**Overview of original studies**

Data were analysed from two previous studies by the authors testing adaptations to questions in order to support autistic adults’ episodic memory recall in different contexts, as outlined below (see Table 1 for further details of the measures in each study).

Recall specificity in police, healthcare, and employment interviews. Norris et al. (2020) tested the effectiveness of three levels of questioning support on the specificity and relevance of interviewees’ episodic ABM recall. Thirty autistic and 30 TD participants were asked a series of questions about personally experienced events that could be relevant to interviews in police (e.g., a time you have been to the bank), employment (e.g., a time you have worked as part of a team), and healthcare contexts (e.g., a time you have felt sad), with participants instructed to recall a specific instances in as much detail as possible. Levels of questioning support differed (within participants): in open (i.e., unsupportive) questions, participants were asked to recall an instance (‘tell me about…’) with no further prompting, while in a ‘visual-verbal prompting’ (V-VP) technique (supportive), initial open questions were immediately followed by specific prompts (e.g., “tell me about a time you went to the bank… Tell me when it happened, the setting, the people who were there, the actions that occurred, and any objects that were there?” See Norris et al., 2020 for full details). Responses were coded for specificity on a 5-point scale (Piolino et al., 2002); for example, a score of 4 was given for the recall of a specific event (isolated, situated in time and space) with rich detail (e.g., actions, thoughts, perceptions, and images), whereas answers with no memory recalled scored 0 (see Norris et al., 2020). In the present study, we were interested in the relationships between executive functions, ToM, expressive language, and recall specificity in response to unsupportive open questions versus supportive V-VP questions, as autistic people provided less specific answers overall compared to TD participants, but V-VP task support was beneficial in improving specificity across all participants (Norris et al., 2020).

Recall quality in employment interviews. Maras, Norris, Nicholson, et al. (2020) examined the efficacy of adapted employment interview questions for improving the quality of candidates’ recall. Twenty-five autistic and 25 TD participants underwent mock employment interviews, in two phases approximately six months apart. In Phase 1, participants were asked standard (unadapted, i.e., unsupportive) employment interview questions (e.g., ‘Do you work well as part of a team?’). Employment professionals then rated the quality of participants’ responses from the interview transcripts, blind to group, and the questions were adapted to be more supportive based on professionals’ and participants’ feedback (predominantly by making questions more explicit in terms of the information required from interviewees, with prompts to help them structure their answers). Twenty-one autistic and 21 TD participants returned for the Phase 2 interview with a counterbalanced set of adapted (i.e., supportive) questions (e.g., ‘I’m going to ask you to give me an example of a time you’ve worked in a team. What was your role in the team? How did you work with the other team members to solve problems?’ [each sub-question asked one at a time]). Autistic participants’ responses were rated more poorly than TD participants with unsupportive questioning, but there was no group difference when supportive questions were used (Maras, Norris, et al., 2020).

### Table 1. Summary of interview type, unsupported and supported questioning examples, and the dependent variables for each study

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| **Study reference** | Norris et al. (2020) | Maras, Norris, Nicholson, et al. (2020) |
| **Interview type[[1]](#footnote-1)** | Autobiographical memory interview, recalling personally-experienced episodic memories relevant to police interviews (events where crimes could happen; e.g., a memory of going to a party), healthcare consultations (memories related to physical and mental health difficulties), and employment interviews (social and non-social work-related memories, e.g., working as a team, meeting a deadline) | Mock employment interviews, whereby participants were asked commonly-used work-related questions such as ‘What are some of your strengths?’, and ‘Tell me about a time you had to work with someone who was difficult to get along with – how did you handle it?’ across two Phases (unsupported and supported, see below) |
| **Unsupported questioning example** | “Tell me about a time you went to a party?” | “What are some of your strengths?’ |
| **Supported questioning example**  | “Tell me about a time you went to a party - Tell me about **when** it happened, the **setting**, the **people** who were there, the **actions** that occurred, and any **objects** that were there?”(Participants had a diagram with the bolded words in front of them) | “I’m going to ask about your strengths: What do you consider to be your main strengths (things that you are good at)?” [participant answers] “How have you used these strengths at work?” [participant answers](Participants had a copy of the questions in front of them) |
| **Scoring and dependent variable** | Specificity Scored on a scale of 0 (absence of a memory) to 4 (memory is highly specific, clearly situated in time and space) | Quality (employer rated)Scored on a scale of 1 (very poor; a single yes/no answer with little to no elaboration/irrelevant/off-topic response) to 5 (excellent; fully satisfied all aspects of the question, relevant to employment) |

## Participants

In both studies, participants were recruited mainly from the South West of England and surrounding areas, including via previous research participation, autism-related and local community Facebook groups, social and support groups, and local community recruitment (including posters, magazine articles, and social media posts). All autistic participants had received a formal clinical diagnosis of an Autism Spectrum Disorder according to DSM–IV (American Psychiatric Association, 2000) or DSM-5 criteria (American Psychiatric Association, 2013), and confirmed this with a copy of their clinical diagnostic report. Those who had received a diagnosis but were unable to access their report received the Autism Diagnostic Observation Schedule, Second Edition (ADOS-2; Lord et al., 2012) to confirm the diagnosis. All TD participants scored below the recommended minimum cut-off of 32 on the Autism Spectrum Quotient (AQ-50 with 80% specificity; Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001). Participants provided their written informed consent to take part and were fully debriefed after each study. Ethical approval was obtained from the Psychology Research Ethics Committee at the University of Bath.

## Materials

### Inhibition

The Delis-Kaplan Executive Function System (D-KEFS; Delis et al., 2001) Colour Stroop task consists of a speed-reading phase (black ink colour-words), colour naming phase (naming the colour of squares), inhibition phase (naming the ink colour of incongruent colour words, i.e. ‘red’ printed in green), and a switching phase (switching between naming the ink colour or reading the incongruent-coloured word). The normed contrast score of the *inhibition phase* minus the *colour naming phase*was used to index inhibition, minimising the impact of processing speed (Coolin et al., 2014).

### Working memory

The Corsi Block-Tapping Task (Corsi, 1973) is a spatial working memory (WM) span task (computerised version via Inquisit; [www.millisecond.com](http://www.millisecond.com/)) consisting of a forwards and backwards span (Kessels et al., 2000, 2008). In up to eight trials of spans increasing by +1, participants were shown a visual array of nine blocks on a screen which ‘lit up’ in a fixed sequence. Participants were instructed to use the mouse to click the blocks in the same order as the lighting-up sequence (forward span) or in reverse order (backward span). The sequence length started at two, increasing by one up to a maximum of eight. The task terminated when participants gave incorrect responses to two trials of the same span. Each participant’s longest backward span was used as an index of WM (Kessels et al., 2000, 2008). Online measures are reported to have good convergent validity with standard (i.e., non-online) Corsi Block tasks (e.g., Siddi et al., 2020), and with split-half reliability reported to be moderate (0.78; de Paula et al., 2016).

### Theory of Mind

The Adult Theory of Mind (A-ToM) test (Brewer et al., 2017) was used to measure Theory of Mind (ToM). Following Brewer et al. (2017), participants watched six videos of social situations (e.g., involving *faux pas*, sarcasm, white lies, etc.) and six physical videos (situations which did not require consideration of mental states; e.g., comparing interest rates offered by a bank and car finance) which played in a randomised order via Qualtrics. One question about what they had seen in the video was displayed on-screen immediately after the video ended, and participants were asked to type their response within 60 seconds. Participants’ answers were rated by two independent raters on a 0–2 scale: 0 (incorrect), 1 (partially correct) or 2 (correct) (see Brewer et al., 2017 for scoring criteria). Each rater pair met to discuss discrepancies in coding and agreed all final scores. Test retest reliability are reported at *r* = .82 for the physical scale, and *r* = .64 for the social scales (Brewer et al., 2017).

### Expressive language

The Expression, Reception and Recall of Narrative Instrument (ERRNI; Bishop, 2004) was used to measure expressive language. For the ERRNI task, participants were provided with a wordless picture book and asked to silently view all the images until they had the story in their mind. They were then asked to narrate the story aloud, following the pictures. Then, after 15-30 minutes participants were again asked to tell the story out loud *without* looking at the picture book. The current study focuses on the syntactic complexity of expressive language, indicated by Mean Length of Utterances scores (MLU; the mean number of words in each utterance) from the recall trial.

## Procedure

The current study included data from 57 participants who were administered tests of executive functioning, ToM, and language during the studies, conducted over a two-year period. Thirty-three of the participants (18 autistic, 15 TD) took part in both studies, and 24 in the ABM study only (10 autistic, 14 TD). The tests were administered after the episodic memory task in each study, and participants were able to take breaks when required. During the study of *Recall specificity in police, healthcare, and job interviews*, participants were administered the ERRNI, inhibition, WM, and ToM tasks. For *Recall quality in employment interviews* study, the inhibition and WM tests were administered to any participants who had not previously completed them.

1. See original papers for full methods [↑](#footnote-ref-1)