Autism and Bilingualism
What’s the Evidence?

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Cultural and Linguistic Diversity in Today’s World

Monolingualism is now a minority situation (Tucker, 1999)

In Australia (ABS; 2006):

- 19% of population speaks language other than English
- Over 200 other languages spoken

Substantial research considers effects of bilingualism on child development

- Research with children with disabilities more recent
  - Research with children with ASD very recent
How I Became Interested in Bilingualism and Autism

2006 – 2010:

- Large early-intervention trial for preschoolers with autism
- Conducted in a highly multi-cultural region
- Parent-mediated intervention
  - Teaching parents new skills
  - Required parents to have good English and regular use of English with their child with ASD
- Therapist reflections on best-practice?

Leadbitter et al. (in progress):

- Comparison of bilingual- and monolingual-exposed children
How the Brain Deals with Language

Children gradually acquire language via social interaction

- First words ~ 1st birthday
  - First phrases ~ 18-24 months
  - Huge growth in vocabulary and complexity of speech across preschool years... and beyond...

Specialized ‘language areas’ develop within the brain

The brain is ‘plastic’... but within reason

- Difficult to ...
  - Develop language later in life
  - Learn a new language later in life
How the Brain Deals with **Two Languages**

Two types of bilingualism

- **Simultaneous:**
  - Two languages acquired together in infancy
  - Young brain must learn which is which
  - And how to switch appropriately/flexibly between

- **Sequential (aka. Dual-language learning):**
  - L1 acquired first (just as in monolingualism)
  - L2 learned later... childhood, adolescence, adulthood...
    - “Mapped on top” of L1
    - Brain uses existing L1 to learn later L2
What we Know: From Studies with TD Children and NT Adults

Cognitive advantages from simultaneous bilingualism

- Better executive and social-cognitive skills in children
- More use of gestures (and adults) (e.g., Carlson et al., 2008)

In adults (simultaneous or sequential bilingualism)

- One language usually ‘dominant’ (e.g., Genesee et al., 1995)
  - Feels most comfortable and spoken most competently
  - Not necessarily the first or ‘native’ language
- Adult bilingualism confers slight negative impact
  - Slower to access vocabulary (e.g., naming pictures; ‘finding’ the right word, etc., e.g., Roberts et al., 2002)

Bilinguals unlikely to feel equally comfortable with L1 & L2
What we Know about Bilingualism and ASD:
From Surveys and Interviews with Parents and Professionals

Broad parent survey (Kay Raining-Bird et al., 2012):
- Professionals reportedly advise single-language exposure, for children with disabilities

Interviews with bilingual parents (Wharton et al., 2000; Yu, 2013)
- Most advised to interact using non-native English
- But described feeling more effective in native language
  - Increased warmth, and comfort; fewer interruptions
  - Concerned about impact of own poor English for child

Interviews with Australian professionals (Hudry et al., in prep)
- ~ half had been consulted for advice about bilingualism

Confirmed the need for dedicated research
What we Know:
From Studies with Other Groups of Children at Risk

Children born preterm with very low birth weight (Walch et al. 2009)

(Chapman, 1995; Feltmate et al., 2008)

Children with Down syndrome (DS) and Specific Language Impairment (SLI)

- No apparent further language delays in bilinguals compared to mono.
  - So no clear detrimental effect of bilingual exposure...

But ASD is different to these other conditions... (and highly variable)

- Expressive language is often delayed/impaired
- Social skills, including communication, is a core diagnostic feature
- Executive functions, social-cognition are ongoing difficulties
- Interaction can be difficult for parents and their children with ASD
What we Know:
The First Study of Bilingualism in a Child with Autism

Single case study (Seung et al., 2006)
- Successful incorporation of Korean and English into early intervention for one boy with ASD

2011-current: A handful of between-group studies
- Leadbetter et al., (in preparation)
- Hambly & Fombonne (2012; 2014)
- Ohashi et al. (2012)
- Valicenti-McDermott et al. (2013)
- Peterson et al. (2012)

- Australian Study of Bilingualism and Autism
Very Recent Findings: Australian Study of Bilingualism and Autism

18 BIL and 20 MON exposed preschoolers with ASD

- Similar levels of ASD severity and functioning
- Tests of child language & Interviews with parents
- Observation of parent-child free play
  - In English and in BIL parents’ native languages
- Most BIL parents had decided to use English with child
- Similar assessed English language across MON and BIL
  - But not when tested by parent-report or when language observed during in free-play
- Very few BIL exposed children were functionally bilingual
Very Recent Findings:
Australian Study of Bilingualism and Autism

18 BIL and 20 MON preschoolers with ASD

- Parent interaction during free-play with the child
- Tested BIL and MON parents’ the English-language skills

- BIL parents (non native speakers) had poorer English
- But BIL parents reported more comfort using English
  - Also tended to speak more when using English
  - ... but... most had decided to use English with child

- BIL parents were more directive than MON parents
  - And used less expansion of child speech

  **BIL children used more gestures when parents interacted using their native languages vs. English**
What we Know:

Studies of Bilingualism in Children with Autism

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- Peterson et al. (2012)
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Suggest no further language delays in BIL compared to MON preschoolers with ASD

No clear negative effect of early bilingual exposure...

Handful of parent-report studies on the experience of bilingualism and ASD
So... Autism and Bilingualism: What’s the Evidence?

(Until now) Professionals and parents have had use ‘common sense’

Common sense is often contradictory and Common sense is usually wrong

- The idea that early bilingualism = negative is not supported by evidence...
- May be unhelpful to advise parents to use non-native (i.e., community) language

Current best advice: Work individually with the family

- If the child has early bilingual exposure, so be it! 😊
- Support parents to use the language which feels right
  - If a parent has already switched to English and that feels right, stick with it
- If child with ASD has language delays, it’s probably the ASD (not the BIL exposure)
  - Work on communication... whatever the language
Still Recruiting... Australian Study of Bilingualism and Autism

We still don’t know...

- Impact of functional bilingualism (vs. exposure)?
- How skills present at school-age (and change)?
- How skills present in broader domains:
  - Language and communication?
  - Executive function & social-cognition?
- Any benefits of early bilingualism/exposure?
- Any long-term impacts from parent non-native language use?

Currently recruiting 2 – 5 (ish) year olds with ASD: Bilingual and Monolingual

Dr Kristelle Hudry, Victorian Autism Conference, August 2014

Olga Tennison Autism Research Centre, La Trobe University
Thank you

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Kathy Leadbitter  Pat Mirenda
Catherine Hambly

Participant children and their parents
Staff at referring centres

latrobe.edu.au/otarc
Thank you

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