Is Poverty the Diagnosis?:

The Hidden Impact of Generational Poverty in Developmental Disabilities and Mental Health

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Children's Mental Health: Is poverty the diagnosis?

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"There is no keener revelation of a society's soul than the way in which it treats its children." Nelson Mandela

Learning Objectives

- To define poverty and generational poverty
- To understand the neurobiological effects of adversity.
- To understand how the effects of poverty can *mimic and impact* developmental and mental and physical health conditions.
- To develop an understanding of how poverty changes behaviour and how a clinician's understanding of this can lead to improved outcomes for patients.
- To consider the role of the health care provider in advocating for people experiencing poverty.

We've been thinking about this for a long time..

"It is easier to build strong children than to repair broken men."

Frederick Douglass (1817–1895)

"Obviously the cycle of poverty and deprivation can and will be broken and broken quickly."

Simon and Gillian Yudkin
Develop. Med. Child Neurol. **1968**, 10,569-579
Poverty and Child Development

"…The authors concluded that familial mental retardation is…produced by a number of interacting disadvantages, social, educational, psychological and neurological.

They also suggest that 'any effort to change the environmentally deprived person must include intensive work with a total family, providing better housing, securing stable employment, improving the health of all members of the family and upgrading the educational experiences of individuals."

Kugel, R. B.. Parsons, M. H. **(1967)** Children of Deprivation.
US. Department of Health, Education and Welfare.

Poverty and Childhood Health Outcomes

In 2012 the AAP released a policy statement entitled

Early Childhood Adversity, Toxic Stress, and the role of the Pediatrician: Translating Developmental Science into Lifelong Health

American Academy of Pediatrics

"When families can't afford the basics in life, it negatively affects their health. Poverty can inhibit children's ability to learn and contributes to social, emotional, and behavioral problems. Furthermore, poverty is a contributing factor to toxic stress, which has been shown to disrupt the developing brains of infants and children and influence behavioral, educational, economic and health outcomes for years."

American Academy of Pediatrics, 2013

American Academy of Pediatrics

In 2017:

"the AAP now asserts that Adverse Childhood Experiences are the single greatest unaddressed public health issue facing the USA today."

Poverty in Canada

In 2010, the entire House of Commons voted to "**develop an immediate plan to end poverty for all children in Canada**".

More children and their families were living in poverty as of 2017

17.4% of Canadian children live in poverty[2]

37% of First Nations children live in poverty

1.1 million Canadian children experience food insecurity:

In food banks, 44% of those helped are families with children, and nearly half of these are two-parent families.[2]

[1]Statistics Canada CANSIM table 202-0802 LIM-AT 2011
2 Food Banks Canada 2013 HungerCount 2015

[2]2017 Report Card on Child and Family Poverty in Canada Campaign 2000

Child Poverty in B.C.

- 1 in 5 children live in poverty in B.C.
- Much higher rates in some pockets of our communities

Child Poverty in B.C.

- BC also had the worst poverty rate of any province for **children living in two parent families—14 %**

Generational Poverty

Generational Poverty

- Income insufficient to meet basic needs
- No one in the family has ever owned property
- Much less likely to have achieved a high school education
- No one in the family has benefited from education
- No one in the family has ever been promoted at a job
- No one has contacts who can help
- Primary focus is on survival, so things that don't relate to that are too abstract
- They often fear authority figures

Generational Poverty

"Poverty is seen by many as *a personal deficiency,* something to be blamed for. People in generational poverty internalize the blame and aren't really aware of the structural and systemic causes of poverty. The message is that if you work hard, you can attain anything, so if you are poor, you must not be smart enough or have worked hard enough.

You are just not enough."

Donna Beegle MSW, PhD, personal communication

Stress and Toxic Stress[1]

- Activation of the normal stress response leads to an increase in inflammatory mediators and stress hormones (CRH, cortisol, epinephrine and norepinephrine)
- In typical situations, the stress response is short-lived and the system goes back to a resting state. Normal levels of stress, buffered by supportive adult responses are positive in child development.
- Prolonged activation leads to changes in many organs, including the brain.
- Toxic stress: “prolonged activation of stress response systems in the absence of protective relationships”.

[1] Shonkoff, J.P. *The Lifelong Effects of Early Childhood Adversity and Toxic Stress,* Pediatrics. 2012; 129(1)

Neurobiological Mechanisms of Poverty and Toxic Stress

1. Effects of stress/adversity on the hypothalmic- pituitary (HPA) axis and Adrenomedullary system
2. Effects of stress/adversity on neuroanatomy.

Child development is affected by both biology and experience.

Epigenetics

Epigenetics is defined as a functional modification to the DNA that does not involve an alteration of sequence.[1]

Epigenetic modifications can be **transient and readily reversible** or more stable especially when linked to sustained environmental influences on phenotype, such as early experience effects or learning.

[1] Bagot R. C., Meaney M. (2010). *Epigenetics and the Biological Basis of Gene x Environment Interactions*, J Am Acad Child Adolesc Psychiatry, 49(8), 752-771.

Biological Mechanisms: Neuroanatomic Effects[2,3]

- Children living in poverty have reduced gray matter volumes in the frontal and temporal cortex and the hippocampus[1]
- Toxic stress impacts the size and function of key areas: amygdala, hippocampus and the prefrontal cortex
- Chronic stress of poverty is associated with an impaired ability of the prefrontal cortex to suppress the amygdala
- Prefrontal lobe dysfunction impairs executive control of affect regulation and impulsive behaviour

[1]Hair NL, Association of child poverty, brain development and academic achievement . JAMA Pediatrics 2015; 169:822-829

[2]Kim P et al. *Effects of childhood poverty and chronic stress on emotion regulatory brain function in adulthood. Proc Natl Acad Sci USA 2013; 110(46): 18442-18447*

[3] Blair C. et al. Salivary cortisol mediates effects of poverty and parenting on executive functions in early childhood

Biological Mechanisms: Neuroanatomic Effects

- Toxic stress affects the development of key areas of the brain needed for self-regulation and Executive Function and for learning (especially verbal learning)
- The longer a child experiences toxic stress, the worse the effect

Neurobiologic Effects: What does it look like in kids?

Toxic Stress

[1]The Lifelong Effects of Early Childhood Adversity and Toxic Stress, J. Shonkoff, Pediatrics, 2011

[2]National Scientific Council on the Developing Child. Excessive Stress Disrupts the Architecture of the Developing Brain: Working paper #3. Cambridge, MA: National Scientific Council on the Developing Child, Center on the Developing Child at Harvard University; 2005. Available at www.developingchild.har- vard.edu. Accessed March 8, 2011

[3]Neuroscience, Molecular Biology, and the Childhood Roots of Health Disparities: Building a New Framework for Health Promotion and Disease Prevention, J. Shonkoff and T. Boyce, JAMA 2009 301(21) 2252-59

[4]Conroy, Sandel, Zuckerman, *Poverty Grown Up: How Childhood Socioeconomic Status Impacts Adult Health,* J Dev Behav Pediatr 31: 154-160, 2010

The The Adverse Childhood Experiences (ACE) Study[1]

- Retrospective study of 17,000, mostly middle income Americans conducted from 1995-1997
- The focus was to analyze the relationship between **childhood trauma** and the risk for **physical and mental illness in adulthood**.
- A linear relationship between traumatic stress in childhood and poor physical, mental and behavioral outcomes later in life was found.

[1]Felitti et al, Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences Study, American Journal of Preventative Medicine, 14, 245-258

ACE Questionnaire

1. Verbal abuse?
2. Physical abuse?
3. Sexual abuse?
4. Emotional abuse/emotional neglect?
5. Neglect: food insecurity, lack of clothing, etc.?
6. Divorce/Abandonment?
7. Partner violence/threatened with a weapon?
8. Household member with alcoholism/substance use disorder?
9. Household member mental illness/suicide attempt?
10. Household member in prison?

- As your ACE score increases, so does the risk of disease, social and emotional problems.
- With an ACE score of 4 or more, things start getting serious.
- The likelihood of chronic pulmonary lung disease increases 390%; hepatitis, 240%; depression 460%; **suicide, 1,220%**.
- >4 ACEs has a stronger effect on causing cardiovascular disease than smoking

Poverty and Childhood Health Outcomes[1,2]

Children from lower income families and neighbourhoods have *higher* rates of:

- infant mortality and childhood illness
- developmental and neurological problems
- childhood hospitalizations, asthma, obesity and overweight
- intentional and unintentional injuries
- mental health problems

[1]Gupta, de Wit, McKeown. *The impact of poverty on the current and future health status of children*. Paedatr Child Health 2007; 12(8): 667-672

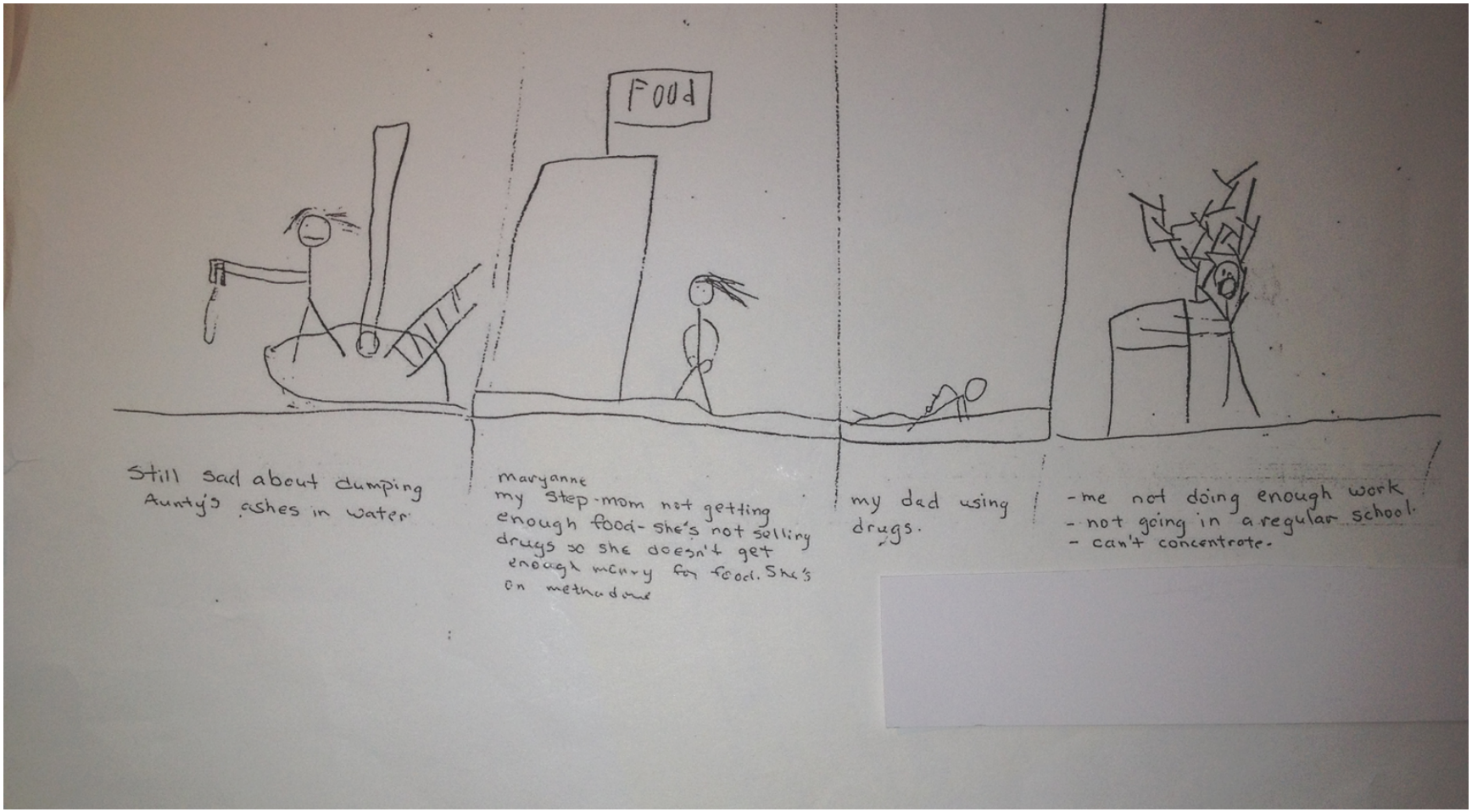
[2] Human Early Learning Partnership, personal communication, Dr. Clyde Hertzmann

Poverty and Childhood Health Outcomes

- Poverty during early childhood is associated with increased morbidity and decreased lifespan in ***adulthood***, and the association persists irrespective of the adult's present social status

Gary W. Evans and Pilyoung Kim, *Childhood Poverty and health: cumulative Risk Exposure and Stress Dysregulation; Psychological Science 2007 18*: 953

Is this really ADHD??



How does poverty influence mental health? [1,2,3]

- Chronic stress/epigenetics
- Not having basic needs met: nutrition, housing, safe neighbourhoods, adequate health care
- Family violence, parental divorce
- punitive parental behaviour, fewer positive experiences such as reading, face to face conversation
- Lack of "environmental complexity"-- the number of books and toys they possess, the amount of nurturing adult attention they receive, and opportunities (recreation, seeing new things, etc.)

[1]Farah, Shera, Savage et al; *Childhood poverty: Specific associations with neurocognitive development;* Brain Research 1110 (2006) 166-174

[2]Ellen Lipman and M. Boyle; *Linking poverty and mental health: A lifespan view*; The Provincial Centre of Excellence for Child and Youth mental Health at CHEO; Sept. 2008

[3] D. Francis; *conceptualizing Child Health Disparities: A Role for Developmental Neurogenomics; Pediatrics 2009; 124; S196*

DSM 5 Condition	Effects of Poverty
Depression	Loss of hope, lack of energy from poor nutrition, low self-efficacy, lack of opportunity leading to low motivation
Anxiety	Worry about hydro/phone being cut off, worry that authorities will take your kids, worry that you don't have food, worry that you missed health appointments due to transportation costs
Oppositional Defiant Disorder	Inconsistent responses from parents depending on their level of stress; lack of parenting skills 2° to parents' own childhood experiences, anxiety, hunger, stress and attachment issues.
ADHD	Chaotic home environment, poor nutrition, witnessing violence, worrying about mom, poor executive function secondary to stress, less exercise, time in nature.

DSM 5 Condition	Effects of Poverty
Learning Disorders	Less exposure to language, books, varied positive life experiences, sleep difficulties, increased screen time, increased family stress, poor nutrition. Decreased access to direct support to ameliorate learning disorder
Fetal Alcohol Spectrum Disorder	Increased peak blood alcohol levels secondary to poor nutrition, stress of poverty exacerbating executive function difficulties and leading to poor self-regulation, lack of access to early intervention
Intellectual Disability	Specific effects on brain development, poor access to early intervention to improve school readiness, association between poverty and exposure to a range of environmental and psychosocial hazards.

Anna and Eric

Anna is a 12 year old girl in grade seven at an inner city elementary school. She was referred for behavioural issues. She is aggressive with peers (hitting, scratching) and she attempted to choke her younger brother at school this year. She is very thin and a restrictive eating disorder has been queried. She was diagnosed with **ADHD** by a pediatrician for impulsive, disruptive behaviour and stimulant medication was recommended.

Eric is Anna's ten year old brother in grade five. He was referred because of academic delays secondary to poor attendance and mental health concerns. He told a teacher that he was going to jump from the third story of the school in an attempt to harm himself. He was referred to the mental health team for treatment of **depression**.

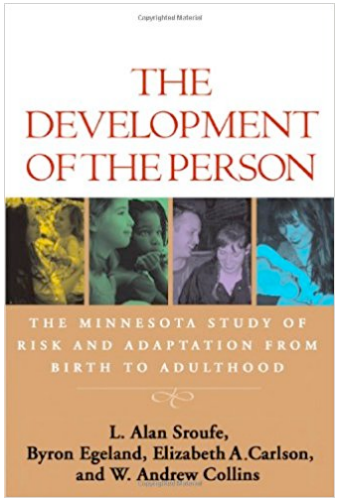
Family and Social History

- children were born to Kim when she was a teenager
- She dropped out of high school to raise them
- She has been diagnosed and treated with an SSRI for depression.
- She also has a 2 ½ yr old daughter who does not attend any early child development programs.
- She lives with her partner and father of the children, Jack. Jack has dyslexia and works as a roofer. He is not working currently because he can't afford the required steel-toed boots
- There are significant financial stressors. They live in a two bedroom apartment and run out of food every week.
- Jack has been violent towards Kim in front of the children.
- Social services have been involved for child protection concerns

The Minnesota Study of Risk and Adaptation from Birth to Adulthood

Emotional and Behavioural Disturbance "is created by the interplay of multiple factors operating over time, and links between antecedent conditions and disturbance are nonlinear. Disturbance is the outgrowth of patterns of maladaptation interacting with ongoing challenging circumstances in the absence of adequate support."

The Development of the Person,
L.Alan Sroufe et al.



Dr. L. Alan Sroufe: Minnesota Child Study

3 things that improved child developmental outcomes at any stage of childhood:

1. Relieve the stress of poverty
2. Connect parents to their children's school.
3. Connect parents to other people and services in their community.

How do we pull all this together into meaningful action?

- Poverty and its inherent stressors impact development, health and mental health in children and adults
- Poverty reduction/alleviation is a complex political issue
- What is the role for health care providers?

Are We Doing Enough? Canadian Pediatric Society

"In fact, 19% of children and fully half of status First Nations children now live below the poverty line in Canada. Among the many effects of low socioeconomic status is a strong association with poor health later in life. All Canadian children and youth deserve the same opportunities no matter where they live. The CPS urges governments at every level to work together and with allied stakeholders to eradicate family poverty." 2017

Resilience

"It's not something you're born with, it's something that gets built over time."

Dr. Jack Shonkoff

Let's start building!

My Background

Over 20 years of outreach developmental assessments to inner city school children led to the realization of:

- The impact of residential schools and other trauma that have erased memories and experiences of healthy families and parenting
- The impact of the stress of poverty on child health and development (direct impacts, epigenetic effects, etc.)
- The possibilities of what a steadfast, compassionate relationship might do to empower women to become healthier, especially if it is in the context of alleviation of poverty

Is it ethical to *not* do something?

- Could we “trick” a child’s brain into thinking it was “rich”?
- If we took away the stress, leaving a loving mother who was connected to caring people and other supports, what would happen to her and to her children??

What are the barriers?

- How do you learn to parent?
- How do you know what the characteristics are of a safe, stable and loving relationship?
- How do you know how to teach a child to ride a bike?

A year of questions

How many things do you know how to cook?

Do you have a library card?

Can you tell me the name of the person who loved you more than anything growing up?

How can I help you?

Observations

- In almost all cases, the child had an incredible connection to his mother, who loved him with all her heart, but it wasn't enough in the face of poverty.
- Children taken into foster care often don't have good outcomes and often return to their families, especially their mother, when they grow up.
- The most vulnerable children, in terms of genetic risk and parental capacity, were being raised in the context of unsafe housing, lack of access to recreation and poor nutrition. It just didn't make sense to expect healthy outcomes.
- Money wasn't going to provide the whole solution.

Inspiration for Advocacy

"The meaning of medicine is not science; it is service. It is not a competency; it is a way of life, the deep wish to make things better or larger than how you found them. Service is larger and older than science."

"They respond to suffering not in order to save the world, but simply because the s
others touches them and matters t

Rachel Remen M.

Mom to Mom
www.m2mcharity.ca

- Volunteer mentors are trained and paired with mothers living in poverty to establish trusting, compassionate relationships, alleviate poverty and promote healthy child development.
- M2M holds out an opportunity for women who haven't had many opportunities.
- It is an attempt to create the context for mothers to be the best they can be.

mom2mom

Results

- Mothers report that the best part of Mom to Mom is having someone they can text or call, who is reliable and stable (and doesn't have any power over them).
- Over time, the mothers are reaching out earlier to mentors for help and support
- Mothers are referring their sisters and friends
- Several families of children who would likely have gone into foster care are still with their mother
- Teachers are reporting that children are arriving better rested, nourished and ready to learn
- Mentors report a sense of personal growth and transformation
- Formal evaluation on-going

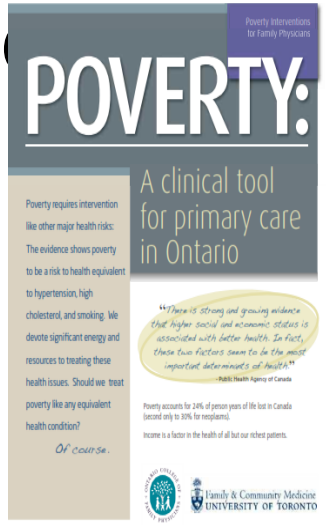
Results

- Moms are going back to finish high school and entering post-secondary education
- Moving into better housing
- Volunteering for Mom to Mom and other organizations

Anna and Eric continued

- Kim has been mentored for four years by two women
- Her partner is working after M2M got him outfitted. They are together and there has been no subsequent violence.
- Anna is attending high school and passing. She has no significant mental health issues.
- Eric is also attending school and doing well.
- Amanda attended StrongStart and is now in grade 1 with no developmental issues.
- Kim graduated with her GED and is making plans for further education. She is no longer on medication for depression.

Office-based Poverty Interventi



- Developed by Dr. Gary Bloch, family physician from St. Michael's Hospital in Toronto and published by the OMA
- Screens for poverty in each patient encounter like any other health-related risk factor
- Provides the foundation for targeted interventions to reduce the effects of poverty and risks of adverse health outcomes in low-income patients

Poverty Intervention Tools

1. **Screen Everyone**: “Do you ever have difficulties making ends meet at the end of the month?” (sensitivity is 98%; specificity 64%)
2. **Factor poverty** into clinical decision making like other health and patient risk factors
3. **Stay curious.** Assume that people are making decisions that seem right for them at the time.
4. **Intervene** by asking further questions: Start with, “what do you need?”, not “Here’s how you can be a better parent”.

Physician Advocacy: Practice Guidelines and Next Steps

1. Make the referral and booking process low-barrier and friendly.
2. Help families make and get to appointments.
3. Clinic setting needs to be welcoming, provide food and childcare.
4. Clinical interview needs to be compassionate, thoughtful, non-judgmental and supportive.
5. Ask about child maltreatment and take a supportive approach.
6. Go outside the traditional medical model and ask about food security, housing and financial pressures.
7. Fill out forms that help: disability tax credit, special authority forms, etc.
8. Write prescriptions for things they need such as strollers, bicycles, etc.
9. Connect families to people who can help with recreation.
10. Let the parent know that you aren't judging and that you are there to listen even when you don't have an answer.

Some Conclusions

- If we start to think of poverty (and toxic stress) as *health* issues instead of (just) social issues, we may be able to insist more strongly on appropriate treatment.
- It is unethical to treat symptoms of conditions while doing nothing to alleviate the underlying etiology.
- As health care providers, our voices matter. We have experience, research and credentials to back us and people/governments listen to us.

Hypothesis

If we can increase their sense of self and reduce their stress, parents will have the space to parent children who experience less trauma, more connection and are ultimately healthier and happier.

Thank you!