GROWING WITH BROCK

| Studying Growth Across the Lifespan |

Research in a Tweet

Physical Activity has a Positive Effect on Brain Health

Higher self-reported physical activity is associated with greater preservation of white matter in your brain as you age #keepmoving

Siblings Encourage Dishonesty

Children with a (younger) sibling more likely to cheat during a game & maintain their lie

Facial Recognition Abilities Develop by Age Six

Skills for identifying and learning new faces improve by age six #growth&development

Risk Taking Across the World

Sensation seeking increases in adolescence & peaks at 19 #Globalstudy

Welcome

Welcome to our first ever Growing With Brock newsletter! The idea of the newsletter is to connect with current and future Growing With Brock Members and to provide updates on our latest findings . We have five research labs that compose the Growing With Brock research team. Our newsletter updates everyone on what is happening in each lab.

Current Research

Here are some of our ongoing studies!

- Exploring the memory of young children and older adults
- Examining the future preferences of children (3-5 years old)
- An online study of adults ability to detect email scams (60+ years old)
- Promoting honesty in 3-8 years old
- Alterations in attention as we age (60-80 years old)
- Investigation into how older adults learn and process new faces (60 + years old)
- Examining how people think about risk and reward (12-30 years old)

If you are eligible and want to participate in any of these studies, please email growing@brocku.ca

Lab Spotlight

Dr. Karen Campbell's Neurocognitive Aging Lab is pleased to recognize the work of a first-year graduate student, Sarah Henderson. Sarah is a dedicated volunteer for Therapeutic Paws of Canada and is a recent Brock alumna.

Graduate student, Sarah Henderson

She now studies healthy aging, specifically how the brain differs when we spontaneously remember something (e.g., your childhood home or when you smell a particular shampoo) versus intentionally remembering something (e.g., trying to recall where you put your keys). In her recent research project, she used EEG to examine brain activity during memory retrieval. Participants learned sounds that were either paired or unpaired with pictures, while EEG was recorded. Participants in the spontaneous memory group indicated in which ear the sounds were loudest, and those in the intentional memory group additionally attempted to recall the associated pictures. The sounds were presented again, and participants indicated whether they had remembered the associated pictures during the sound task. **Findings suggest that while intentional memory declines with age, spontaneous memory remains relatively intact**. Sarah's results combat the stereotype that memory necessarily declines with age, suggesting that this decline depends on how we test memory. Sarah is passionate about promoting a sense of optimism about healthy aging and hopes to further our understanding of how the mind and brain change (or don't!) with age.

Research Spotlight

Here are some of the latest findings from some of our research labs

The Social-Cognitive Development lab has been examining Juror Perceptions of Children Across Adulthood

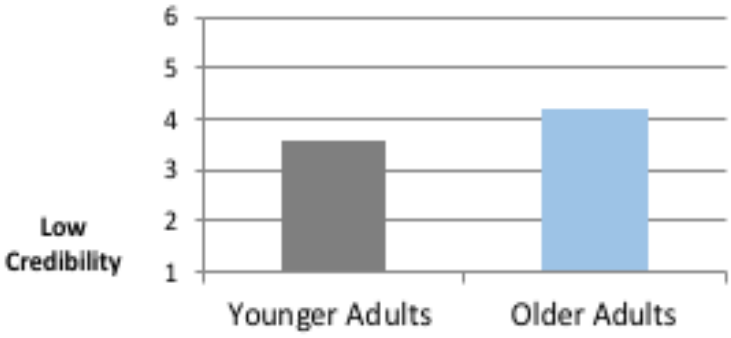
What happened in the study?

100 younger adults and 100 older adults watched a series of child-interview videos where children were either telling the truth about an event or lying about an event to conceal the fact that they broke someone's computer. Participants were asked to rate the credibility of the children and decide if they thought the child was lying or telling the truth.

What did we find?

1) Ratings of Children's Credibility: Older adults - provided higher credibility ratings of the children compared to younger adults, - regardless of whether the child was telling a truth or a lie (see results in Figure 1). -

2) Lie-Detection: Both younger and older adults displayed a truth bias towards the - children by responding that children were telling the truth more often than telling - a lie. Interestingly, older adults displayed a stronger truth bias compared to the - younger adults, suggesting that older adults were more likely to believe that the - child was telling the truth compared to younger adults.



Older adults rated children as more credible compared to younger adults

Science Activity: Make a Lava Lamp

- **What you'll need**
  - Vegetable Oil
  - Water
  - Food Colouring

  - Alka Seltzer Tablets
  - Clear glass or water bottle
- **What to do**
  - Fill container 3/4 full with oil
  - Fill the rest with water
  - Add a few drops of food colouring into mixture
  - Predict what you think will happen when you add the tablets!
  - Break Alka-Seltzer tablets into smaller pieces; add to glass
  - Try with different colours!
- **Why does this happen?**
  - The water and oil don't mix because oil is hydrophobic (scared of water)
  - The Alka-Seltzer mixes with water to create CO_2 bubbles, which rise to the top

Research Spotlight

Children's Understanding of How and Why Questions

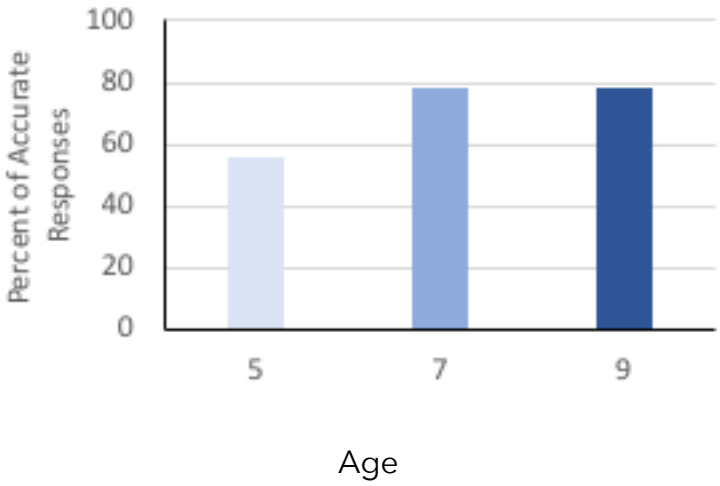
What happened in the study?

180 children were asked to perform a variety of actions (i.e. throw a ball, shake a glitter bottle, etc.). They were then asked about the cause of their previous actions, in the form of a How (How did she make you throw the ball?; How come you threw the ball?) or Why question (Why did you throw the ball?).

What did we find?

Children's Age: Older children (7- and 9-year-olds) provided more accurate responses when answering How and Why questions compared to younger children (5-year-olds). (see Figure below)

Type of Question: Children had more difficulty answering How Make questions, compared to Why and How Come questions. Interestingly, children often interpreted How Make questions as asking how they performed the action, rather than how someone made them perform the action.



Student Spotlight

PhD student, Tessa Mazachowsky

Over the past few years, Tessa Mazachowsky, a graduate student in the Developing Memory and Cognition (DMC) Lab, has been working on developing a questionnaire that parents could answer to measure children's future thinking abilities. The Children's Future Thinking Questionnaire measures 3-to 7-year-old children's future thinking in different areas such as planning, remembering to do something in the future, imaging what might happen in the future, and saving for the future. Recently, Tessa completed the final study in a series of studies involved in developing this new questionnaire measure. In the most recently completed study, parents and their children were invited into the DMC lab at Brock University. While in the lab, parents complete the questionnaire and their child complete a number of games in the laboratory that measured various aspects of future thinking. The study found that parents rated older children as better at future thinking than younger children. This suggests that parents are identifying that children become better at thinking about the future as they grow and develop. It was also found that parent's ratings of their children's future thinking corresponded with children's performance on the future thinking games they played in the laboratory. For example, parent's ratings of their children's saving ability related to how children performed on a board game measuring saving ability in the lab. Broadly, this research highlights the important information parents can provide in regards to their child's development. The DMC lab would like to thank the Growing with Brock families that participated in the future thinking questionnaire study — this research would not be possible without you!

Next, Tessa will be examining a specific domain of children's future thinking more closely, children's ability to save for the future. Specifically, Tessa will be looking at how different types of saving that children display in their everyday life (e.g., children's ability to save money, or save stickers for their collection) relate to one another. In the new year, the DMC lab will be looking for children to participate in this exciting new study on children's saving.

Research Spotlight

High School Grades are Better Predictors of University Success than Standardized Tests

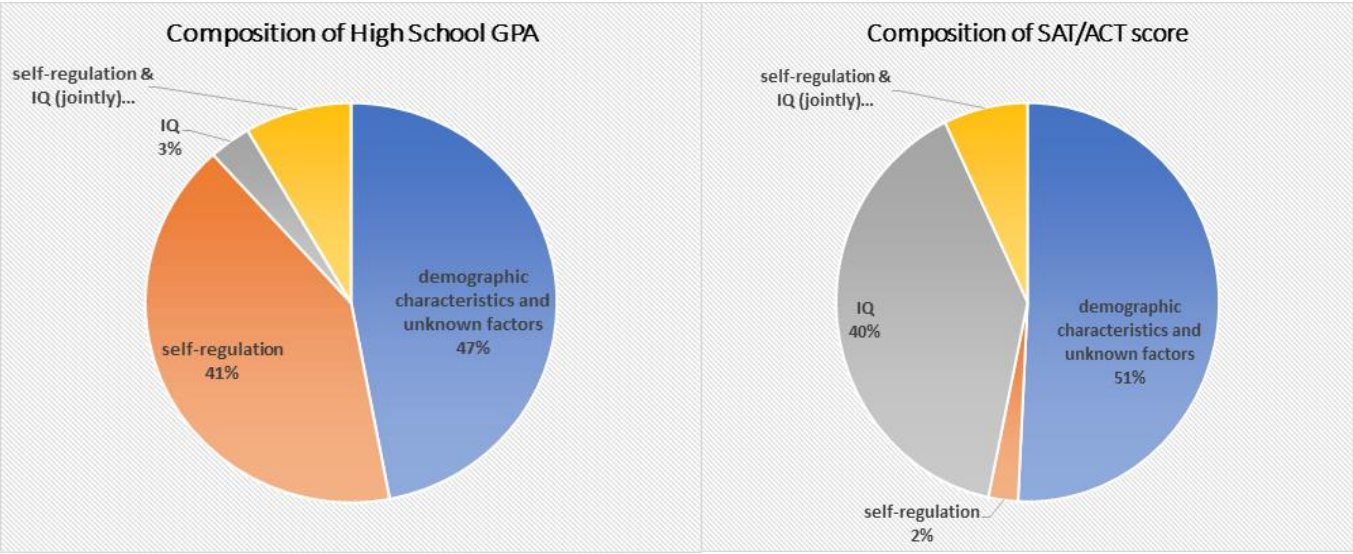
Assistant Professor, Dr. Elizabeth Shulman

What happened in the study?

1622 high school seniors from across northeastern U.S.A completed several intelligence and questionnaires regarding their self-regulatory capacity. Student GPA, SAT or ACT (standardized tests) were obtained in addition to post- secondary enrollment and graduation data.

What did we find?

The study found that high school GPA was a better predictor of successful University graduation than standardized test scores. This is thought to be because high school grades carry information not only about intellectual ability, but also about self-regulatory capacity. SAT/ACT scores, in contrast, conveyed very little information about self-regulatory ability.This ability to marshal one's thoughts, emotions, and behaviors toward the fulfillment of long-term, important goals is essential for academic success. A student with high self-regulatory ability will be able to compel their self to study for an upcoming exam even if that means forgoing a more enjoyable activity, like a trip to the mall with friends or repeatedly checking Instagram. And just as it takes some self-regulation to earn good grades in high school, it takes a high degree of self-regulation to persist in college (university) and earn a four-year degree.



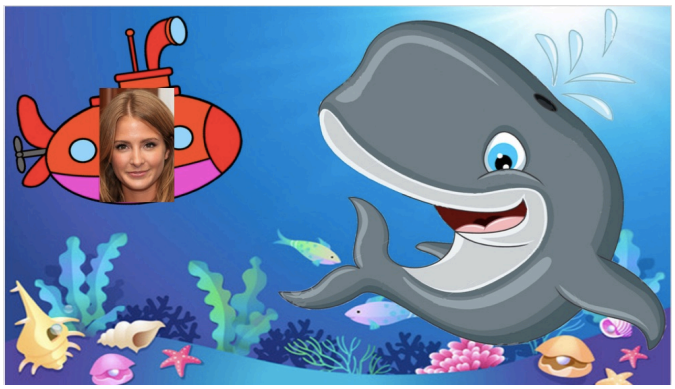
The figures above shows the results regarding the degree to which self-regulation and IQ contribute to high school GPA and SAT/ACT scores

Student Spotlight

PhD student, Claire Matthews

Claire Matthews, a PhD student in the Face Perception Lab, has been investigating how experience shapes our ability to learn new faces. We know that when faces are unfamiliar it is very hard to determine whether two photos belong to the same person or two different people. After all, changes in make-up, facial expression and lighting can dramatically alter our appearance. (This is why many of us don't like our passport photos!) But when faces are familiar we can easily recognize them —even when appearance changes dramatically as the result of aging, illness or a make-over. So, how do faces become familiar?

Claire recently invited children aged 6 to 12 years of age and their parents to come to our lab at Brock. Each child completed one of two tasks. In one task, children viewed an array of four pictures of the same person and then were shown a fifth picture; they were asked whether that fifth picture had been in the array. Like adults, children responded 'yes' both when that picture had been in the array and when that picture was a photographic average of the four pictures in the array. This result suggests that by age 6 children have the ability to build face averages, a critical step in learning a new face. In another task, children read storybooks. Each storybook had one character and children saw 1or 6 different pictures of that character. After reading the book they were shown new pictures and decided whether each image belonged to the storybook character or someone else. Like adults, children were better able to recognize new photographs of the character after viewing 6 photos than after viewing only 1. This result suggests that by age 6 children benefit from experiencing variability in a face's appearance.



Example storybook photo

Next, Claire will be examining face learning in younger children. We reported earlier that children aged 4 and 5 fail to recognize new images of a highly familiar face —their own teacher! Claire will be investigating how well such young children recognize new pictures of their parents and then how face learning works in this younger age group. The Face Perception Lab is looking for children to participate in this fun study. Without you we could not learn about how children recognize faces, a question that has implications on the playground and in a variety of applied settings (e.g., eyewitness testimony).

A Special Thank you to Our Partners

Centre for Lifespan Development Research

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