



INSAR 2017 Summer Institute
Session 4: Autism and Bilingualism:
What Do We Know?
What Do We Need to Know?

Sue Fletcher-Watson

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Course Materials

The purpose of these materials is to help provide an introduction to the Summer Institute session on Autism and Bilingualism. The materials were designed to prepare participants who are unfamiliar with research on bilingualism in Autism with the general background to get the most educational benefit from Dr. Fletcher-Watson's presentation. Toward this objective, we have prepared the following: (1) learning objectives for this session; (2) some key terms and concepts from the field; (3) some broad review articles that are recommended reading. These materials could be considered "prerequisites" in preparing for the presentation.

In collaboration with Dr. Fletcher-Watson, these materials were developed by the trainee group for this session:

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Feel free to contact us with questions/comments.

Register for this course and other sessions in this series at autism-insar.org

Learning Objectives

The Summer Institute for Autism Research was established in direct response to requests from early career researchers (graduate students, postdocs, etc.), who asked INSAR for greater training opportunities in multidisciplinary topics. In designing the Summer Institute, the priorities were: (1) to provide a multidisciplinary training platform for young scientists from various backgrounds; (2) allow international participation; and (3) make it freely available. Thus, the Summer Institute covers broad topics (which are geared to researchers outside the respective topic areas), is offered over a free web platform, and allows researchers from around the world to connect with the presenter. The overarching goal of the Summer Institute is to expose junior scientists to topics they are not currently engaged in, with the hope that basic scientists and clinical scientists could learn from each other to ultimately advance the understanding of autism spectrum disorders.

The current session, Autism and Bilingualism, is led by Sue Fletcher-Watson and a team of trainees who worked in tandem to prepare these materials and the web presentation. The learning objectives for attendees of this session include:

- To share an overview of current research in the field of bilingualism in Autism.
- To understand factors relevant to decision-making about bilingualism with an autistic child.
- To explore some of the ways in which bilingualism impacts development and cognition.
- To reflect on the range of research methods applicable to the topic.
- To contextualise the research within a neurodiversity framework.
- To gain understanding of the evidence-based information available for families, practitioners and researchers.
- To identify future avenues for autism and bilingualism research

Glossary of Terms

Below is a breakdown of some of the technical terminology used in this session.

- **Bilingualism, multilingualism, polyglots**

The term "bilingual" as used in research refers to a range of groups of people with different types of language exposure. :

- Bilinguals = people who know two languages
- Multilinguals or polyglots = know more than two languages
- Bimodal bilinguals = know both spoken and signed languages
- Simultaneous bilinguals = learned at least two languages from birth
- Early sequential bilinguals = learned their second language as a child
- Late sequential bilinguals = learned their second language later in life
- Balanced bilinguals = have similar abilities in all their languages
- Imbalanced bilinguals = have higher abilities in one or some of their languages, with the dominant languages varying between domains.

In this diversity of bilingual profiles the simultaneous balanced bilingual is the exception rather than the rule. In research the distinction between bilingualism and multilingualism is rarely made and it is generally the term "bilingualism" that is used to refer to both.

Regarding the terms "multilingual" and "polyglot", outside of research some people consider them as synonymous with different roots (Latin or Greek), while some people consider they refer to different learning process: often polyglots have learnt multiple languages as adults, whereas multilinguals were raised in multi-language environments. In research the distinction between "bilingual", "multilingual" and "polyglot" is rarely made, and the term "bilingual" is generally used.

- **Bilingual exposure:** coexistence of several languages, spoken or written, in the environment. The bilingual exposure is measured in term of quantity (amount of time spent listening or reading to each language) and quality (variety of speakers, linguistic skills of the speakers, for example).

- **Bilingual proficiency:** proficiency in a language is measured via one's ability to speak (oral expression), write (written expression), understand (oral reception), and read (written reception) this language. In bilinguals proficiency can vary between skills (speak, write, understand, read) and between languages.
- **Communicative gestures:** gestures and movements produced to communicate.
- **Cross-sectional study:** a study that analyses data collected from a population at one point in time, compared to a longitudinal study that analyses data collected from the same population at several points in time.
- **Executive functions:** cognitive processes used to control, inhibit, switch, plan, monitor, or organise actions or other processes.
- **Neurodiversity:** diversity in human brains, minds, and cognitive functioning within a population.
- **Neurodiversity framework:** idea that neurological differences underlying diagnosed conditions, such as Autism Spectrum Disorder (ASD) or Attention Deficit Hyperactivity Disorder (ADHD), result from natural variations, and should not be conceptualised as a disease or injury.
- **Perspective-taking:** socio-cognitive process used when someone take the perspective of someone else. This can be applied to a visual perspective ("I think she sees ..."), a cognitive perspective ("I think she thinks ...") or an emotional perspective ("I think she feels ...").
- **Receptive / expressive language:** The **receptive language** refers to all the words, linguistic concepts and gesture someone understands. The **expressive language** refers to all the words, linguistic concepts and gesture someone can use.
- **Social cognition:** cognitive processes used for social interactions. It involves processes such as perspective-taking, emotion recognition, understanding of social rules, amongst others.

- **Switching:** Bilinguals can switch between languages when both their languages coexist in the environment or when interacting with people who know the same languages. In a conversation the bilingual speakers can either use mainly one language (monolingual mode) and switch for just one word or one sentence, or switch constantly between languages (bilingual mode).
- **Theory of Mind (ToM):** cognitive ability to recognise other people have mental states, possibly different than ours, and to attribute mental states to others.
- **VABS:** Vineland Adaptive Behavior Scales. Set of measures assessing personal and social skills of a person.

Background Readings:

- Drysdale, H., van der Meer, L., & Kagohara, D. (2015). Children with Autism spectrum disorder from bilingual families: A systematic review. *Review Journal of Autism and Developmental Disorders, 2*(1), 26-38.
- Hampton, S., Rabagliati, H., Sorace, A., & Fletcher-Watson, S. (2017). Autism and Bilingualism: A Qualitative Interview Study of Parents' Perspectives and Experiences. *Journal of Speech, Language, and Hearing Research, 60*(2), 435-446.
- Iarocci, G., Hutchison, S. M., & O'Toole, G. (2017). Second Language Exposure, Functional Communication, and Executive Function in Children With and Without Autism Spectrum Disorder (ASD). *Journal of Autism and Developmental Disorders, 1*-12.
- Reetzke, R., Zou, X., Sheng, L., & Katsos, N. (2015). Communicative development in bilingually exposed Chinese children with autism spectrum disorders. *Journal of Speech, Language, and Hearing Research, 58*(3), 813-825.
- Uljarevic, M., Katsos, N., Hudry, K., & Gibson, J. (2016) Practitioner Review: Multilingualism and neurodevelopmental disorders – an overview of recent research and discussion of clinical implications. *Journal of Child Psychology and Psychiatry, 11*, 1205-1217.

Further Readings

- Baker, D. (2012) Particular polyglots: multilingual students with autism. *Disability and Society, 28*, 527–541.
- Hambly, C., & Fombonne, E. (2012). The impact of bilingual environments on language development in children with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 42*(7), 1342-1352.

- Kim, H. & Roberti, M. (2014) "Tengo que habla español. Yo no entiendo ingles!": A qualitative case study on a bilingual child with Autism Spectrum Conditions, *Journal of Special Education Apprenticeship*, 3 (1).
- Kremer-Sadlik, T. (2005). To be or not to be bilingual: Autistic children from multilingual families. In *Proceedings of the 4th International Symposium on Bilingualism* (pp. 1225- 1234). Cascadilla Press Somerville, MA.
- Ohashi, J. K., Mirenda, P., Marinova-Todd, S., Hambly, C., Fombonne, E., Szatmari, P., ... & Volden, J. (2012). Comparing early language development in monolingual-and bilingual-exposed young children with autism spectrum disorders. *Research in Autism Spectrum Disorders*, 6(2), 890-897.
- Valicenti-McDermott, M., Tarshis, N., Schouls, M., Galdston, M., Hottinger, K., Seijo, R., ... & Shinnar, S. (2013). Language differences between monolingual English and bilingual English-Spanish young children with autism spectrum disorders. *Journal of Child Neurology*, 28(7), 945-948.
- Petersen, J. M., Marinova-Todd, S. H., & Mirenda, P. (2012). Brief report: An exploratory study of lexical skills in bilingual children with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 42(7), 1499-1503.
- <http://www.dart.ed.ac.uk>