Examining a dyadic coaching based reminiscing intervention for parents of children with autism: Two exploratory case studies

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Melissa Anne Joll

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Abstract

Parent-child interactions that involve discussion about past events are known as reminiscing. These conversations have been associated with child outcomes such as coherency in child narratives, advanced use of language, self-regulation abilities, and socioemotional skills (Waters et al., 2019). Differences in developmental outcomes such as verbal fluency and language, autobiographical memory and theory of mind and social/emotional understanding are often associated with autism (Faust, 2009; McDonnell et al., 2020; Gaelen, 2021). Interest in potential benefits of reminiscing interventions for children with autism has grown in recent years, given the associations between elaborative and emotion-rich reminiscing for typically developing children's developmental outcomes (Brien & Hutchins, 2024). The aim of this study was to examine whether a three-session reminiscing intervention that includes live coaching would be associated with an increase in specific parent verbalisations, described in the intervention as ONCE skills: asking Open-ended questions, introducing Novel information, Confirming child utterances, and referencing internal/external Emotions/cognitions (Risi et al., 2024), as well as an increase in child elaborative and emotion/cognitive verbalisations.

Participants were two parent-child dyads, where the child had a prior diagnosis of autism spectrum disorder (ASD). The dyads were asked to complete a pre-reminiscing intervention parent-child conversation without any coaching present. They discussed two conversations from everyday life: (1) a time their child did something new or different, and (2) a time their child did something when their parent wasn't there. The first intervention session was parent only, during which an intervention handout detailing ONCE skills was reviewed alongside strategies to increase these skills, types of utterances to decrease during reminiscing conversations, and examples and role playing to teach concepts. Session two involved both the parent and child, in which dyads discussed three parent-selected past

events. Parents were encouraged to bring photos or other cues related to the event (Bhana et al., 2023). Live coaching via a headset occurred during this session, where the coach highlighted and encouraged use of the ONCE skills (Risi et al., 2024; Vess & Campbell, 2022). Session three was the second coaching session, in which dyads were again asked to discuss the three-parent selected past events, to bring photos or other cues, and live coaching again occurred. All sessions were conducted over Zoom.

The current study found that for both dyads, parental use of novel information increased from pre-reminiscing conversations to either one or both subsequent intervention session conversations. Novel information included statement elaborations, elaborative yes/no questions, and elaborative open-ended questions. Counter to our predictions, there was minimal change in parental use of open-ended questions, confirmations, or references to emotions and cognitions. The current study also intended to examine whether parent training of ONCE skills was associated with an increase in children's use of memory elaborations and emotion/cognition verbalisations during reminiscing. For children in both dyads, average memory elaborations increased from pre-reminiscing to intervention sessions. Counter to predictions, for both dyads, children's use of emotion and cognition verbalisations decreased slightly from the pre-reminiscing session to the intervention sessions. Overall, the intervention was associated with an increase in novel information verbalisations from parents during parent-child reminiscing conversations, and an increase in memory elaborations from children.

Further research is needed to understand how novel information, open-ended questions, and emotion discussion function for children with autism and their parents, to inform future reminiscing interventions.

Introduction

Existing research suggests that reminiscing has benefits for children such as verbal fluency, language, autobiographical memory, and social/emotional understanding (Faust, 2009; McDonnell et al., 2020; Gaelen, 2021). Maternal reminiscing style is relatively stable over time but is highly modifiable with training (Corsano & Guidotti, 2019). There is longitudinal data to support direction of causality between more elaborative parent reminiscing and children's recall, suggesting that coaching parent reminiscing style may enhance child outcomes (Corsano & Guidotti, 2019). The majority of reminiscing research, and reminiscing interventions, however, have been conducted with typically developing children and their parents. Autism is associated with differences in many of the areas which high quality reminiscing has been found to benefit. A handful of studies (Brien & Hutchins, 2022; Bhana et al., 2023; Bhana et al., 2024; Brien & Hutchins, 2024) have developed reminiscing interventions for parent-child dyads which include a child with autism, to see whether the same enhancement of child outcomes is seen as in typically developing children. These studies have found varying effects of parent training interventions on parental reminiscing, and on child outcomes. This thesis explores a reminiscing intervention with live coaching and photo prompts. Participants were two parent-child dyads where the child has an existing diagnosis of Autism Spectrum Disorder. This introduction will describe autism and associated developmental differences, parent-child interactions and reminiscing for typically developing children, before considering the potential value of reminiscing for children with autism.

Autism Spectrum Disorder

Autism spectrum disorder (ASD) is a behaviourally defined neurodevelopmental disorder (American Psychological Association, 2013). The aetiology is thought to be multifactorial, involving both genetic and environmental variables (Amaral, 2017). While the

involvement of genetic factors is not conclusively understood (Almandil et al., 2019), differences in terms of behaviours linked to this diagnosis have been somewhat categorised, such as in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). Underlying atypical cognitive mechanisms that may cause these differences are being explored in several dominant cognitive theories. Among the most popular proposed are *Theory of Mind*, which accounts for difficulty attributing mental states to themselves and others, and *Executive Dysfunction* that proposes impairments in executive functioning (Sari et al., 2023). One main limitation in creating a unified theory for understanding mechanisms of autism is that, due to its heterogenous nature, there is no one risk factor or biomarker that holds explanatory power in all cases of autism both biologically and behaviourally (Sarovic, 2021).

The DSM-5 categories autism as a spectrum disorder, and by doing so, assumes an underlying unity and cause or pathway, with heterogeneity and variations in symptom severity proposed to be due to gene dosage effects, genetic background, and environmental influences (Anderson, 2015). According to this widely used clinical diagnostic tool, ASD involves persistent deficits related to social communication and social interactions and restricted and repetitive behaviour, interests, or activities. Also included, is a rating of diagnosis severity, with three levels that each specify different support requirements for the individual with ASD: level 1; requiring support, level 2; requiring substantial support and level 3; requiring very substantial support (American Psychological Association, 2013).

As outlined above, ASD has often been conceptualised from a deficit view and this has received criticism, particularly from individuals and families with lived experience. ASD is often characterised in terms of cognitive and behavioural differences, which are emphasised as impairments when compared to typical development, to the exclusion of alternative explanations or even strengths associated with ASD (Dinishak, 2022). This author will attempt to seek more positively and neutrally framed information regarding autism to de-

emphasise potential negativity. There is also controversy about whether individuals with ASD should be referred to in person-first or identity-first language, and this author recognises there is no term that suits all people. A study by Doepke et al. (2022) found that both types of language are preferred by different groups. In this study, autistic adults were more likely to support identity first language, such as autistic person, as it embraces autism as a core part of identity. On the other hand, professionals who work in the community were more likely to support person-first language (e.g., person with autism) as they feel it is important to emphasise the person and not the disability. This author will address this community using both person-first 'individual with autism' and identity-first 'autistic person' terminology to represent both perspectives. Autism spectrum disorder in the context of diagnosis will be referred to as ASD, as this also exists in the literature.

Māori are the tangata whenua (indigenous people) of Aotearoa/New Zealand, and are a diverse group with differing beliefs, values, iwi affiliations, and economic and social circumstances. The term Takiwātanga was developed in 2019 in New Zealand as a Māori interpretation of autism, translating to 'in his or her own time and space.' This draws on a Māori whakataukī (proverb) which refers to the highly valued but irregularly fruiting titoki tree. Takiwātanga promotes acceptance and celebration of autistic people as they bloom in their own time and space (Te Pou o te Whakaaro Nui, 2019). Māori understandings of autism differ from dominant Western understandings, and no universal Māori view of autism exists due to diversity in the population. Māori health models are influenced by world views and tend to be holistic with focus on spiritual and emotional development. Whare Tapa Wha was developed by a hui of Māori health workers in 1982, in response to the belief that most health services follow a reductionist worldview based biomedical model that does not recognise unmeasurable phenomena. Whare Tapa Wha is a unified theory of health, which contains four main paradigms including: taha tinana (biomedical), taha hinekaro (existential

anthropological or psychosocial), taha whānua (cultural or socio-economic), and taha wairua (systemic or environmental seeing human health as a part of the wider web of life, interconnected and interdependent) (Rochford, 2004). In line with this, te ao Māori describes autism as something to be nurtured, a normal part of life, a gift to be embraced, and bringing both strengths and challenges. Comparatively for some Māori, it is believed that autism is a consequence for past family behaviour. In general, traditional Māori values encourage acceptance and support for individuals with differences or disabilities (Tupou et al., 2021).

Data related to prevalence, age of diagnosis and management of ASD in New Zealand is not definitively recorded. It is important to note that current data related to frequency of autism in New Zealand has been conducted on a small scale, and may be an underestimation (Acraman, 2021). Prevalence is therefore based on these small studies and international data, with the generalisation of such reported data estimating that 1-2% of the population in New Zealand has ASD (Acraman, 2021). A study investigating rates of ASD among individuals aged 0-19 in the Hutt Valley region of New Zealand between 2012-2016 revealed a rate of 1.48% (Drysdale & van deer Meer, 2020). Another report on the autism diagnostic process in New Zealand estimates prevalence rates to be 1.7% (van der Meer & Evans, 2021). International research suggests that prevalence of ASD is rising. It may be that ASD is becoming more common, or the more likely explanation being that ASD is more frequently diagnosed due to increased understanding, improvements in identification, and broader diagnostic criteria due to merging of separate diagnoses with ASD, such as Asperger Syndrome (Bowden et al., 2020).

A review conducted by Tupou et al. (2021) found slightly higher autism prevalence rates for Māori compared to non-Māori New Zealanders. Research and understanding of autism are largely dominated by the Western medical perspective, and diagnostic tools and criteria are largely based on Western populations. Tupou et al. (2021) highlighted the need

for support in terms of diagnosis and services that are effective and culturally appropriate. Evidence suggests that individuals with autism from minority populations may be less likely to access evidence-based treatments. Māori are more likely to be identified as having a disability, and less likely to receive support, therefore raising the possibility that Māori with autism may also be at risk of inequitable outcomes than non-Māori New Zealanders.

ASD is associated with various strengths such as visual thinking, logic, memory (Bowden et al., 2020), special isolated skills and perceptual peaks (Meilleur et al., 2015), attention to detail and the ability to maintain coinciding representations during complex tasks (Dinishak, 2022). ASD is also linked to communication, social/emotional and challenging behaviour differences. Social and communication differences in children with ASD can impact the individual and those around them, making the population important to research and understand. Severity of deficits associated with autism seem to be linked to outcomes later in life, such as employment, relationships, physical/mental health, and overall quality of life (Sari et al., 2023).

Communication is an area of interest in autism, with main differences to typical development being a delay/lack of gesture use and spoken language, or unusual idiosyncratic language, for example, echolalia or difficulty with specific words or metaphors. Deficits in communication lead to difficulty interacting, with challenges such as limited social-emotional reciprocity that ranges from trouble initiating conversation or making social approaches, to lack of engagement in conversation. These differences in verbal/non-verbal communication as well as differences in social motivations can inhibit social interactions, resulting in difficulty in both developing and maintaining relationships (Prelock et al., 2012). Some children with ASD are content with being alone, with one possible explanation being that they lack drive to connect with others and share complementary states of feeling. This can mean they are less responsive to bids for attention from parents, and do not bid for attention

from others with eye contact, gestures, or vocalisations. This can in turn mean fewer opportunities for learning and practicing foundational social skills. Children with ASD may be less likely to form age and language appropriate peer relationships, resulting in few or no friends, or relationships that revolve around child's own special interests. Trouble interacting in groups and challenges adhering to social rules of games mean that children with ASD can be left out or ignored and are at higher risk of being bullied and victimised by peers (Johnson & Myers, 2007).

Restricted and repetitive behaviour patterns are also a core characteristic of autism, manifesting as stereotyped or repetitive speech and ritualised patterns of behaviour (Prelock et al., 2012). Restrictive behaviours include insistence on routine adherence, which can lead to resistance to change, fixed interests and over reactivity or under reactivity to sensory stimuli. Restrictive behaviours can impact relationships, as repetitive behaviour patterns such as excessive questioning, insistence on discussing an interest that isn't shared with the communication partner or using language that doesn't promote reciprocity (Prelock et al., 2012). Most stereotypies are harmless, such as hand flapping or rocking, but some are considered problematic when they interfere with the child's ability to complete a task or learn new skills. Children with ASD can protest when urged to move from a topic, activity, or interest, or when a routine is changed. Protesting can include severe and long tantrums which can include aggression or self-injurious behaviour stereotypies such as head banging, hand biting and skin picking. Self-injurious behaviours are often caused by frustration from events such as unsuccessful communication, transitions, anxiety in different environments, boredom, depression, fatigue, lack of sleep, or being in pain. Presence of these behaviours and others such as aggression or extreme behaviours can inhibit the child's participation in activities with typically developing peers and can also cause family stress (Johnson & Myers, 2007). Edelson (2021) found that over 40% of individuals diagnosed with ASD exhibited both

aggression and self-injurious behaviours. These behaviours are dangerous for the individual, as self-injury can result in tissue damage, lacerations and even fractures in severe cases, and aggression can result in injuries to others, for example, resulting from hitting and biting. These challenging behaviours vary across individuals encompassed in the autism spectrum, in frequency, duration and severity (Edelson, 2022). Internalising behaviours, such as withdrawal, depression and anxiety are also linked to ASD, especially in higher functioning individuals. Higher levels of both internalising and externalising behaviours are associated with lower peer acceptance and more social difficulties (Bauminger et al., 2010). Having a family member with ASD is a risk factor for family stressors, such as sense of loss or depression associated with diagnosis, decreased opportunity for family activities, changes in relationships due to loss of social support, and sacrifices from family members in personal or career domains to accommodate level of support required (Nealy et al., 2012).

Children with ASD utilise different strategies of coping in the context of frustration when compared to their typically developing peers. Autistic children tend to use less constructive strategies, such as goal-direction behaviours, seeking social support or verbal assistance, but instead more vocal and physical venting, and avoidance strategies such as avoiding, distraction and alternative behaviours. A study by Zantinge et al. (2017) found no difference in emotion arousal response between autistic and typically developing children, but there was a difference in behavioural regulation of these emotions between these groups. This study also revealed that use of less constructive strategies in autistic children was linked to language, which were impaired in the autistic children group (Zantinge et al., 2017). While these are differences attributed to autistic children, it is likely that the lack of fit or adaptation of the neurotypical world and associated systems contributes substantially to these difficulties. This could include less opportunity to interact with neurotypical people because of stigma, due to people's poor understanding of autism (Turnock et al., 2022).

Parent-child Interaction and Reminiscing

Before considering parent-child interactions for children with autism, relevant developmental theory will be considered. Vygotsky (1978) argued in his socio-cultural theory that through social interactions, caregivers introduce their children to socio-emotional concepts in a way that is valued in their culture. In these conversations with their children, parents introduce vocabulary surrounding socio-emotional experiences, model expression of emotion and teach children about emotions by discussing causes, consequences, and resolutions. Children are often faced with situations that require more advanced socio-emotional abilities than what they currently possess, therefore relying on parents to bridge this gap. This is known as the zone of proximal development, which is the difference between a child's ability to navigate a task independently and their ability to navigate that task when given support and guidance (Vygotsky, 1978). Parents support their children using scaffolding, teaching them to one day be able to independently navigate these challenging experiences. Differences in children's socio-emotional skills may be partially explained by children's participation in adult-child interactions according to socio-cultural theory. Therefore, it is hypothesised that children who engage in interactions with parents that teach and guide them through social and emotional challenges are more likely to possess better socio-emotional abilities (Clifford, 2021).

Social interactions are a part of daily life and function to achieve a variety of outcomes, of particular importance being developing and maintaining relationships with others. Telling stories of our past experiences is a common way to socially connect. To do this successfully, an individual must be capable of constructing a coherent personal narrative and possess social communication skills (Brien & Hutchins, 2024). Joint reminiscing involves a conversation between a parent and child wherein a past experience is discussed, and a narrative is co-constructed, with the event often being emotionally significant and the

child's feelings often emphasised (Corsano & Guidotti, 2019). Reminiscing is an especially important tool in early childhood to help children regulate emotions, bond with parents, engage in reciprocal conversations and learn social skills (Bhana et al., 2024). As soon as children begin to talk, parents will provide most of the structure for reminiscing conversations (e.g., "*Didn't we have fun at the zoo yesterday? And remember you saw the giraffe with the really long neck*!"), with the child adding confirmation or indicators of engagement (e.g., "*mmmm*"). Usually by age three, children fully participate in reminiscing and co-construct narratives, but parents provide narrative thread to weave a coherent story (Fivush & Salmon, 2023).

Young children rely on adults to guide their comprehension of events and outcomes, making conversations about the past different from general talking (Garnett et al., 2023). An important feature of reminiscing is its decontextualised nature, as that the conversation happens outside of the here and now (Andrews et al., 2023). Hindsight enables reflective narrative construction (Salmon & Reese, 2016), and distance from an event helps parents to teach children connections between the context of an event and recognition of emotion and regulation (Garnett et al., 2023). This allows children the opportunity to contemplate events, develop scripts and plans, talk about the past and the future and practise using temporal language (Andrews et al., 2023). Conversations that utilise decontextualised language when discussing past or future events, as well as explaining how things in the world work, are better predictors of vocabulary skills among preschoolers than total parent talk (Rowe & Snow, 2020). Parents who use more decontextualised language during conversations, tend to have children who use more decontextualised language. This type of talk challenges children to discuss topics that are separate from here and now, which is helpful for teaching and understanding concepts, and tends to use more complex language (Rowe & Snow, 2020).

Over time, children internalise skills gained from interactions scaffolded by adults (Fivush et al., 2006).

Reminiscing happens between parents and children all around the world, often varying in practice or style, due to differing cultural functions (Reese & Neha, 2015). The reminiscing style of a parent reflects their personal or dominant cultural values, as well as emphasis based on the type of event being discussed (Garnett et al., 2023). In New Zealand for example, talking about the past has a strong emphasis in terms of origins and connections to family across generations in Māori culture. Māori adults tend to report earlier memories than other New Zealanders. Māori mothers have been found to be relatively more elaborative than New Zealand European mothers when discussing their child's birth stories compared to discussions about everyday shared events with children, such as going to the zoo (Reese et al., 2008). Interestingly in a later study by Reese and Neha (2015), contemporary Māori mothers were more elaborative when discussing everyday events compared to the child's birth or rituals and misbehaviour. This suggests that the function of reminiscing is changing due to the adoption of both European and Māori reminiscing practices, which may be because many Māori parents align with multiple ethnicities (Reese & Neha, 2015).

It has been thought that mothers may also be more elaborative with daughters than sons, but Waters et al. (2019) found that maternal elaboration style did not differ according to child gender. However, mother's ethnicity impacted maternal elaborations by child gender, and non-Caucasian mothers tended to elaborate more with daughters than sons (Waters et al., 2019).

Reminiscing Style

Reminiscing between a parent and a child about a past experience is very common, however there are evident and enduring differences in how this is done (Fivush, 2007). Individual differences in reminiscing conversation facilitated by parents, in terms of conduct

and structure, have been identified (Waters et al., 2019). It is important to note, however, that most of this research has focused on mothers and typically developing preschool aged children. Fivush and Fromhoff (1988) identified individual differences in maternal reminiscing style with respect to elaboration. Based on Vygotskian sociocultural theory (Vygotsky, 1978), Fivush and Fromhoff suggested that autobiographical memory was a form of practicing culture, and the style of parent scaffolding during reminiscing with their children influences how children remember and understand their own past narratives (Waters et al., 2019). These differences are important because they are reflected in children's style of remembering and narrating past experiences (Salmon & Reese, 2016). Research has found that maternal reminiscing style predicts autobiographical memory development in children, literacy and narrative skills, theory of mind and understanding of self and emotion (Fivush et al., 2006). Converging research has determined that elaboration is an important reminiscing dimension that varies across parents.

Elaborations are units of recall of an event discussed during reminiscing that contain novel information not previously mentioned by the child or parent (Reese & Fivush, 1993). These elaborations are then further categorised based on the function of the utterance e.g., whether a question calls for a response, a yes/no answer, or just provides new information. Elaborative reminiscing represents parental task support to enable children to recall past experiences. The parent elicits child recollections of a past event, then expands upon them through use of task support or elaborative scaffolding, such as through use of open-ended questions that incite participation, elaborative statements to provide more detail and structure, and evaluative feedback such as confirmations to motivate participation (Brien & Hutchins, 2024; Harris et al., 2022). Children become more competent and increase participation in these conversations over time, which prompts parents to reduce their support and enable the child to independently relay a narrative (Bhana et al., 2024). The primary goal of this type of

reminiscing is for a parent and child to retell a detailed past personal experience to be understood mutually and shared socially (Brien & Hutchins, 2024).

Parental use of this task support during reminiscing can be placed on a continuum, with high elaborative task support at one end and low elaborative task support at the other. More elaborative parents discuss the past with children using richer details, alongside statements and questions that provide new information to the forming narrative. Open-ended questions are often *wh*-questions that include novel information and call for more than a yes/no answer from the child (e.g., "*What did we do at the museum*?"). Close ended yes/no questions are still considered elaborative if they add new information and/or focus on a different part of an event (e.g., "*Was Nana there with us*?"). Highly elaborative parents also provide more confirmations (e.g., "*yes that's right, Nana was there*"), and praise information offered from the child, which encourages and gives value to their child's participation. This style invites, engages and involves children in constructing a story to describe a past event. Less elaborative parents in contrast discuss past events with less questions, which function to ask for specific pieces of information, rather than adding more information that aids in stringing the event together as a story (Fivush et al., 2006). Elaborative reminiscing is distinct from "talkativeness," as elaborative approaches are unique to reminiscing compared to other types of conversations between parents and children. Elaborative reminiscing has been inconsistently operationalised in the literature, as different aspects of elaborative utterances (e.g., open-ended questions, yes-no questions, statements) have had different emphasis for enhancing outcomes associated with elaborative reminiscing. However, one consistent foundational feature of elaborative reminiscing is parental use of elaborative open-ended questions (Swetlitz et al., 2021).

Two coding approaches exist to measure parental elaboration in terms of parental support during reminiscing. Frequency based coding for elaboration looks at the conversation

at the utterance level and obtains absolute frequencies of parental behaviours from transcripts. Utterances are coded in terms of information they provide (e.g., elaboration, repetition), and the type of utterance (open-ended question, close-ended question, or statement). In this coding approach, parental elaboration acts as a memory cue for children, and therefore more cues mean greater difference for child memory (Leyva et al., 2020).

The Elaborative Reminiscing Scale is an overall measure of elaborative quality where the reminiscing conversation is considered as a whole. This coding scheme utilises a 5-point Likert scale, wherein 1 indicates low-elaborative reminiscing and 5 indicates high elaborative reminiscing. In this coding approach types of utterances are seen as a variable that needs to be controlled (i.e., maternal talkativeness), instead of a variable of interest on its own. Parents are placed on the low end of the scale (1 point) if they introduce novel information mostly using elaborative yes/no questions or repetitions, ask few or no elaborative open-ended questions, and either negate or ignore child statements by switching topics. Parents are placed at the centre of the scale (3 points) if they utilise a balance of elaborative yes/no and open-ended questions, use moderate amounts of repetitions, and for about half of the child's utterances they confirm or elaborate by introducing or requesting new information. Parents are placed at the high end (5 points) of the scale if they mostly use open-ended questions, use few or zero yes/no questions and repetitions, and confirm or elaborate on most of the child's utterances (Laible, 2004; Leyva et al., 2020). Both the utterance-based and scale-based coding approaches have value and specific advantages. Leyva et al. (2020) compared the two approaches within a single sample and examined associations with a range of child developmental outcomes. Overall, the scale-based coding of elaboration was a stronger predictor of children's socio-emotional outcomes, and the frequency/utterance-based coding was a better predictor of children's autobiographical memory.

Reminiscing Content

Discussing past emotional events (rather than simply everyday events in which emotion talk may arise) is known as emotion reminiscing, which provides opportunity for parents to scaffold children's understanding of an event and their emotions (Fivush, 2007). Since reminiscing contains real events from the child's lives, it offers opportunity for parents to discuss emotional events including how they experienced and coped with emotions (Clifford, 2021). The topic of emotions in the context of reminiscing is particularly important because it enables reflection from both parent and child about causes and consequences of emotions experienced by themselves or others (Bird & Reese, 2006). Talking about a past event also enables this conversation to occur at a time when the parent and/or child is less emotionally aroused compared to during the event (Van Bergen & Salmon, 2010). Events that are emotionally challenging can be overwhelming for children, so once feelings have passed, children are better able to engage in conversation about the event (Clifford, 2021). Children's emotion knowledge is associated with parent-child discussion about emotions, especially emotion causes (Van Bergen & Salmon, 2010).

To obtain frequencies of references to emotion, transcripts are typically coded to identify internal emotion and cognitive states, and external evaluations. Emotion words are references to internal emotion states of the child or another individual from parent-child reminiscing conversations. Emotions can be feelings (e.g., sad, happy) or behaviours (e.g., crying, laughing), which are then subcategorised as either negative or positive. Emotions are coded more specifically into attribution, explanation, confirmation, and resolution of emotion (Bird & Reese, 2006). References to cognitive states include mental states and terms around using the brain such as "know" or "boredom." Cognitions and emotions can then be subcategorised based on whether the internal state was experienced by the child or another person. External evaluations, or affect states, are evaluations or judgements of something

external, such as “good” or “scary.” Affect states are subcategorised as positive or negative and whether the affect state described the child or another individual.

Another coding system designed to understand emotion reminiscing is the Autobiographical Emotional Events Dialogue (AEED). The AEED consists of seven maternal and seven parallel child scales as well as two scales for the narrative co-constructed by the mother and child. Transcripts are coded for by marking indicators for various scales, and then a score is assigned for each scale based on both frequency and strength of the indicator. Scales range from 1 to 9, and high scores indicate high levels of behaviour, except in hostility where high scores represent positive behaviour. Maternal rating scales are: *Focus on the task* (Mother is focused on task and does not become off-task); *Clear boundaries* (Mother accepts child as separate individual with their own perspectives and experiences, she does not force her own emotions or ideas, or become overwhelmed by child’s emotions); *Tolerance* (Mother lets child express range of emotions without becoming judgemental or defensive); *Hostility* (Mother shows hostility, anger or derogation); *Containment of negative feelings* (Mother guides conversations with negative emotions towards resolutions that emphasise the child’s coping abilities, strength, and wellbeing); *Structuring* (Mother helps child to narrate rich and coherent stories) (Koren-Karie et al., 2008).

Russell et al. (2024) adapted a coding scheme to measure emotion resolution from the AEED coding scheme made by Koren-Karie et al. (2003). Emotion resolution is coded for the mother and child separately on a 9-point scale. A low score of 1 would suggest that the mother expanded on negative emotions without any move towards resolution, and for the child, that they resist any maternal resolution efforts and repeat negative emotions. A high score of 9 suggests that the mother or child ended the conversation on a positive outcome with a robust resolution. A score of 5 suggests that the mother may have tried to end the conversation positively, but without persisting, therefore leaving the child without resolution

to negative emotions. This may reflect a relatively superficial 'positive ending' without a well-constructed resolution (e.g., "*but you feel better now, right*?"). This score for the child suggests they shift to another section of the conversation without resolution for negative emotions, or acceptance of the mothers' resolution attempt without engaging in the ending (Russell et al., 2024).

During highly elaborative and emotion content rich conversations, children are practicing management of attention and emotions (Salmon & Reese, 2016). Longitudinally, a child's ability to regulate emotions and respond in a socially competent manner during challenging situations is linked to emotional content in parent reminiscing (Salmon & Reese, 2016). Reminiscing about emotional events after de-escalation teaches children about the causes, consequences, and indicators, which is linked to socio-emotional development. High elaboration and high emotion content are associated with more optimal outcomes, and if these styles remain consistent over time, the child will likely come to report past experiences with more elaboration, emotion language content and understanding of their own and others' emotions (Salmon & Reese, 2016).

The Social Cultural Developmental Theory proposes that individuals understand themselves within a social environment by linking their autobiographical memory of past events, thoughts, and emotions (Vygotsky, 1978). Several decades of research has corroborated that mothers of neurotypical children who reminisce in a style that is elaborative, rich in detail and refer to and resolve emotions, have children that possess better socioemotional skills (Waters et al., 2019). Highly elaborative parents construct narratives with their children, and during this process, parents help their children to understand emotional experiences and the causes and consequences of emotion. Parent-child discussions about happy and positive emotional experiences tend to focus on reliving and savouring the experience, while also creating emotional bonds through having shared history. Parent-child

discussions about sad, scary, angry, or challenging negative emotional experiences tend to involve the parent helping their child to understand causes and resolutions. Children who have emotion understanding that is developmentally appropriate tend to have higher quality peer relationships, better ability to regulate or manage emotions, and fewer emotional and behavioural difficulties (Fivush & Salmon, 2023).

Reminiscing and Typically Developing Children

As noted above, most of the reminiscing research has examined associations between reminiscing among mothers and typically developing preschool aged children. Maternal elaborative reminiscing style is linked to enhanced child outcomes such as coherency in child narratives, advanced use of language, self-regulation abilities, and socioemotional skills (Garnett et al., 2023). The underlying assumption is that parent-child reminiscing is an important mechanism for socialising children, as it facilitates child internalisation of cognitive, social, emotional, and behavioural abilities or knowledge (Waters et al., 2019). Individual differences in maternal reminiscing have been associated with child cognitive development in domains such as memory and language (Waters et al., 2019). Child autobiographical memory is measured in terms of more elaborative memory responses, and child language is typically measured using independent measures of expressive and receptive vocabulary. Autobiographical memory is strengthened by elaborate reminiscing because maternal elaborations serve as memory cues during reminiscing, which facilitate memory retrieval and rehearsal for the child. Well organised memories are better recalled, and mothers providing elaborative information and coherency in narrative help their child to create a more organised memory of a past event, which aids in recall. Self-referenced events are also better recalled compared to non-self-referenced events, and by the mother referencing internal and external states and hereby integrating these to make the event more self-referenced to the child, these will be better recalled. More elaborate mothers are also

modelling autobiographical memory retrieval for their children, which teaches children retrieval activities and lead to better memory. Language is strengthened because highly elaborative mothers teach more complex and diverse linguistic skills, have higher frequencies of utterances, and reminisce more frequently to embed skills compared to mothers with a less elaborative reminiscing style (Waters et al., 2019).

Elaborative reminiscing has been examined in relation to child memory development, but it also has potential to benefit child emotional development (Swetlitz et al., 2021). Both an elaborative style and emotion content in parent-child reminiscing are recognised as critical contributors to children's socioemotional development and consequent behavioural functioning (Garnett et al., 2023). Children who have mothers with a highly elaborative reminiscing style tend to use higher frequencies of emotion references, mental state references, and have increased emotional understanding compared to children who have mothers with a less elaborative reminiscing style (Swetlitz et al., 2021). There is some evidence that the quality of parent-child reminiscing about negative events and emotions may be especially salient for the development of children's socio-emotional skills because causes and consequences are discussed, and resolutions are provided away from the emotionally arousing event (Garnett et al., 2023; Laible, 2011) In a study by Garnett et al. (2023), maternal elaborative reminiscing was negatively associated with 8-year-old children's internalising behaviours, such as emotional and peer problems, and positively associated with prosocial behaviour. They also found that elaborative reminiscing was not uniquely linked to externalising behaviours such as hyperactivity and conduct problems in middle childhood. Russell et al. (2024) also found association between child mental health, particularly internalising difficulties, and parent-child reminiscing. They examined parent-child reminiscing about past and future worry events among dyads where half the children were clinically referred for anxiety, and the other half were a matched community sample. Parents

of the clinical sample showed less emotional expression and explanation, and were less likely to discuss positive emotions when reminiscing.

Maternal reminiscing style is relatively stable over time but is highly modifiable with training (Corsano & Guidotti, 2019). Training targeted at parents to improve their narrative and emotion conversation style is efficacious. There is longitudinal data to support direction of causality between more elaborative parent reminiscing and children's recall. This suggests that training elaboration techniques to parents may result in more elaborative reminiscing styles, and therefore enhanced child outcomes (Corsano & Guidotti, 2019). Intervention studies with an intervention group and a control group have shown that coaching mothers to be more elaborative enhances benefits of reminiscing to children's autobiographical memory, narrative skills and emotion understanding (Corsano & Guidotti, 2019).

A review of reminiscing intervention programs by Corsano and Guidotti (2019) analysed the effectiveness of reminiscing training for parents in which elaborative and emotional reminiscing styles were emphasised. Interventions involved parent focused training, often promoting use of particular words or questions, and using similar methodologies such as showing videos, audio recordings, and books to parents. Parents are instructed to use a more elaborative style of reminiscing, such as using *wh*-questions, detailed descriptions, talk about emotions, causes, and consequences. Interventions were longitudinal, with studies varying in length and input from researchers. Length of training is related to number of sessions, ranging across studies from one day to one year. The reminiscing style of mothers improved across all studies reviewed, alongside children's emotional, cognitive and language abilities, despite differences in participants, methods, training length and settings. Importantly this review found evidence to suggest that parental reminiscing style can be modified with relatively brief interventions consisting of only one to three sessions (Corsano & Guidotti, 2019).

In a longitudinal follow up study, Mitchell and Reese (2022) analysed long-term continued effects of a parental reminiscing intervention on adolescent's narrative identity and well-being. In the original study *Growing Memories* (Reese & Newcombe, 2007), the initial intervention consisted of three sessions with 56 mothers and their preschool aged children (19-44 months) in the reminiscing condition. This original study displayed positive effects of training on all participating mothers, despite variation of education level, as in each case there was an increase in parent-child elaborative conversations (Reese & Newcombe, 2007). From the original *Growing Memories* study containing 115 mother-child dyads, ninety-three adolescents participated in a life story interview and questionnaires such as personality traits (Big 5) and well-being in the follow up study. Mitchel and Reese (2022) found very long-term benefits from this brief elaborative reminiscing intervention targeted at mothers to benefit their children in terms of narrative identity and well-being. Adolescents whose parents had received the intervention when they were preschool aged, told more causally coherent turning-point narratives and referenced more emotions during conversations about negative past events, compared to adolescents whose parents were in the control (Mitchel & Reese, 2022). Salmon et al. (2009) found positive results from their intervention tailored towards 'at risk' preschool aged children (e.g., children with behavioural problems, or in disadvantaged families) and their mothers reminiscing style. Parents of at-risk children could lack in reminiscing abilities that can be reinforced by reminiscing training interventions (Corsano & Guidotti, 2019). Over six sessions, mothers participated in a parent management training program, where mothers assigned to the emotion reminiscing condition were trained to use open-ended questions, introduce more information, label emotions, and refer to causes, consequences, and resolutions of emotions. As a result of the intervention, there was a decrease in child oppositional behaviour and an increase in elaborations and emotion references in the mother's style of reminiscing. Children also demonstrated an increased use

of elaborative and emotion referencing utterances and increased understanding of emotion. These results were maintained until the six-month follow up (Salmon et al., 2009).

In summary, reminiscing interventions appear to have a positive impact on the quality of the mothers reminiscing style and, on their child's socioemotional skills and cognitive abilities (Garnett et al., 2023; Corsano & Guidotti, 2019; Waters et al., 2019). Researchers most commonly analyse effects of training elaborative and/or emotion rich reminiscing techniques to parents at the language level. Measures of parent elaboration and emotion references are then used to examine whether training promotes change in parent reminiscing style during parent-child reminiscing, and eventually how these changes effect child outcomes. Reminiscing training appears to be more effective than other kinds of conversation training (Corsano & Guidotti, 2019).

What the literature does not tell us is whether the benefits of reminiscing interventions can be generalised to broader populations of parent-child dyads (Waters et al., 2019). It has also been identified that mothers may be more elaborative than fathers, therefore it could be important to teach elaborative reminiscing techniques to fathers, or even to compare mother-child and father-child reminiscing training (Corsano & Guidotti, 2019). Reminiscing could also be explored in the context of other significant family and community members (Waters et al., 2019). Reminiscing interventions are being explored in preschool teacher-child interactions (Neale & Pino-Pasternak, 2017). A lot of studies conduct reminiscing training in longitudinal interventions, but training length should consider motivation of families to prevent dropouts during studies. Valentino et al. (2013) showed that short-term home interventions can be effective. Long-term follow ups sessions need to be carried out in future to confirm the efficacy of shorter interventions.

Reminiscing and Children with ASD

Differences in developmental outcomes such as verbal fluency and language, autobiographical memory, theory of mind, and social/emotional understanding are often associated with ASD (Faust, 2009; McDonnell et al., 2020; Gaelen, 2021). Interventions aimed at improving language and social skills are particularly beneficial to support children with ASD (National Autism Center, 2015). Interest in potential benefits of reminiscing interventions for children with ASD has grown in recent years, given the associations between elaborative and emotion-rich reminiscing for typically developing children and developmental outcomes. Elaborative reminiscing is not a social skills intervention designed to teach rules for social interactions or target autistic interaction styles, but instead supports communication and social interactions by increasing access to socially relevant information and increasing representations of experience. Elaborative reminiscing draws on strengths of autism, by encouraging individuals to share their experiences in a way that is meaningful (Brien & Hutchins, 2024).

Parents of autistic children tend to be less elaborative, ask more closed questions, be more directive, and discuss more off-topic points during reminiscing compared to parents of neurotypical children (McDonell et al., 2020; Raman, 2022). Reciprocal determinism is thought to shape parent-child interactions, and this may be what is reflected in these findings (Brien & Hutchins, 2024). It may be that these differences reflect parents adapting to their autistic child's developmental needs, as they may have issues answering open-ended questions and respond better to yes/no questions. In this section this author will review a handful of studies that have examined reminiscing for children with autism, and reminiscing interventions for parents of children with autism. This research comes with the intention of supporting autistic children, given reminiscing with typically developing children suggests that parents who use a more elaborative style tend to have children who initiate more topics,

ask more questions, have better memory measures, and respond more elaboratively (Brien & Hutchins, 2024).

Early Research on Parents of Children with ASD

Now discredited early research on caregivers and their children with ASD described parents as "cold" and "obsessive," which led to the damaging popularisation of the "refrigerator mother," a term which falsely suggested that mothers lacking in maternal warmth caused ASD in children during the 1950's and 1960's. This had substantial negative impacts for the autism community and was linked to the recommendation that children with autism may need to be institutionalised (Swanson, 2020). Researching parents of children with ASD is a sensitive topic due to this history, therefore in this thesis, parent behaviours that support autistic children's development will be discussed, while explicitly clarifying that parental behaviour does not have a causal role in autism. The following sections outline specific areas which are challenging for children with autism and review our current understanding of how these areas are related to parent-child reminiscing.

ASD, Reminiscing and Language.

Parent-child discussion facilitates language development in typically developing children, and the more these discussions happen, the faster language acquisition in children tends to occur. Elaborative reminiscing is linked to vocabulary, understanding of verbal language sounds, and narrative skills (Salmon & Reese, 2016). Mothers who are highly elaborative when reminiscing have greater overall utterances, use varying language, provide detailed descriptions of events and emotions, use internal state language, and encourage child contribution by integrating it into conversation (Waters et al., 2019). Reminiscing challenges children to utilise complicated vocabulary and syntax, alongside exploration of abstract concepts, to adequately express past experiences with language (Salmon & Reese, 2016). Highly elaborative mothers also converse more with children, so provide more opportunity to

practice complex language essential for development (Waters et al., 2019). Talk about past experiences in an elaborative way builds narrative, which contains longer, and more complex sentences compared to talk about a current setting. Narrative talk facilitated by reminiscing at preschool age provides foundation for future academic language and reading skills, therefore having implications for success in schooling (Salmon & Reese, 2016).

Speech and language development are linked to social developmental processes early in life, as both willingness and ability to interact with another is necessary for the process of language acquisition and use of language. This has implications for children with ASD, because one of the core symptoms is lasting difficulties with social communication and interaction in multiple contexts (Vogindroukas et al., 2022). Children with autism have a more limited capacity to communicate and interact with others successfully. This leads to difficulty developing language skills and understanding other people's verbal use of language, as well as nonverbal communication such as gestures, eye contact, and facial expressions (National Institutes of Health, 2020). Broad diagnostic criteria means that children with ASD have different developmental backgrounds, and extent of vocalisation and expression of language in terms of grammar and vocabulary varies. Impaired language ability is evident at preschool age in 75% of children with ASD, with 25% showing typical or exceptional language ability by age 5 (Vogindroukas et al., 2022).

There are different areas of language in which children with ASD can be impaired. Speech, which is communication in terms of articulation, voice, and fluency, is often impaired in children with ASD. Difficulties can include speech production, oral movement, fluency, and speech programming. In some individuals with ASD there is an absence of verbal speech altogether. Oral motor skills are linked to speech and language acquisition, and the more severe these issues are, the more challenging acquisition of speech and rate of learning is, due to difficulty practicing. Pragmatic impairment describes the inability to

determine appropriate language in different social settings. Autistic individuals present inappropriate language behaviour, such as rarely commenting or asking for new information, and language atypicality, such as echolalia, unusual distinctive style of speaking, and misunderstanding of figurative language. (Vogindroukas et al., 2022). Children with ASD often have poor non-verbal communication skills, such as using gestures which act to enhance meaning of language. This can lead to frustrated behaviours in the child due to failure to make thoughts, feelings and needs known to another (National Institutes of Health, 2020). These difficulties can impact social relationships and can lead to social anxiety. Evidence from longitudinal studies indicate that impairments in verbal language skills increase risk for less favourable outcomes later in life, as they predict social functioning, academic achievement, psychiatric outcomes, and independent living as an autistic adult (Vogindroukas et al., 2022).

Children with ASD have varying difficulty engaging with another in conversation such as in reminiscing, as this requires social interaction and communication skills. Difficulties can include the child's lack of interest in social interaction due to preference for solitary activities, inability to realise different perspectives, and lack of joint attention. Some also have difficulty with language in a technical sense, however it is the social use of it that is especially not understood well by those with ASD, making conversation with neurotypical people difficult. These abilities provide the foundation for social development, (Faust, 2009). Parents of children with autism may be more inclined to use more direct approaches when reminiscing with their children, including using simple language. The language-learning environment for a child with autism influences how language and social communication skills develop. Children with autism can benefit from a rich language environment compared to a brief or simplistic one (Brien & Hutchins, 2024).

ASD, Reminiscing and Autobiographical Memory

Autobiographical memory is a cognitive skill, including the ability to recall personal experiences and the organisation of knowledge pertaining to the self (McDonnell et al., 2020). Autobiographical memory (AM) is central to the self, as it guides future behaviour, helps to form, and maintain social relationships, creates a sense of self, and aids in coping with negative experiences and emotion (Vanderveren et al., 2017). The socio-cultural model theorises that interactions with others develops AM, therefore children's recall of memory is linked to parent-child talk. Autobiographical memory recall varies between people with respect to elaboration, specificity, and identification of mental states when recalling memory (McDonnell et al., 2020). Highly elaborative reminiscing is linked to higher detail and coherency of AM in children. Maternal reminiscing acts as a form of memory cue, so higher elaboration includes more cues, thus facilitating more child memory retrieval. Memories are better organised and easier to recall, because highly elaborative reminiscing provides coherency and better representation of an event in the child's memory. The event is also better self-referenced because information about both the child's internal state and external world are integrated. By reminiscing, mothers are also modelling AM retrieval and teaching the child retrieval activities through prompting, which leads to better memory (Waters et al., 2019).

Only a handful of studies have examined differences such as memory in parent-child reminiscing with autistic children. While some studies have found differences, others have not. Faust (2009) conducted a study involving 12 children with ASD and 12 neurotypical children, all of which were matched on verbal and mental age. Dyads were encouraged to discuss four past events that contained emotional experiences, such as a time the child felt happiness, sadness, fear, or anger. Faust found no difference in reminiscing styles in terms of elaborations or emotion references for both children and parents. However, parents in dyads containing an autistic child displayed a more elaborative reminiscing style in cases where the

child was more interested in the conversation. Faust also found that regardless of ASD diagnosis, parents who made more reference to emotions during conversations tended to have children who also made more reference to emotions. This finding suggests that alongside neurotypical children, children with ASD may develop their reminiscing style socially.

A study by McDonnell et al. (2020) included 17 preschool aged children with ASD, and 21 typically developing children, who were all matched on age, sex, and expressive language. Associations of parent reminiscing style with an independent measure of children's autobiographical memory was measured. McDonnell et al. (2020) found that children with ASD did not display notable autobiographical memory challenges compared to the neurotypical children, as their reminiscing responses were of similar lengths and contained emotionally appropriate references and details. One difference was that regardless of prompting from parents, autistic children tended to recall fewer specific memories. Positive predictors of autobiographical memory specificity for both autistic and neurotypical children was a better understanding of theory of mind, positive self-concept consistency, and stronger executive functions. Use of an elaborative reminiscing style by parents positively predicted autobiographical memory specificity for both autistic and neurotypical children. Parents of autistic children tended to have a reminiscing style that contained more off-topic comments and yes/no questions when compared to parents of neurotypical children, which negatively predicted autobiographical memory specificity for children with autism. These AM difficulties can contribute to social differences for autistic people, because expressing experiences is essential to interaction and conversations with others (McDonnell et al., 2020).

A study by Brien and Hutchins (2024) evaluated the efficacy of a parent mediated elaborative reminiscing intervention for children with ASD. Results demonstrated increased elaboration in parents' reminiscing style, and improvements in memory and measures of social learning and connection in children with ASD, which was maintained at follow up.

Memory research on children with autism indicates that degree of interest in the information being discussed is linked to increased recall. Following the child's lead and discussing their interests while reminiscing has been associated with increased engagement, which is beneficial for social learning (Brien & Hutchins, 2024). Parents focusing on their autistic child's memory strengths and interests to support their challenging areas promotes a sense of autonomy, authenticity, and self-esteem in the child (Brien & Hutchins, 2024). Findings from another intervention outside of elaborative reminiscing, which consisted of an AM program for adolescents with autism utilising both individual and peer group sessions to support AM and social learning, saw an increase in social learning and connection. This was achieved through sharing personal memories during the intervention, which lead to autistic adolescents recalling more events, initiating more event memories, and enjoying sharing memories with others (Wantzen et al., 2021). This is important because it suggests that supporting AM in autistic adolescents can increase social learning and social interactions beyond the family unit, because of increased awareness of the self as a social being (Brien & Hutchins, 2024).

Raman (2022) identified a sub-sample of children within the *Growing Up in New Zealand* longitudinal cohort study who had received a diagnosis of autism (based on parental report). Raman compared their parent-child reminiscing at age 8 against a matched sub-sample also from within the larger cohort. Raman found that parents of children with autism had a less elaborative reminiscing style compared to parents of typically developing children. Children with autism went off topic for longer periods, to which parents responded with simple answers, and/or yes/no questions and used fewer open-ended questions. This may be because parents of autistic children are more direct to give increased structure and elicit more participation, and off-topic utterances might result from response to random tangents initiated by their autistic child (McDonnell et al., 2020). Adopting a less elaborative style of

reminiscing when conversing with autistic children may in fact be an adaptive strategy for parents to bring them back on topic, by attempting to connect the child's preferred topic with the reminiscing task. To achieve this, flexibility and adaptability may be important for parents while reminiscing with their autistic children (Raman, 2022). Raman also mentioned the possibility that their sample contained high functioning autistic children. It was also noted that some conversations involved siblings that seemed to help their sibling with autism 'fill in the gaps' in their narrative or took over storytelling. These findings highlight the importance of considering the level of functioning of the child with autism and the potential way in which families might adapt reminiscing.

On the other hand, however, adapting one's reminiscing style in this way (i.e., to be more closed/repetitive) may limit children's exposure to a highly elaborative reminiscing style which may limit their own developing AM (Brien & Hutchins, 2022). Memory recall is crucial for reminiscing, therefore reminiscing interventions that train parents to adopt an elaborative style and provide flexible conversation scaffolding, may facilitate memory development as the autistic child practices recall. A study by Hutchins and Brien (2022), which included 27 parents and their 6–15-year-old children with ASD, found their three-session elaborative reminiscing intervention increased elaboration in the primary caregiver parents, and episodic memory in the children. Because memory AM can be modified, intervention training to improve AM recall may also improve social skills in ASD, as sharing experiences of the past is central to conversation and socialising (McDonnell et al., 2020).

ASD, Theory of Mind, Social/Emotional Understanding and Reminiscing

Theory of Mind (ToM) describes the capacity of an individual to recognise internal states, such as thought and knowledge, in their self and in others (Gaelen, 2021). This milestone ability is important for children's social cognition. Accounting for mental states in others allows children to anticipate behaviour, and this ability can predict success in social

interactions, such as peer acceptance and prosocial behaviour, and in social skills, such as eye contact and social problem solving. Neurotypical preschool aged children have developmental patterns which arise from the understanding that their own self and others have subjective beliefs and desires, and these understandings become more complete in later preschool years (Waters et al., 2019). Higher levels of ToM have been linked to increased socioemotional outcomes for typically developing children, such as pretend play with peers, peer problem solving, and social competence (rated by teachers) (Waters et al., 2019). Reminiscing may facilitate children's ToM abilities in several ways. When parent-child reminiscing takes place, the parent guides the child to understand that memory is a representation of the past, which can differ across the parent and child due to disagreements about details of the event. While reminiscing, highly elaborative parents also reference internal states of both the child and others, helping the child to see that external actions are resultant from internal emotions and reactions. The parent also discusses how these internal states and reactions change/and or become regulated across time (Waters et al., 2019).

Differences in ToM between typically developing children and children with autism have been identified and examined. Typically developing children possess ToM skills by aged four, however in contrast, Hoogenhout and Malcolm-Smith (2017) found that measures from ToM tasks for autistic children could predict symptom severity and the type of school these children would attend according to their needs. The ToM hypothesis proposes that neurotypical children possess the mechanism responsible for recognising and predicting mental states in others, but in children with ASD, this mechanism may develop differently or be delayed (Gaelen, 2021). Baron-Cohen (1985) showed that 85% of neurotypical preschool aged children were able to pass a false belief task, while only 20% of preschool aged children with autism were able to. ToM deficits are a core feature of ASD, which is thought to have explanatory power for impairments in social understanding and communication (Gaelen,

2021). AM and ToM are two cognitive processes thought to facilitate social communication and interaction. It may be likely that developments in AM and ToM hold influence over each other, although a relationship between the two domains has not been established (Gaelen, 2021).

It is often reported that children with autism display emotional behaviour difficulties, such as irritability, anxiety, and impulsivity. These emotional behaviour problems could be due to impairments in behavioural regulations and expressing experienced emotions to others (Zantinge et al., 2017). Raman (2022) found that parents and their children with autism did not differ in their use of specific emotion words, internal states, or pronouns to parents and their typically developing children. This was counter to predictions that children with autism would have difficulty with identification and discussion about their own and others' emotions and internal states, which would be projected into the frequency of emotion and internal state references used in these dyads.

Reminiscing Interventions for Parents of Children with ASD

The intention of training parents in elaborative reminiscing is to support communication with their autistic child by providing access to socially relevant information that may otherwise not be gained, while also making narratives more flexible. This aligns training with the neurodiversity movement (Kapp, 2020), which is in favour of interventions that benefit functional skills. By supporting skills that make communication, interaction, and memory recall stronger in children with ASD, barriers to sharing autistic world experiences will hopefully be reduced (Brien & Hutchins, 2022).

There are three existing studies involving reminiscing interventions for parents and their children with ASD. Brien and Hutchins (2022) conducted an uncontrolled pre-post intervention study involving 27 parents and their children with autism. Parents were trained in elaborative reminiscing and use of task support (statement elaborations and yes/no

questions to increase child participation). Parent training consisted of three sessions on three separate days over one week. Parents were taught strategies to support episodic memory in children (i.e., elaborative reminiscing and task support), paired with use of visual supports, scaffolding child memory contributions by providing more information, letting the child lead, providing the child choices, and using supportive repetition. Results showed that caregiver's elaboration was increased from the intervention, as they asked more open-ended non-rote questions, confirmed their child's memory contributions, offered utterances that were contingent to child responses, and concluded the discussion with an evaluation of the experience. Autistic children's episodic memory (EM) specificity, which is a memory located at a specific point in time, was also increased from the training. Qualitative data revealed that parent's perceptions of the intervention training were positive and encouraging, as it provided families with a way to talk about the past in meaningful and enjoyable ways.

Bhana et al. (2023) used a multi-method design to analyse the effects of photos, training, and coaching on parental communication strategies for three parents and their children with or at risk of autism (child was diagnosed, had a special education eligibility, developmental disability, or speech impairment). In the intervention, family photos were used in the first baseline phase of their study as visual supports to assist child's communication and language. They found that using photos in this phase increased overall use of target reminiscing strategies and number of unique words from children. In the next phase, parents were trained in the "MORE" strategies, which included: Model; point to photo and describe event, Offer Opportunities; ask WH- questions; provide five seconds of wait time; provide two choices, Respond and Expand; Acknowledge and expand on child's response. After this phase the next phase included parent training and coaching, which also increased overall strategy use for two parents and number of unique words for one child. It was unclear from the analysis conducted by Bhana et al. (2023) what impact their Tell me MORE intervention

and the collateral effects of photos and online parent training and coaching, had on the parents reminiscing style in terms of elaboration, and the type and accuracy of child responses. A secondary analysis of the Bhana et al. (2023) single case dataset was conducted to investigate these effects. The results of this secondary analysis found that photos alone can support joint-reminiscing conversations between parents and their children with ASD. Photos paired with training and coaching have collateral effects on parent reminiscing style when conversations focus on past events. Increases were seen in the mother's use of elaboration, and a decrease in repetition, from pairing photos with parent training and coaching (Bhana et al., 2024).

Brien and Hutchins (2024) evaluated the effectiveness of caregiver-mediated autobiographical memory (AM) intervention for 26 parent-child dyads where children were aged between 6-15 years and had a diagnosis of autism. The intervention consisted of three sessions, in which dyads discussed three pre-selected photos: a pre-intervention reminiscing session, a parent training session regarding elaborative reminiscing, and a post-intervention session. Before the post intervention session, parents were encouraged to engage in elaborative reminiscing with children for about five minutes a day, five times a week. Results showed that parents increased all indices of elaborateness (open-ended questions, statement elaborations, confirmations contingent to child utterance, and evaluative statements), in their reminiscing style at both post-intervention and follow up. Children improved in supported memory and some measures of social learning at post-intervention and follow up (Brien & Hutchins, 2024).

Overall, these reminiscing intervention studies for parents of children with autism suggest that relatively brief interventions can result in improvements in parental elaboration. The use of photographs and specific teaching of skills with subsequent coaching appears helpful. Further research is needed, however, given the very limited number of families with

whom these interventions have been conducted to date. In addition, the degree of coaching and support which parents are given in these interventions is quite limited. Given the potential need for flexibility in how elaboration is used for children with autism (Raman, 2022), more live coaching may be beneficial to help parents adapt and to maintain their child's engagement.

Current Study

This was a multiple-case study pilot of a parent-child reminiscing intervention, in dyads including a primary caregiving parent and a child with an existing diagnosis of ASD. The aim of this pilot intervention was to increase both the elaborative and emotion content of parent-child reminiscing, by supporting parents to interact with their autistic child using parent coaching (Corsano & Guidotti, 2019) and photo prompts (Bhana et al., 2023). The researcher's supervisor (AB) conducted live coaching to the parent via a headpiece during parent-child reminiscing conversations. The coaching approach was derived from parent-child interaction therapy (PCIT). This evidence-based parent behaviour training program supports patterns of interactions to increase parent-child relationship quality. Vess and Campbell (2022) found that PCIT was effective for children with ASD with no comorbid externalising disorders. After PCIT, parents in the study displayed more positive and effective parent behaviour, stated their relationship with their autistic child had been enhanced, and were satisfied with PCIT. Children in the study displayed increased adherence to parent instructions and demonstrated improvements in behavioural and social functioning (Vess & Campbell, 2022). Woodfield and Cartwright (2019) found that although parenting skills taught in PCIT seemed unnatural and awkward at first, through repeated coaching, rehearsal, and support, these skills became more instinctive and intuitive. Child-led play was also highlighted by parents as being surprisingly effective. Parents highlighted that the coach and coaching style (specific and positive) was influential in change facilitation, especially in

improving parent ability to regulate emotions (Woodfield & Cartwright, 2019). The intervention was conducted live via Zoom across three sessions to improve accessibility and to help parents embed reminiscing skills. Zoom has also been used in an existing reminiscing intervention for parents of children with autism (Bhana et al., 2020).

The primary aim of the current study was to examine whether a three-session reminiscing intervention that includes live coaching is associated with an increase in specific parent verbalisations, described in the intervention as ONCE skills: Open-ended questions; Novel information; Confirmations; and Emotion/cognitive references, and an increase in child elaborative and emotion/cognitive verbalisations (Risi et al., 2024).

Because this is a pilot study, there is no post-intervention follow up. As such, only dyadic verbalisations before and during the intervention are captured. Further research will be needed to understand long term retention of parental behaviours as well as any associations with child outcomes.

Methods

Recruitment and Ethics

Participants were recruited using social media, by posting the study flier on sites such as Facebook, on autism parenting pages, and via two special education schools in New Zealand. Parents who elected to participate in the study first contacted researchers and were then sent an information sheet about the study. Eligibility criteria for inclusion in the study was as follows: (1) child is aged between 5 and 12, (2) child has an existing autism diagnosis, and (3) child has sufficient language skills to take part. Parents were given the opportunity to review the information sheet and ask questions at the beginning of the first scheduled Zoom session, before written consent was sought via the share mouse function on Zoom.

Participants

Participants included two parent-child dyads, where the child has a diagnosis of ASD. Dyad A was a mother and her 11-year-old son of NZ European ethnicity. Dyad B was a mother and her 7-year-old son, also of NZ European ethnicity. Both children were verbal (with English as their primary language) and attended primary school.

Procedure and Intervention

All sessions were conducted via Zoom at a time that was convenient for families. The intervention sessions were conducted by Dr Amy Bird, a Registered Clinical Psychologist who is certified in PCIT and co-developed CaPES (Rise et al., 2024).

Pre-intervention reminiscing: The dyads initially completed a pre-intervention parent-child conversation without any coaching present. Based on existing research (Bird & Reese, 2006), including children with autism (McDonnell et al., 2020), parents were encouraged to talk about everyday past events from the child's life. The parent and child picked two conversations, being (1) a time [child] did something new or different, and (2) a time [child] did something and [parent] wasn’t there. The parent recorded these two reminiscing

conversations and sent the video/audio files in. This was followed by the intervention, consisting of three sessions.

Session one was parent only and consisted of psychoeducation lasting approximately 50 minutes. The parent was provided with an intervention handout emailed beforehand, which detailed ONCE skills: asking open-ended questions, introducing novel information, confirming child utterances, and referencing internal/external emotions/cognitions (Risi et al., 2024), strategies to increase these skills, and what types of utterances to decrease during reminiscing conversations. The handout also included information about the next two sessions. The material was reviewed during the session, as well as discussion of examples and role playing to teach concepts. Parents were asked to take photos of events in the children's lives to later serve as prompts in next intervention sessions.

Session two involved parent-child coaching lasting approximately 30 minutes. The parent and child were asked to choose three past events from the recent past to discuss together. Dyads were encouraged to select everyday events in 'green' or 'orange' zone, rather than 'red' zone. The parent was coached via a headset or earphones connected to their Zoom device. Positive aspects of parental behaviours were highlighted and reinforced first, including example coaching statements such as '*Nice open-ended question'* or *'Great naming [child's] emotion there'*. This coaching was informed by coaching in behavioural parenting interventions such as Parent-Child Interaction Therapy (PCIT) (Vess & Campbell, 2022). At the end of the session, the parent was told that the second coaching session would involve choosing three conversations for which they have respective photos or pictures of (could include the child, or not, such as a picture of zoo animals).

Session three was the second coaching session. The dyad was asked to discuss the three-parent selected past events, which were prompted by photos or pictures if parents had these available (Bhana et al., 2023). At the end of this session, dyads were thanked for their

time and for sharing the experiences. Parents were also offered the opportunity to trouble shoot or ask any questions about the ONCE skills and their use.

Parents also took part in pre- and post-intervention interviews. The pre-intervention interview asked about parent experiences of talking about past and future events with their child. Including enablers, barriers, and parental goals during these conversations. The post-intervention interview focussed on parent perceptions of the intervention. This data is outside the scope of this thesis.

Measures

The pre-intervention parent-child reminiscing conversations and subsequent two intervention sessions recorded on Zoom were transcribed verbatim from the audio recordings. Any personal identifying information (e.g., names and places) was removed from transcripts. In each transcript there were at least two to three separate parent-child conversations about different events, which were separated and labelled accordingly.

The transcripts were coded using a frequency-based Parent Child Conversation Coding Scheme (Leyva et al., 2019) in two passes. The conversations were coded from the first on topic utterance to the final parent on topic utterance, followed by the child's last response. Off-topic talk between conversations, such as the parent and child selecting the next event to discuss, or coaching and discussion with the parent about the conversation were not coded. The coding was completed in three phases to assess the content of parent and child utterances. In the first coding pass, parent utterances were coded for elaboration or repetition (see Table 1). For the second coding pass, child utterances were coded for elaboration or repetition for child utterances was completed (see Table 2). In the third coding pass, the content of the elaborations was coded for both parent child utterances. Elaboration codes from the first passes were sub-coded in this pass for emotion/affect state/cognitive references

(see Table 3). Then codes were counted to find frequencies of different types of parental and child utterances, such as elaboration and emotion references.

Inter-rater reliability was calculated between two coders using Cohen's Kappa (K), which is an improvement when evaluating this type of reliability, compared to using percentage of agreement. If obtained (K) > 70 it can be concluded that the inter-rater reliability is satisfactory. The mean K of four coded transcripts for both coding passes was 0.88. This was above .70, and therefore inter-rater reliability was satisfactory (McHugh, 2012).

Derived variables were created to reflect parent's use of ONCE skills (Open-ended questions, Novel information, Confirmations, Emotions & cognitions). Frequency of parents' use of open-ended questions was used to reflect the 'O' (open-ended ended question) skill. The 'N' (novel information) skill was the frequency of all elaboration utterances by parents, including open-ended questions, statement elaborations and yes-no question elaborations. For the 'C' (confirmation) skill, a single code already existed, so use of this skill was based on the frequency of this code. The skills listed so far were all measured by the codes in the first pass. Frequency of children's use of memory elaborations and memory questions were used to reflect children's overall elaboration.

The frequency of both parent and child references to emotions, affect states or cognitions in the third coding pass was used as an indicator of the 'E' (emotions and cognitions) skill.

Table 1

Codes Assigned to Types of Parental Utterances

Code	Description	Example utterance
Memory Questions (open-ended)	Open-ended question, often wh- question, that asks for more than yes/no answer from the child.	
	Either coded as **elaborations**, which is an open-ended question containing new information about the event that the mother and child have not previously mentioned.	*P: "Where did we go first at the zoo today?"*
	Or coded as **repetitions**, if the open-ended question repeats the exact content of a previous parent utterance.	*P: "What was the next step?" Followed by "which was the next step?"*
Yes-No Questions	Questions that only require yes/no answer from the child.	
	Either coded as **elaborations**, which ask the child to confirm/deny new information.	*P: "Can you tell me what you were doing?"*
	Or coded as **repetitions**, which ask child to confirm/deny information already given in a previous utterance.	*P: "Was it fun?" Followed by P: "Did you have fun?*
Contextual statements	Either coded as **elaborations**, which are statements that provide the child with new information about the event, but do not call for a response.	*P: "We went to see trains."*
	Or coded as **repetitions,** which are statements that repeat the exact content of a previous statement.	*P: "You liked that." Followed by P: "You did like it."*
	Tag questions are also coded as contextual statements.	*P: "We went to see Dad, remember?*
Fill in blanks	Either coded as **elaborations**, which ask the child to fill in new information.	*P: "His name was…?"*
	Or coded as **repetitions**, which ask the child to fill in new information that the parent has already stated.	*P: "Aunty [name] was there." Followed by P: "Aunty…?"*
Confirmations	Confirming utterance from child, including repetition of child's statement, or turning	

	child's utterance into a question without adding new information. Two confirmations can be given per child's turn. One must be an **evaluation**. One must be a **repetition**.	 *P: "yes", or "Good job"* *C: "My dog?"* *P: "Your dog"*

Note: C = child, P = parent

Table 2

Codes assigned to Child Utterances

Code	Description	Example words and utterances
Memory Elaborations	On topic utterances which provide new information about the event.	*C: "Dad also went with us to the park"*
Memory Questions	A question requesting new information or providing new information.	*C: "Where was that?" or, "Was that when we got ice cream?"*
Memory Repetitions	On topic utterances that do not provide new information about the event. Includes repeating their own or parents' previous utterance or parent questions.	*P: "Do you remember the cow?"* *C: "Remember the cow."*
Confirmations and Negations	Confirming utterance from parent.	*C: "Yes/Mmm hmm" and "No"*

Note: C = child, P = parent

Table 3

Code assigned to Parental and Child Elaboration Utterances: Content of the Elaborations

Code	Description	Example words and utterances
Emotion State	A feeling, emotional behaviour, or desire. Coded as positive or negative. Coded who the emotion was about, either **child** or **other**. Coded as **attribution**, which is anything that doesn't explain why. Or **explanation**, which provides an explanation why.	Like, sad, insecure, sorry. *P: "You like it"* *P: "Dad like's it"* *C: "I liked it when the cat meowed"* *C: "I liked it because the cat meowed"*
Affect state	An evaluation of something. Coded as positive or negative. Coded who the affect was about, either the child or other. Coded as **attribution**, which is anything that doesn't explain why. Or **explanation**, which provides an explanation why.	Good, favourite, scary, naughty. *C: "The rain was bad"* *C: "It was bad because of the rain"*
Cognition	Terms surrounding using the brain. Coded who the cognition was about, either the child or other.	Amazed, believe, pretend, remember.

Note: C = child, P = parent

Analysis

The intervention outcomes assessed were parents use of ONCE skills and children's use of elaboration and emotion/cognition skills, during parent-child reminiscing.

To visualise how both parent and child skills changed from the pre-intervention reminiscing session across the intervention sessions, means were calculated across the multiple conversations in each session. Some conversations contained higher frequencies of skills because there were more on topic utterances and because children were sometimes

more engaged in one of the conversations than others. Therefore a ‘best’ conversation from each session was also selected, based on which had the most on-topic parental utterances.

Data are presented visually across the pre-intervention and two parent-child intervention sessions. Other methods for examining degree of change were considered but were not appropriate given the exploratory design. For example, if a robust baseline phase is established before intervention, the percentage of nonoverlapping data (PND; Scruggs & Mastropieri, 1998) can be calculated. This involves identifying the most extreme baseline datapoint and calculating how many intervention data points fall below this point. This percentage then reflects the efficacy of the intervention (i.e., above 70 is seen as effective and above 90 as very effective (Scruggs & Mastropieri, 1998). However, the current study did only one pre-intervention recording which does not constitute a baseline phase and only two intervention datapoints would be insufficient to calculate a PND. Yin (2009) also suggests using the effect sizes pattern from existing case studies with similar participants and similar measures. However, given the current study was specifically interested in change in coded ONCE skills (rather than, for example, parent-rated child language or behaviour), this approach was also not considered feasible.

Results

Parents Use of ONCE skills.

From Dyad A the parent's average use of all ONCE skills increased from the pre-intervention reminiscing conversations, in either one or both subsequent intervention sessions. ONCE skills average increase from pre-intervention to intervention session one and/or intervention session two: open ended questions (pre-intervention *M* = 16, intervention session one *M* = 12.3, intervention session two *M* = 21.3). Novel information (pre-intervention *M* = 60.5, intervention session one *M* = 56.3, intervention session two *M* = 94.3). Confirmations (pre-intervention *M* = 21, intervention session one *M* = 23.3, intervention session two *M* = 22), emotions & cognitions (pre-intervention *M* = 22.5, intervention session one *M* = 21.6, intervention session two *M* = 28.3).

Also, from Dyad A the use of ONCE skills in conversations with the highest number of utterances, increased from the pre-intervention reminiscing conversation, in either one or both subsequent intervention sessions. ONCE skills increase from best conversation in pre-intervention to intervention session one and/or intervention session two: open ended questions (pre-intervention = 21, intervention session one = 16, intervention session two = 28). Novel information (pre-intervention = 78, intervention session one = 85, intervention session two = 122). Confirmations (pre-intervention = 21, intervention session one = 32, intervention session two = 20), emotions & cognitions (pre-intervention = 33, intervention session one 35, intervention session two = 37).

From Dyad B, the parent's average use of all ONCE skills increased from the pre-intervention reminiscing conversations, in either one or both subsequent intervention sessions. This was except for the emotions and cognitions skill, which decreased. ONCE skills average increase from pre-intervention to intervention session one and/or intervention session two: open ended questions (pre-intervention *M* = 5, intervention session one *M* =

13.3, intervention session two *M* = 15.3). Novel information (pre-intervention *M* = 22.5, intervention session one *M* = 36.7, intervention session two *M* = 45.7). Confirmations (pre-intervention *M* = 9, intervention session 1 *M* = 9, intervention session 2 *M* = 15). The average use of the emotions & cognitions skill decreased from pre-intervention to intervention session one and two (pre-intervention *M* = 6, intervention session one *M* = 5.7, intervention session two *M* = 4.7).

Also, from Dyad B, the use of ONCE skills in conversations with the highest number of utterances, increased from the pre-intervention reminiscing conversation, in either one or both subsequent intervention sessions. ONCE skills increase from best conversation in pre-intervention to intervention session one and/or intervention session two: open ended questions (pre-intervention = 7, intervention session one = 20, intervention session two = 21). Novel information (pre-intervention = 30, intervention session one = 60, intervention session two = 46). Confirmations (pre-intervention = 13, intervention session one =16, intervention session two = 10), emotions & cognitions (pre-intervention = 5, intervention session one 13, intervention session two = 6).

Figure 1

Mean Frequency of ONCE Verbal Utterances by Parent A across Sessions.

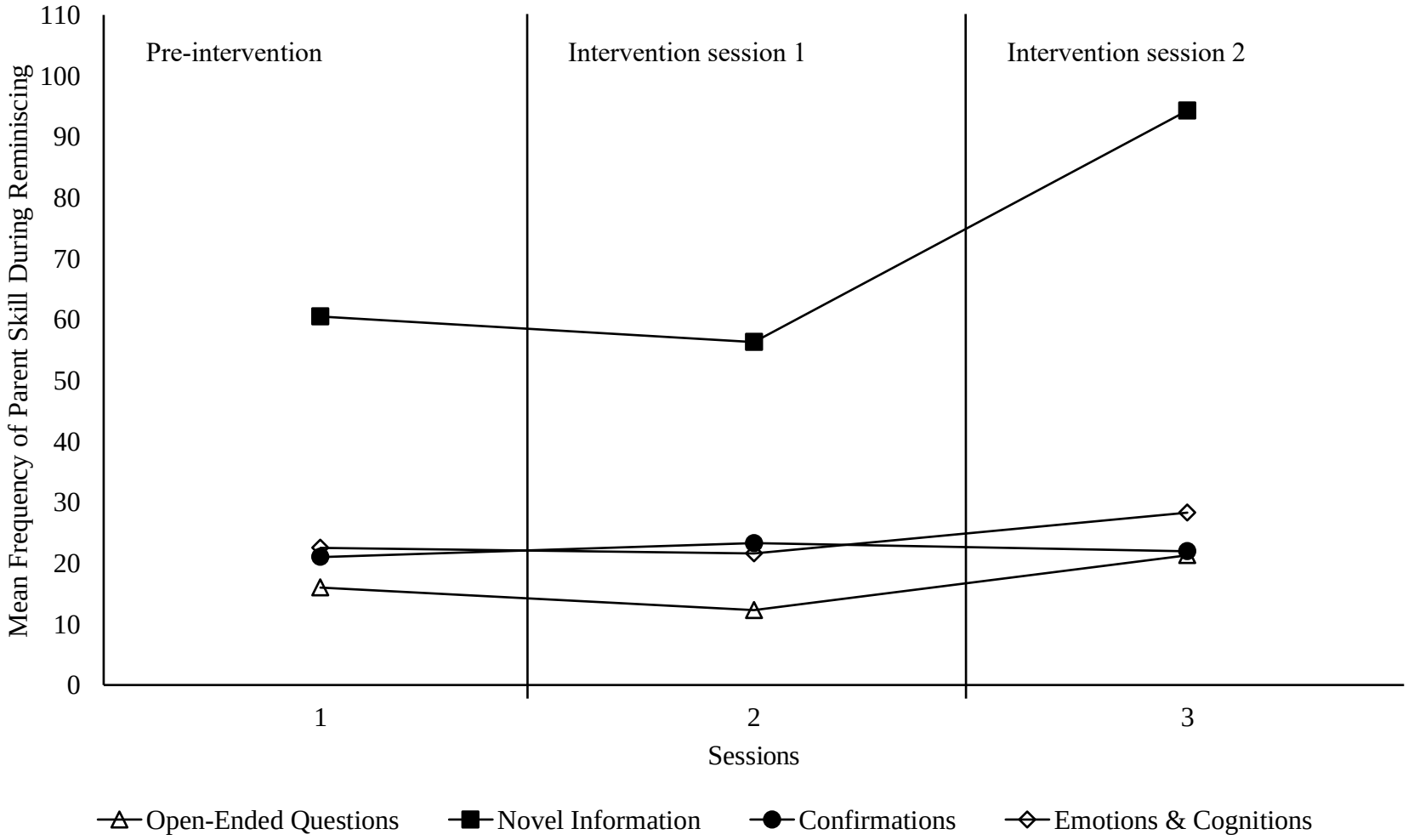


Figure 2

Frequency of ONCE Verbal Utterances by Parent A from Conversations with Highest Frequency of Total Parental Verbal Utterances across Sessions

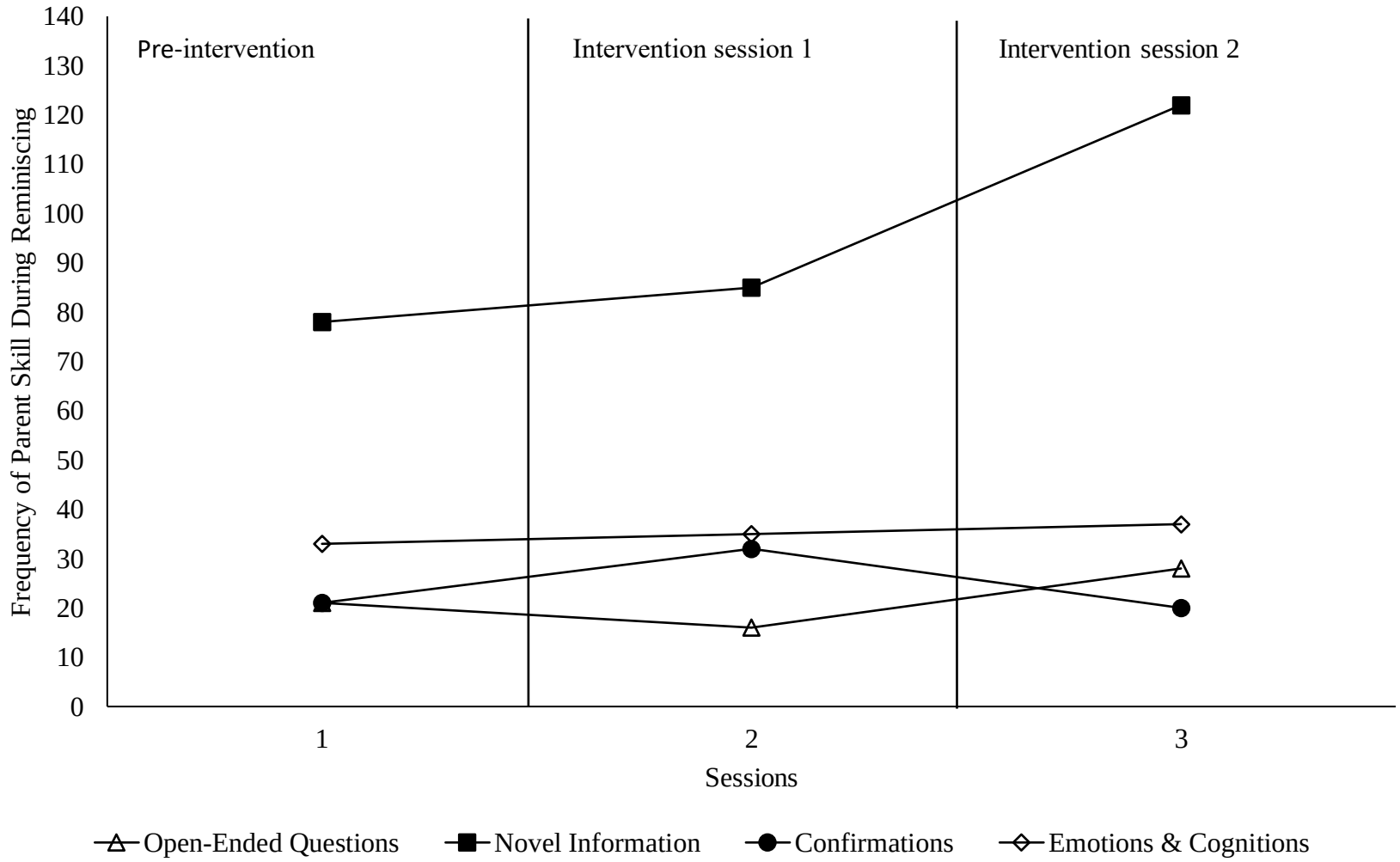


Figure 3

Mean Frequency of ONCE Verbal Utterances by Parent B across Sessions.

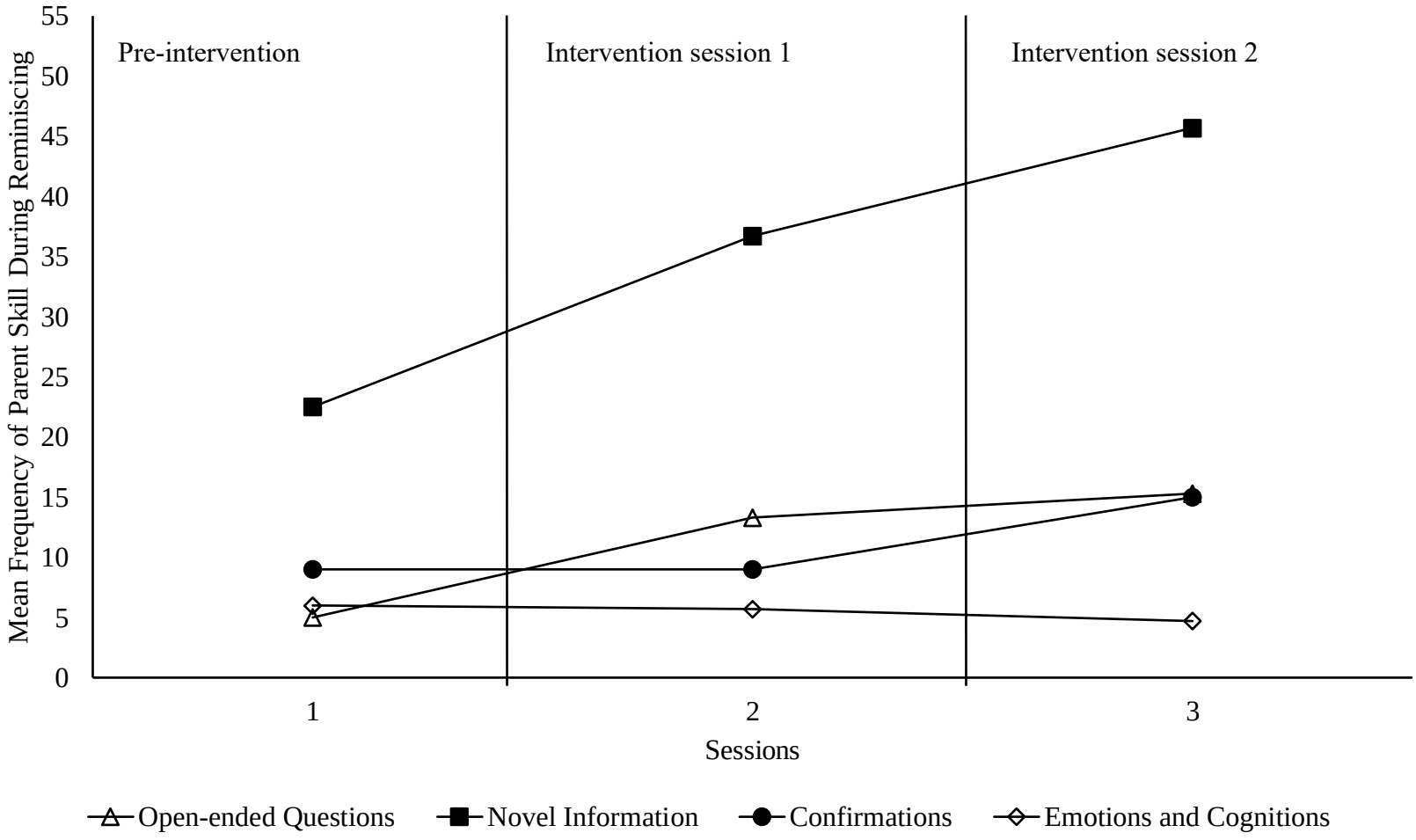
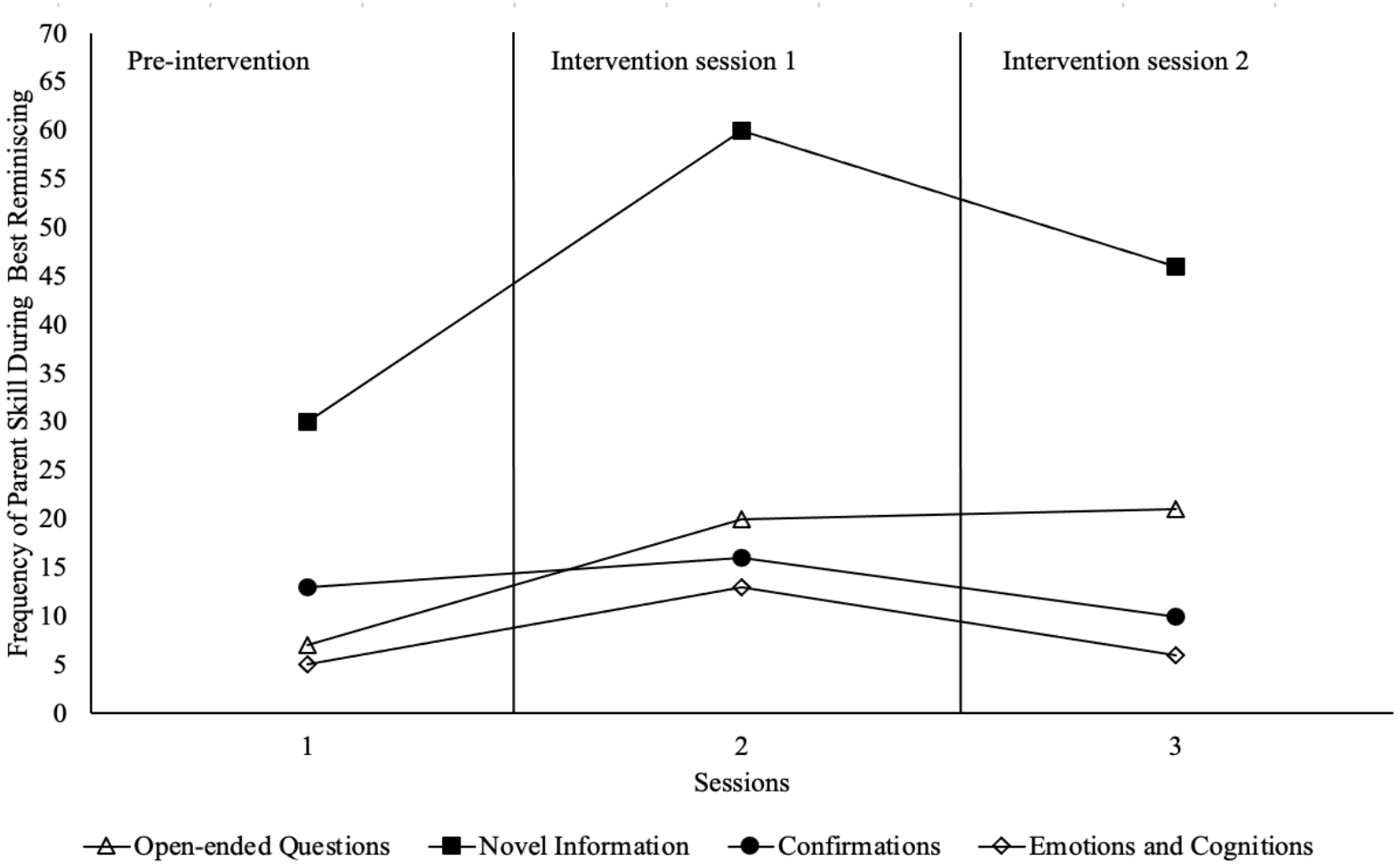


Figure 4

Frequency of ONCE Verbal Utterances by Parent B from Conversations with Highest Frequency of Total Parental Verbal Utterances across Sessions.



Children's Use of Elaboration and Emotion/Cognition Skills

From Dyad A, the child's average use of elaboration skills increased from the pre-intervention reminiscing conversations to the second intervention session: elaborations (pre-intervention *M* = 17.5, intervention session one *M* = 16, intervention session two *M* = 35). The child's average use of emotion/cognition skills decreased from the pre-intervention session to the two subsequent intervention sessions: emotion/cognitions (pre-intervention M = 2, intervention session one M = 0.3, intervention session two M = 1).

Also from Dyad A, the use of elaboration skills in conversations with the highest number of utterances, increased from the pre-intervention reminiscing conversations to both the first and second intervention sessions: elaborations (pre-intervention = 20, intervention session one = 21, intervention session two = 49). The child's use of emotion/cognition skills in conversations with the highest number of utterances, decreased from the pre-intervention session to the two subsequent intervention sessions: emotion/cognitions (pre-intervention = 3, intervention session one = 1, intervention session two = 1).

From Dyad B, the child's average use of elaboration skills increased from the pre-intervention reminiscing conversations to the second intervention session: elaborations (pre-intervention *M* = 24.5, intervention session one *M* = 18.7, intervention session two *M* = 27.7). The child's average use of emotion/cognition skills decreased from the pre-intervention session to the two subsequent intervention sessions: emotion/cognitions (pre-intervention *M* = 2, intervention session one *M* = 0, intervention session two *M* = 0.7).

Also from Dyad B, the use of elaboration skills in conversations with the highest number of utterances, decreased from the pre-intervention reminiscing conversations to the first session and then stayed the same in the second intervention session: elaborations (pre-intervention = 33, intervention session one = 22, intervention session two = 33). The child's use of emotion/cognition skills in conversations with the highest number of utterances,

decreased from the pre-intervention session to the two subsequent intervention sessions: emotion/cognitions (pre-intervention = 2, intervention session one = 0, intervention session two = 1).

Discussion

The aim of this study was to examine whether a three-session reminiscing intervention with live coaching was associated with an increase in specific parent verbalisations, described in the intervention as ONCE skills: open-ended questions, novel information, confirmations, and emotion references, and an increase in child elaborative and emotion/cognitive verbalisations. In line with our predictions, across both Dyads A and B, parental use of novel information increased for both average use and in conversations with the highest number of utterances, from pre-reminiscing conversations to either one or both subsequent intervention sessions. Counter to our predictions, there was minimal change in parental use of open-ended questions or talk about emotions and cognitions. For Dyad A, parental use of open-ended questions, confirmations and emotion and cognition references showed no notable change from pre-intervention to intervention sessions. For Dyad B, parental use of open-ended questions increased slightly from pre-intervention to intervention sessions, seen in both average use and from conversations with the highest number of utterances. The parent from Dyad B showed no change in emotion and cognitive references, and a small decrease in confirmations in conversations with the highest frequency of parent verbal utterances. Conversations with the highest number of utterances for Dyad B showed confirmations stayed at a similar frequency.

The study also intended to examine whether parent training of ONCE skills was associated with an increase in children's use of elaboration and emotion/cognition verbalisations during reminiscing. In Dyad A, the child's elaborations increased from the pre-reminiscing to the second intervention session. In Dyad B, the child's average use of elaborations increased from pre-reminiscing to intervention sessions. However, from conversations with the most utterances, the child's use of elaborative verbalisations decreased from the pre-intervention to the first intervention session and then was maintained at the

second intervention session. For both dyads, the child's use of emotion and cognition verbalisations decreased slightly from the pre-reminiscing session to the intervention sessions.

Novel Information and Open-ended Questions

Both parents in this study increased their use of novel information while reminiscing with their child, which was any unique information provided to the child such as in the form of statement elaborations, yes-no questions, and open-ended questions, from pre-intervention to intervention sessions. A more specific breakdown on types of novel information that changed from pre-intervention to intervention sessions revealed that both parents showed an increase: in use of statement elaborations; a small increase in yes/no elaborative questions; however, no change in use of open-ended elaborative questions. The specific type of novel information that increased the most was parental use of statement elaborations, which offer new information about the event to the child, but do not specifically call for a response.

In the literature pertaining to parent reminiscing interventions for typically developing children, an elaborative parental reminiscing style is linked to enhanced child outcomes in cognitive and socio-emotional domains (Garnett et al., 2023). One consistent foundational feature of elaborative reminiscing across the literature for both typically developing and autistic children, is emphasis on parental use of elaborative open-ended questions (Swetlitz et al., 2021). Parents in this study were coached during intervention training to increase their use of open-ended questions, with the view that this would, either currently or in the future, increase children's memory elaborations. Interestingly, however, it was statement elaborations and not open-ended questions, which parents appeared to increase use of following training. There are several possible explanations for this.

One explanation could be that parents in this study were sensitive to what worked best for their child, and that statement elaborations may function to better structure a narrative and

elicit memory elaborations from autistic children. The following excerpt from Dyad A reflects this: the mother first provided unique information through statement elaborations and then asked follow-up novel yes/no questions It may be that asking a novel open-ended question instead would not provide sufficient structure for her child to recall aspects of the event. Parent A's initial open-ended questions are not answered, so after attempting this, she opts instead to offer the information she is requesting, as to provide more structure to the child and keep the conversation moving forward. In this way, parent A appears to be responding to their child's conversational needs in the moment.

Mother: *That you used to love going in there, and it was closed last time we went. And now they've opened it again, and it was full of what?*

Child: *What.*

Mother: *What was it full of?*

Child: *Full of…?*

Mother: *Music. It was full of music things. Do you remember that?*

Child: *Yeah.*

This mother also used frequent tag questions (i.e., a statement with a "doesn't it" or similar, 'tagged on' at the end) which are coded as statement elaborations. These may function to provide the structure and information, while the tag question at the end keeps the child involved and contributing to the conversation at an appropriate level. This is reflected in the following excerpt from Dyad A where the child responds to his mother's tag questions with novel memory questions of his own.

Mother: No, our table doesn't wobble. The Earth sort of wobbles a little bit, doesn't it?

Child: Why the earth moves round? Because.

Mother: Spins around, doesn't it?

Child: Spins round. Why the sun all moves the planets?

Mother: The planets all orbit around the sun.

These findings align with Gaelen (2021) who conducted a researcher-delivered (rather than parent) reminiscing intervention with autistic children. They suggested that simple yes/no questions had a containing effect on conversation, which enhanced the autistic children's participation by minimising conversational breakdown. These findings are in line with observational data suggesting that parents of autistic children tend to have a more direct reminiscing style that is adapted to increase participation from their autistic child (McDonnell et al., 2020). This style of directive parent-child interaction may be due to autistic children having trouble answering open-ended questions compared to yes/no questions (Brien & Hutchins, 2024). This is also in line with Brien and Hutchins (2024), who found in their study parents increased their use of statement elaborations at follow up, suggesting that they were providing more memory details. At post-intervention, parents increased use of yes/no questions to support child participation and elicit memory elaborations, suggesting parents understood elaborative reminiscing as a social event and not a directive interrogative process. Interestingly at follow up, parents reduced their frequency of yes/no questions, which may be due to their child's increased ability to provide memory elaborations and therefore less need for scaffolding (Brien & Hutchins, 2024).

A notable difference in intervention effects on parental reminiscing style between our study and others, is that parental use of open-ended questions did not increase in our study, whereas this skill did in other studies. Brien and Hutchins (2022) found that their intervention saw no change in parental use of statement elaborations, but an increase in both close-ended questions (i.e., yes/no questions) and non-rote open-ended questions. However, means for statement elaboration from pre- and post- intervention did increase in a way that would likely have been significant with greater statistical power (Brien & Hutchins, 2022). Bhana et al.

(2023) found that their parent-implemented training and coaching intervention increased the average number of *wh*-questions (who, what, where, when, and why) with wait time or child answer, asked by parents. These types of questions are the same as elaborative open-ended questions. Brien and Hutchins (2024) found that their reminiscing intervention increased parental use of open-ended questions, confirmations contingent to child utterance, and evaluative statements, in their reminiscing style at both post-intervention and follow up.

Another possible explanation for these differences could be a coaching effect. While the psychoeducation session with parents spent equal time and emphasis across each of the four ONCE skills, it is possible that coaching may have inadvertently focused on statement elaborations. An inspection of the coaching content during sessions did not appear to support this, although coaching statements per se were not coded. Future research could consider specific analysis of coaching feedback to examine whether this is a coaching effect.

Another possible explanation could be dyad specific differences, or even cultural differences in language use, with the majority of reminiscing interventions to date conducted in the United States (Corsano & Guidotti, 2019). Both children showed an increase in average frequencies of memory elaborations from pre-intervention across intervention sessions. This suggests that parents increasing use of statement elaborations (rather than open-ended questions) was in some way facilitating increased memory elaborations from children.

Although further research with larger samples would be required to support this, findings from this study have implications for future reminiscing interventions, because they suggest that open-ended questions may not be as central to increasing autistic child memory elaborations. This may be a difference between typically developing children and autistic children, in that to increase their participation, autistic children may require more structure from parents during reminiscing conversations (Gaelen, 2021), and their parents have adapted to this. It may be that training parents to increase the amount of novel information they

introduce (irrespective of whether that is framed as a question or a statement) is the most critical element to increased memory elaborations from their autistic child.

An important next step may be to ask parents about their rationale and perspective on the use of different ONCE skills during reminiscing. They are likely to be an untapped knowledge base on techniques to encourage participation from their children. After coaching takes place, parent feedback (i.e., '*Was it useful?' 'How was it not useful?*') for each ONCE skill could be beneficial. As parents appear to be adapting the ONCE skills to their child's reminiscing style, they are likely to have an important perspective on what works and what doesn't. More specific contingency coding may also be helpful to understand how children respond to each type of parental elaborative utterance (elaborative open-ended question, statement elaboration, elaborative yes/no question). This is a more recent form of coding for parent-child reminiscing which involves analysing child responses to different types of parent elaborations, and parent responses to child elaborations (Svane et al., 2021).

Emotion/Cognitive References

Neither parent displayed notable change in use of emotion and cognitive references from pre-intervention across intervention sessions. Like the coaching effects noted above, it may be that inadvertent emphasis was placed on some ONCE skills over others. This could also reflect the bidirectional nature of parent-child reminiscing (Farrant & Reese, 2000). Parents of children with autism may focus less on emotional aspects of events because their children have more difficulty understanding or expressing causes of emotions or complex emotions, compounded by social difficulties and attention differences (Faust, 2009). Because reminiscing is a socially mediated interaction, there may be less opportunities for autistic children to practice emotion resolution skills (Raman, 2022).

Although the extent of elaboration and emotion content of the parents reminiscing style during parent-child reminiscing is important in the socialising process of reminiscing

and how well a child remembers and reflects on a past event, this is a bidirectional process. Both the parent and child influence and accommodate each other during reminiscing (Faust, 2009). In typically developing children, emotion talk is associated with emotion understanding, and for emotion talk to happen in parent-child reminiscing, the child must be able to discuss and label emotions (Faust, 2009). Children with autism tend to focus on visually salient aspects of an event instead of emotional aspects, which impacts their ability to understand causes of emotion and emotional experiences (Losh & Capps, 2006). Children with autism may possess basic understandings of emotion; however, they often have difficulty understanding or expressing complex emotions such as guilt and loneliness. Parents of autistic children may therefore use fewer emotion or cognitive references during reminiscing because their children struggle with these concepts and/or do not respond well. Again, this may reflect parents responding to their child's preferences and capacity.

However, the literature examining differences in emotion talk for autistic and typically developing children is relatively sparse and any differences may be very specific to the autistic child's level of functioning. Raman (2022) found that parent-child dyads containing a child with autism had reminiscing conversations that ended with lower quality of emotion resolution for both parent and child on average, compared to parent-child dyads containing a typically developing child. They posited that this could be due to lack of interest or engagement in reminiscing task, and off-topic talk. Difficulties with emotion regulation and introspection techniques may influence emotion resolution for autistic children. Interestingly, Raman found no difference between autistic and typically developing children's use of emotion words, internal states, or pronouns. Raman posited that this could be due to their sample containing higher functioning autistic children that did not have as many barriers to emotion understanding. Faust (2009) found no differences in emotion talk between parents of children with ASD and parents of typically developing children. Parents'

emotion talk was associated with child emotion talk during parent-child reminiscing (Faust, 2009). McDonnell et al. (2020) found that mothers of children with ASD use more close-ended questions when discussing emotional events, and interestingly a medium effect size was seen for emotional elaborations during reminiscing about emotional events (higher in ASD), compared to parents of typically developing children.

Continued research on how parents talk about emotional experiences with their child with autism will be needed to adapt parent reminiscing training interventions (McDonnell et al., 2020). As noted above, qualitative interviewing could be beneficial to determine how parents feel about coaching targeted at increasing emotion/cognitive references, and whether they found this to be beneficial or not when reminiscing with their autistic child. Contingency coding may also be helpful to determine whether parents are being reinforced for their use of emotion/cognitive references after being coached in an intervention to increase these skills. Overall, this does suggest that if reminiscing interventions aim to increase discussion about emotive and cognitive states, more coaching, practice, and troubleshooting is likely to be required for parents to implement this skill.

Conversation Turns

This study included data from the single reminiscing conversations with the highest frequency of parental utterances, as well as the mean across the three conversations in each session. We made this decision after identifying that for both dyads, there was often at least once conversation where the child displayed minimal interest. This was sometimes but not always the final conversation of the session, possibly reflecting that children had become fatigued, over stimulated or were not as interested in a particular conversation topic. This is reflected in the following excerpt from Dyad A:

Mother: Yes, you were climbing on the dragon. Did you know Mummy used to climb on that dragon?

Child: Dragon.

Mother: When I was little?

Child: What's after this?

Mother: Yeah, we're gonna go after this.

Child: Go after this.

Mother: Yeah. we had a fun day at the zoo, didn't we?

Child: I'd like to go.

….

Mother: Was it fun?

Child: I'd like to go please.

Mother: I think we have exhausted that one.

There was a large range in conversation turns across conversations. From Dyad A, there was variation in conversation turn frequencies across reminiscing conversations, which occurred at random i.e., it wasn't always the last conversation. The child conversational turns during reminiscing discussions ranged from 31 to 93. The mothers' conversational turns during reminiscing conversations ranged from 52 to 158. From Dyad B there was also variation in conversation turns which also occurred at random. The child conversation turns ranged from 20 to 53, and the mother conversation turns ranged from 23 to 81. Highest child conversation turns were associated with highest parent conversation turns for both Dyads. Although a consistent pattern is not established, the large range of conversation turns from both dyads could suggest we may have a smaller 'time window' for quality reminiscing conversations. Future research may need to consider shorter reminiscing sessions more often,

as these could be beneficial compared to three parent-child reminiscing conversations in one session. Faust (2009) found that parent elaboration was positively associated with child interest, therefore future research could also focus on making reminiscing topics of interest to the child.

Off-topic Utterances

In our study we noted that both children with autism discussed 'off-topic' content. This excerpt from a pre-intervention reminiscing conversation from Dyad A shows the mother responding to two separate types of off-topic talk from the child, including discussing different examples of learning not related to the reminiscing event, and a question about the live coach. The mother adapts to the initial off-topic utterance preferred by the child to maintain engagement, then answers the second off-topic question about the coaching process and effectively brings the child back to the reminiscing event with a yes/no question to provide structure and direction.

Mother: Yeah, what other stuff are you learning on your rollerblades?

Child: What about going?

Mother: Yeah, learning about going. What else?

Child: Is learning about drawing, is learning stuff about [unintelligible].

Mother: Oh, oh all sorts of other stuff you're learning. Yeah. What else are you learning? You want to tell me about what you're learning at gymnastics?

Child: Circuit.

Mother: Yeah. What do you like on the circuit?

Child: Where's the [XXX].

Mother: She's listening to all the things you're telling… Um should we go back to rollerblading?

Child: Yeah.

Raman (2022) found that when comparing dyads including neurotypical or autistic children, some children with autism went off-topic for long periods during reminiscing. In response to this, parents tended to stop asking open-ended questions and started asking yes/no questions or responded with simple answers. Therefore, a less elaborative style may be a strategy for parents bringing autistic children back on topic (Raman, 2022).

Across our dyads, there appeared to be two distinct different types of off-topic talk. There was some off-topic talk from Dyad A which functioned as the child asking to stop reminiscing or move on to another task. Whereas from Dyad B the off-topic talk was more observations from around the room (i.e., wanting to play with an object or talk to pets, or referencing adjacent events to the reminiscing event). Both mothers were successfully able to redirect this type of off-topic talk by acknowledging or confirming it and weaving it into the conversation and then going back to previous lines of 'on-topic' conversation.

It will likely be important for future reminiscing interventions for autistic children to explicitly consider how to support parents to manage off-topic talk. The approach taken by the coach in our research and by parents generally reflects an 'all talk is helpful talk' stance. When children went 'off topic' the coach introduced the idea of the child being able to engage more in their environment while reminiscing, which will consequently involve more off-topic talk. This kind of flexibility and adaptability may help children to remain engaged longer in reminiscing conversations and to build links between different events in their lives. Further research is needed to better understand the types and adaptive functions of children's 'off-topic' talk within reminiscing.

Strengths and Limitations

This reminiscing intervention has been the first to include live coaching, making this a unique strength of the study. Some learnings from this unique aspect of parent reminiscing

intervention training are that live moment-to-moment PCIT coaching (Woodfield & Cartwright, 2019) appeared too distracting for these families. Instead of providing feedback as parents spoke, the coach waited until after each event conversation to highlight strengths and areas to practice in the next conversation. As part of this process, the coach kept notes with specific examples, so that the coach and parent could remember and discuss particular instances.

Autism research has typically been conducted with samples that do not contain cultural and ethnic diversity. The same unfortunately applies to the current dyads. Both clinical and scientific understanding of autism are based on the Western medical perspective, and diagnosis of autism is based on Western populations. Culture is central to experience, definition and management of autism, and attitudes can vary across cultures, which impact whether families seek intervention, support, and intervention outcomes they desire. Western interventions may therefore be unsuitable for use with non-Western populations (Tupou et al., 2021).

There were only two dyads that participated in this intervention, both including mothers and male children. There has been evidence of gender differences for both parents and children in reminiscing (Fivush et al., 2009). Results from this intervention can only be analysed in the context of reminiscing between mothers and their male sons. There was also no follow up conducted, therefore the long terms effects of this intervention on the parents reminiscing style could not be determined. There were also no child outcome measures. This design limited our capacity to consider effect sizes (Yin, 2009) or percentage of nonoverlapping data (Scruggs & Mastropieri, 1998), both of which would have been more robust ways to consider any intervention effects. As a result, the visual inspection of findings can only be considered exploratory, and all related interpretations must be interpreted with caution.

Implications

The findings from this study have implications for parent-child reminiscing training in the autism community. Existing research shows that reminiscing has benefits for children such as verbal fluency, language, autobiographical memory, and social/emotional understanding (Faust, 2009; McDonnell et al., 2020; Gaelen, 2021). Due to interest in replicating these benefits for autistic children's developmental outcomes has prompted studies involving reminiscing training interventions targeted at parents (Brien & Hutchins, 2022; Bhana et al., 2023; Bhana et al., 2024; Brien & Hutchins, 2024). These studies have found varying effects of parent training interventions on parental reminiscing, and on child outcomes. Our findings show that the intervention in this study, which targets increase parental use of ONCE skills using live coaching (Risi et al., 2024), increased novel information, but not necessarily open-ended questions or confirmations, although the sample size was very limited. Results also indicated that in response to the parents increase in frequency of novel information, children also increased their frequency of memory elaborations. It has been argued that parents of children with autism who use more open-ended questions while reminiscing have children who tend to respond more elaborately (Brien & Hutchins, 2024). However, our study has shown that open-ended questions may not be solely responsible for an increase in child memory elaborations. This has implications for the current explicit focus in the literature on training parents to use more open-ended elaborative questions, because other forms of elaborative conversation styles may as also be beneficial. Our findings also highlight several ways in which parents are adapting reminiscing. Most notably, our parents appeared to engage in off-topic talk and use techniques to weave it into the reminiscing event being discussed or engage in this preferred topic for the child and then redirect conversation back. Off-topic talk may be less of a barrier to parent-autistic child reminiscing if parents are adaptable (Raman, 2022).

Future research could include a larger sample, which could include both parents, and consider other conversation contexts, for example, family mealtimes (Fivush et al., 2009). We found for Dyad B, longer parent-child reminiscing could take place when the child was able to move around and engage in their environment, compared to being seated across from the mother while reminiscing. Gaelen (2021) found that elaborative reminiscing was strengthened when researchers provided autistic children with an opportunity to participate in an enjoyable activity. Although in our study, enabling the child to engage with their environment was associated with increased off-topic utterances, this may not have impacted overall child memory elaborations, because the mother was able to redirect conversation back to the reminiscing event. Future research could also explore contingency coding with larger samples, to find what types of parental utterances precede child memory elaborations. Perhaps all novel information is helpful to increase the number of child memory elaborations. From this intervention there was evidence that other forms of parent elaborations such as statement elaborations and yes/no questions were functioning in a similar way to open-ended questions because they were eliciting memory elaborations from children.

In sum, this research has extended a small body of evidence that suggests reminiscing training interventions can support parents to increase elaboration when reminiscing, and that this can also increase child memory elaborations. This intervention was not associated with an increase in parental use of open-ended questions or emotion/cognitive references. However, open-ended questions may not be crucial to an elaborative reminiscing style, as an increase in elaborative responses from children was seen when parents increased their use of novel information in the form of yes/no questions and elaborative statements. Future research is needed to further examine whether open-ended questions can function in a similar way to statement elaborations and yes/no questions. This will provide insight into whether

reminiscing training needs to put as much emphasis onto importance of open-ended questions for eliciting memory elaborations from children with ASD. Research into this area may result in parent training interventions that provide more support to parents and their children with autism.

References

Acraman, E. (2021). *Autism prevalence in New Zealand*. Altogether Autism. https://www.altogetherautism.org.nz/autism-prevalence-in-new-zealand/

Almandil, N. B., Alkuroud, D. N., AbdulAzeez, S., AlSulaiman, A., Elaissari, A., & Borgio, J. F. (2019). Environmental and genetic factors in autism spectrum disorders: special emphasis on data from arabian studies. *International Journal of Environmental Research and Public Health, 16(4),* 58. https://doi.org/10.3390/ijerph16040658

Amaral D. G. (2017). Examining the Causes of Autism. *Cerebrum : The Dana Forum on Brain Science,* 2017, cer-01-17.

American Psychological Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5 ed.). Arlington.

Anderson, G. M. (2015). Autism Biomarkers: Challenges, Pitfalls and Possibilities. *Journal of Autism and Developmental Disorders*, *45(4),* 1103-1113. https://doi.org/10.1007/s10803-014-2225-4

Andrews, R., Van Bergen, P., & Wyver, S. (2023). Educators', children's and mothers' use of temporal language in reminiscing and future talk conversations. *Early Years*, *43(2),* 332-349. https://doi.org/10.1080/09575146.2021.1957780

Baron-Cohen, S., Leslie, A. M., & Frith, U. (1985). Does the autistic child have a "theory of mind"? *Cognition*, *21(1),* 37-46. https://doi.org/10.1016/0010-0277(85)90022-8

Bauminger, N., Solomon, M., & Rogers, S. J. (2010). Externalizing and internalizing behaviors in ASD. *Autism Research*, *3(3),* 101-112. https://doi.org/10.1002/aur.131

Bird, A., & Reese, E. (2006). Emotional Reminiscing and the Development of an Autobiographical Self. *Developmental Psychology*, *42(4),* 613 https://doi.org/10.1037/0012-1649.42.4.613

Bhana Lopez, N., Raulston, T. J., & Gilhuber, C. S. (2024). Collateral Effects of the Tell Me MORE! Intervention on the Joint Reminiscing of Mothers of Children with Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders*, *54(10),* 3745-3758. https://doi.org/10.1007/s10803-023-06103-6

Bhana, N., McNaughton, D., Raulston, T., & Ousley, C. (2020). Supporting Communication and Participation in Shared Storybook Reading Using Visual Scene Displays. *Teaching Exceptional Children*, *52(6),* 382-391. https://doi.org/10.1177/0040059920918609

Bhana, N., Raulston, T. J., Ousley, C., & Bagawan, A. (2023). Photographs and Parent Training to Support Conversations about Past Events between Caregivers and Children with Autism. *Advances in Neurodevelopmental Disorders*. *8(2),* 311-323. https://doi.org/10.1007/s41252-023-00333-6.

Bowden, N., Thabrew, H., Kokaua, J., Audas, R., Milne, B., Smiler, K., Stace, H., Taylor, B., & Gibb, S. (2020). Autism spectrum disorder/Takiwātanga: An integrated data infrastructure-based approach to autism spectrum disorder research in New Zealand. *Autism*, *24(8),* 2213-2227. https://doi.org/10.1177/1362361320939329

Brien A., Hutchins T. (2022). Development of a Manualized Intervention to Support Episodic Memory in Autistic Children: Elaborative Reminiscing is Key. *Seminars in Speech and Language*, *43(4),* 229–315. https://doi.org/10.1055/s-0042-1750349

Brien, A. R., & Hutchins, T. L. (2024). The Key to Successful Social Interactions: Elevating Social Learning and Memory in Autism Through Elaborative Reminiscing and

Caregiver Connection. *Topics in Language Disorders*, *44(4),* 265-284. https://doi.org/10.1097/TLD.0000000000000353

Clifford, A. E. (2021). *Telling the whole story: Adult-child reminiscing and young children's socio-emotional development* (Doctoral dissertation, University of Otago). http://hdl.handle.net/10523/12491.

Corsano, P., & Guidotti, L. (2019). Parents' reminiscing training in typically developing and 'at-risk' children: A review. *Early Child Development and Care, 189(1),* 143–156. https://doi.org/10.1080/03004430.2017.1289518

Dinishak, J. (2022). The Deficit View and Its Critics. *Disability Studies Quarterly*, *36(4).* https://doi.org/10.18061/dsq.v36i4.5236

Drysdale, H., & van der Meer, L. (2020). Rates of autism spectrum disorder diagnoses for children and adolescents in the Hutt Valley Region of New Zealand between 2012 and 2016. *Research in Autism Spectrum Disorders*, *73*, 101547. https://doi.org/10.1016/j.rasd.2020.101547

Edelson, S. M. (2021). Comparison of autistic individuals who engage in self-injurious behavior, aggression, and both behaviors. *Pediatric Reports*, *13(4),* 558-565. https://doi.org/10.3390/PEDIATRIC13040066

Evans, K. & van der Meer, L. (2021). *The Autism Diagnostic Process in New Zealand: Final Report.* Brisbane. Autism CRC.

Farrant, K., & Reese, E. (2000). Maternal Style and Children's Participation in Reminiscing: Stepping Stones in Children's Autobiographical Memory Development. *Journal of Cognition and Development*, *1(2),* 193-225. https://doi.org/10.1207/S15327647JCD010203

Faust, W. (2009). Parent-child reminiscing. Relationships between parent elaborations, emotion talk and memory contributions of children with Autism Spectrum Disorder.

[Master's thesis, Victoria University Wellington]. https://doi.org/10.26686/wgtn.16968304.v1

Fivush, R., & Fromhoff, F. A. (1988). Style and structure in mother-child conversations about the past. *Discourse Processes*, *11(3),* 337-355. https://doi.org/10.1080/01638538809544707

Fivush, R., Haden, C. A., & Reese, E. (2006). Elaborating on Elaborations: Role of Maternal Reminiscing Style in Cognitive and Socioemotional Development. *Child Development*, *77(6),* 1568-1588. https://doi.org/10.1111/j.1467-8624.2006.00960.x

Fivush, R. (2007). Maternal reminiscing style and children's developing understanding of self and emotion. *Clinical Social Work Journal*, *35(1),* 37-46. https://doi.org/10.1007/s10615-006-0065-1

Fivush, R., & Salmon, K. (2023). Maternal reminiscing as critical to emotion socialization. *Mental Health & Prevention*, *30*, 200281. https://doi.org/10.1016/j.mhp.2023.200281.

Gaelen, J. S. (2021). *Improving Autobiographical Memory and Social Interaction in Children with Autism Spectrum Disorder Through Reminiscence* [Master's thesis, Harvard University]. https://www.proquest.com/dissertations-theses/improving-autobiographical-memory-social/docview/2543772289/se-2

Garnett, M., Reese, E., Swearingen, I., Peterson, E., Salmon, K., Waldie, K., D'Souza, S., Atatoa-Carr, P., Morton, S., & Bird, A. (2023). Maternal Reminiscing and Children's Socioemotional Development: Evidence from a Large Pre-Birth Longitudinal Cohort Study, *Growing Up in New Zealand*. *Journal of Cognition and Development*, *24(5),* 678–703. https://doi.org/10.1080/15248372.2023.2192276

Harris, C. B., Van Bergen, P., Strutt, P. A., Picard, G. K., Harris, S. A., Brookman, R., & Nelson, K. (2022). Teaching Elaborative Reminiscing to Support Autobiographical

Memory and Relationships in Residential and Community Aged Care Services. *Brain Sciences*, *12(3),* 374-. https://doi.org/10.3390/brainsci12030374

Hoogenhout, M., & Malcolm-Smith, S. (2017). Theory of mind predicts severity level in autism. *Autism*, *21(2),* 242-252. https://doi.org/10.1177/1362361316636758

Johnson, C. P., & Myers, S. M. (2007). Identification and Evaluation of Children with Autism Spectrum Disorders. *Pediatrics*, *120(5),* 1183-1215. https://doi.org/10.1542/peds.2007-2361

Kapp S. (2020) *Autistic Community and the Neurodiversity Movement: Stories from the Frontline.* Palgrave MacMillan. https://doi.org/10.1007/978-981-13-8437-0

Koren-Karie, N., Oppenheim, D., & Getzler-Yosef, R. (2008). Shaping children's internal working models through mother–child dialogues: the importance of resolving past maternal trauma. *Attachment & Human Development*, *10(4),* 465-483. https://doi.org/10.1080/14616730802461482

Laible, D. (2011). Does It Matter if Preschool Children and Mothers Discuss Positive vs. Negative Events During Reminiscing? Links with Mother-reported Attachment, Family Emotional Climate, and Socioemotional Development. *Social Development (Oxford, England)*, *20(2),* 394–411. https://doi.org/10.1111/j.1467-9507.2010.00584.x

Laible, D. (2004). Mother-Child Discourse in Two Contexts: Links with Child Temperament, Attachment Security, and Socioemotional Competence. *Developmental Psychology*, *40(6),* 979. https://doi.org/10.1037/0012-1649.40.6.979

Leyva, D., Catalán Molina, D., Suárez, C., Tamis-LeMonda, C. S., & Yoshikawa, H. (2021). Mother- Child Reminiscing and First-Graders' Emotion Competence in a Low-Income and Ethnically Diverse Sample. *Journal of Cognition and Development*, *22(4),* 501-522. https://doi.org/10.1080/15248372.2021.1908293

Leyva, D., Reese, E., Laible, D., Schaughency, E., Das, S., & Clifford, A (2019): Measuring Parents' Elaborative Reminiscing: Differential Links of Parents' Elaboration to children's Autobiographical Memory and Socioemotional Skills. *Journal of Cognition and Development*, *21(1),* 23-45. https://doi-org.ezproxy.waikato.ac.nz/10.1080/15248372.2019.1668395

Losh, M., & Capps, L. (2006). Understanding of emotional experience in autism: Insights from the personal accounts of high-functioning children with autism. *Developmental Psychology, 42(5),* 809–818. https://doi.org/10.1037/0012-1649.42.5.809

McDonnell, C. G., Speidel, R., Lawson, M., & Valentino, K. (2020). Reminiscing and Autobiographical Memory in ASD: Mother–Child Conversations About Emotional Events and How Preschool-Aged Children Recall the Past. *Journal of Autism and Developmental Disorders*, *51(9),* 3085-3097. https://doi.org/10.1007/s10803-020-04770-3

McHugh, M. L. (2012). Interrater reliability: the kappa statistic. *Biochemia Medica*, *22(3),* 276-282. https://doi.org/10.11613/bm.2012.031

Mitchell, C., & Reese, E. (2022). Growing Memories: Coaching mothers in elaborative reminiscing with toddlers benefits adolescents' turning-point narratives and wellbeing. *Journal of Personality*, *90(6),* 887-901. https://doi.org/10.1111/jopy.12703

Meilleur, A. A. S., Jelenic, P., & Mottron, L. (2015). Prevalence of Clinically and Empirically Defined Talents and Strengths in Autism. *Journal of Autism and Developmental Disorders*, *45(5),* 1354-1367. https://doi.org/10.1007/s10803-014-2296-2

National Autism Center (2015). *Findings and conclusions: National standards project, phase 2* Randolph MA: National Autism Center. https://www.nationalautismcenter.org/national-standards-project/phase-2/.

Neale, D., & Pino-Pasternak, D. (2017). A review of Reminiscing in Early Childhood Settings and Links to Sustained Shared Thinking. *Educational Psychology Review*, *29*, 641-665. https://doi.org/10.1007/s10648-016-9376-0

Nealy, C. E., O'Hare, L., Powers, J. D., & Swick, D. C. (2012). The Impact of Autism Spectrum Disorders on the Family: A Qualitative Study of Mothers' Perspectives. *Journal of Family Social Work*, *15(3),* 187-201. https://doi.org/10.1080/10522158.2012.675624

Prelock, P. J., & Nelson, N. W. (2012). Language and communication in autism: An integrated view. *Pediatric Clinics of North America*, *59(1),* 129-145. https://doi.org/10.1016/j.pcl.2011.10.008

Raman, J. M. (2022). *Parent child reminiscing and developmental outcomes for children with Autism Spectrum Disorder (ASD)* [Masters dissertation, University of Waikato].

Reese, E., & Fivush, R. (1993). Parental Styles of Talking About the Past. *Developmental Psychology*, *29(3),* 596-606. https://doi.org/10.1037/0012-1649.29.3.596

Reese, E., Hayne, H., & MacDonald, S. (2008). Looking back to the future: Māori and Pakeha mother-child birth stories. *Child Development*, *79(1),* 114–125. https://doi.org/10.1111/j.1467-8624.2007.01114.x

Reese, E., & Neha, T. (2015). Let's Kōrero (Talk): The practice and functions of reminiscing among mothers and children in Māori families. *Memory, 23(1),* 99-110. https://doi.org/10.1080/09658211.2014.929705

Reese, E., & Newcombe, R. (2007). Training mothers in elaborative reminiscing enhances children's autobiographical memory and narrative. *Child Development*, *78(4),* 1153–1170. https://doi.org/10.1111/j.1467-8624.2007.01058.x

Risi, A., Pickard, J. A., & Bird, A. L. (2024). Improving Outcomes for Military Families with Young Children: Effects of a Novel Dyadic Coaching-Based Parenting Intervention in

Two Exploratory Case Studies. *Child & Family Behavior Therapy*, *46*(1), 63-96. https://doi.org/10.1080/07317107.2023.2246131

Rochford, T. (2004). Whare Tapa Wha: A Mäori model of a unified theory of health. *The Journal of Primary Prevention*, *25(1),* 41–57. https://doi.org/10.1023/B:JOPP.0000039938.39574.9e

Rowe, M. L., & Snow, C. E. (2020). Analyzing input quality along three dimensions: Interactive, linguistic, and conceptual. *Journal of Child Language*, *47(1),* 5–21. https://doi.org/10.1017/S0305000919000655

Russell, S., Bird, A. L., Waldie, K., Peterson, E., Morton, S. M. B., Atatoa Carr, P. E., Salmon, K., & Reese, E. (2024). From infancy to eight: How early maternal mental health, emotion reminiscing, and language shape children's mental health. *Development and Psychopathology*, 1–15. https://doi.org/10.1017/S0954579424000919

Salmon, K., Dadds, M. R., Allen, J., & Hawes, D. J. (2009). Can Emotional Language Skills be Taught During Parent Training for Conduct Problem Children? *Child Psychiatry and Human Development*, *40(4),* 485–498. https://doi.org/10.1007/s10578-009-0139-8

Salmon, K., & Reese, E. (2016). The Benefits of Reminiscing With Young Children. *Current Directions in Psychological Science: A Journal of the American Psychological Society*, *25(4),* 233–238. https://doi.org/10.1177/0963721416655100

Sari, N. P., Luijk, M. P., Jansen, P. W., Prinzie, P., & van IJzendoorn, M. (2023). Academic achievement of children with autistic symptoms compared to typically developing children. *European Journal of Psychology of Education*, *39(3),* 1979–2003. https://doi.org/10.1007/s10212-023-00758-6

Sarovic, D. (2021). A unifying theory for Autism: The pathogenetic triad as a theoretical framework. *Frontiers in Psychiatry, 12,* 767075. https://doi.org/10.3389/fpsyt.2021.767075

Scruggs, T. E., & Mastropieri, M. A. (1998). Summarizing Single-Subject Research: Issues and Applications. *Behavior modification*, *22(3),* 221-242. https://doi.org/10.1177/01454455980223001

Svane, R. P., Kingo, O. S., & Krøjgaard, P. (2021). A Micro-Analytic Approach to Parent-Child Reminiscing. *Cognitive Development*, *57*, 101004. https://doi.org/10.1016/j.cogdev.2020.101004

Swanson, M. R. (2020). The role of caregiver speech in supporting language development in infants and toddlers with autism spectrum disorder. *Development and psychopathology*, *32(4),* 1230-1239. https://doi.org/10.1017/S0954579420000838

Swetlitz, C., Lynch, S. F., Propper, C. B., Coffman, J. L., & Wagner, N. J. (2021). Examining maternal elaborative reminiscing as a protective factor in the intergenerational transmission of psychopathology. *Journal of Abnormal Child Psychology*, *49(8),* 989-999. https://doi.org/10.1007/s10802-021-00790-4

Taboas, A., Doepke, K., & Zimmerman, C. (2023). Preferences for identity-first versus person-first language in a US sample of autism stakeholders. *Autism: The International Journal of Research and Practice*, *27(2),* 565–570. https://doi.org/10.1177/13623613221130845

Te Pou o te Whakaaro Nui (2019) *Te Tau Tītoki: A Framework for Supporting People on the Autism Spectrum*, Auckland, New Zealand: Te Pou o te Whakaaro Nui. https://www.tepou.co.nz/resources/te-tau-titoki-a-framework-for-supporting-people-on-the-autism-spectrum/915

Tupou, J., Curtis, S., Taare-Smith, D., Glasgow, A., & Waddington, H. (2021). Māori and autism: A scoping review. *Autism*, *25(7),* 1844-1858. https://doi.org/10.1177/13623613211018649

Turnock, A., Langley, K., & Jones, C. R. G. (2022). Understanding Stigma in Autism: A Narrative Review and Theoretical Model. *Autism in Adulthood*, *4*(1), 76–91. https://doi.org/10.1089/aut.2021.0005

U.S. Department of Health and Human Services. (2020). *Autism spectrum disorder: Communication problems in children.* National Institute of Deafness and Other Communication Disorders. https://www.nidcd.nih.gov/health/autism-spectrum-disorder-communication-problems-children

Valentino, K., Comas, M., Nuttall, A. K., & Thomas, T. (2013). Training maltreating parents in elaborative and emotion-rich reminiscing with their preschool-aged children. *Child Abuse & Neglect*, *37(8),* 585-595. https://doi.org/10.1016/j.chiabu.2013.02.010

Van Bergen, P., & Salmon, K. (2010). Emotion-oriented reminiscing and children's recall of a novel event. *Cognition and Emotion*, *24(6),* 991-1007. https://doi.org/10.1080/02699930903093326

Vanderveren, E., Bijttebier, P., & Hermans, D. (2017). The importance of memory specificity and memory coherence for the self: Linking two characteristics of autobiographical memory. *Frontiers in Psychology*, *8*, 2250. https://doi.org/10.3389/fpsyg.2017.02250

Vess, S. F., & Campbell, J. M. (2022). Parent–child interaction therapy (PCIT) with families of children with autism spectrum disorder. *Autism & Developmental Language Impairments*, *7*, 23969415221140707. https://doi.org/10.1177/23969415221140707

Vogindroukas, I., Stankova, M., Chelas, E. N., & Proedrou, A. (2022). Language and speech characteristics in autism. *Neuropsychiatric Disease and Treatment*, *18,* 2367-2377. https://doi.org/10.2147/NDT.S331987

Vygotsky, L. S., & Cole, M. (1978). *Mind in Society: Development of Higher Psychological Processes*. Harvard University Press. https://doi.org/10.2307/j.ctvjf9vz4

Wantzen, P., Boursette, A., Zante, E., Mioche, J., Eustache, F., Guénolé, F., ... & Guillery-Girard, B. (2021). Autobiographical memory and social identity in autism: preliminary results of social positioning and cognitive intervention. *Frontiers in psychology*, *12*, 641765. https://doi.org/10.3389/fpsyg.2021.641765

Waters, T. E. A., Camia, C., Facompré, C. R., Fivush, R., & Albarracín, D. (2019). A meta-analytic examination of maternal reminiscing style: Elaboration, gender, and children's cognitive development. *Psychological Bulletin*, *145(11),* 1082–1102. https://doi.org/10.1037/bul0000211

Woodfield, M. J., & Cartwright, C. (2020). Parent-Child Interaction Therapy from the parents' perspective. *Journal of Child and Family Studies*, *29(3),* 632-647. https://doi.org/10.1007/s10826-019-01611-5

Yin, R. K. (2009). *Case study research: Design and methods* (Vol. 5). sage.

Zantinge, G., van Rijn, S., Stockmann, L., & Swaab, H. (2017). Physiological arousal and emotion regulation strategies in young children with Autism Spectrum Disorders. *Journal of Autism and Developmental Disorders*, *47*, 2648-2657. https://doi.org/10.1007/s10803-017-3181-6