



**Mind Pad**

Canada's student written, edited,  
and published psychology newsletter.

**Notes d'idées**

Le bulletin rédigé, édité et publié par les étudiants  
de la Société canadienne de la psychologie.

SUMMER 2016 – ÉTÉ 2016

CANADIAN  
PSYCHOLOGICAL  
ASSOCIATION



SOCIÉTÉ  
CANADIENNE  
DE PSYCHOLOGIE



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*Mind Pad* has two mandated goals:

1. It aims to provide a professional newsletter that is written and reviewed by students of psychology who are affiliates of the Canadian Psychological Association. The content of the newsletter should be of interest to all who are practicing and studying psychology, but the primary audience of the newsletter is students of psychology.
2. It aims to offer studying psychology researchers and writers an opportunity to experience a formal submission process, including submission, review, and resubmission from the points of view of both submitter and reviewer/editor.

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Le mandat de *Notes d'idées* a deux objectifs :

1. Fournir un bulletin professionnel rédigé et évalué par les étudiants en psychologie qui sont membres affiliés de la Société canadienne de psychologie. Le contenu devrait être d'intérêt à tous les praticiens et étudiants en psychologie, mais les étudiants en psychologie sont les lecteurs cibles.
2. Fournir aux étudiants en psychologie l'opportunité de connaître le processus formel de soumission y compris la soumission, la révision, et la resoumission du point de vue d'auteur et d'évaluateur/redacteur.

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# Appreciating the Joint Influence of Culture and Evolution in Understanding Social Cognitive Processes

Adam C. Davis, H.B.A., Lakehead University

## Abstract

Social cognitive processes and culture have evolved over time in human beings because they conferred adaptive value within the environments that they were selected for; the environment of evolutionary adaptiveness. The present article briefly reviews several points of intersection between social cognition, culture, and evolution in humans to demonstrate how these subfields mutually interact to collectively shape human psychological functioning. It is recommended that in order to best understand social cognitive processes it is necessary to jointly consider their evolutionary lineage and context-specific cultural manifestations. Failing to do so requires invoking the disproved nature versus nurture argument and limits one's understanding and appreciation of the psychological phenomenon of interest.

## Résumé

Chez l'être humain, les processus sociocognitifs et la culture ont évolué au fil du temps, car ils confèrent une valeur adaptative dans l'environnement dans lequel les caractéristiques de l'être humain ont été sélectionnées naturellement. Le présent article examine brièvement plusieurs points de convergence entre cognition sociale, culture et évolution chez l'être humain, afin de montrer comment ces sous-domaines interagissent pour façonner collectivement le fonctionnement psychologique humain. Pour mieux comprendre les processus sociocognitifs, il est nécessaire de considérer ensemble leur lignée évolutive et leurs manifestations culturelles propres au contexte. Autrement, il faut invoquer le débat dépassé entre nature et culture et renoncer à une compréhension et une appréciation complètes de ce phénomène psychologique intéressant.



*Social cognition*—how social information is perceived, processed, stored and retrieved—is strongly shaped by one's culture and by the perceptions one

has of other cultures (Morling & Masuda, 2012). *Culture* can be defined as a dynamic information system comprised of values, attitudes, symbols, and behaviours shared amongst a group of people that is transmitted from one generation to the next (Heine, 2015). It has been argued that culture exerts its influence on social cognition at two interacting levels. At the first level, culture is understood as a *selection pressure*—a force that guides the evolution of the organism—that has greatly impacted human psychology. At the second level, culture shapes human psychological functioning by socially transmitting knowledge that is both content and context-specific (Morling & Masuda, 2012). The impact of these two forces in shaping human development falls under the scope of *dual inheritance theory*, through which it is argued that human beings are a product of both biological evolution as well as cultural evolution (Richerson & Boyd, 2005).

## The Nature versus Nurture Debate

Some researchers however understand evolution and culture as separate entities, at times even antagonistic, in relation to psychological processes like social cognition (e.g., Geertz, 1973; Shiraev & Levi, 2013). For those assuming this perspective, human behaviour is understood as culturally-specific and contains no significant universal consistencies, a position known as the *relativist approach* (Berry, Poortinga, Segall, & Dasen, 1992). However, to argue that culture, or evolution for that matter, is entirely responsible for shaping human psychology necessarily requires invoking the *nature versus nurture* argument. The nature versus nurture debate describes an attempt to characterize psychological processes as either entirely determined by evolution or culture (Plomin & Asbury, 2005).

With the rise of John B. Watson's behaviourism in the 1930's, the prevailing belief in psychology was that we are what we learn. However, following the discovery of the structure of *Deoxyribonucleic acid* (DNA)—the molecule that carries the genetic blueprint for an organism—by Watson and Crick (1953) attention began to turn toward the role of genes in guiding human development and psycholog-

ical functioning. *Genes* are the smallest units of heritable information that are passed on from parent to offspring (Buss, 2012). Researchers began to study twins that share 100% of their genetic material, known as *monozygotic twins*, in comparison to twins that are not genetically identical at birth, referred to as *dizygotic twins*. This approach allowed researchers to parse out the relative influence of genes and the environment in the determination of psychological functioning. These twin studies have demonstrated that nearly every aspect of our psychology, from our behaviour to our susceptibility to different kinds of mental illness, has a genetic influence (Plomin & Asbury, 2005). Thus, to date the accumulated evidence indicates that both nature and nurture are jointly operating to shape human psychology (Schaller, Norenzayan, Heine, Yamagishi, & Kameda, 2010).

### The Intersections of Culture, Social Cognition, and Evolution

The relationship between culture and social cognition is dynamic and bidirectional (i.e., mutually interactive) (Morling & Masuda, 2012). As stated by Morling and Masuda (2012) “Humans both passively inherit and actively participate in cultural patterns” (p. 432). The simultaneous process of inheriting and producing cultural content results in every aspect of social life becoming infused with cultural meaning. In turn, this means that the majority of social cognitive processes should be expected to be shaped by culture. Cultural psychologists, who study the bidirectional influences of culture and social cognition, have and continue to demonstrate the impact that cultural content (e.g., philosophies, daily practices, and physical settings) has on behaviour and vice versa (Markus & Kitayama, 2010).

How then does evolution interact with culture and social cognitive processes? It is first useful to recognize the universality of culture itself. Importantly, we find evidence of some form of culture wherever human beings have subsided in larger communities. There is even documented evidence of culture in higher-order primates such as chimpanzees and bonobos (Laland & Galef, 2009). The ubiquity and cross-species manifestation of culture supports the notion that it likely provided some kind of evolutionarily significant survival and/or reproductive advantage; that it was adaptive. An *adaptation* can be understood as an evolved solution to a specific problem that impinges on an animal’s reproductive success (Buss, 2012). Markus and Kitayama (2010) have argued that culture is adaptive because it enabled human beings to exploit, inhabit, and adapt more efficiently to a diverse range of novel environments.

It is also of benefit to acknowledge that social cognition evolved. Social cognitive processes, such as

person perception, are the product of biological substrates in the brain and body (Ackerman, Huang, & Bargh, 2012). Therefore, the manner in which people think, feel, and act are the result of environmental pressures that, recurrently over millions of years, have shaped the body and the mind to propagate useful and adaptive design features. As an adaptation, social cognition was selected for and evolved in humans to solve *adaptive problems*—any challenge such as avoiding predators, securing nutritious food, and gaining access to mates that impacts an organism’s chances of survival or reproduction (Buss, 2012)—within specific contexts (Ackerman et al., 2012). The context specificity of adaptations like social cognition, entails that they are somewhat amenable to varying intrapersonal, interpersonal, and cultural circumstances.

There exist a host of social cognitive processes that have served specific adaptive functions for human beings over evolutionary time. An examination of adaptive social cognition can yield insights into the ultimate evolutionary function of these structures. Importantly, it is first necessary to acknowledge that social cognitive processes were principally tailored to the environments within which humans had evolved, referred to as the *environment of evolutionary adaptedness* (Tooby & Cosmides, 1992). Thus, adaptations may lose their adaptive value within current cultural and environmental conditions. This also means that from an evolutionary standpoint particular design features that confer a reproductive benefit may appear irrational, and indeed maybe even dysfunctional, in modern environments.

**An evolved fear of spiders.** One example of a social cognitive adaptation that may appear foolish in modern environments concerns people’s innate, evolutionarily predisposed fear of spiders. Emotions like fear are considered social cognitive processes because they serve to coordinate information-processing programs such as attention and memory that often relate to the social world (Al-Shawaf, Conroy-Beam, Asao, & Buss, 2015). Most people across the globe, especially those living in a developed economy, have little reason to fear spiders; however, this fear is universally expressed, easy to learn, and difficult to extinguish (Buss, 2012). At first this response seems irrational. Perhaps however spider bites presented a much larger survival risk in ancestral environments void of modern medicine, anti-venom antidotes, and a taxonomic log of individual species. If so, then it would have been highly adaptive to err on the side of caution and commit a *Type I error*—assuming danger where none exists—to enhance survival. The logic of this process falls under the scope of *error management theory* (Haselton & Buss, 2000), through which



it is argued that many decision making errors have evolved to maximize fitness enhancing benefits while minimizing fitness damaging costs. *Fitness* in this context refers to the ability of an organism to survive and reproduce (Buss, 2012). In support of this position, researchers have documented an evolved spider-detection mechanism that does not generalize to other insects, and that this fear tends to emerge at a very early age prior to the influence of socialization (Buss, 2012).

What role then does culture play in the social cognitive processes of this innate spider fear? First, culture modulates the expression of fear and how it may manifest in response to seeing a spider (Buss, 2012). Second, cultures existing within ecologies with a larger number of poisonous spiders (e.g., Australia, Central America) may display more vigilance in response to these arachnids and possess a more fine-grained spider-detection mechanism. Within these cultures, the informational transmission to children about the dangers of particular spider species should also be more apparent. Children likely engage in other adaptive social cognitive processes that will be culturally specific in relation to dangerous spiders, such as *mimicry* (e.g., watching someone else display a fear of a spider and repeating that action in a similar situation) and *vicarious learning* (e.g., observing a fatal bite and understanding the consequences of being inattentive to the potential danger) (Morling & Masuda, 2012).

The cumulative evidence in the current literature supports social cognitive processes, culture, and evolution as highly interactive, integrated, and co-dependent phenomena (Ackerman et al., 2012; Morling & Masuda, 2012). To view culture and evolution as incompatible requires invoking the disproved nature versus nurture argument and limits our comprehension of psychological phenomena. Culture is best understood as a complex adaptive system of attitudes, values, behaviours, and norms that provide unique adaptive solutions to universal adaptive evolutionary problems (e.g., problems with securing a viable mate). Social cognitive processes permeate every arena of psychological functioning, are evolutionarily predisposed, and sensitive to specific cultural cues. Children enter the world prepared to latch onto cultural content and to learn how to survive within a particular cultural context. The cultural content itself however will differ from one context to another.

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# Is Synaesthesia a Legitimate Neurological Condition?

Alexander L. Pearson, University of Western Ontario

## Abstract

Synaesthesia is a heritable neurological condition in which stimulation in one sensory modality also gives rise to a sensory experience in a second, unstimulated sensory modality. Despite being first reported over two hundred years ago, synaesthesia has only recently gained a legitimate status among scientists. This paper provides a review of recent literature substantiating the legitimacy of synaesthesia as a neurological condition, providing an overview of evidence from behavioral and brain imaging studies, and briefly exploring theories regarding the origins of synaesthesia.

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## Résumé

La synesthésie est un trouble neurologique héréditaire dans lequel la stimulation dans une modalité sensorielle donne aussi lieu à une expérience sensorielle dans une deuxième modalité sensorielle non stimulée. Même si elle a été observée pour la première fois il y a plus de deux cents ans, la synesthésie commence à s'imposer, chez les scientifiques, comme sujet de recherche légitime. Le présent article fournit une revue de la littérature récente étayant la légitimité de la synesthésie en tant que trouble neurologique, ainsi qu'un aperçu des preuves scientifiques issues d'études comportementales et d'imagerie cérébrale et une brève exploration des théories relatives aux origines de la synesthésie.



## Preface

Synaesthesia (Greek: syn = together, aesthesia = sensation) is a heritable neurological condition in which stimulation in one sensory modality also gives rise to a sensory experience in a second, unstimulated modality (Hubbard, 2007). For example, in grapheme-color synaesthesia, synaesthetes experience colors when reading, hearing or thinking about individual letters and/or digits (which are called “graphemes”). Numerous other forms of synaesthesia have also been described, including word-color

synaesthesia and music-color synaesthesia (particular words or sounds elicit different colors; Hubbard, 2007), as well as lexical-gustatory synesthesia (certain words or phonemes evoke different kinds of tastes).

Despite being first reported over two hundred years ago by Georg Sachs in 1812 (Jewanski, Day, & Ward, 2009), synaesthesia has only recently gained a legitimate status among scientists. Initially, it was seen as a “quirky” and “made-up” condition because clinicians had to rely on the subjective self-reports of patients. However, the advent of new experimental techniques in human neuroscience has provided researchers with new ways of studying this unique phenomenon, leading to a renaissance in synaesthesia research in recent years. The purpose of this paper is to provide a review of recent literature substantiating the legitimacy of synaesthesia as a neurological condition. We will explore evidence from behavioral and brain imaging studies, and briefly explore theories regarding the origins of synaesthesia.

## What is Synaesthesia?

According to Ward and Mattingley (2006), synaesthetic experiences are characterised by four features. First, the synaesthetic experiences induced by certain stimuli are not evoked in most members of the population (e.g. for most people, the number “2” does not evoke the color pink). Second, synaesthetic experiences are automatic and difficult to suppress. However, Mattingley, Payne and Rich (2006) found that synaesthetic experiences may be modulated by attention. Third, the synaesthetic experience is analogous to a real perceptual event (e.g. seeing a pink stimulus). Fourth, synaesthetic experiences are consistent over time.

Since synaesthesia generally does not interfere with normal daily functioning, most synaesthetes do not seek the help of clinicians. In fact, a number of cognitive advantages have been associated with synaesthesia, such as superior memory and creativity (Ramachandran & Hubbard, 2001b; Rothen, Meier, & Ward, 2012; Yaro & Ward, 2007). Interestingly, many synaesthetes are surprised to find that other people do not share their experiences (Ward & Mattingley, 2006).

## Evidence from Behavioral Studies

Most diagnostic tests for synaesthesia are based on one or more of the four features described in the previous section (Ward & Mattingley, 2006). The “gold standard” has been to measure the consistency of synaesthetic experiences over time. This has been termed the “test of genuineness” (TOG) (Baron-Cohen, Wyke, & Binnie, 1987). A TOG consists of presenting people with a battery of stimuli and asking them to report synaesthetic associations (e.g. “what color does the word ‘basketball’ evoke?”). This is repeated after a delay period. Since synaesthetic experiences are consistent over time, synaesthetes are expected to report the same pairings with a higher degree of accuracy than non-synaesthetes.

Asher, Aitken, Farooqi, Kurmani, and Baron-Cohen (2006) performed a TOG on 26 sound-color synaesthetes and 23 non-synaesthete controls. They found that over time, the synaesthetes demonstrated greater internal consistency than the non-synaesthetes. After a one-month delay, synaesthetes accurately reported the same sound-color pairings 70-90% of the time. In contrast, the non-synaesthetes were only accurate 20-38% of the time after a one-week delay. In a different study performed by Simner and Logie (2008), the researchers found that synaesthetic experiences remained consistent over at least three decades, providing strong evidence for the existence of synaesthesia.

Researchers have also been able to distinguish synaesthetes from non-synaesthetes using a synaesthetic adaptation of the Stroop interference paradigm (Wollen and Ruggiero, 1983). The task involves participants naming the actual colour of a visual stimulus while ignoring the synaesthetic colour (elicited by the same or another stimulus) (Ward & Mattingley, 2006). Given that synaesthetic experiences are automatic and difficult to suppress, interference arising from the synaesthetic color results in synaesthetes requiring significantly more time to name the actual colour of the visual stimulus compared to non-synaesthetes. Ward, Huckstep, and Tsakanikos (2006) were the first to perform a cross-modal synaesthetic Stroop experiment. They found that in synaesthetes, the color evoked by a sound (presented concurrently with a visual stimulus) interfered with naming the actual color of a visual stimulus. For example, a “red” sound interfered with naming a green stimulus. In a different study, Paulsen and Laeng (2006) measured Stroop interference based on pupil diameter (a physiological measure) rather than reaction time (a behavioural measure) to rule out conscious processes biasing the results. They found that in synaesthetes, pupil diameter increased with incongruently coloured graphemes relative to congruently coloured or black graphemes. Therefore, pupil diam-

eter is a direct physiological correlate of synaesthetic experience.

## Evidence from Functional Imaging Studies

Functional imaging studies (PET and fMRI) have consistently shown that synaesthetes have significantly different patterns of neural activation than non-synaesthetes. For example, Paulesu et al. (1995) conducted a positron emission tomography (PET) study to investigate the neural locus of color-phonemic synaesthesia (i.e. experiencing colors as a result of hearing phonemes). Synaesthetes and non-synaesthetes listened to blocks of spoken words and pure tones. For synaesthetes only, listening to spoken words versus tones resulted in significant activation in the right middle frontal gyrus and insula, and in the left posterior inferior temporal cortex. This pattern of activation was not observed in non-synaesthetes. In addition, there was a lack of activation in primary visual cortex. These observations led the researchers to conclude that color-phonemic synaesthesia results from activity in brain regions involved in color perception and language (e.g. word comprehension), but not from activity in early visual processing areas.

Nunn et al. (2001) replicated these findings using functional magnetic resonance imaging (fMRI) and a sample of 13 color-phonemic synaesthetes and 28 non-synaesthetes. Unsurprisingly, listening to spoken words versus tones resulted in significant activation of language-related areas of the brain in both synaesthetes and non-synaesthetes. However, for synaesthetes only, there was also significant activation in the left inferior temporal cortex, particularly in visual cortex areas V4/V8, which are claimed to be color processing regions of the brain (Hadjikhani, Liu, Dale, Cavanagh, & Tootell, 1998). In addition, no primary visual cortex activation was observed in synaesthetes nor controls, so the results were not confounded by actual visual experiences.

The findings of both of these functional imaging studies suggest that color-phonemic synaesthesia recruits a region of the brain involved in normal color processing, providing an explanation for why color-phonemic synaesthetes experience colours in response to words.

## Evidence from Diffusion Tensor Imaging

One neural model (proposed by Ramachandran & Hubbard, 2001a) suggests that synaesthesia is caused by an excess of cross-connections between different brain regions as a result of defective pruning during development. The brains of young infants have significantly more cross-connections between brain regions than adult brains, and a large portion of these are removed as the brain develops. However, if

a genetic mutation were to lead to defective pruning of connections, activation of neurons in one part of the brain would also result in activation of neurons in another part of the brain, consistent with the results of the functional imaging studies previously mentioned.

A diffusion tensor imaging (DTI) study done by Rouw and Scholte (2007) has provided direct support for this hyperconnectivity model of synaesthesia. The researchers performed DTI on 18 grapheme-color synaesthetes and on 18 matched non-synaesthete controls. They found that the brains of synaesthetes had significantly greater structural connectivity and coherent white matter than the brains of non-synaesthetes, particularly in the inferior temporal cortex, superior parietal cortex, and the frontal cortex. These results support the hyperconnectivity model.

### Genetic Components of Synaesthesia

Numerous studies have found that the incidence of synaesthesia is higher among relatives than in the general populace, which suggests that synaesthesia is a heritable trait (Baron-Cohen, Smith-Laittan, Harrison, Bolton, 1996; Galton, 1883). This further supports the argument that synaesthesia is an independent neurological condition.

Early research also suggested that synaesthesia has a higher prevalence in women than men (Baron-Cohen et al., 1996), perhaps because of an X-linked dominant mode of inheritance (Bailey & Johnson, 1997). However, later studies found no gender bias, suggesting that previous studies were skewed by underreporting males (Hubbard & Ramachandran, 2005). Later studies also suggested that the genetic mechanism underlying synaesthesia may be more complicated than initially thought (Hubbard & Ramachandran, 2005). For example, Smilek et al. (2002) reported a pair of identical female twins in which only one had synaesthesia. This observation could be explained by environmental factors and/or epigenetic changes (e.g. preferential inactivation of one X-chromosome in women, who possess two X-chromosomes) (Ward & Mattingley, 2006). In a different study, two identical male twins demonstrated different degrees of synaesthesia, although both experienced the same color-grapheme pairings – likely due to the fact that they grew up in similar (but not identical) environments (Hancock, 2006). Studies like these suggest that environmental factors also play a role in the development of synaesthesia. Indeed, graphemes are culturally acquired (we are not born knowing letters and numbers) and can only be integrated into synaesthetic experiences after they are learned. No known synaesthete has ever experienced a synaesthetic color in response to a nonsense grapheme (Ward & Mattingley, 2006).

### Conclusion

Over the course of this paper, we have reviewed numerous studies that substantiate the legitimacy of synaesthesia as a neurological condition. We have seen how behavioral experiments involving measures of internal consistency and Stroop interference can be used to diagnose synaesthetes. We then went on to review a number of brain imaging studies that have found functional and structural differences in the brains of synaesthetes, and, subsequently, we related them to the hyperconnectivity model for synaesthesia. Lastly, we discussed the likelihood of a genetic component of synaesthesia, which further supports the argument that it is an independent neurological condition. From this body of evidence, we can confidently conclude that synaesthesia is not a fabricated neurological disorder.

An aim of future research should be to delineate how synaesthesia develops. A microgenetic study, in particular, would be useful for determining when and how synaesthesia arises, how synaesthesia progresses throughout the lifetime, and what environmental factors contribute to the onset and progression of this condition. Several studies have demonstrated that synesthesia can be acquired during childhood (Rothen & Meier, 2014; Simner, Harold, Creed, Monro, & Foulkes, 2009), and that synaesthesia is gradually consolidated during adolescence (Simner, & Bain, 2013; Sørensen, Nordfang, & Ásgeirsson, 2016). Furthermore, future studies should investigate how synaesthesia affects other aspects of cognition, such as creativity and memory.



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# The Action-Project Method in Action: Reflections from its use with Young Adults with Intellectual Disabilities and their Parents

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## Abstract

An important and integral process for researchers engaged in qualitative research is reflecting on and documenting their experience and personal process. This reflexivity and transparency contribute to the quality of qualitative research. As graduate students who are working on a research project using the qualitative action-project method, we have found that this method provokes our thoughts and engages us emotionally because of the way we observe and interact with participants and immerse ourselves in the data. Many of our thoughts and emotions are closely related to the population we are studying: young adults with intellectual disabilities and their parents. After briefly introducing the study, we organize our observations and insights following the sequence of steps in the method.

## Résumé

En recherche qualitative, l'analyse et la documentation de l'expérience du chercheur et de son cheminement personnel constituent une partie importante et fondamentale de la démarche scientifique. La capacité de réflexion et la transparence du chercheur contribuent à la qualité de la recherche qualitative. Nous avons participé à un projet de recherche, où le projet d'action était utilisé comme méthode de recherche qualitative. Notre expérience, en tant qu'étudiants diplômés, nous a fait constater ce qui suit : le projet d'action nous pousse à réfléchir et entraîne un engagement émotionnel de notre part, en raison de la façon dont nous observons les participants et interagissons avec eux, et de la manière dont nous nous plongeons dans les données. Une grande part de nos pensées et de nos émotions sont étroitement liées à la population que nous étudions, c'est-à-dire de jeunes adultes ayant une déficience intellectuelle et leurs parents. Après une brève présentation de l'étude, nous structurons nos observations et nos réflexions en suivant la séquence des étapes de la méthode.

## Introduction

The study we are working on as research assistants is "Transition to Adulthood as Goal-Directed Projects for Young Adults with Intellectual Disabilities and Their Parents." This ongoing study is the second phase of a research project at the University of British Columbia, which is supported by a grant from the Social Sciences and Humanities Research Council of Canada. The research team consists of three professors in Counselling Psychology and Social Work, two international collaborators, and six graduate students. The purpose of this paper is to reflect on our experience using the qualitative action-project method (A-PM) in this study. With a brief description of each step in the data collection and analysis, we aim to share our observations of the process, how we used the methodology with this population, and our reflections based on our involvement in this research experience and encountering participants' lives as researchers.

The A-PM is based on contextual action theory (Wall et al., 2016; Young, Valach, & Domene, 2005). It views actions as goal-oriented and jointly constructed in interactive settings. It attends to these actions from three perspectives: manifest behaviours, internal processes, and social meanings. Through this lens, the transition to adulthood is considered a process involving the joint actions of young adults and their peers, parents, mentors, or other important persons (Young et al., 2008). This study applied this framework to the transition projects of young adults with intellectual disabilities and their parents. Figure 1 provides an overview of the procedure for the interviews in this study (for more details about the A-PM see Wall et al., 2016).

In total, eight families were interviewed, including three mother-son dyads, three father-daughter dyads, and two mother-daughter dyads. The young adults' age ranged from 18 to 31 years. At least one of the authors was involved in each of these interviews.



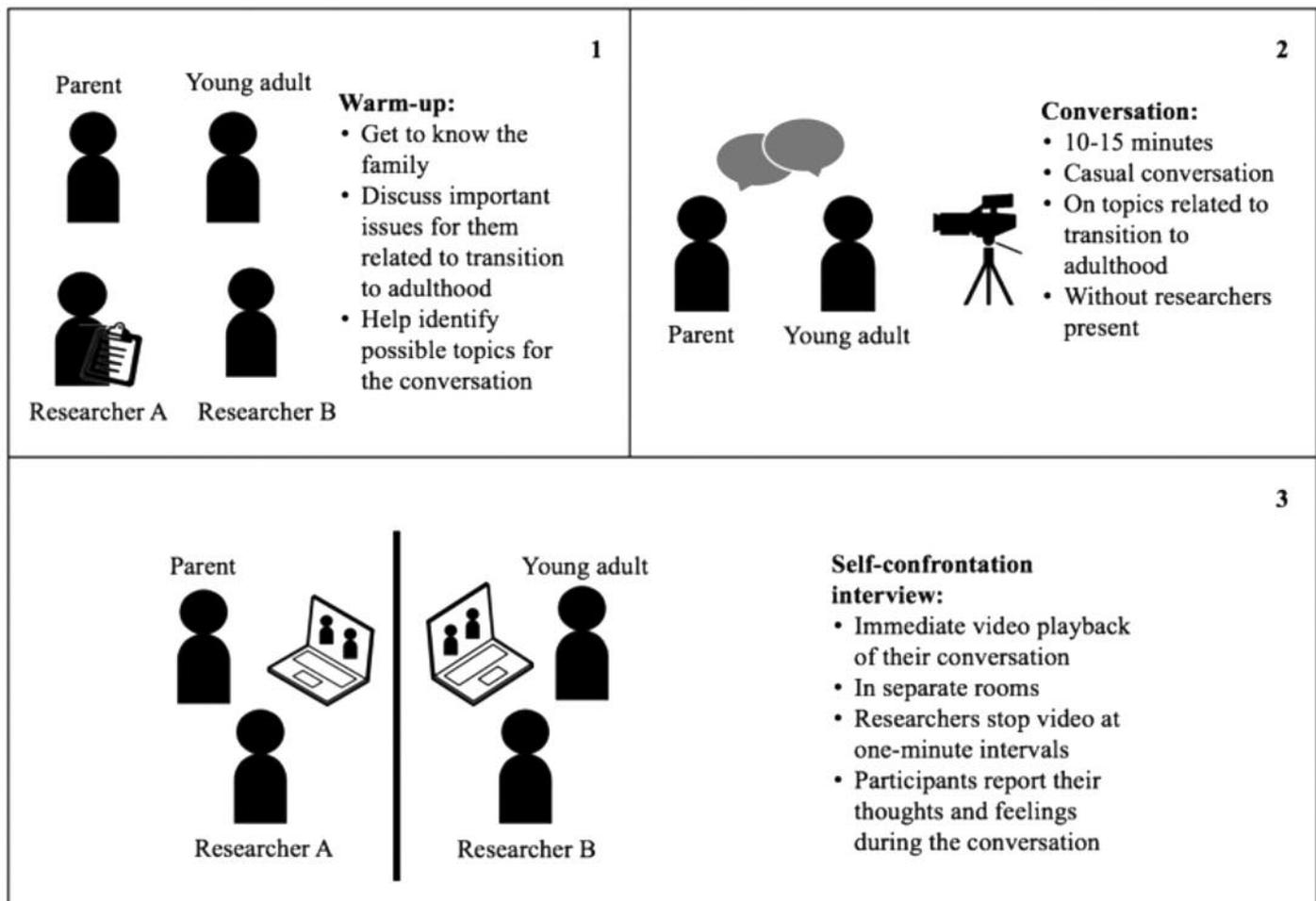


Figure 1. The three parts of the A-PM interview as used in this study.

## A-PM Process and Reflections

### The Warm-Up

We began the warm-up by inviting the young adults to share about themselves through topics such as school, work, and hobbies. The young adults were asked what it means for them to become an adult, and their parents were asked about the goals they have for their child in becoming an adult. We also inquired about their discussion at home regarding transition to adulthood, which helped set-up the conversation portion of the interview around this topic.

We observed that the warm-up in this study relied more on the parents, which is different from interviewing dyads who are more equal in power dynamic (e.g., peers; Young et. al., 2015). The parents tended to act as the family's spokesperson, advocated for the young adult, and served as an interpreter between the young adult and researchers. They made it easier for us to get to know the young adults, though there were times we wished we could hear more from the young adults themselves. We generally tried to offer equal opportunity for both participants to speak, but the parents usually talked more than the young adults. The par-

ents provided more robust answers and often helped the young adults by explaining, prompting, adding comments, or even answering the questions for them.

Compared to their parents, the young adults were more likely to be shy or uneasy when talking to researchers, and in some cases they had limitations in fully expressing themselves. They rarely strayed from answering our questions and often looked to their parents for support if they were not sure what to say. To engage the young adults, we often directed questions towards them, simplified the wording, and responded to them encouragingly, hoping that they felt comfortable in the research setting. However, they still tended to respond faster and opened up more after the parents rephrased the question.

### The Conversation

The conversation between the young adult and the parent was usually built on the topics and themes identified in the warm-up, such as independent living, boundary setting, planning for the future, or practicing how to have a conversation. We encouraged participants to allow the conversation to flow as naturally as possible and not feel limited to the initial topic.

The parents were oftentimes the one who led the conversation, directing it through means that included suggesting the topic of conversation and actively guiding it through purposeful questions. The young adults were often participants in the conversation, responding to the questions and direction but rarely suggesting a new direction of their own. Although they were in a research setting, they often stated that the topics and style of conversation were very similar to what happens at home.

### **The Self-Confrontation (SC)**

Immediately following the conversation, each participant met separately with a researcher. This was the only part where participants had the opportunity to speak their mind without the other participant present. The conversation was then replayed on laptops and stopped in one-minute intervals. The participants were invited to recall what they were thinking and feeling during each minute of the conversation. Follow-up questions and probes were used based on body language or statements observed to help participants' reflections, which we hoped would provide deeper insight into their internal process during the conversation.

**The parent.** Our experiences working with the parents in the SC drew our attention to three things. First, we found that the parents were more open about their worries, intentions, and understanding of the young adults' limitations in the SC. They often wanted to share their personal background and overall experience, such as finding out the young adult's intellectual disabilities, navigating the system, connecting with other parents, or other children in the family. Of course, all the stories provide helpful contextual information; however, the stories can easily take the interview off track.

Secondly, the questions in the SC are highly reflective. They require the participants to be aware of their inner processes as they interact with others, and to be able to recall these processes with the aid of video playback. It is not unusual to have participants explain or elaborate on the conversation rather than directly addressing their thoughts or feelings; however, we have noticed in this study that some parents devoted most of their responses to describing the young adults. Observing the young adults and processing what they may have been thinking was likely a major part of the parents' thoughts, though some parents seemed unaccustomed to using *I* statements or reporting their own internal processes. This may reflect, consciously or unconsciously, how invested the parents are in directing and advocating for these young adults.

Lastly, we learned from the SC that parents could

be quite purposeful in the conversation with young adults. Some parents said they wanted the conversation to be helpful for the research project so they tried to cover all the "important topics" related to the transition to adulthood. Some parents also said they wanted to take the opportunity to address an issue recently discussed at home or a project they felt was vital to the young adult's transition to adulthood. Sometimes the parents told us that they were asking questions to which they already suspected or knew the answers the young adults would provide. This seemed to be part of their attempt to guide the conversation in a direction that they had in mind. Generally, the parents' tendency to have a clear agenda showed less spontaneity than observed when using this method with other populations.

**The young adult.** When working with the young adults, we noticed that their SCs were often shorter than those conducted with their parents. These young adults nevertheless shared their own difficulties, fears, frustrations, desires, and happiness that arose during these discussions. We observed a range of abilities in recalling their thoughts and feelings. Some young adults shared profound insights, while some had little to report beyond what was expressed in the conversation. In some cases, their ability to project back into the moment during the conversation seemed limited. One of the young adults did not seem to fully understand the purpose of the self-confrontation; he simply enjoyed the experience of watching himself in a conversation.

We often tried to get the young adults to talk more by prompting and clarifying with follow-up questions. We made an effort to help the young adults vocalize their inner experience. We found ourselves replicating what the parents were doing in talking with the young adults, but we were careful to relay words in line with what they were trying to share. One difficulty arose with a participant whose speech was difficult to understand. While he had quite a lot to say, we felt limited as we tried to grasp words or phrases to understand his intended meaning. As researchers who were trying to understand our participants' inner world, this experience was particularly frustrating.

Similar to participants in previous studies (Young et al., 2008; Young et al., 2011; Young et al., 2015) several young adults chose to disclose something they had withheld in the conversation. For example, one participant seemed resistant to the idea of participating in a social group during the conversation; however, in the SC she expressed that she did not share with her mother the real reason for avoiding the group. She said she does not like to bring up everything with her mother because it is her personal business. This captures one of the purposes of using the

method, which grants access to the internal processes of our participants and gives clearer meaning to important aspects of behaviour (Young et al., 2005).

### Data Analysis

Once all parts of the interview were transcribed, the researchers who conducted the interview jointly analyzed the transcripts and wrote a narrative summary of the conversation. The research team then discussed the summary, after which it was presented to the participants for their feedback. Once each case had been analyzed for emerging constructs a cross-case analysis was conducted by the research team.

Although data gathering and time with the participants was meaningful for us as researchers, it was in the analysis that our connection to the participants deepened in a significant way. Through the analytic procedures (see Wall et al., 2016) we spent 15-20 hours with each dyad. As we continually re-watched their conversation, listened to their report of the internal experiences, and engaged in our own dialogue about the nuances of their actions, our understanding of their experience evolved. Through this method we not only “heard” the voices of our participants but also “saw” the what, how, and why of their everyday actions in their transition to adulthood.

When we presented these narratives to the research team we felt like we were representing the family and described them with great empathy. Like the parents in the warm-up, we found ourselves taking on the roles of spokespersons and interpreters for the family. At times we even noticed a defensiveness when it seemed another member of the research team was not understanding the family as we thought the data represented them. We became familiar with the barriers and frustrations the family had faced and often felt those frustrations ourselves in our own processing. This ignited a desire for us to take our understanding of these participants, an often marginalized and easily misunderstood population, and share our research in the hopes of contributing to systemic change.

### Conclusion

The A-PM has been used to conduct several qualitative research projects on transition to adulthood (Young et al., 2008; Young et al., 2011; Young et al., 2015). In this study it retains its advantages in understanding transition to adulthood as actions in the context of interpersonal relationships while meeting new challenges in working with this specific population. We hope that our experience shared here provides unique insight into the new applications of the A-PM, specifically the ways that it can be used to understand and describe how these parents and young adults with intellectual disabilities work together to explore their path forward in the transition to adulthood.



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# Collaborative Approach to Graduate Training at Brock University

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Opening in 1964, Brock University is one of the fastest growing universities in Canada with over 18,000 students and over \$300 million recently being invested in expanding the campus. Medium in size, Brock maintains strong community involvement in the Niagara region. This is achieved by encouraging students to engage in local initiatives and establishing collaborative partnerships with community agencies, such as the Ontario Brain Injury Association, Pathstone Mental Health, and the Canadian Mental Health Association of Niagara. In addition, Brock University contends with other top universities in terms of research productivity, all while preserving student-faculty interactions akin to those of smaller institutions.

Out of all of Brock University's faculties, the Psychology Department continues to lead by example.

Attracting students from across the world, Brock's Psychology Department is recognized as a leading institution in research. In particular, the department has ranked 7<sup>th</sup> nationally in research productivity and 3<sup>rd</sup> in research impact out of all Canadian institutions (analysis of 2004 to 2008 by Carleton, Peluso, & Asmundson, 2010). This excellence in research is evident from a student's perspective; not only are students encouraged to conduct innovative, leading-edge research, but they are also encouraged to disseminate and apply this new knowledge. Developing police interview procedures, assisting individuals with traumatic brain injury, and educating the public about the psychological effects of bullying – these are just a few examples of how students are able to recognize the impact of their research.

Brock's leadership in the research community stems from its ability to attract strong candidates and offer competitive funding packages on par with larger institutions. In particular, all graduate students are guaranteed Teaching Assistantships throughout their studies, providing students with experience in pedagogy and reducing financial concerns, thereby allowing further devotion to academics. Brock's commitment to training competent researchers is evident within the first year of the program; all first year Master's students gain a strong theoretical background in psychological statistics, being introduced to complex statistical analyses and software. With this knowledge, students possess the expertise to devise research designs, participate in additional research aside from their theses, and become critical consumers of research. This solid foundation in statistics complements the knowledge translation skills cultivated in Brock's Focal Area Research Seminars (FARS). These unique seminars allow students to develop the skills to communicate their research to a broader audience and exposes them to a variety of topics within their field.

While graduate students are obtaining experience in these key areas, they are also given the opportunity to put these skills into practice by attending research conferences around the world and actively publishing within the field. Brock University encourages students to present their research to the community and offers many opportunities to network with experts in their respective research area. However, Brock itself has a renowned faculty with diverse research interests, comprising the three main research concentrations: Behavioural and Cognitive Neuroscience, Lifespan Development, and Social/Personality. Each of these streams offers training and tools that ensure student success. The Behavioural and Cognitive Neuroscience stream boasts access to EEG, eye-tracking, behavioural modeling, neuropsychological assessments, and animal research facilities, offering many oppor-

tunities for cross-lab collaborations. The Lifespan Development stream has opportunities to gain expertise in longitudinal analyses, access to specialized face perception equipment, and substantial lab space devoted to childhood research, and the faculty are ranked 3<sup>rd</sup> in Canada for research generativity (Farrell et al., 2016). Faculty in the Social/Personality stream actively contribute to the current literature, with many publishing books that have shaped the discipline, such as Dr. Michael Ashton's new book, *The H Factor of Personality*. This stream encompasses a range of topics including but not limited to psychopathy, subjective well-being, and intergroup relations.

Given the broad range of expertise possessed by Brock University faculty and students, students are encouraged to approach their research from an interdisciplinary perspective, collaborate with other faculty, and seek advice and mentorship from a number of sources. This environment at Brock University cultivates students' potential as independent researchers and contributes to the overall success of Brock graduates.

For more information about the Department of Psychology and Graduate Studies at Brock University, please visit: <https://brocku.ca/social-sciences/departments-and-centres/psychology/graduate-programs>



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