Interviewing autistic adults: adaptations to support recall in police, employment, and healthcare interviews

Jade Eloise Norris[1], Laura Crane[2], Katie Maras[1]

[1]Centre for Applied Autism Research (CAAR), Department of Psychology, University of Bath, BA2 7AY, UK

[2]Centre for Research in Autism and Education (CRAE), UCL Institute of Education, University College London, WC1H 0NU, UK

Corresponding Author:

Dr Katie Maras

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Abstract

Recalling specific past experiences is critical for most formal social interactions, including when being interviewed for employment, as a witness or defendant in the Criminal Justice System (CJS), or as a patient during a clinical consultation. Such interviews can be difficult for autistic adults under standard open questioning, yet applied research into effective methods to facilitate autistic adults' recall is beginning to emerge. The current study tested the efficacy of different prompting techniques to support autistic adults' recall of specific personal memories. Thirty autistic and 30 typically developing (TD) adults (IQs > 85) were asked to recall specific instances from their past, relevant to CJS, healthcare, and employment interviews. Questions comprised 'open questions', 'semantic prompting' (where semantic knowledge was used to prompt specific episodic retrieval), and 'visual-verbal prompting' (V-VP; a pie-diagram with prompts to recall specific details, e.g., who, what, where, etc). Half the participants received the questions in advance. Consistent with previous research, autistic participants reported memories with reduced specificity. For both groups, V-VP support improved specificity and episodic-relevance, while semantic prompting also aided recall for employment questions (but not health or CJS). Findings offer new practical insight for interviewers to facilitate communication with TD and autistic adults.

Keywords: Autism, interviewing, employment, criminal justice system, healthcare, task support, memory, episodic, recall, preparation

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Autobiographical memories (ABMs) comprise both personally experienced events ('personal episodic memories', e.g., my first day at school) and facts related to the self ('personal semantic memories', e.g., I used to live in London). Recalling specific ABMs that happened on one particular day, at a specific place and time (Conway & Rubin, 1993; Piolino et al., 2010) aids a range of everyday and formal situations. In the Criminal Justice System (CJS), for example, an eyewitness who provides an elaborate, detailed account of an incident is likely to offer more investigative leads than an eyewitness whose account is lacking specificity, is deficient in contextual details, or deviates from a temporal account (Gaigg & Bowler, 2018). Similarly, in healthcare consultations, providing specific information about the onset of an illness or injury can be crucial in supporting a clinical diagnosis (e.g., taking a history, reporting symptom onset and what makes them better/worse, etc), while evidencing claims about possessing favourable skills and experience with specific examples is important for success in employment interviews (Barclay, 2001; Campion, Pursell, & Brown, 1988).

Autistic people often experience difficulties in recalling specific personal episodic memories (Ben Shalom, 2003; Crane & Goddard, 2008; Goddard, Howlin, Dritschel, & Patel, 2007; Klein, Chan, & Loftus, 1999; McDonnell, Valentino, & Diehl, 2017). These difficulties are characterised by over-general recollection, with autistic adults retrieving fewer or less specific memories, and taking significantly longer to do so (see Crane & Maras, 2018; Gaigg & Bowler, 2018). This is particularly pertinent for CJS, health, and employment interviews because autistic individuals currently face significant disadvantages in each of these areas. Due to factors such as social vulnerability and difficulty with understanding others' intentions, autistic people are more likely to be questioned in the CJS (e.g., (Chaplin & Mukhopadhyay, 2018; Rava, Shattuck, Rast, & Roux, 2017; Tint, Palucka, Bradley, Weiss, & Lunsky, 2017; Weiss & Fardella, 2018), yet current interviewing techniques are ineffective in eliciting their best evidence (see Maras, in press; Maras & Bowler, 2014). Autistic people also experience significantly higher rates of physical and mental health problems (Bishop-Fitzpatrick & Kind, 2017; Croen et al., 2015), yet struggle with accessing appropriate healthcare given their communication needs (Mason et al., 2019; Muskat et al., 2015; Nicolaidis et al., 2015; Raymaker et al., 2017). Regarding employment, 85% of autistic people are not in full time work (Knapp, Romeo, & Beecham, 2009; see also Gotham et al., 2015; Hendricks, 2010; Howlin, 2013; Levy & Perry, 2011; Lounds-Taylor, Henninger, & Mailick, 2015; Shattuck et al., 2012), and around 46% of employed autistic adults are over-educated or over-skilled for their current role (Baldwin, Costley, & Warren, 2014). Interviews have been reported to be a major barrier to gaining employment (Scott et al., 2019).

A common factor across these contexts is the use of open questions (e.g., "*tell me what happened at the crime scene*"; "*tell me about your accident"; tell me about a time you've met a deadline"*) (Conway & Peneno, 1999; Gask & Usherwood, 2002; Home Office, 2011). Yet this style of questioning is problematic for autistic people, whose performance usually becomes more impeded relative to TD individuals the greater the open-ended nature of the task (see, e.g., Gaigg & Bowler, 2018; Maras, in press). This may be due to difficulties with theory of mind and forming an implicit understanding of the questioner's expectations (e.g., Kenworthy, Yerys, Anthony, & Wallace, 2008; White, 2013, see also Milton, 2012), coupled with executive processing demands (Maister, Simons, & Plaisted-Grant, 2013) and relational processing difficulties (see Gaigg & Bowler, 2018).

Critically, task support in the form of cued recall or recognition tests has been shown to improve autistic individuals' recall of past events compared to free recall (e.g., Bowler, Gardiner, & Berthollier, 2004; Bowler, Matthews, & Gardiner, 1997, or see Boucher, Mayes, & Bigham, 2012). The 'Task Support Hypothesis' posits that, with more specific and supportive cues, autistic people can recall as much information as TD peers (Bowler et al., 2004, 1997). The use of support, such as asking specific questions, can reduce error reporting (e.g., Maras et al., 2013) and increase the amount of accurate information reported (e.g., Almeida, Lamb, & Weisblatt, 2019; Mattison, Dando, & Ormerod, 2015, 2018).

The provision of more support at test may also facilitate the *relevance* of responses. Indeed, autistic people sometimes provide fewer relevant and more irrelevant details in their recall of events. For example, on a semi-structured conversation narrative recall task, Losh and Gordon (2014) found that autistic participants produced more off-topic and irrelevant remarks, departed from the main story themes, and produced less coherent stories. In line with the task support hypothesis, these differences in performance were reduced on a structured story task that involved narrating from a wordless picture book. This indicates that the provision of cues can reduce the ambiguity of what is required by a task, and help to control attention and facilitate the organisation of recall (Losh & Gordon, 2014; see also Losh & Capps, 2003).

A further, but as yet untested, avenue for supporting autistic individuals' episodic ABM retrieval involves drawing upon semantic ABM first as a cue to elicit more specific ABMs. Robinson, Howlin and Russell (2017) found that autistic participants (aged 11-18 years) recalled significantly fewer of their own personality traits but a similar number and type of specific episodic memories to TD individuals (although they required more initial prompts to do so). Whilst in contrast to previous literature (e.g., Crane & Goddard, 2008; Crane et al., 2009), the authors suggested that this may be due to the task structure: initially requesting semantic knowledge about the self may have drawn upon intact semantic ABM structures to scaffold the retrieval of specific memories. This is consistent

with Conway and Pleydell-Pearce's (2000) proposal that ABM is organised hierarchically, with cues first activating general memories (e.g., *'studying at university'*), followed by more specific exemplars (e.g., *'my first day at university'*). When retrieving specific memories, an individual must inhibit each inappropriate general memory encountered during the retrieval search in order to focus on a specific exemplar. This is coordinated by a component termed the 'working self' (a direct analogy with Baddeley's 1986 model of working memory) that arranges memories into goal hierarchies according to current self-concepts (see also Dalgleish et al., 2007). This is of relevance to autistic people because the difficulties they experience in recalling specific ABMs have been suggested to be related to problems in using the self as an effective memory organisation system (Crane et al., 2009; Crane, Goddard, & Pring, 2010). Furthermore, the executive functioning difficulties often reported in autism (Demetriou et al., 2018; Hill, 2004) have been implicated in autistic children and adults' specific ABM retrieval difficulties (Crane & Goddard, 2008; Crane et al., 2009; Goddard, Dritschel, Robinson, & Howlin, 2014). Thus, tasks which draw upon intact semantic processing (e.g., Crane et al., 2009) may reduce executive processing demands, and scaffold episodic memory (e.g., Miller, Odegard, & Allen, 2014).

Allowing time for preparation may also benefit autistic people's recall and is championed by autistic people as a key strategy used to minimise anxiety caused by unpredictable events (Robertson et al., 2018). Autistic individuals have been reported to perform as well as TD individuals on written and online tasks (Crane, Lind, & Bowler, 2013; Zamoscik, Mier, Schmidt, & Kirsch, 2016), which may represent a less stressful retrieval context wherein social demands are not present. Employment experts are increasingly advocating for providing candidates with interview questions in advance to ensure that assessment is based on work history and skills, rather than presentation performance (particularly for disabled groups; Jordan, 2008). Further, healthcare patients are advised to prepare for doctor's appointments by making notes (The Patients Association, n.d.), while witness familiarisation courses in England and Wales aim to prepare witnesses for court by familiarising themselves with the environment and court procedures, during which questioning techniques used by lawyers during cross-examination may also be discussed (Wheatcroft, 2017; Wheatcroft & Ellison, 2012).

In sum, constructing an appropriately detailed, relevant, and coherent free narrative requires retrieving a specific past event and generating, monitoring, and controlling output while simultaneously considering the listener's perspective. These are all areas of difficulty for an autistic person (see Maras, in press). Autistic people may need guided retrieval from the outset to: (a) support memory retrieval; (b) reduce implicit social demands regarding relevance; and (c) minimise demands on executive resources. The primary aim of the current study was to test the

effectiveness of two novel supportive questioning techniques, 'Semantic Prompting' (using initial semantic prompts to elicit subsequent episodic retrieval) and 'Visual-Verbal Prompting' (V-VP; providing verbal and visual cues to indicate which aspects of the memory to report), against standard open questions in eliciting specific and relevant memories from autistic adults, across topics relevant for CJS, healthcare, and employment interviews. A secondary aim was to examine the effect of providing preparation, whereby participants received the questions in advance and could write notes. It was predicted that with open questions, autistic participants would recall less specific memories than TD comparison participants, with fewer relevant episodic details, and more irrelevant details, but that differences would diminish with semantic prompting, V-VPs, and preparation.

Method

Participants

Thirty autistic participants (17 males; 11 females; 2 other: genderfluid and no gender preference) and 30 TD participants (8 males; 22 females) took part. Participants were recruited primarily from the South West of England, including via social media, support groups, and local community recruitment (posters, magazine articles, etc). All autistic participants had received a formal clinical diagnosis of ASD according to Diagnostic and Statistical Manual of Mental Disorders criteria (American Psychiatric Association, 2013), and confirmed this with a copy of their 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. Autistic and TD groups were matched on verbal IQ; $t(58) = -0.77$, $p = .446$, $d = 0.20$, and age; $t(58) = -0.57$, $p = .574$, $d = 0.15$, and did not significantly differ on Performance IQ or Full Scale IQ (all ps > .051; see Table 1). A series of 2 (Group) x 2 (Prep) ANOVAs confirmed that the autistic and TD Prep vs No Prep groups did not differ on VIQ (Fs < 0.62, ps > .435, ηp^2s < .01), PIQ (Fs < 4.00, ps > .050, ηp^2s < .08), FSIQ (Fs < 3.22, ps > .078, ηp^2s < .05), and age (Fs < 0.31, ps > .580, ηp^2s < .01). 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). The autistic group scored significantly higher on the AQ than the TD group, $t(57) = -9.26$, $p < .001$, with 18 scoring above the recommended minimum cut-off of 32 (Table 1). Ethical approval was obtained from the Psychology Research Ethics Committee at the University.

Table 1. Mean age, AQ, and Wechsler Abbreviated Scale of Intelligence (WASI-II) scores by group (standard deviations in parentheses)

	TD adults (N = 30[1])	Autistic adults (N = 30)
Age (years)	34.87 (13.08); range = 18-59	33.00 (12.02) range 18-58
VIQ	108.83 (8.38); range = 94-142	106.97 (10.05); range = 85-128
PIQ	113.70 (10.75); range = 92-136	107.50 (12.84); range = 82-131
FSIQ	112.63 (7.21); range = 95-126	108.17 (11.08); range = 89-129
AQ-50	13.97 (8.56); range = 2-30	34.90 (8.80); range = 14-48

[1] AQ data for one autistic participant was not available.

Design

The study utilised a 2 (Group: autistic vs. TD) x 2 (Prep: preparation vs. no preparation) x 3 (Support: open vs. semantic prompting vs. V-VP) x 3 (Context: CJS vs. health vs. employment) mixed factorial design, where support and context were within-subjects. To minimize carry-over effects of support, conditions were administered in a fixed order (consistent with Crane et al., 2012; Piolino et al., 2010): 1) Open Questions, 2) Semantic Prompting, 3) V-VP.

Measures and procedure

ABM questions

The study utilised an ABM interview task comprising questions about specific instances of potential witness scenarios in the CJS (where crimes may take place; e.g., *"tell me about a specific time… when you went to the bank"*), physical or mental health scenarios (e.g., *"tell me about a specific time... when you vomited"*), and social and non-social scenarios relevant to employment (e.g., *"tell me about a specific time… when you've shown someone how to use a piece of technology?"*). The interview comprised 18 questions (six CJS, six health, and six employment) and was developed specifically for the study, building on Crane and Goddard's (2008) ABM interview (see also Bekerian, Dhillon, & O'Neill, 2001). Questions were refined following an online survey conducted with 95 TD and 26 autistic people (including two respondents with an informal diagnosis and two awaiting a formal diagnosis) to ensure that the questions overall represented situations that were not disproportionately more common for one group than the other[2].

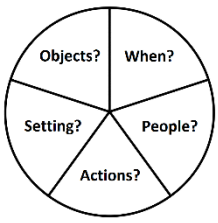
The 18 interview questions were split between the three different support conditions, resulting in six questions in total per support condition (two from the CJS context, two from health, and two from employment; see Supplementary materials A for full list). Questions were balanced within each Support x Context condition according to the type of event such that (in all three of the

[2] The responses for the autistic and TD groups were summed as frequencies for each context (CJS, health, employment), with group (autistic vs. TD) as a between-subjects factor. A repeated-measures ANOVA indicated no main effect of Group, $F(1,119) = 0.01$, $p = .956$, $\eta p^2 < .01$. There was a main effect of Context, $F(2,238) = 53.03$, $p < .001$, $\eta p^2 = .31$, with a higher reported frequency of activities in the employment ($M = 9.02$, $SD = 2.05$) than the health context ($M = 7.20$, $SD = 1.87$, $p < .001$, $d = 0.93$), for health compared to CJS activities ($M = 6.87$, $SD = 1.28$, $p = .007$, $d = 0.21$), and for employment compared to CJS activities ($p < .001$, $d = 1.26$). There was a Group x Context interaction, $F(2, 238) = 8.93$, $p < .001$, $\eta p^2 = .07$. Within-subjects contrasts indicate that TD participants reported engaging in CJS-related activities (going to the supermarket, etc.) more frequently than the autistic group, whereas the autistic group reported engaging in more health-related behaviours/activities (feeling worried, falling over, etc.) than TDs, $p = .001$, $\eta p^2 = 09$. Moreover, the TD group reported engaging in employment-related activities (working in a team, etc.) more frequently than the autistic group, $p < .001$, $\eta p^2 = 12$.

support conditions) for the CJS context, one question related to places and one to events, in the employment context one question related to social and one to non-social work tasks, and in the health context one question related to mental health and one to physical health.

Question support. Open questions provided no support (i.e., "*tell me about a time…*"), while semantic prompting used an initial prompt to cue semantic ABM (e.g., "*do you enjoy going to the cinema?*") before then asking for a relevant specific instance in an identical format to the open questions (e.g., *"tell me about a time when you went to the cinema?"*). Finally, V-VP support (adapted from Brown & Pipe's, 2003 'Verbal Labels') also involved asking the initial question in open-question format, but was immediately followed by further instruction about the details that were expected (*'tell me about **when** it happened, the **people** who were there, the **actions** that occurred, the **setting**, and the **objects** that were there'*; see Table 2). Participants also received a paper copy of the V-VPs 'wheel' prompt, and a coin to use to keep track as they moved between the words (in any order).

Table 2. Example support adaptations for questions within the employment context

Support	**Example questions**
Open questions	*"Tell me about a specific instance, more than a week ago, when you have had to make a difficult decision"*
Semantic Prompting	*"Are you good at organising things?"* (respondent answers). *"Tell me about a specific instance, more than a week ago, when you have organised something"*
Visual-Verbal Prompting (V-VP)	*"Tell me about a specific instance, more than a week ago, when you have met a deadline. Tell me about **when** it happened, the **people** who were there, the **actions** that occurred, the **setting**, and the **objects** that were there. You should use this card to help you structure your answer."* 

Preparation. Participants were randomly assigned to receive the questions in advance ('Prep'), or not ('No Prep'). Participants receiving preparation were given a summary of the task instructions and the question topics in open question format (they were not informed about support), and a visual schedule (details about the appointment, including a photo of the researcher and the room). They were also encouraged to make notes and bring these to use during the interview. Participants were asked to read the preparation materials and think of their memories by themselves, and were advised that they should not seek help from others whilst doing this. Participants not receiving preparation were not given specific information regarding what they

would be asked about prior to the appointment, but were fully informed about the study and told that they would be asked to recall memories of personally-experienced events.

Procedure

All participants received detailed instructions regarding what was expected of them during the interview, including that they should recall a specific memory for each question, defined as a particular event from more than a week ago (due to the tendency for people to recall more recent events, which tend to be more specific; Jansari & Parkin, 1996) lasting no longer than a day (Williams & Broadbent, 1986). All participants received instructions as to the level of detail expected, an example of a specific memory, and a paper summary of the instructions (see Supplementary materials B and C).

Prompting. If participants gave no reply, a very limited response, or only semantic/general information, the interviewer prompted them up to once per question: *"Can you think of a particular time, within a 24-hour period? One specific instance?"* (Crane et al., 2012). If they recalled the same event more than once to different questions during the interview, the interviewer asked them to recall a new memory. Interviews lasted on average 57 minutes (SD = 23, range = 21-132 minutes)[3], were audio recorded, and transcribed verbatim.

At the end of the interview, participants were asked which aspects they found difficult/easy, whether they preferred a question type, and (for those receiving prep) whether preparation was helpful (see Supplementary materials D).

Coding

Transcripts were imported into NVivo (2012) where responses to each question were coded for overall specificity, and then each unit of information provided was coded as episodic vs. semantic and relevant vs. irrelevant. In order to accurately measure the effect of support (semantic prompting and V-VPs) compared to open questions with no support, only details given by participants *prior* to a generic prompt were coded[4] (see Supplementary materials G for analyses including responses after

[3] A univariate ANOVA; 2 (Group: autistic vs. TD) x 2 (Prep: prep vs. no prep) was conducted on the mean duration of the interviews. There were no significant main effects nor interactions (*p*s > .352).

[4] A mixed factorial ANOVA; 2 (Group: autistic vs. TD) x 2 (Prep: prep vs. no prep) x 3 (Support: open vs. semantic prompting vs. V-VP) x 3 (Context: CJS vs. health vs. employment), with Support and Context as within-subjects factors, was conducted on the total number of prompts required when participants were not relaying a specific instance. The number of prompts given declined with Support, $F(2,112) = 12.67$, $p < .001$, $\eta p^2 = .19$: open questions resulted in the highest number of prompts ($M = 0.17$, $SD = 0.15$), followed by semantic prompting ($M = 0.11$, $SD = 0.14$), with the lowest number of prompts

the prompt). Forty-seven per cent of the transcripts were double coded, with good inter-rater reliability for specificity (r = .728, α = .873) and relevance (episodic relevant r = .961, α = .801; episodic irrelevant r = .742, α = .938; semantic relevant r = .829, α = .766; semantic irrelevant r = .683, α = .556), ps < .001. In cases of disagreement, the first author's ratings were analysed.

Specificity. Participants' responses to each question were coded for level of specificity on a 5-point scale (Piolino, Desgranges, Benali, & Eustache, 2002), see Supplementary Materials E.

Episodic and semantic relevance. For each response, each new unit of information was coded as episodic or semantic, and as relevant or irrelevant. Episodic details were coded as relevant when they directly related to the temporal event (e.g., feeling cold during that particular supermarket visit) as well as episodic details directly related to the specific instance being discussed (e.g., referring to the outcome of a previous doctors' appointment). Any episodic details about unrelated events were coded as irrelevant (e.g., discussing a later cinema trip in response to a question about going to the supermarket). Semantic information referring to general, non-event-specific information was coded as relevant (e.g., general time management skills when discussing meeting a deadline) or irrelevant (not related to the question, or referring to another person, e.g., their father's poor time management skills) (See Supplementary materials F for an example coded response).

Results

All mixed factorial ANOVAs were conducted as 2 (Group: autistic vs. TD) x 2 (Prep: prep vs. no prep) x 3 (Support: Open vs. Semantic Prompting vs. Verbal-Visual Prompting, V-VP) x 3 (Context: CJS, health, employment), with support and context within-subjects. Where the assumption of sphericity was violated, Greenhouse-Geisser corrections were applied.

Specificity

Overall, autistic participants produced memories with lower specificity (M = 3.22, SD = 0.50) compared to TD participants (M = 3.50, SD = 0.41), $F(1,56) = 5.72$, p = .020, ηp^2 = .09. There was a

needed for V-VP (M = .05, SD = .10; ps < .05). A main effect of context, $F(1.54,86.40) = 36.03$, p < .001, ηp^2 = .39 indicated that the number of prompts required was higher for the employment context (M = .22, SD = 0.20) compared to the health context (M = 0.09, SD = 0.12, p < .001, d = 0.79) and to the CJS context, M = .02, SD = .06, p < .001, d = 1.35). Finally, a Support x Context interaction, $F(2.92,163.25) = 9.75$, p < .001, ηp^2 = .15 indicated that, whereas semantic prompting decreased the need for prompting for the employment context compared to open questioning, prompts increased for the health context with semantic prompting compared to open questioning (p < .001, ηp^2 = .21). Further, whilst V-VP support reduced the number of prompts required for the health context compared to semantic prompting, the number of prompts remained the same for the CJS questions with semantic prompting and V-VP (i.e., lower than all other contexts across all levels of support, p = .004, ηp^2 = .14). There was no main effect of Group (p = .433, ηp^2 = .01) or Prep (p = .1.00, ηp^2 = .00).

main effect of Support, $F(2,112) = 19.34$, $p < .001$, $\eta p^2 = .26$, with pairwise comparisons indicating significantly higher specificity in response to V-VP ($M = 3.56$, $SD = 0.43$) compared to both open questions ($M = 3.24$, $SD = 0.57$, $p < .001$, $d = 0.63$) and semantic prompting ($M = 3.26$, $SD = 0.58$; $p < .001$, $d = 0.59$), with no significant difference between the latter two ($p = .696$, $d = 0.03$). There was also a main effect of Context, $F(2,112) = 51.16$, $p < .001$, $\eta p^2 = .48$. Pairwise comparisons indicated that specificity was higher in response to questions in the CJS context ($M = 3.66$, $SD = 0.41$) than health ($M = 3.31$, $SD = 0.59$, $p < .001$, $d = 0.69$) and employment ($M = 3.10$, $SD = 0.57$; $p > .001$, $d = 1.13$), with the health context also yielding higher specificity than employment ($p = .001$, $d = 0.36$). There was no main effect of Prep, $F(1,56) = 0.55$, $p = .460$, $\eta p^2 = .01$.

There was also a Support x Context interaction, $F(3.21,179.70) = 4.80$, $p = .002$, $\eta p^2 = .08$. Within-subjects contrasts indicated that, compared to open questions, semantic prompting resulted in decreased specificity for the health context, but increased specificity for the employment context, ($p = .008$, $\eta p^2 = .12$). Moreover, compared to open questions, V-VP improved specificity for the employment context to a greater extent than the CJS, $p = .003$, $\eta p^2 = .14$, and health contexts, $p = .002$, $\eta p^2 = .16$. There were no Group x Support, $F(2,112) = 0.68$, $p = .505$, $\eta p^2 = .01$, Group x Context, $F(2,112) = 1.96$, $p = .145$, $\eta p^2 = .03$, Group x Prep, $F(1,56) = 1.90$, $p = .174$, $\eta p^2 = .03$, or Group x Support x Context interactions, $F(4,224) = 0.72$, $p = .582$, $\eta p^2 = .01$. Therefore, autistic adults' responses were less specific overall, but questioning support had similar effects on performance for the autistic and TD groups (Figure 1).

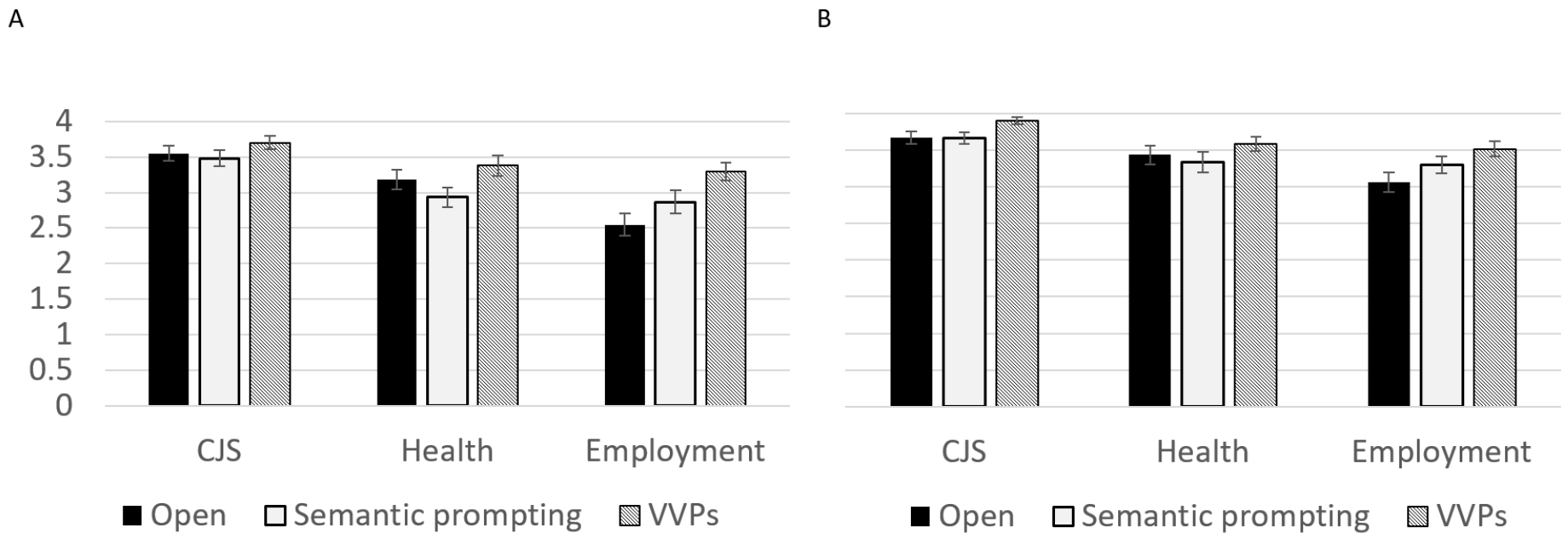


Figure 1. Mean specificity of responses by the autistic group (A) and TD group (B), by support type and reporting context (error bars represent 95% confidence intervals)

Relevant and irrelevant episodic and semantic information

The proportion of episodic relevant, episodic irrelevant, semantic relevant, and semantic irrelevant details were calculated as a function of each participant's total recalled details.

Proportion relevant episodic detail. There were no main effects of Group, $F(1,56) = 2.69$, $p = .107$, $\eta p^2 = .46$, or Prep, $F(1,56) = 0.01$, $p = .926$, $\eta p^2 < .001$. There was a main effect of Support, $F(2,112) = 10.59$, $p < .001$, $\eta p^2 = .16$, whereby responses comprised a higher proportion of relevant episodic information with V-VP support ($M = .76$, $SD = .14$), compared to open questions, $M = .71$, $SD = .15$; $p = .001$, $d = 0.34$, and semantic prompting ($M = .70$, $SD = .16$; $p < .001$, $d = 0.40$), with no difference between open questions and semantic prompting, $p = .660$, $d = 0.06$. There was also a main effect of Context, $F(2,112) = 52.62$, $p < .001$, $\eta p^2 = .48$, whereby the CJS context yielded a higher proportion of relevant episodic details ($M = .80$, $SD = .11$) compared to the health ($M = .71$, $SD = .17$, $p < .001$, $d = 0.63$) and employment contexts ($M = .64$, $SD = .17$; ps $< .001$, $d = 1.12$). Finally, there was a Support x Context interaction, $F(4,224) = 6.86$, $p < .001$, $\eta p^2 = .11$. For the employment context, participants particularly struggled to produce relevant episodic details with open questions and benefitted from semantic prompting, whereas answers to the CJS and health contexts did not benefit from semantic prompting, $F(1,56) = 5.22$, $p = .026$, $\eta p^2 = .09$. Moreover, V-VP (compared to open questions) improved episodic relevance for the employment context to a greater extent than the CJS context, $p < .001$, $\eta p^2 = .28$, and the health context, $p < .001$, $\eta p^2 = .20$. No other interactions were significant (all Fs < 2.02, ps $> .092$, and ηp^2s $< .04$). Thus, in contrast to the findings regarding specificity, autistic and TD adults produced similar proportions of relevant episodic detail, but in line with the effects on specificity, questioning support improved performance for both groups.

Proportion relevant semantic detail. There was no main effect of Group, $F(1,56) = 1.46$, $p = .232$, $\eta p^2 = .02$, or Prep, $F(1,56) = 0.59$, $p = .447$, $\eta p^2 = .01$. There was a main effect of Support, $F(2,112) = 14.70$, $p < .001$, $\eta p^2 = .21$, with the proportion of relevant semantic information recalled declining with V-VP support ($M = .19$, $SD = .10$) compared to open questions ($M = .25$, $SD = .12$, $p < .001$, $d = 0.54$) and semantic prompting ($M = .26$, $SD = .14$; $p < .001$, $d = 0.58$), with no difference between open questions and semantic prompting ($p = .874$, $d = 0.08$). There was also a main effect of Context, $F(2,112) = 56.66$, $p < .001$, $\eta p^2 = .50$. Responses in the employment context comprised the highest proportion of relevant semantic detail ($M = .30$, $SD = .14$), compared to the health ($M = .24$, $SD = .14$, $p < .001$, $d = 0.43$) and the CJS contexts ($M = .16$, $SD = .09$; $p < .001$, $d = 1.19$). Finally, there was a Support x Context interaction, $F(3.05,170.58) = 6.66$, $p < .001$, $\eta p^2 = .11$. For the employment context, semantic prompting reduced the proportion of relevant semantic information reported, whereas semantic prompting increased the proportion of relevant semantic detail for the

health and CJS contexts, $p = .017$, $\eta p^2 = .10$. No other interactions were significant (Fs < 2.15, ps > .091, ηp^2s < .04)[5].

[5] There were no effects or interactions when the proportion of *overall relevant* and *overall irrelevant* info (episodic and semantic) was combined (ps > .091).

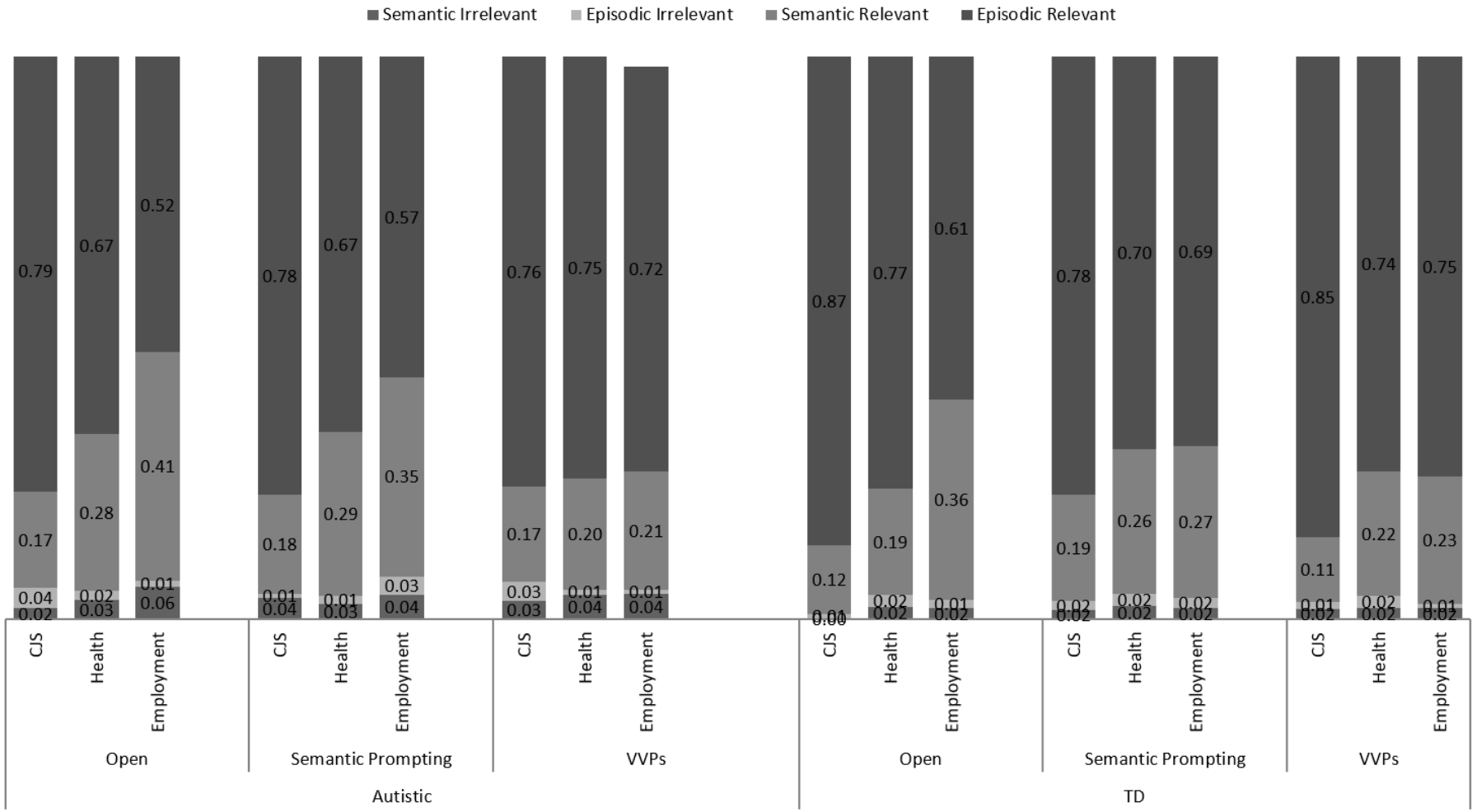


Figure 2. Proportion relevant and irrelevant episodic and semantic details by support and context in the autistic and TD groups

Proportion episodic irrelevant detail. There were no main effects of Support, $F(2,112) = 0.32$, $p = .730$, $\eta p^2 = .01$, Context, $F(2,112) = 0.31$, $p = .736$, $\eta p^2 = .01$, or Prep, $F(1,56) = 0.73$, $p = .398$, $\eta p^2 = .01$, and no interactions (Fs < 2.86, ps > .062, ηp^2s < .05).

Proportion semantic irrelevant detail. Autistic participants reported more irrelevant semantic information overall ($M = .04$, $SD = .05$) compared to TD participants ($M = .02$, $SD = .03$), $F(1,56)$ 4.07, $p = .048$, $\eta p^2 = .07$. There were no main effects of Support, $F(1.69,94.70) = 0.57$, $p = .570$, $\eta p^2 = .01$, Context $F(1.80,100.68) = 3.03$, $p = .052$, $\eta p^2 = .05$, or Prep $F(1,56) = 0.82$, $p = .368$, $\eta p^2 = .01$, and no interactions (Fs < 1.92, ps > .123, ηp^2s < .03).

Qualitative analysis of participant feedback

Participants' responses to questions about their experience of the interview were analysed using content analysis (Mayring, 2015), coding responses within main themes and subthemes. The first author independently developed the codes and coded all data. A second rater then coded the data. The first author and second rater met to discuss discrepancies in codes and decide on final codes before the first author applied the final coding template to the entire dataset. See Supplementary Materials H.

Perceptions of question support. All interviewees provided feedback with regard to their preferred question type, things they found easy/difficult, and why (see Table 3 for themes). Some participants explicitly stated they found the open questions more difficult, due to a lack of guidance and difficulty gauging the appropriate level of detail. Thirteen participants commented on the semantic prompting being easy, but six found it challenging. Overall, both groups indicated a preference for V-VP prompting (30 interviewees), indicating that V-VPs enabled them to check the 'completeness' of their recall, acted as a general memory aid and visual cue, and improved the relevance and detail of their responses. A minority of participants indicated difficulties with V-VP (e.g., feeling that they were required to use each prompt and not knowing how; confusing the order of the elements; forgetting to use the visual cue).

Perceptions of the preparation condition. As seen in Table 4, although one autistic participant indicated that they would have preferred not to have received preparation ("*I'd rather go in cold*"), most participants indicated its value in feeling prepared for the interview.

Table 3. Themes from participants' responses about their perceptions of the questioning support

Themes	ASD	TD	Example quotes
Open Questions			
Difficult			I couldn't organise my thoughts properly [Autistic participant]
Difficult (general)	4	1	
Lack of guidance	1	2	…I thought that's a bit of an open question and that's something I do struggle with [Autistic participant]
Unsure of level of detail	0	2	
Preferred/easiest			
Preferred/easiest (general)	4	5	
Semantic prompting			
Difficult			…always find it like, awkward, like, cause it's not a conversation. So it's just a bit strange and robotic… They just ask you a question, you answer and then they ask you a question and you answer. [Autistic participant]
Difficult (general)	2	4	
Preferred/easiest			
Preferred/easiest (general)	6	7	…was a bit… easier because that's… sort of set me up to remember um how I feel about certain things [Autistic participant]
VVPs			
Difficult			I guess remembering to use this, I did forget that a couple of times. [Autistic participant]
Difficult (general)	2	3	
Difficulties in addressing each point	4	2	… that's easier in some respects but then it puts pressure on you're trying to think of something to fit that box. It's like that you feel like you've got to complete something, finish it. It's like there is something missing if you haven't got it all there. So although it's good to have the visual it can …. put pressure on as well. [Autistic participant]
Difficulties with the order of prompts	1	1	
Feeling pressure to fulfil all aspects	2	1	
Preferred/easiest			
Preferred/easiest	14	16	…it's just here on a plate for you, 'cause it kind of has everything that you need to talk about and everything you need to know about what you need to include in your answer, so I think that helped me quite a bit. [Autistic participant]
Organisation			
Help with structure	1	7	
Completeness	2	2	I think I preferred using the prompt cards it gave me sort of the … way to sort of space out my sentences. [Autistic participant]
Memory Aid			
Visual cue	4	6	It was easier having that, having the visuals and having something there… That helped me focus.

[Autistic participant]

Helps recall	3	4
Prompted relevance	2	2
Prompted detail	2	4

Table 4. Themes from participants' responses about their perceptions of the preparation condition

Themes	ASD	TD	Example quotes
Prep useful			
Prep useful (general comments)	3	8	It was fine because I could then think about it when I was at home, which I find things easier at home. [Autistic participant]
Would have been difficult without prep	3	5	
Making notes helpful	9	12	…(making notes) certainly helped me keep to topic a little bit. [Autistic participant]
Reduced anxiety	1	0	
Memory Aid			…notes were useful… so I could focus on one specific thing 'cause sometimes my brain can go through like 50 different thoughts at the same time. So it helped me like focus on that one thing. [Autistic participant]
General memory prompt benefits	2	4	
Had examples ready	4	2	
Would need more thinking time without	6	6	… it takes me a while to… search through my memories and to find a specific um thing, but once I know er about it, I can quickly think back to that and to, um to remember it um, so without the preparation questions I would've had to, think for a long time before I remembered each individual event. [Autistic participant]
Avoided over-preparing	1	1	
Effects on support			
Support didn't differ/conflicted	2	1	
Changed recall (in semantic prompting condition)	0	1	
Changed recall	1	1	
Prep not useful			
Making notes unhelpful	1	0	
Prep unhelpful	1	0	

Discussion

The current study tested the efficacy of two novel methods of questioning support (semantic prompting and Verbal-Visual Prompting; V-VP) in improving the specificity and relevance of ABM recall by autistic and TD participants in CJS, health, and employment contexts, compared to standard open questioning. Consistent with predictions, responses from autistic participants were less specific overall than TD participants. Nevertheless, V-VP support improved specificity and increased the proportion of relevant episodic information reported by both groups. In contrast to predictions, autistic participants' responses did not contain a lower proportion of relevant episodic (or semantic) detail compared to TD participants. They did, however, comprise more semantic irrelevant detail, thus partially supporting our prediction regarding relevance. No significant quantitative effects of preparation were found.

That autistic participants' responses were of lower specificity than TD participants provides further evidence for the over-generality of ABMs in autistic adults (e.g., Adler et al., 2010; Chaput et al., 2013; Crane & Goddard, 2008; Crane et al., 2009, 2012; Tanweer et al., 2010). However, there were no significant differences between groups in terms of the proportion of episodic (relevant or irrelevant) details reported. The present study included very detailed instructions (including a print-out) even for the open questioning condition, which may have been sufficiently supportive to elicit comparable levels of episodically-relevant detail from both groups (see also Losh & Capps, 2003; Losh & Gordon, 2014). Although autistic participants recalled more irrelevant semantic details than TD participants, this was a relatively small effect, with overall analyses indicating similar effects of support and context for both groups.

Compared to open questions and semantic prompting, more detailed and explicit questioning using V-VPs resulted in an overall improvement in specificity (as well as episodic relevance) for both autistic and TD groups, supporting the utility of the task support hypothesis (Bowler et al., 1997, 2004) in more applied settings, in line with previous findings within the CJS context (e.g., Almeida et al., 2019; Maras et al., 2013; Mattison et al., 2018; McCrory, Henry, & Happé, 2007). The explicit V-VP prompts may reduce demands on relational retrieval processes (known to be a source of difficulty for autistic people; see Gaigg & Bowler, 2018), which would typically aid the reconstruction of the event's narrative with relations between specific details (who did what, to whom, where, when, etc). V-VPs may also reduce implicit task demands, alleviating the need to infer what and how much to recall, in contrast to open questions (see Kenworthy et al., 2008; Müller, Schuler, & Yates, 2008; White et al., 2009).

Our findings highlight the importance of considering context. While semantic prompting did not improve specificity or episodic relevance overall across contexts, it was effective for the

employment questions (albeit not to the same extent as V-VP), supporting previous findings by Robertson et al. (2017). Open questions may be particularly problematic in eliciting specific responses in the employment context. Semantic prompting may therefore be an effective method to support recall in contexts requiring the interviewee to relay personal characteristics and specific examples evidencing these (e.g., employment and promotion interviews). Although previous studies have found that autistic adults may not use the self to regulate ABM recall *spontaneously* (i.e., they do not appear to have a tendency to do so; Crane et al., 2009, 2010), our findings regarding the utility of semantic prompting for employment-related questions indicate that autistic people can use the self-memory system for episodic recall when they are explicitly instructed to do so. For the health context however, semantic prompting decreased specificity.

Context-specific support effects are perhaps to be expected. When answering questions in an employment interview, we are usually thinking about ourselves (e.g., our personality and attributes) which may facilitate access to relevant specific memories (e.g., examples of acting upon these values). The autobiographical self-memory system implicates current goals of the working self in determining which events are remembered, and ultimately accessible for recall (Conway & Pleydell-Pearce, 2000). Due to the nature of the CJS questions, semantic prompts were limited to personal preferences (e.g., "*do you enjoy going to the supermarket*"), which may not be as effective in accessing semantic autobiographical memory compared to personal characteristics, which may be more easily linked to goals of the working self (Conway & Pleydell-Pearce, 2000). Further, although semantic prompts for the health context also utilised personal attributes (e.g., "*are you clumsy?*"), these contexts may lend themselves more naturally to specific events (e.g., falling over as a discrete event). According to Conway and Pleydell-Pearce (2000), emotional cues are generally the least effective in prompting autobiographical recall, and people retrieve more memories associated with mild positive affect compared to intense positive or to negative emotions. In this study, to prompt memories related to mental health, the semantic prompts could be categorised as mild negative emotional cues (e.g., *"are you a worrier?"*). Since people tend to inhibit the recall (and, crucially, the re-experiencing) of negative emotions, especially when these are incongruous to the perceived self (e.g., perceived negative connotations of being a worrier), such prompts may limit the autonoetic awareness required to recall detailed episodic memories (Conway, Gardiner, Perfect, Anderson, & Cohen, 1997; Tulving, 1985; Wheeler, Stuss, & Tulving, 1997). Indeed, participants noted that memories related to emotions were often difficult to recall (endorsed more often by autistic than TD participants).

Qualitative analysis of participant feedback provides further evidence that the open questions were the most difficult, with a clear preference for V-VPs, and mixed responses regarding

semantic prompting. Participants indicated the usefulness of V-VPs in providing a general aid for memory and a useful visual cue, as well as in specifying the amount and relevance of detail required. A minority of participants in both groups, however, commented that V-VP questions could be difficult due to needing to remember to refer to them, a desire to fulfil all criteria, and a feeling of not being able to do so effectively in some cases (i.e., depending on the content of the question). This emphasises the importance of tailoring support to the context (for example, in order to be effective in a CJS context, V-VPs would need to focus on aspects including who did what, to whom, where, when, etc).

The absence of quantitative effects of preparation may be due to the already very detailed interview instructions, with the type of detail to include clearly specified (with a comprehensive example), and participants being prompted when their answers were not clearly relaying a specific event (which, although analysed separately may nonetheless have induced an order effect). Nonetheless, participants generally reported that preparation was helpful (e.g., in reducing thinking time). Preparation may be a particularly valuable tool for reducing anxiety in police and employment interviews and healthcare consultations.

Limitations of the current study are acknowledged. Clearly, ideal answers to interview questions in different contexts vary; whereas questioning in CJS and health contexts often focuses on specific events, the interviewee should be 'selling themselves' in an employment interview (and focusing on one specific instance may not always be an effective strategy). As the current study focused on investigating effective methods to support recall it was not possible to capture all differences between applied contexts within a single design, however this is an important area for future research. Relatedly, our findings from the frequency survey conducted to inform the ABM interview questions merit further investigation. TD participants reported engaging in CJS-context (e.g., going to the supermarket, cinema) and employment-context activities (working in a team, being organised, etc) more frequently than the autistic group, whereas the autistic group reported a higher frequency of health-context experiences than the TD group. The effect of these disparities in experience on recall should be investigated in future. Finally, although the groups in the current study were matched on age and IQ, it was not possible to match the groups on sex. Future research should aim to match the groups on sex, as some sex differences are found in autobiographical memory (Grysman & Hudson, 2013; Herlitz & Rehnman, 2008; Schulkind, Schoppel, & Scheiderer, 2012), although the findings regarding sex differences for relevance and specificity are mixed (Baron & Bluck, 2009; Bluck, Alea, Habermas, & Rubin, 2005; Wang, 2004).

In conclusion, the current findings demonstrate how flexibly employing different methods of questioning support may be valuable in supporting recall by autistic and TD people in different

contexts. V-VP may be universally useful in minimising task ambiguity and freeing up cognitive resources to elicit an appropriate strategy for memory searching, with potential added value in using semantic prompting in employment and related contexts. V-VP may be particularly useful in police interviews, and is somewhat analogous to the five-part statement structure used by police in obtaining written statements (i.e., introduction, people, places, 'what happened', and descriptions e.g., people/property).

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Supplementary materials A: Question topics within each Support x Context condition

	Open	**Semantic**	**V-VP**
CJS (functional activities)	Train (bus)	Supermarket	Bank (Post office)
CJS (leisure activities)	Cinema (theatre)	Party	Out for meal
Health (Physical)	Vomited	Fallen over/ bashed into something	Accidentally cut yourself
Health (Mental)	Angry	Worried	Sad
Employment interview (Social)	Worked as a team	Disagreement	Use technology
Employment interview (Non-social)	Difficult decision	Organising	Deadline

Supplementary materials B: General instructions for the ABM interview

Hi, thanks again for taking part in this study. There will be three blocks of questions about memory, and we can have a short break in between the blocks if we need to. Try to answer as best you can, but there aren't any right or wrong answers. As the interviewer, I'm only allowed to say certain things in response to your answers.

So, I'll be asking you to remember and tell me about some things that you have personally experienced. When I ask you the questions, I'd like you to tell me a specific memory that you have – a memory of a particular event lasting no longer than a day – from more than a week ago (so don't recall something that happened within the last 7 days) but it can be any memory from before this.

We're interested in your ability to recall in detail a specific instance each time, so try to give details of an event, or things that happened at only one time, at a particular place and within the same, single day. You should try to include the 'who, what, where and when' of the memory, and try to recall a different instance/event for each question.

Here's an example of a specific memory for going swimming: "I remember it was during summer but it was a really cold day. My brother insisted we try out the new outdoor pool at the leisure centre. I remember I had my new red swimming trunks on. There was hardly anyone at the pool, and I remember jumping in and the cold of the water taking my breath away! I got out as quickly as I could and my brother called me wimp".

Finally, take your time to think about the memory before giving your answer whenever you need to. These instructions are here for you if you need them.

Supplementary materials C: Participant printed notes provided at interview

- Tell me a *specific* memory
    - from *more* than a week ago
    - try to give details of an event, or things that happened within one day

- There aren't any right or wrong answers

- Take your time to think about the memory before answering

Supplementary materials D: Final Questions (at the end of the ABM interview)

1. Was there anything you found particularly difficult?

2. Anything you found easy?

3. Which block of questions did you prefer/find easier to answer?

4. Is there anything that we didn't do that would have made it easier for you to answer the questions?

5. Any other thoughts?

IF in prep condition =

1. Did you find the preparation information useful?

2. (did you make and bring notes?/ I see you've brought some notes) did you find this helpful?

Supplementary materials E: specificity coding (as in Piolino, Desgranges, Benali, & Eustache, 2002)

Score and criteria	Example response
4 = Specific event (isolated, situated in time and space) with rich detail in terms of actions, thoughts, perceptions, images, etc.	"*I went to the bank two weeks ago, on a Thursday. It was sunny and a nice lady with long hair greeted me at the counter. I asked her if I could discuss a mortgage application, so she showed me upstairs to a little private booth. I found it odd that they had glass windows all the way around, and all of the booths had the same three pictures on the wall…"*
3 = Specific event (isolated, situated in time and space) with few details	*"I went to the bank two weeks ago, on Thursday. I didn't have to wait long so it was all over pretty quickly."*
2 = Generic event (repeated or prolonged over time, situated in time and space)	*"I go to the bank every Thursday to pay in cash for work. Last time was just the same as ever."*
1 = Vague event (repeated or prolonged over time, not situated in time and space),	"*Whenever I go it's always so busy. I avoid it at all costs."*
0 = Absence of memory	"*I don't know"* or "*I can't think of anything"* or general information about a theme, e.g., *"I never go, I hate banks"*

Supplementary materials F: Example response coded for relevance

In this example response: *"I walked into the bank. It was the bank on Broad Street. I usually avoid going to the bank. Like the other time when I went to a different branch and it was terrible. I also avoid supermarkets"*, "walked", "bank", and "broad street" would be coded as relevant episodic details, "I usually avoid going to the bank" would be coded as a relevant semantic detail, "Like the other time when I went to a different branch" and "it was terrible" would be coded as irrelevant episodic details, and "I also avoid supermarkets" would receive a semantic irrelevant code.

Supplementary materials G: Analyses including responses after the 24 hour prompt

Specificity of responses

A 2 (Group: autistic vs. TD) x 2 (Prep: prep vs. no prep) x 3 (Support: Open vs. Semantic Prompting vs. V-VP) x 3 (Context: CJS, health, employment) mixed factorial ANOVA was conducted for overall mean specificity as scored with data *including* the 24-hour prompt (support and context were within-subjects factors). There was a main effect of support, $F(2,112) = 14.37$, $p < .001$, $\eta p^2 = .20$. Pairwise comparisons indicated significantly higher specificity for responses to V-VP ($M = 3.63$, $SD = 0.40$) compared to open questions ($M = 3.40$, $SD = 0.53$) and to semantic prompting (M = 3.38, SD = 0.50),*ps* < .001, with no difference in specificity between open questions or semantic prompting ($p = .738$). There was also a main effect of context, $F(2,112) = 24.27$, $p < .001$, $\eta p^2 = .30$. Pairwise comparisons indicated that specificity was higher for responses to questions in the CJS context ($M = 3.66$, $SD = 0.40$) compared to health ($M = 3.41$, $SD = 0.50$) and employment ($M = 3.34$, $SD = 0.53$), *p*s < .001, with no difference in specificity between the health and employment contexts ($p = .195$). There was also a main effect of group, $F(1,56) = 6.39$, $p = .014$, $\eta p^2 = .10$. Autistic participants produced memories with overall lower specificity ($M = 3.34$, $SD = 0.45$) compared to the TD group ($M = 3.60$, $SD = 0.35$). There was no main effect of Prep, $F(1, 56) = .428$, $p = .516$, $\eta p^2 = .01$. There was a Group x Context interaction, $F(1, 112) = 3.38$, $p = .037$, $\eta p^2 = .06$. Within-subjects contrasts indicate that whereby the autistic group's specificity declined for the employment context compared to the health context, the TD group had similar responses for both of these contexts ($F(1,56) = 6.51$, $p = .013$, $\eta p^2 = .10$). There was also a three-way interaction between Support, Context, and Group, $F(4, 224) = 3.38$, $p = .010$, $\eta p^2 = .06$.

Relevant and irrelevant episodic and semantic information

A further four 2 (Group: autistic vs. TD) x 2 (Prep: prep vs. no prep) x 3 (Support: Open vs. Semantic Prompting vs. V-VP) x 3 (Context: CJS, health, employment) mixed factorial ANOVAs were conducted for the data including the 24-hour prompt for the proportion of: episodic relevant, episodic irrelevant, semantic relevant, and semantic irrelevant information produced, respectively (support and context were within-subjects factors).

Proportion relevant episodic detail. There was a main effect of Support, $F(2,112) = 8.55$, $p < .001$, $\eta p^2 = .13$. Pairwise comparisons indicated a significantly higher proportion of episodic relevant detail for responses to V-VP ($M = .766$, $SD = 0.14$) compared to open questions ($M = .727$, $SD = 0.15$), $p = .006$ and compared to semantic prompting (M = .708, SD = 0.15), $p < .001$, with no difference in the proportion of episodic relevant information between open questions and semantic prompting ($p = .254$). There was also a main effect of Context, $F(2,112) = 39.40$, $p < .001$, $\eta p^2 = .41$. Pairwise

comparisons showed that the proportion of episodic relevant details was higher for the CJS context (*M* = .803, *SD* = 0.11) compared to health (*M* = .725, SD = 0.16) and compared to employment (*M* = .673, *SD* = 0.17; *p*s > .001), and for the health context compared to employment (*p* = .002). There was no main effect of Group, $F(1,56) = 3.20$, $p = .079$, $\eta p^2 = .05$. Finally, there was a Support x Context interaction, $F(3.50, 195.83) = 5.21$, $p = .001$, $\eta p^2 = .09$. Within-subjects contrasts indicated an increased proportion of episodic relevant details for the employment context with semantic prompting, compared to a decrease in the proportion of episodic relevant details for the CJS and health contexts with semantic prompting, $F(1,56) = 4.39$, $p = .041$, $\eta p^2 = .07$.

Proportion relevant semantic detail. There was a main effect of Support, $F(2,112) = 10.77$, $p < .001$, $\eta p^2 = .16$, with a significantly higher proportion of semantic relevant detail for open questions (*M* = .23, *SD* = 0.12) compared to V-VP (M = .186, SD = 0.10; *p* < .001), and for semantic prompting (*M* = .24, *SD* = 0.13) compared to V-VP (*p* < .001) with no difference between open questions and semantic prompting (*p* = .451). There was also a main effect of Context, $F(1.80, 100.79) = 43.52$, $p < .001$, $\eta p^2 = .44$. Pairwise comparisons indicated that the proportion of semantic relevant details was highest for the employment context (*M* = .28, *SD* = 0.13) compared to the health (*M* = .23, SD = 0.12; *p* = .002) and CJS contexts (*M* = .16, *SD* = 0.09; *p* > .001), and for the CJS context compared to health (*p* < .001). There was no main effect of Group, $F(1,56) = 2.15$, $p = .148$, $\eta p^2 = .04$. Finally, there was a Support x Context interaction, $F(3.06, 171.28) = 5.06$, $p = .002$, $\eta p^2 = .08$. Within-subjects contrasts indicated a decreased proportion of semantic relevant details for the employment context with semantic prompting compared to open questions, whereas the proportion of semantic relevant details increased with semantic prompting for the CJS and health contexts, $F(1,56) = 4.60$, $p = .036$, $\eta p^2 = .08$. No other main effects or interactions were significant (all *p*s > .069).

Proportion episodic irrelevant detail. There was a Group x Context interaction, $F(2, 112) = 3.37$, $p = .038$, $\eta p^2 = .06$. Within-subjects contrasts indicated that this was due to the TD group producing an increased proportion of episodic irrelevant details for the health context compared to CJS, whereas the autistic group produced a lower proportion of episodic irrelevant details for the health context compared to CJS, $F(1,56) = 5.82$, $p = .019$, $\eta p^2 = .09$. No other main effects or interactions were significant (all *p*s > .111).

Proportion semantic irrelevant detail. There was a main effect of Context, $F(2, 112) = 4.18$, $p = .018$, $\eta p^2 = .07$. Pairwise comparisons indicated that this was due to a higher proportion of semantic irrelevant details for the employment context (*M* = .04, *SD* = 0.05) compared to CJS (*M* = .02, *SD* = 0.03; *p* = .010), whereas the differences between CJS and health (*M* = .03, *SD* = 0.05; *p* = .142), and employment and health (*p* = .130) were non-significant. No other main effects or interactions were significant (all *p*s > .051).

Supplementary materials H: Additional content analysis tables

Themes from participants' responses about aspects of the interview they found difficult

Themes	ASD	TD	Example Quotes
General difficulties (e.g., bad memory in general)	13	9	…um, remembering some of the, uh instances were difficult… my memories tend to get a little mixed up if its, if it's a recurring setting or, um, or event, so it was hard to separate them unless I got something that, attaches them all together in a specific event… [Autistic participant]
Remembering dates	2	1	
Gauging detail level or relevance	3	6	
Being unprepared	0	2	
Feeling uncomfortable about question topic	1	2	… that's something I do struggle with, a lot, is open ended questions. I'm always asking people to be more not so open ended… [Autistic participant]
Many questions	1	0	
Used bad example	0	1	Just sort of trying to get things, erm, together, erm, in my mind… sort of trying… to remember it all and that sort of thing, and trying to get memories into coherent sense really. [Autistic participant]
Some questions more difficult than others			
Some questions more difficult than others (general)	4	7	
Mundane or day-to-day difficult	6	5	
Emotion more difficult to recall	6	3	
Infrequent activity	0	1	
Dislike interview environment	1	0	

Themes from participants' responses about aspects of the interviewee they found easy

Themes	ASD	TD	Example quotes
General ease (good memory, easy to talk about self, etc)	9	18	I generally find talking about myself easy… so err that was fine [Autistic participant]
Liking the interview environment	0	1	… I must admit, I did find it, strangely easy recalling things like um, the supermarket and also the restaurant, in Pizza Hut… especially the restaurant one, even though it was awkward at the time I sort of look back and sort of it just brings a slight smile to my face… [Autistic participant]
Some questions easier than others			I think… what comes to light is emotional memories. Because you know, that's what really, you remember. It's those emotional times that suddenly point you in another direction in life. [TD participant]
Some questions easier than others (general)	2	2	I tend to remember things which had more of an emotional impact I suppose. [Autistic participant]
Emotions easier to recall	1	2	
More recent memories easier	2	1	
Some Qs more specific, easier	2	0	