Childhood Aggression, Victimization and the Developing Brain

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Developmental – Different Perspective

• Troubled child understood as requiring educational, mental health, and relationship supports.
• Move away from seeing emotional and behavioural problems as a discipline issue
• Formative/educational consequences & restorative approaches
Why is it important to understand what is going on under the skin for aggressive and/or victimized children?

- Development occurs in context of relationships
- Adults are responsible for the quality of children’s relationships
- Understanding can change attitudes of parents, educators, coaches & move them to action
Aggressive children are not “just bad kids”…

They have missed important developmental opportunities in relationships.
What is Not Developing?

- **Behavioural regulation**: attentional, verbal, and social skills
- **Emotional regulation**: anger, anxiety, and arousal
- **Executive functioning**: perspective-taking & problem-solving abilities, consequence-based reasoning
- **Moral understanding**: empathy, respect, inclusion, and prosocial reasoning

All critical for successful social interactions, mental health and academic success
What is Developing?

Aggressive strategies -- in their efforts to thrive
Aggression can be “effective” in gaining control, solving problems, and acquiring resources and social power

However, dysregulation leads to:
• Irritability which then leads to anger and oppositional behaviour
• Anxiety
• Other troublesome behaviours
• Patterns of escalating conflict
• Victimization by peers
• Mental and physical health problems
Developmental Perspective

What is Not Developing?

What is Developing?

Even with development of skills, relationships matter
What Fosters Development?
Children experience their world as an environment of relationships.

- Relationships are important throughout development
- Relationships affect all aspects of development – intellectual, social, emotional, physical, behavioral, and moral.

*Adults are responsible for the quality of children’s relationships*
What is Developing under the Skin?
The “operating system” for genes is built over time through:

- Positive experiences, such as exposure to rich learning opportunities.. or
- Negative experiences, such as stressful life circumstances
- Experiences leave a chemical “signature” on genes, which can be temporary or permanent
- Affect how genes are switched on or off.
Relationships Matter for the Brain through Genes and Experiences

The brain adapts to the experiences that a child has:

If the child has positive experiences, the brain adapts positively for learning, memory, and regulation.

If the child has stressful experiences, the brain adapts negatively, with too much or too little response to any stress.

As brain develops, gene expression adapts, leading to further positive or negative brain development.
High Stress in Relationships and Brain Development

- Neurochemical (dysregulated stress response)
- Neurostructural (connections, mylin)
- Neural network (neural loops)
Children’s Experiences of Victimization Affect Their Brains

• Peer victimization linked to depressive symptoms
• Peer victimization, depressive symptoms and higher cortisol levels uniquely predicted memory deficits.

Children’s Experiences of Violence Impact their Genes

Exposure to violence: domestic violence, frequent bullying victimization, and physical maltreatment by an adult

Compared with those not exposed, children who experienced 2+ kinds of violence exposure showed significantly more telomere erosion between ages 5 and 10 (Shalev et al., 2012)
Genes x Environment

Michael Meaney et al. (McGill)

• Cross fostered rats bred to be highly anxious and reactive. If raised by nurturing mothers, the anxious/reactive gene was modified, even into the next generation

• If rat pup placed back into a chaotic environment, anxious/reactive gene changed back
Identical Twins
Different Experiences

Risk is environmentally mediated
• Study of identical twins – one chronically bullied, one not
• Higher rate of psychopathology in victimized twin, despite same levels of genetic risk

(Arseneault et al., 2008)
Identical Twins
Discordant Bullying and Later Behaviours

• Study of identical twins – one bullied, one did not bully at 7
• At 12, twin who bullied involved in more rule breaking behaviour
• Family relationships with high warmth buffered children who bullied from graduating to
• antisocial behaviors
Relationships are the “active ingredients” of the environment’s influence on healthy human development.

Relationships engage children in the human community in ways that help them figure out who they are, what they can become and how and why they are important to others.

National Scientific Council on the Developing Child
Working paper #1. Young children develop in the environment of relationships
Aggressive Children’s Relationship Environments

Within the family, peer group, school and community:

• Frequent opportunities to observe and garner reinforcement for being aggressive;

• Relatively few opportunities to observe and be reinforced for prosocial behaviour.
The Capacity of Relationships

• From a developmental perspective, it is important to consider whether the critical relationships in children’s lives have the capacity to promote their healthy development.

• Family Relationships
• Peer Relationships
• Relationships with teachers and others
<table>
<thead>
<tr>
<th>Country</th>
<th>Average of the three relationships scores</th>
<th>% of children who find classmates kind and helpful</th>
<th>% of children who find it easy to talk to mothers</th>
<th>% of children who find it easy to talk to fathers</th>
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UNICEF, 2013
Figure 4.3b  Being bullied
% of children aged 11, 13 and 15 who report "being bullied at school at least once in the past couple of months"

- Italy
- Sweden
- Spain
- Czech Republic
- Iceland
- Denmark
- Slovenia
- Netherlands
- Norway
- Poland
- Slovakia
- United States
- Hungary
- Greece
- United Kingdom
- Ireland
- Luxembourg
- Germany
- Finland
- France
- Canada
- Switzerland
- Belgium
- Portugal
- Austria
- Estonia
- Romania
- Latvia
- Lithuania

UNICEF, 2013
Learning to get along with others is much more complex than learning to read or do math!

Could the strategies we use for reading and arithmetic apply to learning how to relate to others?

Elder: “Honour children’s mistakes”
Changes in Aggressive Children’s Brain Activity Through Treatment SNAP®
Developmental Psychopathology and the Brain

• Dorsal anterior cingulate cortex (ACC) is a key structure for executive functioning (making judgments, monitoring one’s behaviour and learning, controlling emotional responses)

• Orbital frontal cortex (OFC) involved in assigning emotional significance, maintaining avoidance or inhibition

• Systems seem to compete for activation: Aggressive individuals show deficits in both ACC and OFC activation
HYPOTHESIS:
With treatment, we should see a decrease in activity in the ventral brain regions and an increase in activity in the dorsal brain regions implicated in emotional self-regulation and deliberate cognitive control!
Successful treatment with SNAP and parent management training (Stop Now And Plan Parenting) produce discernable changes in brain systems responsible for cognitive control and self-regulation.
What Fosters Healthy (or Unhealthy) Development?
Bullying is a Relationship Problem that Requires Relationship Solutions

Child or youth’s needs, strengths, challenges

Child’s or youth’s relationships with family, peers, adults, & community

© Promoting Relationships and Eliminating Violence Network, 2007
It Takes a Network to Raise A Child

Preventing violence and promoting healthy relationships requires relationship solutions in all of the places where children live, learn, play and work.

By addressing children’s aggression and promoting healthy relationships, we can promote children’s healthy development.
PREVNet Partners  www.prevnet.ca
A Role for Pediatricians

• Ask questions about friendships and bullying (www.prevnet.ca)
• Communicate concern to child, parent, and school (?)
I am writing because I am concerned about my patient, ________________.

At a recent visit to my office, _____ reported health problems that I assessed as being linked to the stress of being bullied at school. _______ reported bullying is in fact taking place.

As professionals dedicated to the health and success of ________________, it is critical that we communicate and collaborate. I felt that it was important to bring _____’s health problems to your attention. I am concerned that the bullying and related problems are and will continue to have a negative impact on his/her, health and general well being.

I have discussed sending this letter with _______ and his/her parent and they have agreed to my contacting you. I have attached a resource sheet for your reference. If there is any further information that I can provide that might be helpful, please contact me.
THANK YOU!

For Helping Promote Healthy Relationships for the Healthy Development of All Children and Youth

www.prevnet.ca

Promoting Relationships and Eliminating Violence
La Promotion des Relations et l’Élimination de la Violence