Roots of Empathy

RESEARCH SYMPOSIUM

Toronto, Canada   APRIL 26-27, 2017

PROCEEDINGS

Roots of Empathy
Racines de l'empathie

www.rootsofempathy.org

Introduction

The 2017 Roots of Empathy Research Symposium was an invigorating gathering in Toronto, Ontario, Canada. Scientists and experts from Canada, USA, UK, and Europe shared research and their profound insights on the overarching theme of well-being. Dr. Dan Siegel opened the symposium with a powerful keynote on taking an interpersonal neurobiology approach to resilience and empathy. Dr. Michael Ungar, Bart Weetjens, Dr. Lise Eliot, Mary Black, Maurice Meehan, and Dr. Joshua Aronson shared their fascinating research on the social ecology of resilience, saving humanity and promoting well-being through partnerships with communities, brain and gender in infant social development, improving outcomes using a systemic strategic framework, and the science of helping children become happier. Mary Ito, former host of CBC's Fresh Air, moderated a captivating panel discussion with David Bornstein, Sharon Avery, Richard Steele, and Paul MacMillan on the intersection of business, government, philanthropy, and journalism in tackling social problems. Sophie Grégoire Trudeau, wife of the Prime Minister of Canada, shared a special message to welcome the delegates to the 2017 Research Symposium.

Mary Gordon
Founder/President

Lisa Bayrami, PhD
Director of Research

An interpersonal neurobiology approach to resilience and the development of empathy

DAN SIEGEL, MD

Clinical Professor of Psychiatry
UCLA School of Medicine
Founding co-director of the Mindful Awareness Research Center, UCLA

We will dive deeply into the notions of empathy and resilience and look at how the Roots of Empathy program is doing a profound service to the children who are fortunate enough to participate in the program and their wider communities that benefit. I had the opportunity to visit a Roots of Empathy classroom and see the incredible moment when the children in the classroom connect with the baby. This continues through the

Dan Siegel

first year of the baby's life and there are profound things that are happening in the Roots of Empathy experience. Why is the Roots of Empathy program so profound? To explore this, we need to understand the framework in which it works.

I work in interpersonal neurobiology, which means combining all the fields of science together – anthropology, sociology, psychology, linguistics, medicine, biology and physics – and looking at the common ground amongst all those fields. In my field, we see that the mind is not just brain activity. What I will tell you about Roots of Empathy comes from this perspective. What happens in the "between-ness" of the baby and child in the Roots of Empathy classroom? And what happens within the person? What is developing and changing? To understand, we need to explore interpersonal neurobiology.

Let's explore the statement that the Roots of Empathy intervention program is going to alter the development of the children who participate. How will they be different? What is actually happening? It's a connection. There is eye contact and emotional contact which is an exchange of energy that is light and sound. Communication can be defined as energy and information flow. Roots of Empathy gives an immersion in an energy and information flow of another kind then what they typically receive in the classroom.

> *"The Roots of Empathy program teaches children how to create a world that is gentler and more compassionate"*

Energy and information flow occurs both between people and within us. The child in the Roots of Empathy classroom is having to attend to non-verbal forms of communication. These non-verbal forms of communication (e.g. eye contact, facial expression, tone, posture, gesture, timing and intensity) are the starting points for Roots of Empathy. The next step is when the Instructor leads the children to then reflect with words what the baby is experiencing. Learning these non-verbal signals, and defining what the baby's attention and intention are become the building blocks that humanity has used over the ages to transfer consciousness of our humanity and maintain just and civil societies.

Humans have an unusual history of alloparenting. We have the capacity to attach not just to our parents but also to others in the community. This has had a significant impact on how we have evolved to be collaborative. In order to do this, we must be able to know the mind of another; specifically, what is holding their attention, what are their intentions and what are their emotions that will drive behaviour.

There are five forms of empathy that are all reinforced by Roots of Empathy.

1. Emotional resonance
   - Feel the feelings of another person
2. Perspective empathy
   - See the world as another does
3. Cognitive empathy
   - Realize that memory and emotion influence our present moment
4. Empathic concern
   - Synonym for compassion
5. Empathic joy
   - To be joyful at someone else's positive experience

Empathy is critical to be able to understand that "self" does not need to be limited by the boundaries of our skin and is not a singular verb. This concept of self as singular kills our sense of belonging and inhibits our capacity to connect with others and build community. We need these experiences of interconnection to change the experience of inner awareness.

This is evident when interviewing children in grade 8 who had participated in Roots of Empathy. They had respect for each other's perspective, honoring the differences and promoting linkages; most importantly, they had internalized that self was not just separate. Roots of Empathy promotes the development of mindsight- empathy for the life of another.

What is the role of neurobiology? The nervous system can be considered the social organ of the body and is influenced by both genetics and experience. There are 2 types of growth in neurobiology; experience expectant growth (e.g. lights shining into eyes triggers development) and experience dependent growth (e.g. riding a tricycle, not everyone will have this experience). We do know that neurons that fire together, wire together and where attention goes, neuron firing flows. Mindsight may be experience expectant growth so we can develop circuits for empathy and Roots of Empathy promotes this.

The differentiation and integration of neurobiology is critical for energy and information flow. This is promoted by attachment during infancy. Relational integration stimulates the growth of neural integration. When a system in unintegrated, the person can't differentiate their ideas from another's.

We are all deeply interconnected as part of energy and information flow. We are all a part of the system of interconnected neurobiology. If meaning, connection, resiliency and empathy are what you are looking for, Roots of Empathy gives you the roots of how that can be created because you are stimulating all this integration both within and between. The Roots of Empathy program teaches children how to create a world that is gentler and more compassionate, both to be in and for future generations.

Classroom teacher, Tom Veenstra, and his grade 7/8 students from Market Lane Public School shared their deep reflections on the impact of Roots of Empathy

Intersection of business, government, philanthropy and journalism in tackling social problems

Panel discussion
Moderated by Mary Ito, former host of CBC Radio's Fresh Air

DAVID BORNSTEIN

Co-founder, Solutions Journalism Network
Co-author, "Fixes" column in The New York Times

RICHARD STEELE

Principal,
SYPartners

PAUL MACMILLAN

Strategy and Operations Consulting Leader,
Deloitte Canada

SHARON AVERY

President and CEO,
Toronto Foundation

Mary Ito moderated a panel discussion on the intersection of business, government, philanthropy and journalism when tackling social problems.

What brought about this intersection? What role has social entrepreneurship played in this intersection?

David Bornstein:
Social entrepreneurship brought these stakeholders together and created this intersection. Whereas 30 years ago, entrepreneurs would bring their ideas to institutions, in the last few years, the field of social entrepreneurship has evolved into an ecosystem where people work within existing institutions as "intrapreneurs". Integration is the way things are now moving.

Paul Macmillan:
Social entrepreneurship is a massive field now. There is a trillion-dollar economy, some for profit, some non-profit, and the partnerships between these, who undertake activities with the explicit objective of improving social outcomes.

What are examples of these types of partnerships?

Sharon Avery:
A great example of modern social partnerships would be the Omega Foundation's SmartSaver program. It involves government, private sector partners (the banks), social sector, individuals and families and a private foundation catalyst. The problem this partnership is solving, is a lack of uptake from low income families, of the Canadian Learning Bond, to start RESP saving's accounts for their children. Omega reduces barriers to participate by partnering with grassroots social service organizations and private sector, to leverage $1B in available government money. Since 2012 they have increased the percentage of eligible families who opened RESPs from 10% to 33% nationwide.

Richard Steele:
From the 70s we have raised generations of social entrepreneurs. I am very optimistic about the wave of innovation that is coming where the core of businesses will include social entrepreneurship. This is beginning to happen in ways that profoundly impact people. Using IBM as an example:

- IBM is partnering outside of its core business with schools and using their reputation and assets to give access to mentoring and employment opportunities in high growth areas of the economy. Because it is IBM, it can do policy work to change the workforce development.
- There is a profound shift from marginal to finding ways of remaking the core business and putting it to work.

Is there a problem with profit based businesses embracing the social entrepreneurship movement?

The panel was in consensus that these were not at odds with each other. In the US, the B Corp laws are in place to protect against shareholders suing for this reason. In fact, companies with social consciousness do equal or better in profit outcomes. We do know that in order to weather a recession, the social entrepreneurship needs to be at the core of the business to last. The concept of "courageous philanthropy" was introduced, to explain those who invest in a new idea before others believe in it.

How does the work of social entrepreneurship continue?

In both business and society, real life is about relationships. We don't need everyone to invest in social entrepreneurship initiatives, only 1%-2% of people can make a huge difference and empathy is part of it.

Richard Steele reflected that in the successful NGOs where he has worked, they unashamedly challenged the social norms and codified the intellectual practice of social entrepreneurship. The panel agreed that social entrepreneurship is ubiquitous, spanning industrialized Western countries to microloans in third world countries.

How does this intersection impact philanthropy?

Sharon Avery shared that the percentage of children in poverty in Toronto hasn't changed in 15 years, yet Ontario holds 46% of the wealth. We need to use this data to shift people from institutional giving, and consider issue-based philanthropy. Paul Macmillan shared an example of social assistance programs which are growing at 2-3% the rate of healthcare. This is an area that could benefit from experimentation to improve outcomes yet it is difficult to gain political will for change and it is hard to see how to ask philanthropists to invest in poverty. There have been partnerships in Canada where philanthropic donations have been structured so that they are triggered by government achieving pre-set goals in health care.

What role can journalism play at the intersection?

David Bornstein shared details about the Solution Journalism initiative. This initiative aims to change the narrative of journalism from focusing primarily on the negative. Instead, Solution Journalism creates activism pressure by making the positive visible and reporting on information that betters the community. The BBC has made this change and seen both shares and readership increase.

What are the challenges for partnerships forming at the intersection through social entrepreneurship?

The panel was optimistic that any challenges could be overcome. While not worried about scaling, there is a need to tie global progress to local progress ensuring partnerships are creating programs and initiatives that tie global improvement to local improvement. This will require collaborative models and a willingness to incorporate what others are doing as well as best practices. For governments, this will mean being aware and able to take advantage of public and private partnerships including philanthropy.

David Bornstein, Sharon Avery, Paul Macmillan, and Richard Steele shared their insights on tackling social problems in a captivating panel discussion moderated by Mary Ito

The social ecology of resilience: families, schools and communities

MICHAEL UNGAR, PhD

Canada Research Chair in Child,
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Director, Resilience Research Centre
Dalhousie University

What makes us resilient? The quote "You can't stop the waves but you can learn to surf" from John Kabat-Zinn is a good example of resiliency but having a surfboard, a coach and a lifeguard makes it much easier to surf! Resiliency is an emerging field of study. We know resiliency is not just inside the person. The 2008 British Columbia Adolescent Health Survey found that school connectedness decreased suicidal ideation in children who had been physically or sexually abused.[1] This is the protective effect of resiliency.

Michael Ungar

"Resiliency, in the applied sense, can be defined as the ability to navigate and negotiate to get what you need."

What is resiliency and how can we assess it? In the context of exposure to significant adversity, psychological resiliency is the capacity of individuals to navigate their way to the psychological, cultural and physical resources that sustain their well-being and their capacity, individually and in groups, to negotiate for these resources to be provided in culturally meaningful ways. How do we assess resiliency? The diagnostic criteria are broken down into 3 domains as in table 1.

The larger scale studies on resiliency have found that neurological integration is impacted by the interconnectedness between the child/family/mother/school/community. The level of interconnectedness required means that what children need to become more resilient or navigate through a trauma depends on the social and cultural contexts. This is an area where Roots of Empathy can provide direct training by talking about resiliency and citizenship. Additionally, there are global themes that are emerging in areas that are likely to predict resiliency.

Table 1 – Diagnosis of Resiliency

Domain 1: Assess adversity	Domain 2: Assess resilience	Domain 3: Multidimensional considerations

• Severity
• Chronicity
• Ecological level
• Attributions of causality
• Cultural and contextual relevance
	• In low risk contexts, assess individual qualities (temperament, personality, cognitions)
	• In high risk contexts, assess both individual qualities and resource use and availability
		• Temporal
		  – Sociohistorical
		  – Developmental
		• Cultural

"Roots of Empathy is seeding the foundational stones for a more resilient community."

The 9 elements that are likely contributors to resiliency and that all children should have access to are:

- Structure
- Consequences
- Parent-child connections
    - This is not exclusive to the mother but includes father and other family members
- An abundance of strong relationships
    - This can allow child to get a powerful sense of identity and mentorship apart from the parent
- A powerful identity
- A sense of control
- A sense of belonging/culture/spirituality/life purpose
- Rights and responsibilities
- Safety and support

Many of the above factors can be addressed by governmental policy and good social intervention. Consider the story of Japan after the tsunami disaster occurred. Many children survived as they were inland at school at the time of the disaster. How could resiliency be facilitated in this situation? NGO and governmental partnerships allowed the schools to be back up and running 3 weeks post-tsunami. This helped tremendously by providing a sense of continuity.

Summary

Young people who are under high levels of stress, cope better when they are able to navigate and negotiate effectively and access resources that are culturally and contextually meaningful. Further research is needed to ensure that optimal interventions can be given to children with the goal of increasing resiliency across the lifespan.

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1 2008 British Columbia Adolescent Health Survey

Training rats to save human lives, and training humans to save humanity

BART WEETJENS

Founder of APOPO

Landmines kill approximately 9 people per day worldwide including many children. They further impact lives by cutting off access to markets, schools, water and farmland and impeding development. While travelling in Mozambique, I saw subsistence farmers in small villages, where everyone, right down to children and grandchildren, were all dependent on food aid. This was a fundamental injustice; they could not farm on the landmines and they could not clear the landmines on their own without expensive technology. The landmines were a scourge and a structural barrier to any development.

Bart Weetjens

My story is how social entrepreneurship by the APOPO non-profit organization is harnessing a low-tech solution to save lives in Africa by training rats to detect landmines in order to clear land and safely return it to use by the local population.

FIGURE 1: The Impact of Apopo Hero Rats
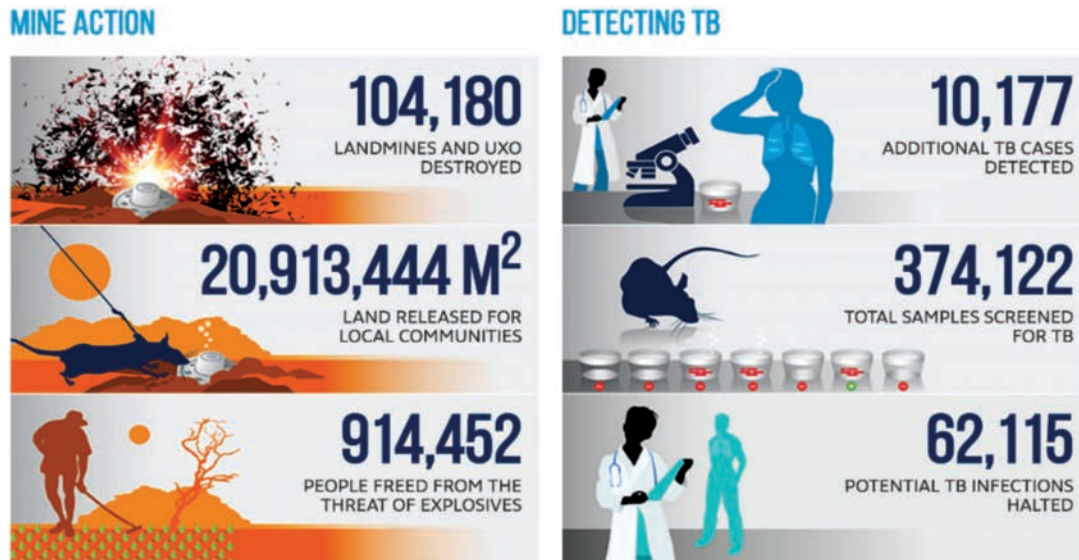
What are Hero Rats?

Rodents represent more than 40% of animals in the world and while they have been accused of many things, they have lived in symbiosis with humans for millennia.

The use of trained Hero Rats is an elegantly simple, low-tech solution to a complex problem. Rats are an ideal partner for landmine detection; they have a highly developed sense of smell, are too light to set off landmines and are able to transfer between trainers.

The Hero Rats are African pouched rats with a lifespan of 6-8 years and are a locally available and sustainable resource easily transported from site to site. Similar to why they are often used for research, the rats can be kept in high numbers with simple care and little healthcare needs.

Rats have an impressive ability to smell with a higher ratio of neurons dedicated to olfactory use compared to dogs and they receive 80% of their perception from olfaction. This makes them ideal for landmine detection. The rats are not harmed in the training or subsequent landmine detection; we work in respectful partnership with the Hero Rats.

How do the rats detect the mines?

The rats are trained to systematically walk up and down the land being cleared and use their sense of smell to find landmines. When they find a mine, they signal by scratching. The rats are then rewarded with bananas and peanuts—they literally work for peanuts!

How are the rats trained?

Training a Hero Rat is a 9-month process. From birth, the pups are exposed to mobile phone music and all kinds of noises and stimuli that normally, from an evolutionary point of view, they would stay away from. Essentially, the rat pups are learning that humans are friends. There needs to be a bonding between the rats and their trainers.

Pavlovian training techniques are used where the rats are trained that every time they hear a click, they will receive food – in their case, mashed bananas and cereals. The pups quickly learn that a click means food and this creates a language between the animal and the trainer.

In the next stage of training, operant conditioning is used to train the rats to first smell and then correctly identify explosives in piles of dirt. The "click and food" system continues to reward positive behavior or correctly identified explosives. The rats are also trained to be able to walk in a harness outdoors.

Once the Hero Rats are able to walk an 8-square meter plot and locate 8-9 landmine targets consistently, they undergo the international land mine accreditation test and are then licensed to work for 6 months.

Once licensed to work, a small unit of Hero Rats can make clearing much more efficient and cheaper. The rats work very fast compared to the traditional techniques and can support a large mine clearing area. In Mozambique, the Hero Rats were able to clear the Gaza province of land mines 1.5 years ahead of schedule.

Using Hero Rats to detect tuberculosis (TB)

Detecting TB is possible with the Hero Rats. Sputum samples are collected, inactivated and then screened by the Hero Rats who are trained to identify TB based on smell.

Using this cost-effective health intervention, over 374,000 samples have been tested and 62,000 potential TB infections halted and 10,000 cases of TB detected.

The Hero Rat accomplishments

APOPO currently employs over 650 people in Angola, Mozambique, Ethiopia, Tanzania, Cambodia and Laos who work in partnership with the Hero Rats. The outcome of the partnership between the Hero Rats and humans has been life-changing. The trainers, who are local inhabitants, gain expertise in animal training and are employed in areas where employment is scarce.

Together, the Hero Rats and APOPO have cleared over 20 million square meters of land that has given nearly 1 million people their land back without threat of explosives and prevented 62,000 potential cases of TB. The impressive story is that their work continues.

Brain and gender in infant social development

LISE ELIOT, PhD

Professor of Neuroscience
Rosalind Franklin University of Medicine & Science
Chicago Medical School

Lise Eliot

Despite the popular belief that "male brains" and "female brains" are distinctly different, MRI studies reveal far more similarity than difference between the sexes. Whether we look at the size of specific brain structures, such as the amygdala, or the activity of the brain during specific mental tasks, such as language, gender differences are very subtle. Unfortunately, this is not the way most people think about gender, in part because scientists get a lot of press any time they find a brain difference, no matter how small.

One researcher who has gotten considerable mileage out of studying gender difference is psychologist Simon Baron-Cohen. He has written, somewhat provocatively, that the "female brain is hardwired for empathy [while the] male brain is hard-wired for understanding and building systems." However, the actual data don't support this claim. Meta-analyses of gender difference in empathy found only a modest difference in adults (d=0.4), and a trivial difference in children (d=0.16), while functional MRI finds no difference in brain activity when men and women are empathizing with other people's pain. These findings are all more consistent with social learning than "hard-wiring" as the basis for gender differences in emotion. Boys are taught to be tough and girls are taught to be tender, such that tiny differences in infants grow into more troublesome gaps by adulthood.

Brain studies similarly point to a critical role of social interactions and neuroplasticity in the development of empathy. The "social brain hypothesis" holds that a major driving force behind human evolution has been the benefit of social cohesion. Empathy is exhibited by many other mammals and is the glue that holds groups and families together. We also know that the parts of the cerebral cortex involved in social behavior have undergone dramatic expansion over evolution, culminating in the outsized human cerebral cortex. Nonetheless, social brain areas depend critically on early life experience to wire up according to their evolutionary potential. Just as the visual brain requires that babies experience normal visual stimulation

in order to be properly configured, verbal and emotional communication depends on healthy relationships and countless social interactions in order for its underlying circuits to develop optimally.

Research with infants finds that we are "born to bond".

Newborns are pre-adapted to social stimuli, preferring the human face and voice over all other types of stimuli. Imitation also begins at birth, a potent form of learning that allows deep communicative exchange with others. By 2-3 months of age, most babies engage in a kind of vocal turn-taking with caregivers known as "protoconversation." These exchanges promote babies' affective attunement with others, and it is not long before babies are aware of other people's intentions and demonstrate a preference for "good guys"—i.e. characters who treat others in a pro-social, rather than selfish manner.

This research has challenged the longstanding view that children acquire their sense of right and wrong from parents' praise and punishment. Prosocial preferences are seen as early as 3 months of age. By 12 months, we see that babies will spontaneously help others, without any overt reward or punishment. Thus, it appears that very young children genuinely like to help others, probably because this is the behavior that they've seen modeled by their caregivers throughout their short lives.

These findings about early social orientation apply equally to boys and girls. One study published in the year 2000 got a lot of attention for claiming that newborn girls are more interested in faces than newborn boys. However, this experiment had two significant flaws that should have precluded its acceptance in a peer-reviewed journal: 1) the researchers were not always blinded to the infants' gender and 2) the researcher herself was the face that the infants were looking at, so it is possible she was unconsciously cuing girls and boys differently. This study has not been replicated in the 17 years since it was published and in fact contradicts several prior studies that found no difference in social preference between newborn boys and girls. By 4 months of age, baby girls do engage in more eye contact with caregivers than baby boys; however, this could reflect the fact that parents themselves engage differently with infant boys and girls from birth.

Such findings raise discussion of the role of social learning vs. biology in gender differences. Prenatal exposure to hormones has been proposed to account for boys' slightly later language development. Here again, the data are highly conflicting, with some studies finding an effect of testosterone on brain lateralization and other studies finding an exact opposite effect. We do know, however, that mothers talk and read more to daughters than sons, so thus far, the evidence favors nurture over nature as the basis for gender differences in language development—an important fact for parents of boys to keep in mind! In sum, social learning is a key component of gender development. There is no such thing as "gender neutral rearing" –even mother rats treat their male and female pups differently!

Sex is biological; gender is cultural.

Like language-learning, gender learning begins at birth, thanks to the different names, clothes, pronouns, toys and other accoutrements we ascribe to girls versus boys. Parental gender bias is also evident at birth, judging by large anonymous Google searches that show parents of boys are more concerned about their child's intelligence, whereas parents of girls are more concerned about their child's appearance (beauty and weight). These differences are reinforced once children enter same-sex peer groups, as early as age three, when in-group preference and out-group chauvinism promote the intensification of gender roles (such as girls' "pink frilly dress" phase). Specifically, "boy culture" promotes visual-spatial and physical skills (on the positive side) and physical aggression (on the negative side). "Girl culture" promotes relational, literacy, and self-regulatory skills (on the positive side), and self-objectification (on the negative side). Gender segregation happens whenever the group of kids is large enough (e.g., in school, but less often in families). One study in preschools incorporated a structured boy/girl buddy activity every day, along with teacher training in gender bias and an emphasis on sharing and cooperation. These interventions resulted in less aggression, less exclusionary behavior and better social skills among both boys and girls.

Summary

Neuroscience research does not support the idea that the "male brain" and "female brain" are categorically different from each other. Brain gender differences are small and statistical, with much more overlap than difference between groups. Moreover, brain differences in adults are shaped by the decades we all spend living and learning in distinctly male or female cultures. This applies equally to empathy and communicative skills. Faulty beliefs about brain gender difference are harmful to both boys and girls and are impeding progress toward a more just, harmonious, and productive society.

Improving outcomes: reflections from Northern Ireland

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The 1.85 million people living in Northern Ireland are a population that has experienced significant change since the end of the Conflict. While the population is aging and diversity is increasing, the legacy of the Conflict continues to affect the people of Northern Ireland. There are profound patterns of inequality in health (e.g. infant mortality, birth weight, educational attainment) that are large and persistent within Northern Ireland and the rest of the UK. The greatest single cause of death in 15-19 year olds in Northern Ireland is suicide; the highest rate of suicide in the UK as well as conversely the happiest 15 year olds in the UK. Lasting and meaningful change requires both public health and education solutions that fit the context; in Northern Ireland, this is poverty, inequality and the legacy of conflict.

The Public Health Agency in Northern Ireland has developed a coordinated approach based on Sir Michael Marmot's analysis where all policies and departments are working towards the same common outcomes. The Making Life Better Public Health strategic framework has 6 themes:

- Giving every child the best start
- Equipped throughout life
- Empowering healthy living
- Creating the conditions
- Empowering communities
- Developing collaboration

An outcome based accountability framework is now part of the Northern Ireland Programme for Government that includes both population accountability (e.g. the well-being of whole populations such as communities, trusts, cities) and performance accountability (e.g. the well-being of customer populations such as services, agencies etc.). This forces different kinds of conversations with partnering organizations with the key question being "Is anybody better off?"

The Public Health Agency champions and supports community development, recognizing the importance of sustainability and building on the strengths of the community. Examples of these community based programs are:

- 'Take Five" program (based on The New Economics Foundation) that focuses on 5 ways to well-being: connect, be active, take notice, give and keep learning
- "Flourish" program that partners with faith based organizations for suicide prevention and emotional well-being
- Lifeline Service of 24/7 telephone crisis and support service
- Small grant programs that are community led initiatives such as green spaces or provide children's art programming

Improving outcomes: reflections from Northern Ireland

*The Roots of Empathy program has been implemented for the last 7 years.
Currently 1 in 7 children in Northern Ireland receive the Roots of Empathy Program
in 130 programs across the country.*

The adverse childhood experiences (ACEs) data extrapolated to the UK underscored the importance of supporting parents and families with exposure to ACEs. Two projects that the PHA has supported specifically to prevent ACEs and support parents are:

- The MACE project
  - Targets 3,000 families with a $7.5 million budget
  - Goals are to:
    - Establish an adversity matrix and risk stratification tool to allow early identification of vulnerable children
    - Develop a range of tools and interventions for vulnerable families

- Guidance-based parenting programs including Incredible Years
  - Targets parents, children and teachers with a 2-pronged approach: prevention and treatment
  - Full suite of programs from infancy to early school-age
  - Goal is to promote sustainable parenting skills in order to improve child behaviour outcomes

We have also developed and implemented an Infant Mental Health framework (www.publichealth.hscni.net/publications/infant-mental-health-framework-northern-ireland) to ensure that all children have the best start in life by prioritizing and supporting the development of positive social and emotional well-being. The framework has 3 themes:

- Evidence and policy
  - Ensuring that policy, practice and service development are informed by the most up to date evidence on child development and infant mental health

- Service development
  - Highlights the importance of appropriate services, both universal and targeted, to support parents and hence promote healthy social and emotional development of infants

- Workforce development
  - Prioritises the need for practitioners to be fully equipped to promote positive social and emotional development, to identify any issues at an early stage, and to seek timely help for families at risk

The learnings we have gained at the PHA are the importance of building partnerships across services, sectors and communities. Research plays an integral role both for establishments and locally based programs and collaboration between academics from a wide range of disciplines. We know that community engagement is essential. Programs need to be relevant to the local context and must be objectively assessed against outcomes with critical analysis of findings and a willingness to share and learn. Ultimately, we are aiming to build supportive community environments that create and sustain resilience and early development.
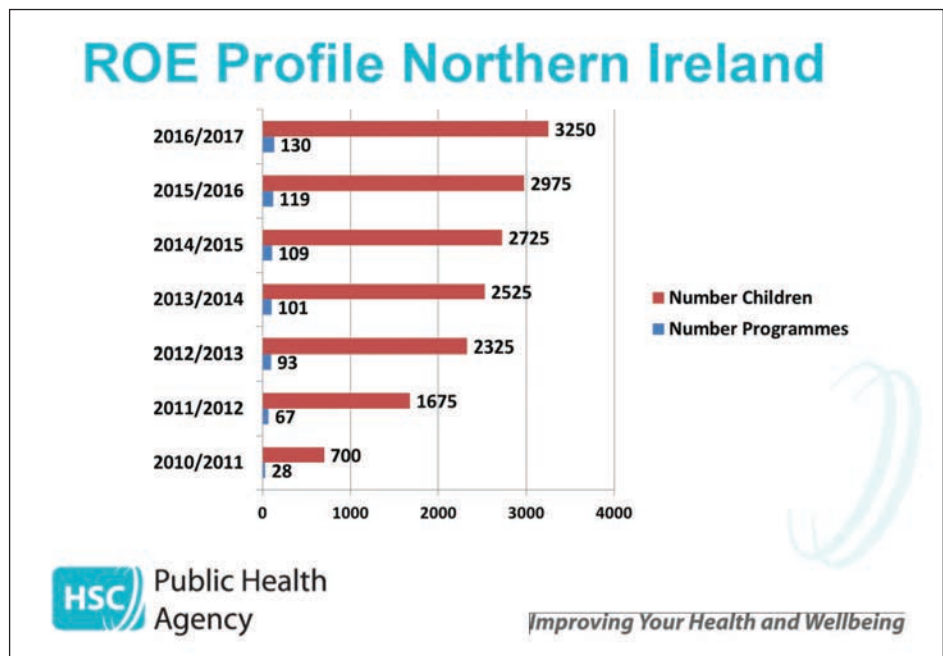
The elevation education: the art and science of helping children become smarter, nicer, and happier

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Joshua Aronson

What is the way forward in education? How shall we educate children and how do we best educate children who are economically disadvantaged? The challenge is finding the environment that brings out the best in children and then creating a pipeline that goes from small children right through to college.

Academic achievement isn't enough. Schools are in the business of making people not just educating. Schools need to help children become smarter, grittier, happier and nicer. The ideal is a school environment where you know within 10 seconds "this is where I want my kids". While the schools that excel in this regard are diverse in their philosophy of education (Waldorf, private, public), they are all places of empathy.

My social psychological training taught me to appreciate the fact that everything depends on context. Intelligence, curiosity, grit, teacher quality, parent quality… each of these is fragile and malleable and needs to be nurtured. Essentially, when we measure human performance, we're not just measuring what's inside the person; we're measuring the quality of the environment they're inside of. What a child needs is not a quick fix but rather a loving community around them. The best determinant of success is the number of powerful people who love you.

> *"We don't think about how they'll do on the test as much as we think about what kind of person they will be in ten years. That changes the way you think and act and teach."*
> – Dana McCauley, Principal, Crellin Elementary School

The factors that can contribute to IQ fragility are physical and psychological in nature including lead poisoning, malnutrition, toxic stress, mistrust and social exclusion. In a study on social exclusion, students who were led to believe they would one day lack friends lost significant motivation and intelligence on a test of reasoning.[2] Similarly, children who are in an unreliable environment have dramatically reduced self-control compared to children in a reliable environment in a test of self-control.[3] Identity threat – the fear of confirming the stereotype that you or people like you lack competence or worth – impairs the verbal test performance of African American students.[4,5] These studies show the impact of the environment on the child's IQ.

What children need are environments that are both warm and effective. The Crellin Elementary School is an example of a school that raised its score to near 100% percent proficiency on a year-end statewide test within an emotional climate of warmth. Dana McCauley, principal at Crellin, shares their method: "We get to know each child as an individual, find out what he or she needs, and then we do our best to give it to them." This attains academic excellence by building a community with empathy, compassion and opportunity; one where students support one another, and free labor is attracted and welcomed.

The core social motives seen at schools that elevate their students are belonging, trusting, mattering, understanding and controlling. They exhibit habits that include:

- A focus on belonging and inclusion
  - Building a group identity and forging a shared identity for the school community
  - "Relationships before rigour"
- Open love and familiarity with kids
  - Teachers socialize to build trust – their trust and bonds are reflected in children's improved test scores
  - Public displays of affection
    - ° Number of hugs witnessed per day at Crellin 98 vs. 4 at other schools
- Modeling curiosity and growth mindset
  - This needs to be shown not talked about as imitation is a key mode of learning; we need to embody the attitudes we want kids to adopt.
  - Choice and autonomy boost engagement
- Positive group identity – moral and academic
- Calming rituals (meditation, nature, animals)
  - Foster a deep connection to nature
  - Mindfulness programs have shown reduced aggression, increased self-control
- Age mixing
  - This is a critical component and brings out the best in everyone
- Growth mindset
  - The belief that you can – and should want to – make your brain smarter

Crellin Elementary elegantly satisfies the need for belonging, mattering, autonomy, trust, identity and competence with what I call 4-dimensional work. This is work that is meaningful, challenging, three-dimensional work that serves a pro-social purpose while building competence. Examples of 4-dimensional work includes beautifying the school every day by planting trees and producing and delivering food to the community.

We know the way forward in education — building school communities that have positive, warm emotional climates and the core social elements of belonging, trusting, mattering, understanding and giving children control.

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Sophie Grégoire Trudeau welcomed delegates to the 2017 Research Symposium

Roots of Empathy
Racines de l'empathie