

Speaking the same language?

Comparing communication profiles of females and males on the autism spectrum

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Why consider communicative gender differences in autism?

Females on the Autism Spectrum (FwASD) present with more subtle impairments in social interaction (Lai et al 2011) and restricted interests (Mandy et al 2012) than male peers (MwASD). This may impact negatively on correct diagnosis of ASD in females (Kopp and Gillberg 2011), which in turn reduces access to suitable services.

Little is known about gender differences in language and communication skills of young people with ASD, especially within the higher IQ group. There is some evidence that gender differences may exist in both functional communication (Park et al 2012) and the social impact of language and communication deficits (Sedgewick et al, 2016).

This study aims to establish a profile of language and discourse skills for girls and boys with autism and compares this to typically developing females (FwTD) and males (MwTD).



What we did

13 females with autism and 13 males with autism (plus matched controls) aged 9 -10 years and without learning difficulties (PIQ $M=111$) were recruited to take part in a series of language and communication assessments (3-4 sessions of 1 hour). This included:

- Standardised measures of receptive and expressive structural language at vocabulary, sentence and paragraph level
- Experimental measures of pragmatic language: interpretation of figurative language (fig.1) and implied meaning (local coherence: fig.2)
- Novel experimental tasks of receptive (fig.3) and expressive vocabulary of emotion

What we found

There were no significant differences between group scores on structural language measures (BPVS, TROG & TOWK*)

There were significant differences between group scores for:

- Word association (CELF*) $p=0.001-0.003$
- Expressive vocabulary of emotion (fig.4) $p=0.0035$
- Receptive vocabulary of emotion (fig.5) $p=0.009$
- Interpreting meaning & intent in figurative language (fig.6) $p < 0.001$
- Interpreting implied meaning (local coherence) $p=0.001$

A typical pattern across pragmatic tasks placed FwTD as highest performers with MwASD as the lowest performers. FwASD were generally *lost in the middle*, except on **expressive vocabulary of emotions** where they matched FwTD.



(fig.1) Figurative Language*

George left his bath water running
George cleared up the mess in the bathroom

George cleared up the mess in the bathroom because:

a. His brother had left it untidy
b. The workman hadn't cleared up his mess
c. The bath had overflowed

(fig.2) Local coherence*



(fig.3) Receptive vocabulary of emotions

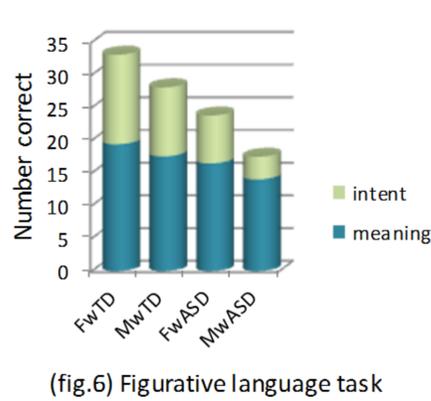
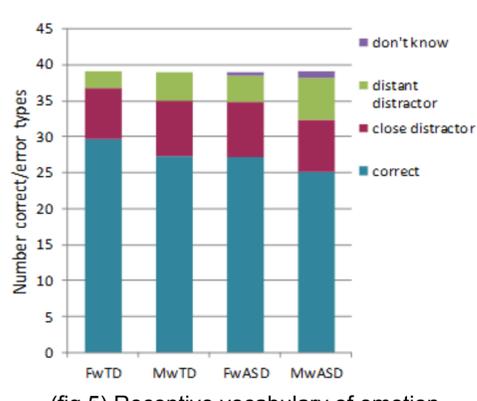
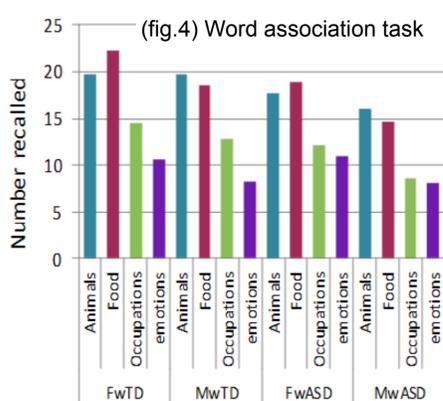
What this means

Females with autism do not show the same level of impairment as males with autism in pragmatic language tasks.

However, there is a pattern which suggests they are not performing at the same level as females with typical development.

This mirrors findings from studies in social awareness (Lai et al, 2012) and pretend play (Knickmeyer et al, 2008).

Both males and females with autism demonstrated pragmatic language difficulties despite near average results on standardised measures of vocabulary and sentence level language



How will this help? Key points

- Females with autism should be assessed for language skills using gender specific normative data i.e. being compared to the typically developing female population rather than combined male/female group norms
- Females with autism may also need specific support with functional use of communication which should be tailored to address the individualized difficulties she experiences within her peer group.
- Assessment of communicative needs for high-functioning females and males with autism should always consider more than structural language skills.
- Good structural language skills should not preclude referral to a diagnostic service

*details on reference list

