can therefore be thought of as a default or starting position. For the early

childhood development policy battery, the starting point was .71 or 71 percent support. In contrast, the starting points for the child mental health policy battery and the addiction battery were much lower, coming in at around 60 percent support. This difference between where Albertans start in terms of their support for early child development relative to addiction and child mental health policies suggests that there is already substantial support for public policy in the realm of early child development. Moreover, the 71 percent support for policies directed at early childhood development suggests a possible “ceiling effect”—where support for these programs has reached some kind of upper limit. This suggests that there is that much less room to move support for early child development policies relative to the other two domains explored in the experiment. Given that the treatment effect sizes for hover around 3 percent, having ten points less room for expansion could be enough, by itself, to prevent us from observing statistically significant results when it comes to early childhood development.

Comparing the results from the United States to those from Alberta, we see that some of the values that increase support in the United States function similarly in Canada, while others do not. The values that proved significant in increasing support for child mental health policies in Alberta were Interdependence and Ingenuity. Based on previous qualitative research, Interdependence was expected to work well in Alberta. In addition, this qualitative research gave us reason to believe that Prosperity would be relatively ineffective in increasing support for child mental health issues.^{xviii} This finding was confirmed by this survey experiment by the relatively poor performance of this value on the child mental health policy battery. Ingenuity proved to be relatively effective in Canada on the child mental health and addiction policy batteries and was similarly effective in the U.S. Perhaps both countries share a frontier mentality and a “can do” spirit that allowed this value to be tapped into and brought to people’s thinking on these issues. On the whole, we have one value that worked well in the previous United States research, Ingenuity, and one that is distinctly specific to the Albertan cultural context, Interdependence.

With respect to early childhood development, again, none of the values demonstrated statistically significant results among the Canadian respondents on the early childhood development policy scale. These results are also consistent with qualitative research conducted prior to the experimental survey in Alberta. In this research, and unlike Americans, Albertans did not have trouble attributing responsibility for early childhood development to community, society and government. They did, however, have significant problems conceptualizing the basis for early childhood development itself—in understanding how development works. Thus, it is not surprising that the values tested failed to move support for policies designed to facilitate progress in this area. This does corroborate the suggestion that, when it comes to early childhood development, the simplifying models may be as important to raising and moving public understandings as values. Without a concrete sense of how development happens, we suspect that Albertans are unable to see how specific policies would help or hurt.

By contrast, our experimental survey provides direct evidence of the end result of this process of public education in the realm of addiction. Here, every value demonstrated the ability to move support in a positive direction, with all values attaining high degrees of statistical significance. It seems that an orienting value is essential and highly effective at getting addiction out of the individual context and at connecting the issue to collective consequences and public solutions. In

short, when it comes to addiction, redirecting or reorienting Albertans to the collective benefits to be realized from preventing addiction in the province with values is effective in elevating policy support.

Does this mean you can dispense with values when you talk about early childhood development in Alberta? No, first these values lift support for other policies when included in advocacy communication, but they do need help. To lift their support for early childhood development programs, Albertans need the additional leverage provided by the simplifying models discussed above. In most cases, the same models that did well in the United States did well in Canada; when they did not, good substitute models were available. In sum, the core story, with its full array of values and models, is going to be needed in Alberta as much as in the United States. Specifically, it will take just as much effort to explain how early childhood development happens, but not quite as much effort to convince Albertans that supporting early childhood development is in the province's best interest. If you want to lift support for child mental health and addiction programs in the course of this explanation, then it behooves communicators to use the values above, especially Interdependence and Ingenuity, to remind people what is at stake and move people into ways of thinking consistent with public solutions to these problems.

Of course, there is more to say on these matters. The next phase of research in Alberta will explore addiction more deeply. In addition, FrameWorks will be investigating the successful simplifying models in detail to try to determine important differences in executing the fundamental ideas between U.S. and Canadian contexts. In this way, we hope to arrive at a fully articulated set of values, models and principles in which Albertan science communicators can have full confidence.

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. The Institute's work also includes teaching the nonprofit sector how to apply these science-based communications strategies in their work for social change. The Institute publishes its research and recommendations, as well as toolkits and other products for the nonprofit sector, at www.frameworksinstitute.org.

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APPENDIX

Dependent Variables

Early Childhood Development

Please tell us whether you agree strongly, agree, disagree, or disagree strongly with the following items:

1. Offer sliding fee scales to families to allow more children access to early childhood education and care
2. Expand government tax credits for families with young children to help families afford early childhood education
3. Do not require all early education staff to have at least two years of post-secondary training in child development (reverse coded)
4. Improve the system of regulated or licensed early care and education to provide developmentally appropriate activities and experiences for children
5. Expand access to early childhood education for all children before kindergarten
6. Develop intensive early childhood education services targeted for at-risk children before kindergarten
7. Create more coordination between the child health and early childhood education systems
8. Make certain that early care and education settings adequately support child health by serving healthy food and offering opportunities for physical activity
9. Make certain that all children who have health problems that might impact their learning are appropriately identified and referred for services

Child Mental Health

Please tell us whether you agree strongly, agree, disagree, or disagree strongly with the following items:

1. We do not need to hire mental health professionals who have specific training in child mental health who are qualified to recognize and address the needs of the young (reverse coded)
2. We should encourage involvement and collaboration between primary care physicians, parents, and caregivers/teachers

3. We should improve the quality of child care and early education programs by reducing child-to-teacher ratios, reducing class size, increasing teacher training, and increasing teacher compensation
4. We should decrease funding for high-quality child care and early education programs in order to increase access to these programs (reverse coded)
5. We should increase awareness of the fact that children can have mental health problems

Addiction

Please tell us whether you agree strongly, agree, disagree, or disagree strongly with the following items:

1. The capacity of existing addiction treatment services should be increased to treat more people in need
2. Medical students should be trained to screen for, assess, and treat addiction
3. It is not necessary to focus on the implementation of evidence-based addiction intervention strategies in educational settings for youth and adolescents (reverse coded)
4. We do not need more funding for research on addiction neurobiology to better understand addiction as a medical disorder (reverse coded)
5. Efforts to improve access to addiction services should include educating the public about the availability of community-based treatment
6. Research and evaluation of prevention and intervention strategies for addiction aimed at youth/adolescents should be supported

Simplifying Models

1. Electric power is:
 - A. Something used to run a machine or device
 - B. Something used to apply perfume
 - C. Something used to build a sand castle
2. If you were to apply this idea of electric power to children's mental health, you would probably agree that...
 - A. To have strong mental health, children need supportive environments—like positive experiences and relationships
 - B. Young children don't yet have the emotional capabilities to really have mental health
 - C. Children just naturally develop good or poor mental health

3. If you were to apply this idea of electric power to children's mental health, you would probably agree that...

- A. Important sources of children's mental health come from outside the child
- B. Once there is a mental health problem, it's impossible to fix it
- C. If children learn how to take responsibility for their feelings, they can deal with any negative emotions they encounter

4. The concept of children's mental health suggests that...

- A. Proper supports, stability, and preventive measures are key to promoting good mental health in children
- B. The choices children make determine whether they will have good mental health
- C. Since children's paths are set by their genes, there is very little that can be done to promote or improve their mental health.

5. If you were to apply this idea of electric power to children's mental health, you would probably agree that...

- A. Prolonged stress might damage functioning
- B. Promoting good mental health is not that essential
- C. Nothing can be done to repair damage

6. If you were to explain children's mental health to a friend, you might stress the idea that...

- A. If a child experiences problems in one aspect of his or her development—such as mental health problems—you might see the effects in all kinds of ways (learning, social behavior)
- B. Children can't really have mental health because their brains work in essentially different ways from adult brains
- C. Because genes determine life outcomes, no amount of positive experiences and environments can give children good mental health

7. Now that you've worked with the idea of electric power, please rate how well it captures important features of children's mental health (one to seven point scale).

Values treatments

Prevention

Preventing Problems Before They Occur Is Best Plan for Alberta's Mental Health Policy

When making mental health policy, we need to look to the values that should be guiding our province. Preventing problems before they occur needs to be our number-one goal. People who believe in this goal say that we should not postpone our response to children's mental health

issues. When we postpone dealing with these problems until later on, they get more serious and require more resources and effort to fix. Instead, we should use our resources today to prevent them from occurring in the first place or becoming worse. So, according to this view, Alberta would be better off in the long run if we took steps today to prevent child mental health issues that we know can undermine children's success in life and affect the well-being of our communities. A good mental health system for Alberta would use a preventive approach to making decisions about children's mental health issues. (156 words)

Pull out: Prevention is key to promoting children's mental health in Alberta

Interdependence

Everyone Has a Stake in Alberta's Mental Health Policy

When making mental health policy, we need to look to the values that should be guiding our province. Recognizing that we are all connected and must rely on each other needs to be our number-one goal. People who believe in this goal say that we should not promote policies that only work for a few. When we fail to recognize that everyone has a stake in healthy children, we fall short of ensuring that most children become contributing members of society. Instead, our province should use our resources to work for the greatest common good. So, according to this view, Alberta would be better off if we developed policies that promote the mental health of as many children in our society as possible. A good mental health system for Alberta would recognize that we are all in this together and would apply this approach to making decisions about children's mental health issues. (157 words)

Pull out: Recognizing our interconnectedness is key to promoting children's mental health in Alberta

Prosperity

A Prosperous Alberta Depends on Sound Mental Health Policy

When making mental health policy, we need to look to the values that should be guiding our province. Improving our province's long-term prospects by giving all children the opportunity to reach their potential needs to be our number-one goal. People who believe in this goal say that we should not think only about child mental health issues that present immediate problems. When we only look at the immediate problems, it is much harder to see how societal investments in children's well-being can bring long-term prosperity to our province. Instead, we should use our resources to promote mental health in children and ensure that they can contribute fully to our communities in the future. So, according to this view, we could improve Alberta's prospects for the future if we looked further out in making decisions about child mental health issues. A good mental health system for Alberta would take a long-term approach to making decisions about child mental health issues. (167 words)

Pull out: Alberta can thrive tomorrow by promoting children's mental health today

Ingenuity

Innovation Is Best Plan for Alberta's Mental Health Policy

When making mental health policy, we need to look to the values that should be guiding our province. Developing innovative solutions to tackle our problems needs to be our number-one goal. People who believe in this goal say that we should not limit our thinking to the way that current programs address child mental health issues. When we only look at the system we've got, it is much harder to see how new approaches and solutions could promote our children's well-being over the long term. Instead, we should use our resources to find new and innovative solutions to promote child mental health. So, according to this view, we could more effectively deal with children's mental health issues if we pursued ingenious solutions to our child mental health system. A good mental health system for Alberta would take an innovative approach to making decisions about child mental health issues. (162 words)

Pull out: Using ingenuity in Alberta is key to promoting children's mental health

Child Mental Health Simplifying Models

Name: **Engine**

I'm going to talk to you about a way to think about child mental health. New scientific research shows that you can see a child's mental health in their brain. And scientists say that a child's mental health is vital to their overall development, because it affects how they socialize, how they learn, and how well they meet their potential.

So one way to think about this is through the idea of an engine. Children's mental health is like an engine—something that uses fuel and needs regular maintenance. Children's mental health is also similar in the sense that children have to have the right influences from their environments so they can develop and thrive. Another similarity is that when you promote a child's mental health, you protect the child's potential to do many things. There are many other points of comparison that you might think about but, in general, a healthy brain is well-fueled, maintained, and smooth-working.

Name: **Electric Power**

I'm going to talk to you about a way to think about child mental health. New scientific research shows that you can see a child's mental health in their brain. And scientists say that a child's mental health is vital to their overall development, because it affects how they socialize, how they learn, and how well they meet their potential.

So one way to think about this is through the idea of electric power. Children's mental health is like an appliance—something that needs a constant supply of electricity in order to run. Children's mental health is similar, in the sense that children have to have the right influences from their communities so they can develop and thrive. Another similarity is that when you promote a child's mental health, you protect the child's potential to do many things. There are many other points of comparison that you might think about but, in general, a healthy brain is energized.

Name: Roadway

I'm going to talk to you about a way to think about child mental health. New scientific research shows that you can see a child's mental health in their brain. And scientists say that a child's mental health is vital to their overall development, because it affects how they socialize, how they learn, and how well they meet their potential.

So one way to think about this is through the idea of roadways. Children's mental health is like a roadway—a path that drivers safely use to get from one place to another. Children's mental health is similar, in the sense that it needs to be guided by people and institutions in their communities so they can develop and thrive. Another similarity is that when you promote a child's mental health, you protect the child's potential to go many places and do many things. There are many other points of comparison that you might think about but, in general, a healthy brain is well-maintained and reliable.

Name: Game Plan

I'm going to talk to you about a way to think about child mental health. New scientific research shows that you can see a child's mental health in their brain. And scientists say that a child's mental health is vital to their overall development, because it affects how they socialize, how they learn, and how well they meet their potential.

So one way to think about this is through the idea of the game plan. Children's mental health is like a sports team's game plan—a strategy that the team uses to play their games. Children's mental health is similar, in the sense that it provides a path for success but also must adjust and respond to outside factors, like the weather or other teams. Another similarity is that when you develop a good one, you protect the child's potential to succeed in many different ways. There are many other points of comparison that you might think about but, in general, a healthy brain is winning and flexible.

Name: Leveling

I'm going to talk to you about a way to think about child mental health. New scientific research shows that you can see a child's mental health in their brain. And scientists say that a child's mental health is vital to their overall development, because it affects how they socialize, how they learn, and how well they meet their potential.

So one way to think about this is through the idea of leveling. Children's mental health is like a table that you can adjust if the floor is sloped or slanted. Children's mental health is similar, in the sense that it has to work in many different kinds of environments, and allows someone to do many things with their life just like a table has to work on many different surfaces and support many things. Another similarity is that when you level it, you protect the child's potential to do many things. There are many other points of comparison that you might think about but, in general, a healthy brain is level and balanced.

Name: Toxic Stress

I'm going to talk to you about a way to think about child mental health. New scientific research shows that you can see a child's mental health in their brain. And scientists say that a child's mental health is vital to their overall development, because it affects how they socialize, how they learn, and how they meet their potential.

So one way to think about this is through the idea of toxic stress. Just as some things in our environments cause toxic reactions in our bodies, some experiences cause toxic stress. Toxic stress is extreme, frequent and happens when children don't have supports to protect against these experiences. So just like we need to limit the negative substances in our environments to avoid harm, we need to eliminate the stressors in children's communities to avoid the toxic stress that will affect their mental health. There are many other points of comparison but, in general, a healthy brain is one that doesn't get toxic stress.

Name: **Brain Architecture**

I'm going to talk to you about a way to think about child mental health. New scientific research shows that you can see a child's mental health in their brain. And scientists say that a child's mental health is vital to their overall development, because it affects how they socialize, how they learn, and how well they meet their potential.

So one way to think about this is through the idea of brain architecture. The brain architecture that supports children's mental health is like a building—a structure whose quality and durability depends on its foundation and the material it's made of. Children's mental health is exactly that kind of structure, in the sense that good supports and resources early on help a child develop later. Another similarity is that when you maintain it, you protect the child's potential to do many things. There are many other points of comparison that you might think about but, in general, a healthy brain has good architecture.

Name: **Signature**

I'm going to talk to you about a way to think about child mental health. New scientific research shows that you can see a child's mental health in their brain. And scientists say that a child's mental health is vital to their overall development, because it affects how they socialize, how they learn, and how well they meet their potential.

So one way to think about this is through the idea of a signature on a child's genes. The experiences and environments that children have as they develop leave a signature on their genes—a permanent mark that influences how the genes carry out their instructions. Children's mental health depends on those marks, especially the ones that control children's brains, which aren't fully developed yet. Another similarity is that when you protect it, you protect the child's potential to do many things. There are many other points of comparison that you might think about but, in general, a healthy brain is the product of positive signatures from the environment.

Executive Function Simplifying Models

Name: **Air Traffic Control**

Children's ability to focus and pay attention is like air traffic control at a busy airport. Some planes want to land and others want to take off at the same time, but there's only so much room on the ground and in the air. In the brain, the mechanism that acts as air traffic control is called executive function. It regulates the flow of information and the focus on tasks, creates mental priorities, avoids collisions, and keeps the system flexible and on time. In children, this mechanism needs to be actively **geared up** as early as possible.

Name: **Switchboard**

Children's ability to focus and pay attention is like a switchboard. Some messages are coming in at the same time that others want to go out, but there are only so many lines in the system. In the brain, the mechanism that acts as the switchboard is called executive function. It regulates the flow of information and the focus on tasks, creates mental priorities, avoids dropped calls, and keeps the system flexible and efficient. In children, this mechanism needs to be actively **geared up** as early as possible.

Name: **Rope**

Children's ability to focus and pay attention is like a rope. As a child develops, many small strands of mental abilities, such as being able to talk and being able to move one's body, are woven together into this rope. In the brain, it eventually becomes something called executive function. It holds together information and provides basic support for social interaction, learning, behavior control, and other activities. In children, the rope needs to be actively woven from the strongest strands as early as possible.

Name: **Weaving**

Children's ability to focus and pay attention is like a strong fabric. As a child develops, many strands of mental abilities, such as being able to talk and being able to move one's body, are woven together to make up this fabric. In the brain, it eventually becomes something called executive function. It supports social interaction, learning, behavior control, and other activities. In children, the fabric needs to be actively woven from the strongest threads as early as possible.

Name: **Software**

Children's ability to focus and pay attention is like software for the hardware of the brain. Early in life, this software includes very basic operations, such as being able to talk and being able to move one's body, which help to download other components from the environment. In the brain, it eventually builds into a full application called executive function. It regulates the flow of information and helps to power social interaction, learning, behavior control, and other activities. In children, this software needs to be actively started and maintained from the beginning.

Name: **Electronics kit**

Children's ability to focus and pay attention is like an electronics kit. As a child develops, many small components, such as being able to talk and being able to move one's body, are assembled

to make a basic electronic device. In the brain, this device eventually builds into something called executive function. It is a set of mental components that regulates the flow of information and is essential for social interaction, learning, behavior control, and other activities. In children, the kit needs to be actively constructed with the right components from the beginning.

Name: **Lazy Susan**

Children's ability to focus and pay attention is like a lazy Susan, a round, rotating tray of food or utensils set in the center of a table. It puts the things you want to think about right in front of you, and it moves the things you don't need away from you. In the brain, this mechanism is called executive function. It keeps us focused on tasks, creates mental priorities, and keeps space for the right utensils and dishes. In children, the lazy Susan needs to be in good working order as early as possible.

Name: **Gate**

Children's ability to focus and pay attention is like a gate at a swimming pool. It regulates the number of swimmers allowed in the pool at one time. In the brain, this mechanism is called executive function. By allowing relevant information to enter the mental space, it keeps us focused on tasks, creates mental priorities, and keeps space for the participants who belong there. In children, the gate needs to be in good working order as early as possible.

Epigenetic Simplifying Models

Name: **Signature**

A new topic among experts who study human genes is called the epigenome, which is like a signature on our genes. The idea is that our genes have instructions on them that tell our bodies how to work. But the environment has to sign for the instructions first. Positive experiences are signatures left by environments which authorize instructions to be carried out. These lead to positive development. Negative experiences are environmental signatures that can't authorize the right instructions, or sign for the wrong ones. These lead to poor development. Because the environment's signatures on a person's genes can last a lifetime, it's crucial that the genes get positive signatures early on.

Name: **Edits**

A new topic among experts who study human genes is called the epigenome, which is like edits to a document. The idea is that our genes have instructions on them that tell our bodies how to work. But an individual's environment can edit the gene's instructions. Positive experiences are environmental edits to the instructions that preserve them. These lead to positive development. Negative experiences are environmental edits that confuse the instructions or make them say something else. These lead to poor development. Because the environment's edits on a person's genes can last a lifetime, it's crucial that the gene get positive edits early on.

Name: **Chemical memory**

A new topic among experts who study human genes is called the epigenome, which is like a chemical memory. The idea is that our genes have instructions on them that tell our bodies how to work, but experiences that our bodies have make impressions on the genes that they remember. These chemical memories affect how the genes' instructions are carried out. Positive experiences leave chemical memories that enable these instructions. These lead to positive development. Negative experiences leave chemical memories that obscure or even change the instructions. These lead to negative development. Because these chemical memories can be remembered by a person's genes for a lifetime, it's crucial that the gene have positive chemical memories of the environment from the start.

Name: **To do list**

A new topic among experts who study human genes is called the epigenome, which is like a to-do list. The idea is that our genes have instructions on them that tell our bodies how to work, but the environment puts them in order and makes a to-do list. Positive experiences put the right instructions at the top of the to-do list. These lead to positive development. Negative experiences put the wrong instructions at the top of the to-do list. These lead to poor development. Because the order of instructions on the to-do list can control a person's genes for a lifetime, it's crucial that the genes get the right order from the environment from the start.

Name: **Waterway**

A new topic among experts who study human genes is called the epigenome, which is like a waterway. The idea is that our genes' instructions about how to run our bodies are the flow of water, and the environment is the landscape the water runs through. Positive experiences keep the water flowing. These lead to positive development. Negative experiences block the flow of water or make it cut a harder path. These lead to poor development. Because this waterway can shape how a person's genes act for a lifetime, it's crucial that the gene gets a positive direction from the environment early on.

Name: **Board game**

A new topic among experts who study human genes is called the epigenome, which is like a board game. The idea is that our genes do their job to tell the body how to work when they're moving forward, like pieces on the board. Positive experiences are like dice rolls that move our pieces forward. These lead to good development. Negative experiences are like dice rolls that don't give our genes many moves. These lead to poor development. Because the direction of the game can last for an individual's lifetime, it's crucial that the genes get positive dice rolls early on.

ⁱ Bales, S.N. (2009). *New and Improved: Using New Findings to Parse the Core Story: A FrameWorks MessageMemo for the Center on the Developing Child at Harvard University*. Washington, D.C.: The FrameWorks Institute.

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- ⁱⁱ Gilliam, Jr., F. (2007). *Telling the Science Story: An Exploration of Frame Effects on Public Understanding and Support for Early Child Development*. Washington, D.C.: The FrameWorks Institute.
- ⁱⁱⁱ Kendall-Taylor, N. & Mikulak, A. (2009). *Child Mental Health: A Review of the Scientific Discourse*. Washington, D.C.: The FrameWorks Institute.
- ^{iv} 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, D.C.: The FrameWorks Institute.
- ^v Note that initial seed funding was provided by the Endowment for Health (NH).
- ^{vi} Manuel, T. & Gilliam, Jr., F. (2009). *Advancing Support for Early Child Mental Health Policies: Early Results from Strategic Frame Analysis™ Experimental Research*. Washington, D.C.: FrameWorks Institute.
- ^{vii} For methodological details see www.yougov.com.
- ^{viii} The exact wording for all questions is included as an appendix.
- ^{ix} For a detailed description of the simplifying model development and testing process see Kendall-Taylor, N. (2010). *An Empirical Simplifying Models Research Process: Theory and Method*. Washington, D.C.: FrameWorks Institute.
- ^x Jones, L. & Estes, Z. (2006). “Roosters, Robins, and Alarm Clocks: Aptness and Conventionality in Metaphor Comprehension.” *Journal of Memory and Language*, 55 :18-32.
- ^{xi} Manuel, T. & Gilliam, Jr., F. (2009). *Advancing Support for Early Child Mental Health Policies: Early Results from Strategic Frame Analysis™ Experimental Research*. Washington, D.C.: FrameWorks Institute.
- ^{xii} Kendall-Taylor, Nathaniel. (2010). *Experiences Get Carried Forward: How Albertans Think About Early Child Development*. Washington, D.C.: FrameWorks Institute.
- ^{xiii} Ibid.
- ^{xiv} Erard, Michael, Nathaniel Kendall-Taylor, Adam Simon and Lynn Davey. (2010). *The Power of Levelness: Making Child Mental Health Visible and Concrete Through a Simplifying Model*. Washington, D.C.: FrameWorks Institute.
- ^{xv} Two additional models, roots and brain health, were tested but were dropped from further analyses due to strategic concerns about their applicability.
- ^{xvi} It is important to note that experiment survey research is only one of the methods used by FrameWorks to validate the effectiveness of simplifying models; future research in Alberta – including on-the-street interviews and Persistence Trials will be conducted on a set of simplifying models in Alberta in 2011.
- ^{xvii} FrameWorks Institute, (2010). *More to Genes than That: Designing Metaphors to Explain Epigenetics*. Washington, D.C.: FrameWorks Institute.
- ^{xviii} O’Neil, Moira. (2010) *Changing Addiction from a Sin Problem*. Washington, D.C.: FrameWorks Institute.