Talking About Addiction

A FrameWorks MessageMemo

A FRAMEWORKS RESEARCH REPORT
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Norlien Foundation

Alberta family wellness initiative
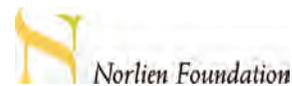
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"Interrogating discourse provides a way to challenge structures of power that constrain what is politically possible….Highlighting the ways in which discourse helps construct what is taken to be real, natural and true creates resources for working toward alternative arrangements."

Sanford F. Schram[1]

Introduction

The issue of addiction is currently riding a wave of interest in Alberta, due to a felicitous confluence of science, policy, philanthropy, and practice. "Scientists and leading clinicians now consider addiction to be a chronic, relapsing brain disease. This approach has produced new treatment models that have dramatically higher success rates in treating addiction and restoring health," reports the Alberta Family Wellness Initiative.[2] Citing compelling statistics about the number of Albertans affected and the associated public costs, a new report from Alberta Health Services and the Government of Alberta concludes, "We have a unique opportunity to improve the health and well-being of Albertans by implementing innovative and visionary changes to our addiction and mental health system."[3] More than 100 leaders from various private and public organizations have made a three-year commitment to study and incorporate the emerging science of addiction in order to transform their practice.[4] Yet despite the problem's prevalence and experts' enthusiasm for its remediation, momentum in addressing addiction will rely to a great degree upon the understandings of ordinary Albertans as they consider the proclamations of leaders, talk with family, neighbors, and colleagues, decide to access or avoid the health care system, and vote for public priorities.

"There is no such thing as a social problem, until enough people, with enough power in the society, agree that there is. Social problems are produced by public opinion, not by particular social conditions, undesirable or otherwise."[5] The plurality and ambiguity of Albertans' answers to fundamental questions about addiction – what it is and what causes it – illustrate the challenge of communicating on this issue. Moreover, the specific assumptions used to reason about these questions shape and even bound the way that citizens and policymakers alike are able to think about other critical questions around addiction, such as who is responsible, and what can and should be done to address the problem.

Furthermore, both a lack of science-translation and a scarcity of addiction scholars in media depictions, along with a highly patterned and caricatured portrayal of addiction and the addicted in these news stories, demonstrate a profound need and opportunity to improve the public's scientific literacy regarding addiction. However, meeting these challenges requires more than simply occupying *more* news space. The question of how science can best address public questions about addiction requires a thorough understanding of *how* the patterned ways

in which news stories frame an issue interact with the "pictures in our heads" to narrow and harden public assessments of how addiction happens and who is responsible. This connection between media frames and public understanding presents an optimistic paradox – the interplay explains the recalcitrance of public understanding, but also holds the key to *changing* the way that people think about issues and social policy as solution.

Without a thorough assessment of the ways that public thinking about addiction policy, prevention, and treatment are likely to "go wrong," and a concomitant strategic effort to "plug the holes" in public understanding with proven communications, even the impressive momentum noted above is tenuous. Science cannot speak for itself. It requires translation. Nowhere is this more evident than in the public understandings that confront addiction communications in Alberta. Whether the derailment comes in the form of an overestimation of the power of chemicals to cause addiction, or in the underestimation of the impacts of early-life stressors and environments on susceptibility, public thinking about addiction is fraught with strongly entrenched misdirections. The good news for addiction communicators is that the translated science we report here shows demonstrable impact on public understanding of, and support for, ways of addressing addiction that are in line with expert understanding. There is no reason why addiction communications should fail to serve the science.

This MessageMemo on framing addiction summarizes research the FrameWorks Institute conducted for the Alberta Family Wellness Initiative, supported by the Norlien Foundation. To assist the Foundation's ambitious goals of redefining addiction to include both processes and substances, and to expand public understanding of the causes of addiction issues and their solutions, the FrameWorks Institute conducted a series of studies that document the conceptual challenges in the public's understanding of addiction, and prescribe communications strategies that increase support for evidence-based programs and policies to address addiction.

It is important to note that this investigation focuses primarily but not exclusively upon the relationship of addiction and early exposure to adversity. It is informed by a broader research agenda in Alberta on effective translation of the science of early childhood development. In this related research, FrameWorks has documented both the constraints and opportunities in the public's understanding of the intellectual, social, and emotional development of children, including the role of genetic predispositions and environmental stressors, both in Alberta[6] [7] and in the U.S.[8] We use this robust "core story" of early child development (see Appendix B) as the foundation for analyzing and prescribing strategic communications about child mental health as it relates to the early biological antecedents of addiction. Our foray into the issue of addiction represents another extension of this core story.

The research base informing this MessageMemo is as follows: (1) FrameWorks undertook a literature review of roughly 100 scholarly articles on addiction to codify key themes and points in the science; (2) expert interviews were further conducted with 11 leading scholars in

the field of addiction who focus specifically on neuro-developmental aspects of this science; (3) interviews were conducted with 20 Albertans to document cultural models in use in the province; (4) a media content analysis of 221 articles documented dominant frames in Albertan and Canadian news media; (5) peer discourse sessions with a diverse group of 72 Albertans allowed for the observation of group dynamics and expectations on this topic; (6) two large experimental surveys involving more than 6,500 Albertan respondents allowed FrameWorks to demonstrate the impact of exposure to a variety of values frames on public support of addiction programs and policies; and (7) qualitative and quantitative testing of metaphors to capture aspects of the science of addiction were conducted with 2,090 Albertans. (See Appendix A for a complete listing of reports.) All in all, more than 8,500 Albertans were queried as part of this research. All reports are published at www.frameworksinstitute.org/addiction and www.albertafamilywellness.org.

This MessageMemo is not intended to take the place of the research reports that inform it; indeed, FrameWorks strongly recommends that communicators avail themselves of these reports and challenge their own creativity to apply this learning. Representative quotations are used here to remind the reader of the research base that informs these assertions; more nuance and variety can be found in the original reports. In addition to summarizing and synthesizing that body of work, this MessageMemo extends this descriptive research by providing another level of more detailed and prescriptive interpretation to inform the work of policy advocates.

This MessageMemo charts a course through the dominant patterns of reasoning employed by the public, identifies the major challenges for communicators, and recommends how communications may be redirected to improve public understanding. It is organized as follows.

> » We first **Chart the Landscape** of public thinking by providing a description of the dominant patterns of thinking that are chronically accessible to Albertans in reasoning about addiction, and the communications implications of these dominant models.

> » We then identify the **Gaps in Understanding** between experts and ordinary Albertans – features that bring into relief the specific locations where translation is needed if expert knowledge is to become accessible to the public in understanding and reasoning about addiction.

> » We then provide an outline of **Redirections,** research-based recommendations that represent promising routes for improving public understanding of addiction.

> » We end with a cautionary tale of the **Traps in Public Thinking** that must be avoided if reframing is to succeed.

I. Charting the Landscape: Default Patterns of Thinking about Addiction in Alberta

The mental landscape on addiction presents a complicated terrain. In this section, we discuss the most prevalent and highly shared paths, or "cultural models,"[9] that ordinary Albertans rely on when asked to think about *what addiction is, how it occurs,* and *what can and should be done to address it.* These patterns in understanding constitute the challenges that the prescriptive reframing research must address. It is crucial that communicators who seek to build new understandings of addiction become familiar with these default patterns of understanding in order to accurately anticipate what they are up against and what their communications must overcome.

A. *Addiction is understood largely as an individual problem, usually as a character defect that results from impaired willpower.*

The perceived locus of responsibility for any social problem reveals a great deal about the communications challenge. While informants acknowledge that "some chemicals are highly addictive" and that difficult life situations can make people more susceptible to addictions, these ways of thinking share a common attribution of responsibility – they place responsibility on the affected individual to choose differently, overcome temptation, and resist moral weakness. As one participant said about someone who is addicted, "Oh, they just aren't willing to face reality."[10] It should be noted that the definition of the problem as individual and moral crowds out considerations of external factors and, most importantly, population-level and programmatic solutions. It is not that Albertans don't also perceive the prevalence of contextual factors that contribute to addictions. Rather, the narrow focus on addiction as an individual-level problem of weak character and resolve mentally advantages individual-level solutions, and makes more systemic approaches appear less relevant and effective.

> We can't have our society going "Oh look, we've got some addicted people! Okay, send in the counseling team!" Because as a society we can't make somebody change. Just like in a relationship we can't make each other change, we can only change ourselves. So it comes down to personal responsibility. As a friend of that person, you could say "You know, don't you think this thing is impacting your work a little bit?" Or "You know, have you gotten out and talked to your friends lately? I don't see you anymore." But really, it's got to play out. As a society, it's not our job to go in and say to those people that they have certain lifestyles that seem like addiction. It's not our job. Once you're an adult, you've got to want to have a new life.
>
> *Alberta Cultural Models Interview Informant* [11]

Relatedly, Albertans often think of addiction as situated along a continuum of control. FrameWorks research concludes, "At one end of the continuum, an individual has complete control over their behaviors and actions, while at the other there is a complete absence of control….Addiction was caused when an individual reaches a tipping point… where their behaviors and actions are characterized more by a lack of control than by its presence."[12] Problematically, evoking this continuum further focuses attention on character deficits and individual responsibility, as in this exchange:

> **Interviewer:** Do you think she is addicted?
>
> **Informant:** I do. I think it's getting to be, and if it's not already it's very close to that point. You know, she can't walk away from it. She can't actually just leave the files in the office and she can't just disconnect.

> *Alberta Cultural Models Interview Informant* 13

Once this pattern of reasoning is established, the logic constrains people to think about acts of willpower and exertion of control as the most appropriate and effective solutions to addiction. Once the tipping point is breached, most policies appear irrelevant since, as participants frequently said, there is "no going back."

Thus, one of the major challenges in reframing addiction lies in re-establishing its identity as a societal problem with roots in cultural experiences and shared environments, not as an individual character defect that can only be solved through more deliberate will and discipline on the part of the affected individual. It is notable that, despite experts' assertion of addiction as a brain disease, for most Albertans addiction does not happen in the brain but rather in some shadowy place of will power, discipline, and resolve. Relocating "where addiction happens" is equally as important as moving the issue from an individual context to a broader societal context. Once the subject of addiction acquires some biology, it is seen more as a shared vulnerability, and less as a deviant defect. The vividness of the tipping point model suggests that displacing this model will require an equally concrete and commonsensical way of thinking about addiction.

B. *Addiction is defined as a chemical dependence or, alternatively, as an internal need.*

FrameWorks' informants explained that addiction is caused by chemical properties of certain substances. These properties make some substances essentially irresistible. As a result of this cultural model, many people believe that a single exposure to particular substances, such as crack cocaine or meth, leads inevitably to addiction. Another belief structured by this model is that one can't be addicted either to substances or to processes that lack these inherent addictive properties, i.e., food, sex, or gambling. A final consequence of this model is that addiction

becomes narrowly defined as dependence on alcohol, tobacco, and certain drugs, with all the focus on the objects of addiction, as opposed to the underlying process by which addiction occurs.

> [Addiction] is about the strength of the chemical. It's [addiction] about the
>
> addictive properties of the chemical. Caffeine is a stimulant, but it doesn't
>
> influence our serotonin to the point that crack cocaine does. So now we're
>
> working on a chemistry level.   *Alberta Cultural Models Interview Informant*[14]

This cultural model conceptually collapses the *definition* of addiction (i.e., being vulnerable to a substance's addictive properties) into its *cause* (i.e., being vulnerable to a substance's addictive properties). So one can only be addicted to a small class of things with addictive properties, while other more behavioral addictions fall outside of the definitional parameters of "addiction." When addiction is defined using this model, another communications implication is that the role of neurobiological processes in addiction is diminished in importance.. After all, if substances are inherently addictive, it is simply *usage of specific substances* that explains why someone becomes an addict. When thinking along these lines, the importance of a wide range of solutions and treatments – anything that comes after the introduction of a substance – is effectively obscured. The chemical dependence model also functions to strengthen the moralist's view of the addict, who is seen as someone who lacked the will to resist an initial exposure to the inevitably addictive substance.[15]

Alternatively, people thought about addiction as an internal and irrational "need."

> Addiction is a need to have whatever it is they need to have.
>
> *Alberta Cultural Models Interview Informant*[16]

> Usually it's because we can't get enough of, whatever it is. We need to continuously fill that need, or something.   *Calgary Peer Discourse Session Participant*[17]

When addiction was defined using this cultural model, informants tended to think more expansively about the range of substances and processes that are potentially addictive (i.e., not *just* alcohol and drugs). However, this is not to suggest that the "need" model is conducive to understanding process addictions, as defined by experts. When informants employed this model, they generated long lists of things that one might become addicted to (video games, shopping, texting, your kids, radical groups, talking on the phone, etc.). But, upon reflection, they found it hard to understand how exercise, work, or other activities that might be healthy in some circumstances could prove "addictive."

Interestingly, for most Albertans, the process of conversion from want to need happened in a black box of some nebulous psychological or internalized state.[18]   When Albertans employ this definitional model, there is an awareness of "something going on inside"[19] but a lack of understanding of psychological or biological processes. Without a process to explain how addiction happens, the potential of "need" defaulted back to the addict's abdication of responsibility and lack of control.

> I think a lot of it is self-control. There are addictions where it is "chemical," and there's something inside that craves that drug, or whatever, but I think a lot of addictions are just a matter of self-control, and if you just inserted a little self-control, you know, you could start a new habit, and fix yourself.

> *Calgary Peer Discourse Session Informant*[20]

While this way of thinking creates some space to talk about neurobiology, recognizing connections between internal states (or traits) and external triggers, it requires filling the black box with a clear process.

Addiction is caused, people say, by early developmental disruption or the experience of a proximate trigger. Albertans readily volunteer that addiction is caused by some experience or set of experiences that happened early in life.[21] Although they were unable to specify exactly *how* this happens (again, symptomatic of the black box understanding of development[22]), they were resolute in thinking that what happens early in a child's life can have long-term effects. Even without an explicit understanding of developmental processes, Albertans reasoned that early experiences are necessary for establishing "life skills" like control, coping, and social knowledge. In describing the process by which early experiences affect addiction outcomes, informants described a vague process by which negative experiences somehow "get embedded" in the child and have long-term negative effects.

> I think family life plays into it [addiction] a lot. Trauma as a child, things like
>
> that…I think childhood trauma plays into it [addiction] massively.

> *Alberta Cultural Models Interview Informant*[23]

At the same time, informants explained that there are factors that can trigger addiction in and of themselves: the need to escape or avoid problems; the need to fill a void; and having access and exposure to particular substances. However, they argued that the most likely pathway to addiction was the experience of early childhood adversity *coupled* with the experience, later in life, of one of these more proximate triggers. For example, they often explained that the likely creator of the void was early adversity, , e.g., a lack of fulfilling childhood relationships left a void that later "needed to be filled."

The perceived connection between addiction and childhood experiences is a promising foothold from which communications can work to translate science and present policy messages. The fact that there exists a connection between early experiences and later addiction in the minds of Albertans opens the door for scientists and advocates to explain *how* early experiences promote or derail development, and with what influence on addiction.

Understanding environmental triggers also sets up broader thinking about influences external to the individual. This connection has promise in opening up Albertans to consider how the contexts of children's development might be improved through programs and policies. Informants did, in fact, acknowledge that friends, educators, and community mentors can and do shape children's development; thus, they can play a role in protecting against vulnerability to addiction. However, as noted above, the considerations of the processes by which experiences affect development are shallow and tend toward abstract notions of internalization (i.e., "something" experienced "somehow" gets embedded into one's "self"). The need to provide Albertans with more effective translation of the science of development writ large, through simplifying models like Brain Architecture (see Appendix B), underscores the advantage of framing addiction within a child development story in order to improve understanding of how addictions develop and how they may be prevented through public programs and policies.

C. *The consequences of addiction are permanent and irreversible*.

Despite the nod to process in their efforts to understand how addiction "happens," FrameWorks' informants invoked a "damage done is damage done" deterministic model when asked to explain the outcomes of these types of experiences. Informants argued that the damage caused by developmental disruptions was irreparable. Clearly, this way of thinking poses obstacles to public understanding of prevention and appropriate treatment of addiction. If the damage is done, the best that can be hoped for is to manage the harm; neither preventing nor controlling addiction are possible. Further reinforcing this determinism is the model of the "continuum of control" discussed above, which sets up an understanding that, once breached, equilibrium (i.e., health) cannot be regained. Informants explained that someone has reached the tipping point when they become severely dependent, compulsive, or destructive – or, more colloquially, when they lack "self-control" or have moved from a position of "wanting" to one of "needing."

Even as they acknowledged early adversity, environmental triggers, and the existence of some continuum of control, informants still focused the majority of their attention on how individuals *choose* to deal with the problems, adversities, and "voids" that they experience. In this way, informants downplayed the role of stressors and focused instead on how individuals deal with the sources of stress in their lives, which, they reasoned, are unavoidable. Those who had "tipped" might regain some measure of functionality through exertion of willpower but, once addicted, they were defined by the addiction.

I think any addiction is *controllable*, but not *curable*. An addiction to smoking, for example, you can take medication to help you with the addiction. But you can't get over the addiction, but it [medication] can help you deal with the addiction. The part of the addiction that makes it an addiction is that it never leaves you. For the rest of your life, you will always have that. Whether it's a thought of it, the smell of it when you're driving down the road, and all of a sudden you just get a, a scent of a cigarette, or, or a craving for a cigarette, or perhaps you see somebody smoking, and it triggers a thought in the back of your mind that that's something that you used to do. You can treat it. But you'll never cure it. It is something incurable. It is something that is part of you.

Alberta Cultural Models Interview Informant[24]

Finally, it is important to note that we observed relationships *among* these models, such that the patterns of reasoning used to think about what *causes* addiction often shaped thinking about what *constitutes* addiction, who is *responsible*, and what the possible *solutions* are. This suggests simultaneously a challenge and opportunity to communicators: activating certain causal models predisposes people to think in particular ways about appropriate intervention and treatment.

II.   Gaps in Understanding

Gaps in understanding are those places where the cultural models employed by the public to think about an issue differ significantly from experts' understanding of the same issue. As such, they represent strategic opportunities for framing in order to bridge gaps between expert and lay understandings. We enumerate the gaps below. In the subsequent section, we assign specific frame elements – values, metaphors, etc. – to fill them.

Gap #1: The Definition Gap ("What It Is")

Experts explain addiction as related to the neurobiology of reward systems,[26] and as manifesting in the loss of an individual's ability to rationally assess the costs and benefits of particular actions. In short, for experts, addiction is brain-based and related to cognitive functioning.

In contrast, the public defines addiction in terms of the chemical properties of certain substances or, more commonly, as a vaguely conceptualized internal "need." The foundational model of addiction as character-based applies across these more specific definitional models. In this way, chemical properties, environments and experiences, and development are perceived as moral tests – a secular version of "the devil made me do it."

In addition, many experts acknowledge that there are only subtle and nuanced differences between process addictions (e.g., work, sex) and substance addictions (alcohol, drugs). Others argue that there are fundamentally different mechanisms by which different types of addictions

stimulate the brain's reward circuitry. However, the public, focused on the properties of the substance, is hard-pressed to define as potentially addictive anything that in some circumstances can be positive and rewarding (work, exercise, sex). While they argue that in theory one can become addicted to anything, they implicitly but powerfully define addiction as related to a short list of stereotypical "addictive substances." This narrows the definition of addiction to a relationship between an individual and a substance with all the cognitive energy focused on these two actors. The only dynamism or plot in this narrative lies in the addict's resistance or complicity and the substance's power.

Gap #2: The Causation Gap ("How It Happens")[27]

Experts understand addiction as caused by a dynamic relationship between genes and environments that shapes the development and functioning of neurobiological systems. There is, admittedly, tension among experts in defining specific causal mechanisms at play in *all* addictions (substance and process). But experts agree that repeated exposure to sources of addiction, such as drugs or gambling, engages and affects specific brain circuits in ways that result in compulsion and loss of control.

In contrast, Albertans clearly understand environmental triggers as influencing susceptibility to addiction, but understand little about how that process actually works. Without an understanding of the "how," they default to assertions that outside events somehow "get embedded" in individuals, or that self-control is the key mediating variable. And, when reasoning about genes, they do so in strongly deterministic terms (i.e., that genes are set in stone, immune to influence, and alone can determine behavior, personality, etc.).[28]

All of these models of causation lead to dead-ends for communicating the science of addiction. If addiction is caused by genetics, there are no solutions, preventive or otherwise; addiction must simply be treated and managed. If addiction is caused by the properties of the chemicals themselves, then the solution is to avoid or reduce exposure to those chemicals – a solution that promotes individual education, vigilance, and yet again, willpower. If addiction is caused by a person's inability to "just stop using," the solution lies in enhanced character through individual therapy. Nowhere in these models do we find the dynamism of the expert view, where prevention is seen as a societal responsibility to determine susceptibility and prevent further exposure, to intervene in the process of addiction, and to treat it as a chronic disease.

Gap #3: The Messenger Gap ("Who Says?")

Experts are visible and vocal in Canadian and Albertan media on such issues as early child development and child mental health. Indeed, on these issues, research scientists are the most frequently quoted messengers, appearing in 25% of all news stories. To a significant degree, early child development and child mental health are science stories. Not so with addiction. Of

73 stories that FrameWorks reviewed about addiction, not one dealt in any significant way with the science of this issue. Scientists appeared as messengers in only 8% of news stories about addiction. The dominant messenger on addiction is law enforcement, representing 25% of all messengers on the topic, followed by parents (16%).[29]

Anecdotes of violent children, or of depraved parents who inflict harm on children because of addictions, dominate the coverage of addiction. Furthermore, explanations of causation are highly individualized in the news coverage where there are few mentions of prevention, reifying the fated and intractable definition of the issue.

Finally, the dominant narrative in the news about addiction is one of individual triumph or personal failure over adversity. FrameWorks' analysis concluded that "media stories about addiction as it pertains to child and family health framed it primarily as a moral issue, rather than as a brain- based disorder. Addiction in this context either signaled a parent's extreme depravity or a child living outside of normative society. The media coverage of addiction sensationalized certain kinds of impacts of addiction and provided graphic details about the abuse that can accompany addition, but it did not report on the causes of addiction."[30]

Given this narrative, one should not be surprised by the cultural models held by ordinary Albertans who are regularly exposed to these patterns in the news. However, the fact that coverage of both early child development and child mental health is presented as more authoritative news, informed by scientist messengers, suggests that the gap between the science story that experts wish to tell about addiction, and the story that is told in the media, is assailable.

Gap #4: The Solutions Gap ("What Can Be Done")

Experts firmly assert the efficacy of interventions in the prevention and treatment of addictions. This is in direct contrast to the Albertan public's view that, once developmental damage is done, damage is done. Therefore, once an addict, always an addict. The issue of "control" factors prominently in both expert and public considerations of addiction and its treatment, but in very different ways. For experts, addiction is defined as a neurobiologically-based lack of control. Responsibility is conferred on the factors that shape those neurobiological systems: experiences, exposures, and the contexts in which they occur. Solutions to the problem of addiction are those that can more optimally shape those systems.

In contrast, the public understanding underscores the need for personal responsibility and self-control in managing behavior, resisting temptation, and staying away from the "tipping point" that can propel one into irremediable harm. Interestingly, if an individual has lost control, she is therefore not responsible for her behavior. It is, then, the lack of control that *causes* addiction. This control proposition is also applied to think about the efficacy of treatment. In general,

our informants argued that, if interventions "worked," it was due to the self-determination and willpower of the individual to "seek it out and stick to it." The roles of communities, government, and society more generally were rare in informants' discussions of how best to address addiction.

These views are best contrasted by the "big picture" view that experts exhibit, in which many factors can serve as the locus for prevention and treatment. In this way, the Solutions Gap is closely linked to the Definition and Causation Gaps noted above; that is, if the latter remain uncontested, the solutions that are supported by the public follow a distinctly predictable pattern, at great odds with expert recommendations. For addiction communicators, this finding should underscore the importance of reframing the entire narrative, not merely focusing on a policy or program as the "low-hanging fruit" on an addiction agenda.

III.   Redirections

Building a more productive route along the cognitive map of addiction will require communicators in Alberta to address those highly accessible but unproductive patterns of thinking that limit the public's understanding of the causes, mechanisms, and treatment options for addiction. This will require the introduction of proven strategic framing elements that translate expert understanding by clarifying what addiction is, how it happens, and how it can be addressed by programs and policies. Strategies to reframe addiction will also need to make explicit the public dimensions of the issue. Based on the research findings, we offer the following evidence-based recommendations for communicators.

WHAT TO DO:

1.   Prime communications with two values: Interdependence and Ingenuity.

As noted above, for Albertans the existing mental landscape makes it very easy to see addiction as an individual issue and very difficult to consider collective consequences. Specific framing strategies are needed to orient Albertans such that they can consider a broader notion of what is at stake in both the prevention and treatment of addiction. This challenge is tantamount to redefining the issue, as it pulls addiction out of the "little picture" domain of individual actors where there are few consequences for "the rest of us," and pushes it into the domain of social policy, where population-level problems are addressed through policies and programs that are both preventive and science-based in an effort to improve the quality of life for all.

In fact, FrameWorks research underscores how important values are to reframing addiction. Of the three issues we investigated – early child development, child mental health, and addiction – addiction was the only issue to show statistically significant improvements in policy support across *all the values* tested.[31] This suggests that values matter hugely for addiction communications.

In a follow-up to this experimental survey, we reconfirmed the impacts of three of the values that were initially tested – Interdependence, Ingenuity, and Prevention – as well as demonstrating the relative inutility of the value of Empathy[32] (see the Traps section below). Thus, on reflection, it is not *any* value that improves thinking about addiction, but only those that satisfy specific criteria identified as obstacles in the mental landscape. In short, for a value to work, it must collectivize the issue and establish a sense that there are solutions, while pushing individual-level conceptions and notions of determinism into the background.

FrameWorks' experimental survey report concludes, "*Interdependence* makes people more likely to see the environmental causes of addiction and to support more comprehensive addiction treatment. *Prevention* leads to more support for policies that address issues of addiction comorbidity. Finally, *Ingenuity* increases support for addiction policies aimed specifically at children and youth. *Empathy*, in contrast, produces no positive movement on any of these outcomes, and, in fact, led to a statistically significant decrease in respondents' support for policies that addressed disparities in the access to and delivery of addiction services in the province."[33]

It is important to note that Prevention as a value did not perform as consistently overall as Ingenuity and Interdependence. We interpret this value's relative power in light of the criteria enumerated above. While Prevention can be seen as a societal goal, it can also easily individualize and lead addiction back to the dead-end of willpower (resistance to powerful chemicals) and character failure (succumbing to temptation). Moreover, Prevention can be impaired, we suspect, by the black hole of causality that attends addiction thinking; that is, if causality has not been explained before Prevention is introduced, it is challenging for people to figure out exactly what comes first in a nebulous sequence of causation.

Thus*,* FrameWorks researchers conclude*, "Interdependence* and *Prevention* can be presented in that order as a coherent communications package….*Interdependence* offers a stronger choice for framing communications that introduce new scientific thinking on addiction to provincial audiences. This can be followed by the use of *Prevention* as a way to discuss what needs to be done now in order to alleviate addiction in the future.[34]

Here are examples of how one might implement these values in practice.

Interdependence

Albertans know that what affects one part of Alberta affects us all. We need to have programs that get people to work together to solve our health and social problems like addictions, as well as programs that prevent the factors that put people at risk for addiction. Albertans know that we function best when all members of our community come together to use our resources to deal with problems. When we share responsibility for the health of our communities, this bonds our communities together and allows us to deal effectively with problems.

Prevention

As Albertans, we need to focus on preventing problems before they occur. When we postpone dealing with problems, they become worse and require more resources to fix. One way to get ahead of problems is to set up policies and programs that allocate resources now instead of putting things off and waiting until later. Simply put, Alberta would be better off if we took steps today to prevent and treat addictions. Realizing that we need to prevent problems before they occur is the key to moving forward and will allow us to deal effectively with our problems.

Ingenuity

As a province, Alberta needs to invent more effective solutions to address addiction issues. Innovative provinces have been able to design highly effective solutions to address addictions of all kinds, such as programs that focus on early identification and diagnosis and therapies that have a strong focus on changing people's patterns of thinking and that last for a longer period of time than is typical of current addiction interventions. These innovations have solved problems in how we provide care for addiction and have lead to significant improvements in the lives of people who are addicted and their families.

Here are some key components that *must be included* when these values are implemented in communications:

» The notion that collective action to resolve problems bonds communities and has implications for the province as a whole.

» A can-do assertion that solutions are available and they need to be implemented.

» An explanation that using resources today can produce long-term improvements in quality of life.

2. Use the core story of early child development[35] to build on what Albertans already believe and get the brain into the story. FrameWorks' reframing tools on early childhood offer communicators a rich set of resources (see Appendix B). The core story of development is consonant with the neurobiological science of addiction. Further, it has been vetted and validated in prior research in Alberta,[36] which followed a dozen years of research in the United States.[37] The fact that Albertans see early experiences as significant in the development of addiction, but cannot exactly identify how they are so, suggests an opportunity for communicators to rely on aspects of the core story of development to fill certain gaps in the public's thinking about addiction. A strategic pivot to aspects of the development story – which explains the *what*, the *how*, and the *to what effect* of

development – could help fill in some of the missing pieces in public understanding of the causes of and processes involved in addiction.

Specifically, we recommend recruiting the Brain Architecture simplifying model – explaining that development is like building a house, and what happens early in the process is foundational to all that follows. In addition, the Toxic Stress simplifying model can be used to explain how exposure to unrelenting, unbuffered stressors in a child's environment weaken brain architecture and predispose it to susceptibility to later stresses. The simplifying model of Serve and Return can be used to explain how environments and individuals interact dynamically and how early experiences get built into developing brains and bodies, including those characterized by neglect. In sum, we believe that communications about addiction can be nested within the broader and more developed narrative of early child development, with additional benefits accrued to public understanding of addiction causation and consequence. Researchers concluded that "a developmental perspective on addiction:

» Softens the biological determinism of the strict biomedical account (in which individuals have genetic predispositions to addiction), yet retains the powerful contributions of neurological and genetic sciences.

» Makes visible the patterns among the trajectories of individual addicts' lives, without erasing the emotionally powerful biographical particularities through which people often commonly understand their own and others' experiences.

» Makes visible patterns of addiction across substances and between substances and activities (e.g., gambling, sex, etc.), an approach that helps move reasoning away from attributing some addictive quality to a narrow set of substances."[38]

The simplifying models from the core story of development move people a good ways toward prying open the black box on definition, causation, and remediation – but they don't fully explain addiction. For that, FrameWorks research has shown that a more explicit metaphor is required.

3. Explain addiction in terms of the Brain Faultlines simplifying model.

FrameWorks developed, tested, and refined a highly communicable and durable simplifying model that further enabled Albertans to talk more articulately about addiction and its causes. Here is the refined version of the metaphor that emerged from testing.

Brain Faultlines

We can think about how addiction happens in the same way that faultlines sometimes result

in full-blown earthquakes. Like a faultline in the earth, people's brains can develop small cracks. These faultlines can form in a number of ways. In some cases, they appear as the brain develops. They can also develop over time as people experience stress and don't have supportive relationships. Other times, people may have been born with faultlines. But just because there is a faultline doesn't mean there will be an earthquake. Faultlines are triggered by factors and experiences that turn them into earthquakes, which can do a huge amount of damage. We know that there are things we can do help prevent brain faultlines from developing in the first place and things that we can do to minimize the chances that existing faultlines will turn into earthquakes. There are also things we can do once earthquakes or addictions have happened to prevent damage from happening again.

FrameWorks' researchers concluded that "The strengths of Brain Faultlines come mainly from its geological associations, in the sense that:

» Faultlines underlie and are not visible from the surface

» Faultlines, however, can be identified; warning signs mark their presence

» How faultlines become earthquakes because of causes that are beyond human agency

» Faultlines come in varying sizes and states of readiness; they can also grow over time

» The right cause can trigger a faultline and cause an earthquake

» Though a faultline is present, an earthquake is not inevitable

» Once identified, a faultline can be prepared for and built around

» Earthquakes cause tremendous damage, so avoiding them is desirable

» The consequence of earthquake damage is a loss of function (e.g., cities, communities, regions, and/or societies do not work)."[39]

When exposed to the Brain Faultlines simplifying model, Albertans:

» Reassigned responsibility by removing it from the self and conceptually relocated it to the brain. The individual's willpower was no longer the focus of attention. Because geological forces are not associated with things humans do, participants exposed to Brain Faultlines were less likely to talk about the role of individual agency in avoiding or preventing addiction or securing successful treatment.

» Were able to see the interaction between factors that are internal and external to the individual,

or between environments and biology.

» Understood that addictions can result from events and processes that are temporally separated from symptoms – in other words, that addiction can be the result of specific stresses experienced early in life.

» Became more articulate in explaining how one person will become addicted but another won't; i.e., because they do or do not possess these faultlines.

» Were inoculated against the implicit understanding that substances are inescapably and immediately addictive, due to their enhanced appreciation of the process by which addictions develop and the important role of proximate triggers.

» Were more appreciative of commonalities in the brain-based physiology of a wider array of addictions.

In deploying the model to maximum effect, it is important to include its key properties:

» **Faultlines are located in structures of the brain.** They are not literal cracks or fissures, but rather represent structural susceptibilities to addiction.

» **Faultlines can develop or exist for multiple reasons.** They may be a result of genetics, but they can also arise through the course of development (particularly as young people's brains develop), and can also be acquired later in life.

» **An addiction is an earthquake.** Setting this part of the metaphor is very important, especially in the sense of its consequences – earthquakes and addictions cause real damage.

» **Not all faultlines become earthquakes.** In other words, though some brains are more susceptible than others to addiction, they are not predestined for addiction, but rather require contextual triggers, which can be addressed through policy and programs.

» **The stresses that can cause faultlines to develop are not everyday stresses (i.e., a hard day at work), but toxic stress.** Intensive stress over a long duration causes the body to be flooded with negative physiological effects and can cause the formation of faultlines.

» **Faultlines are dynamic.** Preexisting susceptibilities can become more or less dangerous based on context and experiences.

» **There are specific strategies for addressing the situation.** The responses to Brain

Faultlines should be to minimize the stresses that can create faultlines, to limit and reduce the potency of those things that act as triggers, and to take steps to reduce the damage that an earthquake might cause.

» **Even when an earthquake happens, damage can be repaired and prevented.** Earthquake damage, though undesirable, can be repaired and steps can be taken to prevent and mitigate further damage.[40]

Finally, in using Brain Faultlines, it is important to recognize that the metaphor can be misused and highjacked. This is most likely to happen if the recommended narrative order is ignored. If individual responsibility and the power of willpower are not first contested by values, Brain Faultlines will simply default to "faulty" morals. Note that this did not happen when Brain Faultlines was securely anchored in the brain and in the geological referent.

4. In explaining solutions, make explicit the role of communities, government, and society in addressing addiction.

Albertans clearly think about the family as embedded in and influenced by communities.[41] This default understanding represents an opportunity for communicators who wish to broaden understanding of addiction policies and programs that function at the community level. This might include epidemiologically based assessments of risk factors or community supports for Albertans dealing with addiction. When community contexts are made explicit, this improves understanding of how policies and programs might shape developmental outcomes and, by extension, addiction.

Communicators should always be aware, however, of the ability for this wider lens to constrict when people are provided with cognitive cues that activate powerful and well-practiced individualist models in their swamps of understanding. Communications that focus on the individual or family will get eaten in the swamp of individualism, obscuring social influences and supports. Focusing on individuals also runs the risk of triggering explanations that individuals are unique and, therefore, no community-based or population-based program could possibly address the range of individual differences.

WHAT TO AVOID:

1. Don't focus initially or exclusively on individual addicts and their families.

2. Don't talk about specific substances early in the communication.

3. Don't highlight factors related to individual control or willpower when discussing effective treatments.

4. Don't focus on the role of early adversity without explaining developmental processes.

5. Don't reinforce stereotyped images or portrayals of addicts or addiction.

6. Don't appeal to sympathy, empathy, or compassion for the addict as a leading value.

7. Don't emphasize the role of the individual in determining the efficacy of solutions.

8. Don't use Prevention as a value until you have established collective responsibility, so that the value does not default to individual acts of education and willpower.

9. Don't introduce Brain Faultlines without first getting addiction into the brain, using Brain Architecture or another simplifying model.

IV.   Traps in Public Thinking

In the following section, we list aspects of thinking about addiction that trigger models that may be "easy to think" but trap public thinking in unproductive evaluations and judgments. We focus here specifically on traps that are common in science and advocacy communications, as these tend to represent unexamined hypotheses about effective communications.

A. The Early Adversity Trap

It is important to reshape Albertans' understanding of the specific developmental processes that can shape addiction outcomes, but calling attention to the role of early adversity *alone* will not do the trick. Even for those who understand that early experiences matter, the tendency is to believe that *damage done is damage done.* Their lack of understanding of *what* develops in the child and *how* development can be facilitated leaves them unable to see how interventions at particular points in the developmental trajectory might either prevent or successfully treat addictions. This trap can be addressed by using the Brain Architecture and Toxic Stress simplifying models from the core story of early child development to explain a dynamic process that can yield Brain Faultlines. This troika of models should be deployed to inoculate against this trap.

B. The Nature/Nurture Trap

When FrameWorks first attempted to demonstrate the interactive effects of biology and environment in the development of addictions, we often saw informants take sides on the role of nature *vs.* nurture in determining outcomes and miss any consideration of the interactive effects of biology and environments. Even when informants argued that environments were the most important factor in addiction, they narrowly conceptualized "environment" in terms of the child's home. Others reasoned that biology equals destiny because genetic make-up is

set in stone and certain people are simply wired to become addicts; therefore, there is nothing that can be done. Still others were thrown by this biological determinism argument, as it ran right up against their notions of willpower as a central determinant of addiction. This trap is effectively addressed using the Brain Faultlines simplifying model, with its ability to concretize the synthetic effects of determinants in shaping outcomes.

C. The Prove Worthiness Trap

Both FrameWorks' cultural models interviews and peer discourse sessions revealed Albertans' reliance on individualist models to define addiction and explain its causes and outcomes. For example, willpower can explain why some are able to stay on the control side of the continuum, in contrast to those who reach the tipping point. Similarly, the efficacy of treatment is often explained according to an individual's willpower and desire to change and "stay with the program." Any communication that emphasizes self-determination, personal responsibility, and willpower – whether positive or negative – will obscure the science translation of causal factors and appropriate treatments for addiction. Moreover, arguing for the worthiness of the addict only reinforces this tendency by forcing all the attention on individual characteristics. When FrameWorks argued for a more sympathetic approach to the addict in values experiments, the value of empathy/sympathy demonstrated either strong negative effects on support for policies and programs or no significant effects. Highlighting the plight of individuals and suggesting a moral responsibility for their welfare simply backfires – perhaps by inadvertently cuing a moral stance and invigorating individualist cultural models as the lens through which to view addiction.

D. The Iconic Image Trap

Informants often described addicts as fundamentally different from "normal" people. FrameWorks' research[42] found Canadian media to be saturated with images that portray addicts as "others" and depict their behaviors or life contexts as far outside normal experiences. Our informants often characterized addicts as homeless, jobless, and engaging in criminal behavior. Once such notions were generated, our participants were virtually unable to reason about how community contexts might shape the onset and course of addiction. The notion of addiction as individual pathology simply obscured broader contexts from consideration. In communicating about addiction, it is imperative that these stereotypes be avoided. They cannot be simply "turned on their heads" or explained away; by exposing Albertans to these familiar images, they are re-minded of the dominant discourse. These images must be altogether displaced, with thinking redirected to structures and interactions that characterize populations, not individual life stories.

E. The Stigma Trap

It has long been a truism of mental health and addiction communications that stigma is the elephant in the room. Unless the prejudice that people bring to their consideration of the addict can be dislodged, it is assumed that progress on addiction policies and programs cannot be made. The FrameWorks research contests this assumption. When the addict was made the focus of the communications, it was indeed true that individuals were stigmatized for their perceived weakness or moral failure. Stigma is real. But it is important to understand that stigma and moral considerations are bound together in ways that undermine more scientific and neurobiological approaches to addiction. The legendary sociologist Erving Goffman, an Albertan himself, reminds us that the word stigma originates from the practice of using "bodily signs designed to expose something unusual and bad about the moral status of the signifier."[43] By calling attention to stigma, addiction communicators run the grave risk of reassigning the issue to the moral and individual realm. We now know that addressing stigma head on activates cultural models of determinism and genetic defect, on the one hand, or willpower and choice on the other. The values experiment bears this out by showing the negative effects of empathy on addiction attitudes and policies. Once again, FrameWorks cautions against a literal approach to communications in which we confuse the social analysis (stigma) with its power as a communications strategy.

Goffman is also eloquent on the idea of addiction as a shared identity and of the exclusionary nature of advocacy on the issue. Commenting on the habit of those with a particular stigma to form action groups, he observes that "they serve as 'speakers' before various audiences of normals and of the stigmatized; they present the case for the stigmatized and, when they themselves are natives of the group, provide a living model of fully-normal achievement, being heroes of adjustment who are subject to public awards for proving that an individual of this kind can be a good person."[44] Yet, as FrameWorks' research attests,[45] and Goffman infers, this kind of argument is unlikely to lead a majority of people to reassess the process of addiction more generally. Rather, the speaker is likely to be judged as "the exception that proves the rule," the hero-addict who ironically proves that willpower can triumph over past adversity and the power of chemicals.

This is not to argue against authentic voices in the addiction movement, but rather to urge that speakers use their power and platform to explain the causal processes that underlie the disease in such a way that their stories highlight societal opportunities to address, prevent, and treat this pervasive disease. This narrative is far different from the anti-stigma argument so often espoused. We believe the research is compelling on this point.

Conclusion

The cognitive terrain of addiction in the minds of Albertans offers up a complex map with many ancillary routes and dead-ends. But this map also reveals opportunities to use recessive patterns in Albertan thinking that surface even as people struggle to make sense of addiction. Albertans know that development matters and believe that experiences matter, but they are missing an essential process piece, and struggle to understand *how* theses determinants are connected o toutcomes. It is this lack of specificity that leaves them vulnerable to unproductive and stereotyped considerations about what addiction is and what causes it. Unless communicators fill this hole, the public will bring their own dominant cultural understandings to this task – an event our research shows is highly problematic for communicating about addiction science and policy.

Further, although Albertans asserted a need for interventions that might address the root causes of addiction, they were unable to grasp what those might be and how such interventions would work. To begin to bridge the gaps between "what it is" and "how it happens," communicators can rely on the core story of development and enhance it further with the idea of Brain Faultlines.

Albertans have virtually no access to a public discourse that treats addiction as an issue of *science*. We know from FrameWorks' research on early child development and mental health that Canadian media are, in those cases, largely dependent on scientists and researchers as storytellers. [46] This presents an immediate opportunity for those scientists and researchers who study the neurobiology of addiction to be recruited as public translators of the science of addiction. This affords additional opportunities for authentic voices, practitioners, and community-based health advocates to learn and embrace a science story. Without a translation of the science that situates addiction as rooted in neurobiology and shaped by environments and experiences, and for which social and provincial resources can impact course and treatment, the more destructive cultural models outlined here will prevail and inhibit understanding. The good news for all those who would engage on this topic is that even a small dose of reframing – i.e., the right values at the top of the communications, the addition of a brain-based metaphor – demonstrates substantial impacts on public understanding of addiction and support for public programs and policies. The ball is in our court.

Appendix A

The following research reports have been published by FrameWorks Institute (Washington, DC) as part of this inquiry.

» **Rounding Up the Associations: How Perceptions of Addiction Are Recruited. Kendall-Taylor, N. (2010).** This report examines how experts and the Albertan public understand and talk about addiction, including topics of prevention and treatment. FrameWorks compares these expert and public understandings in order to "map the gaps" that exist between these groups. These "gaps" represent specific areas where reframed communications can bridge expert and lay understandings to improve and encourage new ways of thinking about the science of addiction and the effectiveness of evidenced-based programming initiatives.

» **Scientists, Holy Terrors and Lax Parents: How the Alberta Media Tell Stories About Early Child Development and Its Disruptors. O'Neil, M. (2010).** As part of a broader look at media portrayals of early child development and child mental health, **t**his report examines the media presentation of issues related to addiction, by identifying and documenting the way existing frames about addiction are embedded and presented to the public. The report finds different patterns of coverage on addiction, including messengers. More than 221 print and broadcast stories are coded and analyzed for their impact on public thinking.

» **Changing Addiction From A "Sin Problem": Peer Discourse Sessions on Addiction in Alberta, Canada. O'Neil, M. (2010).** This report details the research findings from eight Peer Discourse Sessions conducted on addiction by the FrameWorks Institute with groups of civically engaged Canadians. This report offers an interesting contrast to the individual interviews, revealing how people in group situations share their implicit assumptions and entrenched understandings about issues related to addiction, including their views on individualizing causes of addiction.

» **Moving North: Translating Child Mental Health Values and Models to Canada. Simon, A. (2010).** This report examines the effects of values on support for early child development and child mental health and addiction policies using an experimental survey design, and begins to document the importance values play in redirecting Albertan thinking on addiction.

» **Can Redirecting Values Increase Support for Addiction Policies and Related Issues? The Role of Values Framing. Simon, A. (2011).** This study uses an experimental survey design with a large, province-wide panel of Alberta respondents to test whether a specific set of values frames – Prosperity, Ingenuity, Prevention, and Interdependence – can effectively inoculate against prevailing attitudes on addiction, overcoming the dominance of individual responsibility and creating more support for addiction prevention, treatment, and policies that reflect the brain science.

» **Cracks in the Brain: Enhancing Albertans' Understanding of the Development Causes of Addiction, Through a Simplifying Model. Erard, M. (2011).** This report describes the investigation process and identification of a metaphorical model that enhances Albertans' understanding about what defines addiction, its causes, and possible treatment. The resulting metaphor – Brain Faultlines – was found to be highly successful as well in opening up opportunities for productive discussions involving social and systemic approaches to causation and remediation of addiction.

Appendix B

FrameWorks Institute's research with the National Scientific Council on the Developing Child has resulted in the articulation of an overall "core story," or key elements, of development. An explanation of the Core Story of Development can be found in FrameWorks' *Framing Early Child Development MessageBrief*, which can be found here:

http://www.frameworksinstitute.org/assets/files/ECD/ecd_message_brief_2009.pdf

The essential outline of the Core Story is as follows.

» VALUE: INGENUITY. Innovative states and communities have been able to design high-quality programs for children. These programs have solved problems in early childhood development and have shown significant long-term improvements for children – but many communities still don't have access to these innovations.

» *WHAT* DEVELOPS: BRAIN ARCHITECTURE SIMPLIFYING MODEL. The basic architecture of the human brain is constructed through an ongoing process that begins before birth and continues into adulthood. It is similar to the construction of a home: the building process begins with laying the foundation, framing the rooms, and wiring the electrical system, all in a predictable sequence. Early experiences literally shape how the brain gets built; a strong foundation in the early years increases the probability of positive outcomes. A weak foundation increases the odds of later difficulties.

» *HOW* IT GETS BUILT: SERVE AND RETURN. The interactive influences of genes and experience shape the developing brain. The active ingredient is the "serve and return" relationships children have with their parents and other caregivers in their family or community. Like the process of serve and return in games such as tennis and volleyball, young children naturally reach out for interaction through babbling and facial expressions. If adults do not respond by getting in sync and doing the same kind of vocalizing and gesturing back at them, the child's learning process is incomplete. This has negative implications for later learning.

» *HOW* IT GETS BUILT: CAN'T DO ONE WITHOUT THE OTHERS. You can't focus on developing just one part of the child without paying equal attention to the other capacities.

Cognitive, emotional, and social capacities are tightly connected throughout the life course. Being an interactive organ, the brain utilizes some functions to enrich others. Language acquisition, for example, relies on hearing, the ability to differentiate sounds, and the ability to pay attention and engage in social interaction.

» *HOW* IT'S DISRUPTED: TOXIC STRESS. Chronic stressful conditions such as extreme poverty, abuse, or severe maternal depression – what scientists now call "toxic stress" – can also disrupt the architecture of the developing brain. This can lead to lifelong difficulties in learning, memory, and self-regulation. We know that children who are exposed to serious early stress develop an exaggerated stress response that, over time, weakens their defense system against diseases, from heart disease to diabetes and depression.

» *WHAT* ARE THE CONSEQUENCES: PAY NOW OR PAY MORE LATER. Trying to change behavior or build new skills on a foundation of brain circuits that were not wired properly when they were first formed requires more work and is less effective. Remedial education, clinical treatment, and other professional interventions are more costly and produce less desirable outcomes than the provision of nurturing protective relationships and appropriate learning experiences earlier in life. The exaggerated neurological response to toxic stress never goes away, with costly consequences for both children and society.

» *WHAT* ASSISTS WITH OPTIMAL DEVELOPMENT: EFFECTIVENESS FACTORS and RETURN ON INVESTMENT. We can measure "effectiveness factors" that often make the difference between programs that work and those that don't work to support children's healthy development. Without these effectiveness factors, children can spend many hours in a program, but not show many positive outcomes. In addition, we can evaluate the efficiency of programs for young children by comparing the benefit of the investment to the cost. This allows for a reliable comparison between programs that don't improve child development and those that show real results.

ENDNOTES

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