

# Implicit bias in academic papers:

## Skills and areas covered:

- Academic Skills: Critical reading and critical thinking
- Reflecting on epistemology and methods
- Open science and inclusivity

## Objectives:

- discuss and recognise researchers' implicit bias,
- recognise its influence on the choice of research methods, results and conclusions
- reflect on the influence it may have on public perceptions
- the harm using language that pathologises communities and groups of people may cause to them and to the progress of research.

## Students:

- undergraduates and early researchers

## Materials:

- Lombroso, C. (1903). Left-handedness and left-sidedness. *The North American Review*, 177(562), 440-444. <https://www.jstor.org/stable/25119452>
- Interactive task for Activity 1 based on the above article- <https://msgrose-hodge.github.io/ND/h5p-standalone-1.3.x/demo/content-example-2.html>
- Choose one of the following or use both:
  - **Article 1** - Zwaigenbaum, L., & Penner, M. (2018). Autism spectrum disorder: advances in diagnosis and evaluation. *BMJ: British Medical Journal*, 361. <https://www.jstor.org/stable/26959693>
  - **Article 2** - Faras, H., Al Ateeqi, N., & Tidmarsh, L. (2010). Autism spectrum disorders. *Annals of Saudi medicine*, 30(4), 295–300. <https://doi.org/10.4103/0256-4947.65261>

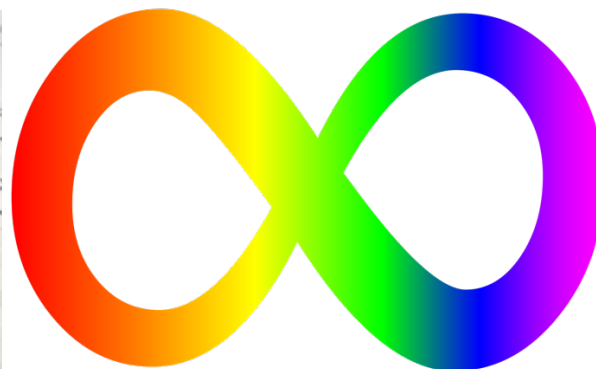
Developed by: Magdalena Grose-Hodge & FORRT  
#FORRT @team-neurodiversity @Magdalena Grose-Hodge

## Activity 1 Skim reading – identifying bias and discriminatory language

### *Before you read*

*Are you or do you know anyone who is left-handed? How were left-handed individuals often perceived in the past?*

*What is neurodiversity? What does it mean to be neurodivergent?*



### *Reading*

*Looking at the article published in The North American Review in 1903, what can you say about the beliefs the author held about the following:*

*men / women / white people / people of other races / children / left-handed individuals / individuals suffering from mental health problems / individuals with criminal record?*

*Do you think any of the groups have been involved in the production of this paper?*

*Do you think this paper would be well-received today?*

*Can you identify language that would not be used today? Why would it not be used anymore? Political correctness or avoiding discriminatory framing? Do you think terminology matters? Why? / Why not?*

## LEFT-HANDEDNESS AND LEFT-SIDEDNESS.

BY PROFESSOR CESARE LOMBROSO.

As is universally known, we use the right hand very much more commonly than the left, the number of persons who are more agile with the left hand being comparatively small. They are ordinarily found among women, children, and savages, and they were more numerous in ages past than they are now. Much has been written of these persons, but as no one has heretofore tried to determine their frequency by means of statistics, I decided to undertake that task with the aid of my friend Professor Marro.

Amongst 1029 operatives and soldiers I found a proportion of four per cent. in men and five to eight per cent. in women. Among lunatics the proportions are not much different. On the other hand, studying a certain number of criminals, the quota of left-handedness was found more than tripled in men, thirteen per cent., and nearly quintupled in women, twenty-two per cent. Some particular kinds of criminals, however, as, for example, swindlers, offered me again a much greater proportion, thirty-three per cent., while murderers and ravishers give less—from nine to ten per cent. At all events, this is a new characteristic, which connects criminals with savages, and differentiates them from sane people as well as lunatics.

[...]

To understand the exact significance of these researches, it is necessary to know that a greater tendency to asymmetry is seen in the animal species the nearer they approach man and the more perfect they are.

[...]

As asymmetry always grows in proportion to the development, and as the brain is among the organs which develop the most, it becomes more asymmetric the more it works. Therefore, as man advances in civilization and culture, he shows an always greater right-sidedness as compared to savages, the masculine in this way outnumbering the feminine and adults outnumbering children. Thus women and savage races, even when they are not properly left-handed, have certain gestures and movements which are a species of left-handedness. Some time ago Delaunay observed that the man holds out the right arm, which the woman takes with the left; that the woman buttons her clothes from right to left, while the man does so from left to right, and that women and children, when they trace a line or turn a key, for instance, of a watch, initiate the movement from right to left, while the adult man does so always from left to right. This explains why, in early times, and still among people little civilized, such as Arabs, the writing was preferably from right to left, which is the habit of children until corrected.

- Interactive task: <https://msgrose-hodge.github.io/ND/h5p-standalone-1.3.x/demo/content-example-2.html>

## Activity 2 Deficit approaches and patologising minority groups

*In the 70s, Bakan and colleagues have published a number of highly influential articles that patologised left handedness. Their claims, which were later revoked (e.g., Bishop, 1990), included that left handedness results from birth trauma and a minor brain damage. Below are some of their papers that discussed the ideas:*

Bakan, P (1971) Handedness and Birth Order. *Nature* 229(195). <https://doi.org/10.1038/229195a0>

Bakan P (1975) Are left-handers brain damaged? *New Scientist* 67(1): 200–202.

Bakan P, Dibb G, Reed P (1973) Handedness and birth stress. *Neuropsychologia* 11(3): 363–366.

*Below is part of an abstract to one of the papers (Bakan, 1971). Read it and underline parts where language that suggests pathology is used. Can you see any ableist language used in this abstract?*

“The frequency of left-handedness is greater in males and in twin births, both of which are also associated with greater birth and infant mortality and, in the case of males, a higher rate of spontaneous abortion. The pre-natal and peri-natal periods seem to be more stressful for these groups. Left-handedness is also associated with language disorders such as stuttering, dyslexia, and mental retardation, conditions where central nervous system pathology may be implicated<sup>1</sup>. This suggests that the incidence of left-handedness might be correlated with stressful pre-natal and birth conditions. Such difficulties are most characteristic of primiparous births (longer labour and more use of instruments) and births to older mothers. Thus high risk birth orders would be the first born and the late-born (defined here as fourth or later birth).”

*What effect, do you think, this had on the public perceptions of left handedness in the 70s and 80s? And what impact did it have on the population? And the progress of research in the area?*

*Can you think of other areas where implicit bias / patologising language (has) had a detrimental impact on? What groups of people might have been affected?*

### Activity 3 Neurodiversity paradigm

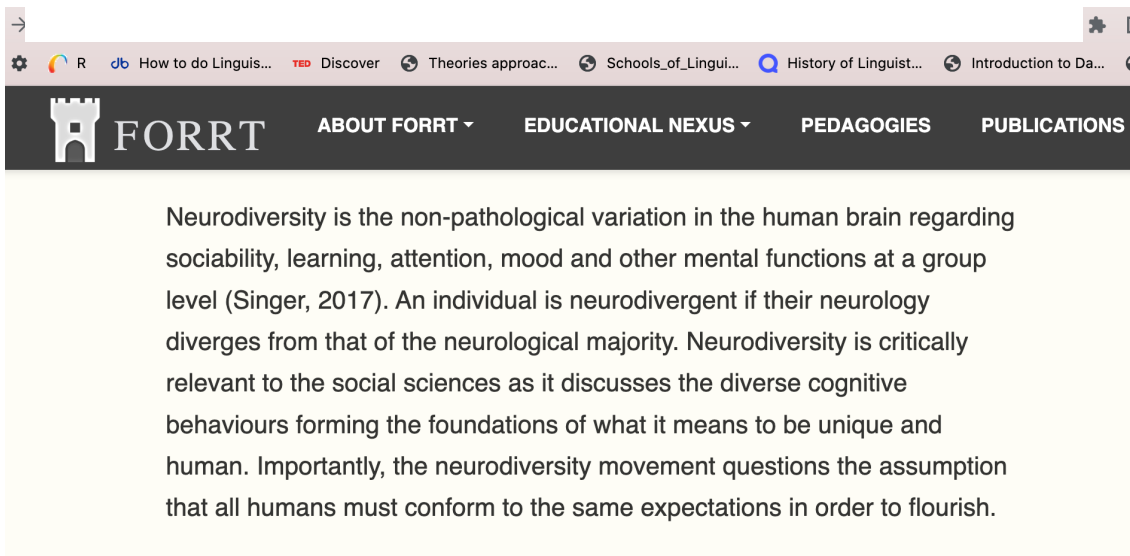
*Look at the definition of neurodiversity from the FORRT (Framework for Open and Reproducible Research Training) website and a twitter thread from the same research group and discuss / reflect on these questions:*

*Can you explain what neurodiversity is in your own words?*

*What is the difference between neurodiversity and neurodivergence?*

*What does it mean that an individual is neurodivergent?*

*Look at the wheel from the group's Twitter thread and either discuss it with in pairs or reflect on it. Are you included in the wheel?*

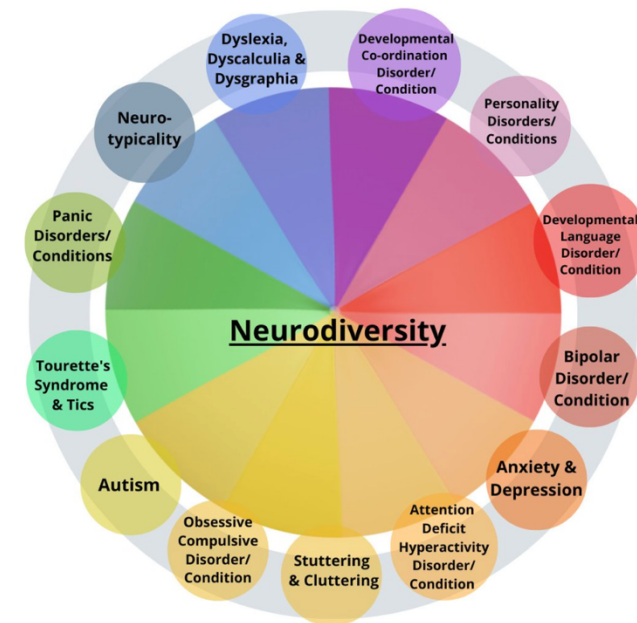


The screenshot shows the FORRT website with a navigation bar containing links to ABOUT FORRT, EDUCATIONAL NEXUS, PEDAGOGIES, and PUBLICATIONS. The main content area defines neurodiversity as the non-pathological variation in the human brain regarding sociability, learning, attention, mood and other mental functions at a group level (Singer, 2017). It states that an individual is neurodivergent if their neurology diverges from that of the neurological majority, and that neurodiversity is critically relevant to the social sciences as it discusses the diverse cognitive behaviours forming the foundations of what it means to be unique and human. Importantly, the neurodiversity movement questions the assumption that all humans must conform to the same expectations in order to flourish.

<https://forrt.org/educators-corner/010-neurodiversity/>

FORRT @FORRT@mastodon.social  
@FORRTproject

#Neurodiversity includes neurotypical & neurodivergent people. A person is neurodivergent when their neurology diverges from the neurological majority. Examples of neurodivergence: dyslexia, dyspraxia, OCD/C, personality disorders/conditions, autism, ADHD/C, Tourette's and tics.



<https://twitter.com/FORRTproject/status/1547570517137207296>



## Activity 4

Choose one of the two articles below and skim the abstract and intro. Discuss or reflect on the questions below.

- **Article 1** - Zwaigenbaum, L., & Penner, M. (2018). Autism spectrum disorder: advances in diagnosis and evaluation. *BMJ: British Medical Journal*, 361. <https://www.jstor.org/stable/26959693>
  - **Article 2** - Faras, H., Al Ateeqi, N., & Tidmarsh, L. (2010). Autism spectrum disorders. *Annals of Saudi medicine*, 30(4), 295–300. <https://doi.org/10.4103/0256-4947.65261>
- How is neurodivergence viewed by the authors? How do the authors see individuals with neurotypes other than neurotypical?
  - Are neurotypical and neurodivergent populations perceived equally by the authors or is one of the groups given as a model and the other compared to it by looking at their deficits?
  - Can you see any examples of pathologising language? Underline fragments that suggest that neurodivergent brains are deficient rather than different.

Look at some examples of language taken from these and other articles published in the last 20 years in influential journals and discuss the language use. Can you identify the implicit bias? What does it suggest about the perception of different neurotypes presented by many researchers nowadays?

**Abnormal time processing in ASD / red flags indicating possible autism spectrum disorder / may have speech peculiarities including ‘flat’, unmodulated speech, repetitiveness, use of stereotyped phrases/ detecting the risk of autism spectrum disorder /autism spectrum disorder is characterised by impaired social communication and interaction and by restrictive interests and behaviours**

**Autism is one of a group of neurodevelopmental disorders known as pervasive developmental disorders (PDD). These disorders are characterized by three core deficits: impaired communication, impaired reciprocal social interaction and restricted, repetitive and stereotyped patterns of behaviors or interests. The presentation of these impairments is variable in range and severity and often changes with the acquisition of other developmental skills.**