



City Research Online

City, University of London Institutional Repository

Citation: Durkin, K., Toseeb, U., Botting, N., Pickles, A.R. & Conti-Ramsden, G. (2017). Social Confidence in Early Adulthood among Young People with and without a History of Language Impairment. *Journal of Speech, Language, and Hearing Research*, 60(6), pp. 1635-1647. doi: 10.1044/2017_jslhr-l-16-0256

This is the accepted version of the paper.

This version of the publication may differ from the final published version.

Permanent repository link: <https://openaccess.city.ac.uk/id/eprint/16169/>

Link to published version: https://doi.org/10.1044/2017_jslhr-l-16-0256

Copyright: City Research Online aims to make research outputs of City, University of London available to a wider audience. Copyright and Moral Rights remain with the author(s) and/or copyright holders. URLs from City Research Online may be freely distributed and linked to.

Reuse: Copies of full items can be used for personal research or study, educational, or not-for-profit purposes without prior permission or charge. Provided that the authors, title and full bibliographic details are credited, a hyperlink and/or URL is given for the original metadata page and the content is not changed in any way.

Social Confidence in Early Adulthood among Young People with and without a History of
Language Impairment

Kevin Durkin¹, Umar Toseeb², Nicola Botting³, Andrew Pickles⁴, & Gina Conti-Ramsden^{5*}

¹ School of Psychological Sciences and Health, University of Strathclyde, 40 George Street,
Glasgow, G1 1QE, UK. kevin.durkin@strath.ac.uk

² Department of Psychology, Manchester Metropolitan University, Brooks Building,
53 Bonsall Street, Manchester M15 6GX, UK. u.toseeb@mmu.ac.uk

³ Language and Communication Science, Northampton Square, City University, London,
EC1V 0HB, UK. Nicola.Botting.1@city.ac.uk

⁴ Department of Biostatistics, Institute of Psychiatry, King's College London, De Crespigny
Park, Denmark Hill, London, SE5 8AF, UK. andrew.pickles@kcl.ac.uk

⁵ School of Psychological Sciences, The University of Manchester, Ellen Wilkinson Building,
Oxford Road, Manchester M13 9PL, UK. gina.conti-ramsdén@manchester.ac.uk

***Corresponding Author:** Professor Gina Conti-Ramsden

Email: gina.conti-ramsdén@manchester.ac.uk

Tel. +44(0)1612753514; Fax. +44(0)1612753965.

Disclosure of potential conflicts of interest:

The authors declare that they have no real or potential conflicts of interest that could be seen as having an influence on the research.

Abstract

Purpose:

The purposes were to test the predictions that lower self-esteem and higher shyness in individuals with a history of language impairment (LI) would continue from adolescence into early adulthood and that those with LI would have lower social self-efficacy in early adulthood.

Method:

Participants were young people with a history of LI and a comparison group of age-matched peers (AMPs). Both groups were tested at ages 17 and 24 years. Participants completed measures of language ability, nonverbal IQ, shyness, global self-esteem and (at age 24 only) social self-efficacy.

Results:

Young adults with LI scored lower than AMPs on self-esteem, higher on shyness, and lower on social self-efficacy (medium to large effect sizes). In line with expectations, in the group with LI language ability in adolescence predicted shyness in young adulthood, which in turn was negatively associated with self-esteem. There was also a direct association between language ability in adolescence and self-esteem in young adulthood.

Conclusions:

Young people with a history of LI are likely to be entering adulthood less socially confident than their peers. Interventions may be desirable for young adults with LI and the present findings indicate social self-efficacy as a key area of social confidence that calls for practitioners' attention.

Running head: SOCIAL CONFIDENCE AND LANGUAGE IMPAIRMENT

Key words: Language impairment; adolescence; early adulthood; self-esteem; shyness; social self-efficacy; longitudinal; CELF-4.

Social Confidence in Early Adulthood among Young People with and without a History of Language Impairment

Young people growing up with language impairment (LI) face considerable burdens that extend beyond language difficulties themselves. Language is a primary tool for interacting with the world and for learning. As will be outlined below, difficulties in comprehending and/or producing language are associated in development with problems in other domains, such as behavior and social relations. This wide ranging and protracted adversity could be expected to have negative consequences for the self-esteem and social confidence of individuals with LI as they reach adulthood but, to date, only a small amount of evidence is available. We investigate the relationship between shyness and self-esteem scores collected in adolescence (17 years) and the shyness and self-esteem scores of the same individuals in young adulthood (24 years). We examine the relationships among language ability, shyness, and global self-esteem. In this paper, we also present (what is, to the authors' knowledge) the first comparison between young adults with and without LI on a measure of social self-efficacy.

Language Impairment and its Impact on Other Aspects of Development

Behavioral and emotional difficulties in children with LI are often more pronounced than population norms (Beitchman, Hood, Rochon, & Peterson, 1989; Botting & Conti-Ramsden, 2000; Cohen, Menna, Vallance, Barwick, Im, & Horodezky, 1998; Fujiki, Brinton, & Clarke, 2002; Peterson et al., 2013; Van Daal, Verhoeven, & Van Balkom, 2007). For many, these and related problems persist through middle childhood and into adolescence, with poorer mental health and poorer peer relations (Beitchman et al., 1996; Conti-Ramsden & Botting, 2004, 2008; Durkin & Conti-Ramsden, 2007; Fujiki, Spackman, Brinton & Hall, 2004; Mok, Pickles, Durkin, & Conti-Ramsden, 2014; Yew & O'Kearney, 2013).

Language Impairment and Self-Esteem in Childhood and Adolescence

Self-esteem is defined as the extent to which one values oneself (Cooley, 1902; Coopersmith, 1967). It can be measured in respect of particular domains (e.g., educational self-esteem, physical self-esteem) and/ or in terms of overall self-regard, or global self-esteem (Rosenberg, 1965). In the present study, we will be concerned with global self-esteem, as measured by the Rosenberg self-esteem scale. This instrument gauges how the individual perceives her or his general worth, possession of positive qualities, and whether or not she or he takes a positive attitude towards the self. Global self-esteem is important because it bears on individuals' personal goals, beliefs about their worth and expectations about their future. In the general population, those with high self-esteem tend to achieve more favourable outcomes in many aspects of life, whereas those with low self-esteem tend to fare less well (Orth, Robins, & Widaman, 2012). For example, in a large scale prospective study, Trzesniewski et al. (2006) found that adolescents with low global self-esteem grew up to have poorer mental health and poorer economic outcomes in their mid-20s.

Intuitively, it seems very plausible that LI and its associated difficulties would tend to depress self-esteem in young people. It is potentially undermining to find oneself less able than others to handle everyday communication, to be on the periphery of peer groups, or to be performing poorly in the classroom. The evidence available with respect to self-esteem, however, is mixed. For example, some studies of elementary school aged children (6- to 9-year-olds) have reported null results when comparing self-esteem in those with and without LI (Jerome Fujiki, Brinton, & James., 2002; Lindsay & Dockrell, 2000; Lindsay, Dockrell, Letchford, & Mackie, 2002). It may be that children in this age range are not yet fully aware of the ways in which they are different to others (Jerome et al., 2002). Older children and adolescents in the same studies, on the other hand, did have lower self-esteem, particularly in relation to social and academic domains. Furthermore, in a study of adolescents aged 16 to 17

Running head: SOCIAL CONFIDENCE AND LANGUAGE IMPAIRMENT

years completing the Rosenberg Self Esteem Scale (RSES; Rosenberg, 1965), Wadman, Durkin and Conti-Ramsden (2008) found that those with a history of LI had significantly lower scores than did peers with typical development, with a medium effect size. It is important to note that the overall means of both groups approximated to the mean RSES scores reported in many studies of typical populations (Schmitt & Allik, 2005). Even so, the LI mean was lower than that of the age-matched peer (AMP) group and some 48% of participants with LI had self-esteem scores below the norm for their age group, while this was the case for only 11% of the AMP group. Lindsay, Dockrell and Palikara (2010), in a longitudinal study, monitored change in self-esteem in a sample of young people with LI over a similar age range to Wadman et al. (2008). They found improvements from age 16 to 17 years in respect of several domains of self esteem (perceptions of scholastic competence, job competence, global self worth, physical appearance, athletic competence) but not in interpersonal domains (social acceptance, close friendships, romantic relationships).

In short, the evidence to date suggests that a negative relationship between LI and self-esteem is not reliable in middle childhood but is apparent by mid-adolescence. Some evidence indicates that increases in self-esteem may occur in those with LI during mid-adolescence (approximately, ages 16 to 17) but self esteem relating to social domains may be less likely to increase. Where discrepancies between those with and without LI have been reported, they are not necessarily enormous, but those with LI tend to be disadvantaged.

Language Impairment and Shyness in Childhood and Adolescence

Shyness is the feeling of tension, discomfort and inhibition in the presence of others (Cheek & Buss, 1981). For example, individuals who score high on shyness tend to perceive themselves as socially awkward, uncomfortable in social contexts and often find it difficult to adapt to new social settings. In the general population, individuals vary in the extent to which they experience shyness and it is generally regarded as an enduring personality

characteristic. Nevertheless, it can be subject to some within-individual variability, too (across situations and/or over time; Ash, Rice, & Redmond, 2014; Liu, Chen, Zhou, Li, Fu, & Coplan, 2016). For example, children learning English as a second language score higher on measures of shyness when in English-speaking contexts than when in contexts where they are able to use their native language (Ash et al., 2014). High levels of shyness are associated with negative self-perceptions, internalizing symptoms, limited social participation, problems or delays in relationship formation, peer rejection/ victimization, and poorer career development (Coplan, Closson, & Arbeau, 2007; Coplan & Rubin, 2010; Phillips & Bruch, 1988; Rowsell & Coplan, 2013). Shyness is negatively correlated with self-esteem (Crozier, 1995; Lawrence & Bennett, 1992; Wadman et al., 2008).

Considerable evidence exists to establish that there is a negative association in childhood between language ability and shyness (Coplan & Evans, 2009). The causal directions underpinning the association are not fully understood (Coplan & Evans, 2009; Smith Watts et al., 2014). One possibility is that having LI makes interacting with others uncomfortable and that some children respond to this by avoiding or withdrawing from social contexts. Alternatively, it is possible that those who do not have the motivation or desire to participate socially will find less opportunity to practice or extend their language abilities. Another possibility is that deficits in both language and social confidence reflect some common underlying cause, which could be genetic or environmental. Smith Watts et al. tested several competing hypotheses in a longitudinal study of a large sample of toddlers. The authors found some evidence consistent with the proposition that lower expressive language ability led to higher growth of behavioral inhibition, and some evidence consistent with the proposition that shy children do know more about language than they demonstrate but are reluctant to express it. Smith Watts et al.'s findings, however, concern relations among variables in toddlers, none of whom were identified as having LI. Causal relations may

change with development, and causal relations may be different in those with and without LI. For example, while it is plausible that shyness could inhibit language use in some contexts, it seems less plausible that it could bring about the pervasive linguistic difficulties found in those with LI and no theory has been advanced to propose that LI is ‘caused’ by shyness. These considerations make evidence on the patterns of relationship in those with LI, including relationships between language ability and social confidence later in development, of particular interest.

Numerous investigations concur that individuals with LI, from early in childhood, tend to be more reticent (wary or even fearful of joining social groups), less likely to initiate interactions, and poorer at maintaining conversations than are their typically developing peers (Conti-Ramsden & Botting, 2004; Fujiki & Brinton, 2015; Fujiki, Brinton, Morgan, & Hart, 1999; Fujiki et al., 2004; Hart, Fujiki, Brinton, & Hart, 2004; Maggio et al., 2013). In adolescence, individuals with LI tend to be significantly shyer than their peers (Wadman et al., 2008). Wadman et al. argued (after Redmond & Rice, 1998) that this can be explained as the consequence of an adaptive process. Language difficulties make it challenging to interact with others and so the young person seeks to reduce the discomfort by restricting, or even withdrawing from, social interactions. It follows that, if there is a relationship between LI and self-esteem, it should be at least partially dependent on the extent to which the individual manifests shyness. Wadman et al. (2008) tested this possibility in their adolescent sample and found evidence that a relationship between language ability and global self-esteem (RSES) was, as predicted, partially mediated by shyness.

In short, from early childhood, individuals with LI tend to be reticent and less socially engaged. In adolescence, they are significantly shyer than peers without LI. Through development, language impairment is associated with, leads to or exacerbates shyness, and shyness contributes to lower self-esteem.

Social Confidence in Individuals with LI in Early Adulthood

What is the legacy of this developmental history as young people with LI reach adulthood? How confidently do individuals with LI approach the tasks of entering society?

Relevant research is somewhat scarce but there is a growing body of evidence that the non-linguistic difficulties associated with LI in childhood continue through adolescence and into adulthood. For example, young adults with a history of early language impairment have significantly higher rates of mental health problems (Beitchman et al., 2001; Conti-Ramsden & Botting, 2008; Law, Rush, Schoon, & Parsons, 2009; Schoon, Parsons, Rush, & Law, 2010). Difficulties in social adjustment and friendship maintenance are often reported in young adults with LI (Clegg, Hollis, Mawhood, & Rutter, 2005; Törnqvist, Thulin, Segnestam, & Horowitz, 2009; Whitehouse, Watt, Line, & Bishop, 2009). Voci, Beitchman, Brownlie and Wilson (2006) found that the incidence of social phobia (fear of interacting with others, speaking to small or large groups, being observed) was more than twice as high in 19-year-olds with LI (who had been identified first at age 5) than in peers with typical language skills. Indeed, the authors observe that the rate of social phobia in the group with LI was one of the highest reported in the epidemiological literature.

This developmental context leads to the possibility of a lower sense of social effectiveness and confidence than might be expected in a sample of young adults without LI. The disadvantages that impact on self-esteem during adolescence could also be expected to be sustained into adult life. Individuals who tended to be reticent or socially marginal in childhood and adolescence may be likely to remain shy or socially marginal into adult life.

A construct that is closely related to, but distinct from, shyness is social self-efficacy (SSE). Social self-efficacy is 'an individual's confidence in her/his ability to engage in the social interactional tasks necessary to initiate and maintain interpersonal relationships' (Smith

& Betz, 2000, p. 286). For example, a person with high social self-efficacy would regard himself or herself as able to initiate a conversation with someone unfamiliar, to be able to handle unfamiliar social situations, and know how to relate to others effectively. While shyness is a personality trait, social self-efficacy is conceived of as a product of social-cognitive activity: it emerges from individuals' reflections on their prior experiences and it guides their expectations about how they are likely to perform in the future (Bandura, 1997). Thus, via self-referent cognitions about their social competence, individuals contribute causally to their own personal development (Caprara, Steca, Cervone, & Artisticco, 2003, p. 961).

Social self-efficacy, then, has the potential to be a revealing measure of how confidently young people with LI feel they can manage a host of social demands that are encountered in everyday life and workplaces in adulthood. The SSE scale developed by Smith and Betz (2000) asks participants to indicate, in each case on a scale anchored from 'No confidence at all' to 'Complete confidence', their abilities in respect of items such as: 'Express your opinion to a group of people discussing a subject that is of interest to you', 'Work on a school, work, community or other project with people you don't know', 'Put yourself in a new and different social situation,' 'Be involved in group activities', 'Ask someone for help when you need it', 'Call someone you've met and would like to know better' (35 items in all). Social self-efficacy is associated negatively with shyness and positively with global self-esteem (Caprara & Steca, 2005; Smith & Betz, 2000; Watson & Nesdale, 2012).

While there are strong reasons to expect a developmentally-based disadvantage to young adults with LI in respect of social confidence (that is, self-esteem, shyness and social self-efficacy), it should be noted that, theoretically, there are alternative possibilities. For example, young adulthood is a major new life phase that offers greater status and freedom,

many opportunities and rewards; for most young people, this is a time of gains in autonomy and relative optimism about their personal future (Arnett, 2004). Consistent with this, cross-sectional and longitudinal studies (in the general population) show gradually increasing self-esteem scores from around age 18 through early adulthood (Orth et al., 2012; Robins & Trzesniewski, 2005). We lack data on whether young adults with LI show a similar trajectory.

Although there are continuities in relative shyness through childhood and into adulthood (Dennissen, Asendorpf, & Van Aken, 2008; Schwartz, Snidman, & Kagan, 1999), there are some indications that shyness declines slightly in the general population during early adulthood (Dennissen et al., 2008; Grühn, Kotter-Grühn, & Röcke, 2010). It has been argued that this may reflect experience-based growth in social competence (Gruhn et al. 2010). For example, by this stage of life, individuals may have developed strategies for how to respond to unfamiliar people (Dennissen et al. 2008). For young adults with LI, however, there is less evidence on within-individual continuities from earlier in development and on whether there is an overall reduction in shyness in early adulthood.

The Present Study

Global self-esteem, shyness, and social self-efficacy are all important indicators of how adequately a young person is equipped psychologically to meet confidently the myriad challenges and opportunities of adult life. In each case, there are reasons to suppose that individuals who have grown up with LI will be at a disadvantage compared to typical peers, although alternative outcomes or null findings are conceivable. To date, relatively little direct evidence is available. The first purpose of the present study was to provide such evidence, based on a sample of individuals with LI who had been followed from childhood to early adulthood. We predicted that, at age 24, these participants would score lower on measures of global self-esteem, shyness and social self-efficacy than would age matched peers without LI.

We also conducted a correlational analysis of the relationships among global self-esteem, shyness and social self-efficacy in both groups of participants. These are known to be inter-related constructs in the typical population but it is not known if the pattern of relationship is identical in those with LI and, importantly, it is not known if language ability is significantly associated with these constructs.

The second purpose of the study focused on shyness. We examine the relationship between shyness scores of young people with LI in adolescence (17 years) and the shyness scores of the same individuals in young adulthood (24 years). Again, although shyness is a relatively enduring trait, it can vary over time and some individuals become less shy as they gain experience and confidence in handling social situations (Asendorpf, 2000). Similarly, we examined correlations between self-esteem scores obtained at the same two time points. Self-esteem is also amenable to variation over time (Eccles et al., 1989; Lindsay et al., 2010; Robins & Trzesniewski, 2005). In respect of each variable, little previous evidence is available speaking to continuity or change in those with LI from adolescence to early adulthood.

The third purpose of the study was to test causal models of the relationships among language ability, shyness, and global self-esteem. Specifically, we expected that language ability, measured at ages 17 and 24, would predict self-esteem at age 24 and that this relationship would be at least partially mediated by shyness among participants with LI. We did not expect to find such a mediation effect among peers without LI. There was no evidence, for example, of such a relationship in typically developing individuals at age 17 (Wadman et al., 2008). There is no reason to assume that variation within the normal range of language ability should itself provoke the emergence of shyness. Thus, while shyness is a normally distributed trait among the general population and could well impact on self-esteem, this relationship should, among those without LI, be independent of language ability.

Method

Ethics

The study reported here received ethical approval from the University of Manchester. All participants provided informed written consent.

Participants

Participants with a history of language impairment (LI).

In the current investigation, there were 90 young adults with a history of LI at age 17 and 84 at age 24, who were originally part of a wider study, the Manchester Language Study. There were 62 participants who provided data at both time points. The sample at 17 years, 37% of the original cohort, consisted of 62 (69%) males and 28 (31%) females. The sample at 24, 35% of the original cohort, consisted of 56 (67%) males and 28 (33%) females. The initial cohort of 242 children were recruited from 118 language units across England and represented a random sample of 50% of all 7-year olds attending language units for at least half of the school week. Language units are specialized classes for children who have been identified with LI, i.e., primary language difficulties. Language unit placements are offered to children who would find it difficult to cope in mainstream education, even with support. These children are deemed to need a structured small group setting with intensive language input that usually involves both teachers and speech and language therapists.

Age-matched peers (AMPs).

The comparison group consisted of 91 age-matched peers (AMPs) at age 17 and 88 at age 24 who had no history of special educational needs or speech and language therapy provision. There were 57 AMPs who took part at both time points. At age 17, there were 54 (59%) males and 37 (41%) females. At age 24, there were 49 (56%) males and 39 (44%) females.

Sixty-six of these young adults were recruited at age 16 years and 22 young adults were recruited age 24. Participants at age 16 came from the same schools as the participants with a history of LI as well as additional targeted schools. These participants were sampled from selected demographic areas in order to ensure AMPs came from broad background and wide geographical areas, similar to participants with a history of LI. The 22 young adults were recruited to match the original sample in terms of age and socioeconomic status as measured by personal income. Thus, the LI and the AMP groups did not differ on personal income at age 24 years, $\chi^2(5, N=131)=7.38, p=.194$.

Materials

Language.

The Clinical Evaluation of Language Fundamentals (CELF-4^{uk}, Semel, Wiig, & Secord, 2006) was used to assess language ability. A core language index was calculated using both receptive and expressive language subscales following the procedure specified in the CELF manual. Given the dearth of standardized language tests in adulthood and for continuity, the CELF-4 was deemed the best fit assessment for our cohort at 24 years of age (neither group reached ceiling levels on this assessment, which is normed up to age 21;11 years). The CELF-4 has good reliability in young adulthood, i.e. reliability for the word classes subtest is reported to be .88 and for the formulated sentences subtest is .82. Clinical validation studies of the CELF-4 reported in the manual indicate that the test is sensitive to language impairment in children, adolescents and young adults.

Nonverbal IQ.

The Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999) Performance subscale was administered as a measure of nonverbal IQ and standard scores

were calculated.

Shyness.

The revised Cheek and Buss shyness scale (Cheek, 1983) was used to measure shyness. Versions of this scale are used in most social psychological and personality research into shyness. The adapted version of the scale, also previously used by Stritzke, Nguyen and Durkin (2004) and Wadman et al. (2008), consisted of 12 items to which participants responded using a 5-point scale (e.g., 1 = very uncharacteristic, 2 = characteristic, 3 = neither characteristic nor uncharacteristic, 4 = uncharacteristic, 5 = very characteristic). . Items included “I am often uncomfortable at parties and other social functions”; “I am socially awkward”, and also items that were reversed scored, such as “It does not take me long to overcome my shyness in new situations”. Scores were summed and a higher score indicated higher levels of shyness. Satisfactory convergent and discriminant validity have been established for the revised Cheek and Buss scale (Hopko, Stowell, Jones, Armento, & Cheek, 2005). The internal reliabilities in the present administration were very high (Cronbach’s alphas: LI= 0.87 and AMP = 0.89).

Global self-esteem.

The Rosenberg self-esteem scale (RSE; Rosenberg, 1965) was used to measure global self-esteem. This is the most widely used instrument in research assessing self-esteem in adolescents and adults. The scale consists of 10-items each requiring the participants to respond on a 4 points scale Strongly Agree, Agree, Disagree, or Strongly Disagree. Items included “I feel I have a number of good qualities”; “At times I think I am no good at all”; as well as reversed scored items such as “I take a positive attitude toward myself”. Higher summed scores indicated higher self-esteem. Satisfactory convergent, discriminant and predictive validity for the RSE have been well-documented (Blascovich & Tomaka, 1991;

Rosenberg, 1965). In the present administration, the internal reliabilities were very high for each group (Cronbach's alphas: LI= 0.88 and AMP = 0.89).

Social self-efficacy.

The Perceived Social Self-Efficacy scale (PSSE; Smith & Betz, 2000) was used to measure self-efficacy. The scale consists of 25 items scored on a 5-point Likert-type scale (where 1 represents 'no confidence at all' and 5 represents 'complete confidence'). Items include "Start a conversation with someone you don't know very well"; "Put yourself in a new and different social situation"; "Be involved in group activities." Given the nature of social self-efficacy and the confidence rating scoring system, the PSSE does not include any negatively worded items that would require reverse scoring. Higher summed scores indicated higher social self-efficacy. This measure was administered at age 24 years only. Good evidence of convergent validity and high reliabilities have been reported for this instrument (Smith & Betz, 2000). In the present administration, the internal reliabilities were very high for each group (Cronbach's alphas: LI= 0.96 and AMP = 0.96).

Procedure

The participants were interviewed face-to-face at their educational institution or home at age 17 and at their home at age 24 as part of a wider battery of tests. Interviews took place in a quiet room, wherever possible with only the participant and a trained researcher present. Basic demographic information was collected and then the standardized assessments were administered in the manner specified by the test manuals. For the interview, the items were read aloud to the participants and the participants were given additional clarification, where needed, although this occurred rarely. Particular care was taken to ensure the participants understood the interview items. The response options were carefully explained and both the items and response options were also presented visually. Participants could respond verbally or by pointing to the response options presented visually.

Statistical Analysis

All statistical analyses were conducted in Stata/SE 13.1 (StataCorp, 2013). A two-tailed significance level of $p = .05$ was used, unless otherwise specified. Independent *t*-tests were used to compare group differences between groups in language, nonverbal IQ, shyness, global self-esteem, and social self-efficacy. Following this, within-individual continuity and change between ages 17 and 24 was examined using pairwise correlations for all measures except social self-efficacy as this was only collected at age 24. Relationships across variables were also investigated. In particular, the relationship of language with shyness, self-esteem and social self-efficacy was examined in each of the groups as it is not known if the pattern of associations is similar in young people with and without LI.

A further aim of the study was to examine the relationships among language ability, shyness and self-esteem. To this purpose, a mediation analysis was undertaken. Mediation analysis affords better understanding (Baron & Kenny, 1986), of underlying mechanisms or processes by which one variable (e.g., language) influences another variable (e.g. self-esteem) through a mediator variable (e.g., shyness). Mediation conceptually means causation. However, mediation analysis must be carried out and interpreted with caution. This is because measurement of mediation, statistically, is in essence a set of correlations. Therefore, it is possible that some other variable, strongly correlated with the key variable of interest but not considered in the analysis, may in fact be the causal factor. For example, in the case of language abilities, variables collinear with language abilities, such as school success, socio-economic status, non-verbal or other skills, may be in fact the causal agents.

Nonetheless, there are stronger reasons to suppose that LI influences self esteem than that self esteem gives rise to LI. Theoretical arguments and empirical data support the examination of shyness as a potential mediating variable in the relationship between language and self-esteem in young people with LI (Wadman et al., 2008). Within this context, a

specific mediation analysis, following Hayes (2009), was conducted for the group with LI to investigate the mediating effect of shyness (age 24) on the relationship between language (age 17) and global self-esteem (age 24). Regression equations were estimated simultaneously using the SEM command in STATA. Missing data were treated as such and only available data were analysed.

Results

Group Comparisons: Psycholinguistic Profiles, Shyness, Self-Esteem and Self-Efficacy

The mean standard scores, standard deviations and LI vs. AMP comparisons on language and nonverbal measures are presented in Table 1. The AMP participants had mean receptive, expressive and core language scores within the expected range. At both time points, the participants with a history of LI had significantly lower receptive, expressive, and core language; mean scores fell below 1 SD below the mean (< 85). Both groups of young adults had mean nonverbal IQ within the expected range at both time points. It should be noted, nonetheless, that the young adults with a history of LI had significantly lower nonverbal IQ scores than their peers, as is often found in research with this population (Leonard, 2014).

[Table 1 about here]

Descriptive statistics for between-groups comparisons of scores on shyness, global self-esteem and social self-efficacy are presented in Table 1. As can be seen, there were strong differences in the predicted direction, with the group with LI scoring significantly lower on global self-esteem and social self-efficacy but higher on shyness.

Longitudinal Associations among Language, Shyness, Self-Esteem, and Social Self-Efficacy

A correlation matrix for the key measures in young adulthood is shown in Table 2.

There were a number of similarities across groups. For both groups, better language at age 17 was associated with better language at age 24. Higher levels of shyness at age 17 were associated with higher levels of shyness at age 24, with lower self-esteem (ages 17 and 24), and with lower social self-efficacy (measured only at age 24). Higher self-esteem at age 17 was associated with higher self-esteem at age 24. For the AMPs only, higher self-esteem at age 17 was also associated with higher social self-efficacy at age 24.

Relationships between language and the other variables revealed differences across the groups. For the young people with LI, better language at 17 and 24 was associated with lower levels of shyness (age 17 and 24) and with higher self-esteem (age 17 and 24). Better language at 24 was also associated with higher social self-efficacy at 24. In contrast, for the AMPs, there were no significant associations between language at 17, nor language at 24, and shyness, self-esteem and social self-efficacy at any of the time points examined.

[Table 2 here]

Shyness in Young Adulthood as a Mediator of the Relationship Between Language and Self-Esteem

We tested the prediction that shyness at age 24 would mediate the relationship between language ability at age 17 and self-esteem at age 24 using mediation analysis. For the participants with LI the prerequisite condition for mediation analysis was met, that is, language ability at 17 years was directly and significantly associated with self-esteem at 24 years. For the AMPs, there was no association between language and self-esteem, so issues of mediation did not arise in this group.

[Figure 1 here]

As shown in Figure 1, for the young people with LI, better language in adolescence was associated with being less shy in young adulthood, which was in turn associated with having

higher self-esteem in young adulthood. Better language was also still directly associated with higher self-esteem. The proportion of the total effect that was mediated was 0.24. That is, 24% of the association between language and self-esteem was explained by shyness. The ratio of the indirect to direct effect is 0.3 and the total effect was approximately 1.3 times the indirect effect.

The association between language at 24 and self-esteem at 24 was weaker overall and was not significant in either group examined separately. Hence, there was no basis for testing the contemporaneous mediation model.

Discussion

By the time they arrive at early adulthood, young people with LI are likely to have encountered many difficulties and unfavorable experiences in terms of their personal adjustment and relations to others. The present study tested aspects of the outcomes in respect of individuals' confidence that they were able to effectively meet the challenges of the social world. As anticipated, 24-year-olds with LI scored lower on self-esteem (with a moderate effect size) and higher on shyness (with large effect size) than did age matched peers without LI. This investigation reports for the first time significantly lower social self-efficacy in young adults with LI as compared to their peers. The size of the effect observed was large. Growing up with a history of LI is associated with disadvantage in these measures of social confidence, extending at least into early adulthood. This is important new evidence that the sequelae of language impairments are sustained and potentially handicapping well beyond childhood and, for a number of individuals with LI, well beyond the age range during which they are likely to receive any language therapy or support.

Furthermore, each of shyness, self-esteem and social self-efficacy are known to predict life outcomes in subsequent adulthood. Shyer individuals arrive at personal (e.g., finding a partner, becoming a parent) and career decisions (e.g., finding a profession, seeking

promotion) later than do non-shy people (Caspi, Elder, & Bem, 1988). Those with lower self-esteem are at risk of poorer mental health and poorer economic outcomes (Trzesniewski et al., 2006). Social self-efficacy, a social cognitive construction about one's competence to handle social tasks (Bandura, 1997; Caprara et al., 2003), predicts social competence, emotional wellbeing and career progress (Rice, Cunningham, & Young, 1997; Smith & Betz, 2000). Thus, by their early 20s, the age of the present participants, a number of individuals with LI have disadvantageous developmental histories and are at greater risk of pursuing less rewarding futures.

The findings with respect to self-esteem and shyness support findings in this same sample at age 17 (Wadman et al., 2008). Social self-efficacy was not measured at the earlier age, and the present findings make clear that there are substantial group differences in this respect, too, at age 24. We examined the relationships between shyness scores at the two age points, and between self-esteem scores at the two age points. Each relationship was positive and moderate.

The relative standing of those with LI compared to those without LI remains constant but there are individual differences in the extent to which scores vary over time. Some fluctuation in shyness and self-esteem over time is consistent with theoretical arguments that these characteristics reflect adaptive processes (Asendorpf, 2000; Ash et al., 2014; Redmond & Rice, 1998; Wadman et al., 2008); changes in circumstances, skills, and/or a range of other experiences may have contributed to within-participant changes in shyness. Further research would be valuable towards identifying which factors in the lives of young people with LI during the years of the early adult transition lead to variability and change in shyness scores. Nevertheless, the overriding finding is that, at age 24, the group with LI remained significantly shyer and less self-assured than their peers.

The findings also provide novel information on the potential causal relations among language ability, shyness, and global self-esteem. We expected that, among participants with LI, language ability in adolescence would predict self-esteem and that this relationship would be at least partially mediated by shyness (as found in adolescence; Wadman et al., 2008). In line with expectations, we did find that, in the group with LI, language ability in adolescence predicted shyness in young adulthood, which in turn was negatively associated with self-esteem. There was also a direct association between language ability in adolescence and self-esteem in young adulthood. This pattern was not observed in age-matched peers. This result suggests that having average (or above) language skills in mid-adolescence may be a variable that mitigates the risk of developing lower social confidence in the transition to young adulthood.

It should be stressed that the effects indicated in the correlations and regression analysis were modest, reflecting the heterogeneity of individuals with LI (Conti-Ramsden & Durkin, 2016) and that likelihood that multiple variables bear on the social confidence of young people with LI (see below). Sample size restrictions meant that we could not enter every possible covariate. However, we did examine the consequences of including nonverbal IQ at 17 as a mediator of the relationship between core language at 17 and self-esteem at 24; the mediation effect for shyness was still obtained, albeit slightly attenuated. Future research with larger samples available could examine a wider range of possible covariates.

Interestingly, the corresponding contemporaneous (age 24) pattern of relationships among language ability, shyness and self-esteem was not as evident as that found between language at age 17 and shyness and self-esteem at age 24. The dynamics of these relationships appear to change in the transition to young adulthood. This is interpretable from a developmental perspective. It suggests that having LI around mid-adolescence puts the young person at risk of disadvantage in terms of self and social confidence over the next few

years. This is analogous to other well-established developmental effects. For example, children who suffer parental neglect as toddlers or individuals who enter puberty markedly early or late are likely to continue to experience negative sequelae well into adulthood (Cicchetti & Toth, 2005; Cicchetti, Toth, Nilsen, & Manly, 2016; Mendle & Ferrero, 2012). The parental abuse or differences in sexual maturation itself are no longer in place by adulthood (e.g., there is no longer a contemporaneous correlation between secondary sexual characteristics and adjustment) but the psychological consequences of the earlier circumstances continue to have ramifications. Differences in language ability are still in place in early adulthood (Table 1) but the evidence obtained here indicates that the causal links are distal (can be traced to the adolescent period) rather than proximate (cf. Belsky, Steinberg, & Draper, 1991).

It is important to acknowledge that many other factors that interweave with language abilities are likely to bear on the development of social confidence in childhood, adolescence and young adulthood in people with LI. For example, we know that having LI is associated with a range of social, cognitive, emotional and behavioral difficulties from early in childhood (Andrés-Roqueta, Adrian, Clemente, & Villanueva, 2016; Durkin & Conti-Ramsden, 2010; Nilsson & López, 2016; Redmond & Rice, 1998; Schoon et al., 2010; Timler, Olswang, Coggins, 2005). These characteristics themselves are likely in turn to be associated with risks and disadvantages, and relationships can be reciprocal: A child who is behaviorally challenging and emotionally volatile may find it difficult to make friends, and thus have less opportunities to develop social skills. Similarly, children with LI are at greater risk of having co-occurring conditions, such as ADHD, above average ASD symptomatology, or motor disorders (Conti-Ramsden, Simkin, & Botting, 2006; Hill, 2001; Redmond, 2016) and, when present, these characteristics, too, have implications for many other aspects of the individuals' lives (Durkin, Conti-Ramsden, & Simkin, 2012; Redmond, 2016). Children

with LI are at greater risk of victimization (Brownlie, Jabbar, Beitchman, Vida, & Atkinson, 2007; . Conti-Ramsden & Botting, 2004; Knox & Conti-Ramsden, 2007; Lindsay, Dockrell, & Mackie, 2008; Redmond, 2011). Experiencing peer victimization is associated with depressive symptoms, lower self esteem, social phobia and social exclusion (Blood & Blood, 2004; Hawker & Boulton, 2000; Hunter, Durkin, Heim, Howe, & Bergin, 2010; Liu et al., 2016). As observed by Johnson, Beitchman and Brownlie. . (2010, p. 60) ‘a history of language disorder does not, in and of itself, predetermine outcomes for individuals.’ However, having LI places the child at risk of negative sequelae, and/ or LI often co-occurs with other symptoms, disorder(s) or experiences that are associated with additional problems (Law, Reilly, & Snow, 2013).

Clinical Implications

We have identified the patterns reported here in young adulthood. This does not necessarily mean that they are irrevocable, ‘set in stone’ for the rest of the individuals’ lives. A fundamental issue for practice is whether professional interventions can be designed and effected in ways that make sustained differences to these young people’s daily experiences and future prospects.

We have stressed that even the characteristic of shyness, traditionally assumed by many to be an enduring trait, may vary over time and situations; it is, at least in part, an adaptive response to circumstances and experiences (Asendorpf, 2000; Ash et al., 2014; Redmond & Rice, 1998; Wadman et al., 2008). Similarly, self-esteem can be bolstered by professional and family support (Mann, Hosman, Schaalma, & de Vries, 2004); and, indeed, while self-esteem was lower in those with LI in the present sample, it was not in the clinical range.

Social self-efficacy, as a social cognitive construct, is of particular interest for intervention and practice. Social self-efficacy is likely to be amenable to enhancement in

people who have positive experiences to draw upon (Bandura, 1997). There are compelling reasons for paying greater attention to social self-efficacy in clinical work with adolescents and young adults with LI. Not only does this measure have much to contribute to client assessment, the strong theoretical background to the concept of social self-efficacy provides firm guidelines for intervention strategies (Bandura, 1997; Smith & Betz, 2000).

Interventions which theory and evidence (Smith & Betz, 2000) suggest are likely to be of substantial benefit include guiding the young person to set viable self-management goals, modelling successful social strategies, modifying negative expectations of social efficacy and increasing positive expectations, and supporting confidence in the ability to implement new skills.

Our findings also suggest that adolescence may be a sensitive period for the impact of LI on other aspects of personal and social adjustment. Although we do not preclude effects in other age ranges, the finding that language at age 17 bears more directly on concurrent and subsequent shyness and self-esteem highlights this age range as one to which professionals should be particularly alert to the potential for long-term disadvantage but also for pre-emptive intervention. In most educational systems, important evaluations and decisions are being made at around this age, and social confidence and educational outcomes are likely to have reciprocal influences.

Conclusions

This study provides clear evidence that young people with a history of LI are likely to be entering adulthood less socially confident. They are likely to experience lower levels of self-esteem, higher levels of shyness, and importantly lower levels of social self-efficacy than their peers. This adds to the emerging picture of the developmental continuities and consequences of LI. Future research could investigate the relations among the variables tested here further into adulthood. Some individuals with LI may make progress in their personal

and/or occupational lives that will bolster their self-confidence and mitigate their shyness.

Others may encounter contexts which are less propitious. Importantly, the prospect emerges that interventions may be desirable for young adults with LI and the present findings indicate social self-efficacy as a key area of social confidence that calls for practitioners' attention.

The findings also have implications for extending the provision of services. In many parts of the world, these tend to be targeted primarily at childhood, sometimes including adolescence, but rarely beyond, and they often prioritize specific problems (e.g., severity of language difficulties), with less attention paid to broader impact across the lifespan; cf. Law et al., 2013). Language impairment can extend into adulthood, and is associated with many other aspects of development; services are required that meet both the duration and the breadth of the needs of people with LI.

Acknowledgements:

We acknowledge the support of the Economic and Social Research Council (grant RES-062-23-2745; ES/I00064X/1), the Nuffield Foundation (EDU 8366, EDU 32083), the Wellcome Trust (060774) and for A. Pickles the Medical Research Council (G0802307) and the National Institute for Health Research (NIHR) Biomedical Research Centre at South London and Maudsley NHS Foundation Trust and King's College London.

References

- Arnett, J. J. (2004). *Emerging adulthood: The winding road from the late teens through the twenties*. New York: Oxford University Press.
- Andrés-Roqueta, C., Adrian, J. E., Clemente, R. A., & Villanueva, L. (2016). Social cognition makes an independent contribution to peer relations in children with Specific Language Impairment. *Research in Developmental Disabilities, 49*, 277-290.
- Asendorpf, J. B. (2000). Shyness and adaptation to the social world of university. In W. R. Crozier (Ed.), *Shyness: Development, consolidation and change* (pp. 103–120). New York: Routledge.
- Ash, A. C., Rice, M. L., & Redmond, S. M. (2014). Effect of language context on ratings of shy and unsociable behaviors in English language learner children. *Language, Speech, and Hearing Services in Schools, 45*, 52-66. doi:[10.1044/2013_LSHSS-13-0020](https://doi.org/10.1044/2013_LSHSS-13-0020).
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182. <http://dx.doi.org/10.1037/0022-3514.51.6.1173>.
- Beitchman, J. H., Brownlie, E., Inglis, A., Wild, J., Ferguson, B., Schachter, D., ... & Mathews, R. (1996). Seven-year follow-up of speech/language impaired and control children: Psychiatric outcome. *Journal of Child Psychology and Psychiatry, 37*, 961–970. doi:[10.1111/j.1469-7610.1996.tb01493.x](https://doi.org/10.1111/j.1469-7610.1996.tb01493.x)
- Beitchman, J. H., Hood, J., Rochon, J., & Peterson, M. (1989). Empirical classification of speech/language impairment in children II. Behavioral characteristics. *Journal of the American Academy of Child & Adolescent Psychiatry, 28*, 118-123. doi:<http://dx.doi.org/10.1097/00004583-198901000-00021>

- Beitchman, J. H., Wilson, B., Johnson, C. J., Atkinson, L., Young, A., Adlaf, E., ... & Douglas, L. (2001). Fourteen-year follow-up of speech/language-impaired and control children: Psychiatric outcome. *Journal of the American Academy of Child & Adolescent Psychiatry*, 40(1), 75-82. doi:10.1097/00004583-200101000-00019
- Belsky, J., Steinberg, L., & Draper, P. (1991). Childhood experience, interpersonal development, and reproductive strategy: An evolutionary theory of socialization. *Child Development*, 62, 647-670. doi:10.1111/j.1467-8624.1991.tb01558.x
- Blascovich, J., & Tomaka, J. (1991). Measures of self-esteem. *Measures of Personality and Social Psychological Attitudes*, 1, 115-160.
- Blood, G. W., & Blood, I. M. (2004). Bullying in adolescents who stutter: Communicative competence and self-esteem. *Contemporary Issues in Communication Science and Disorders*, 31, 69-79.
- Botting, N., & Conti-Ramsden, G. (2000). Social and behavioural difficulties in children with language impairment. *Child Language Teaching and Therapy*, 16(2), 105-120. doi:10.1177/026565900001600201
- Brownlie, E. B., Jabbar, A., Beitchman, J., Vida, R., & Atkinson, L. (2007). Language impairment and sexual assault of girls and women: Findings from a community sample. *Journal of Abnormal Child Psychology*, 35(4), 618-626.
- Caprara, G. V., & Steca, P. (2005). Self-efficacy beliefs as determinants of prosocial behavior conducive to life satisfaction across ages. *Journal of Social and Clinical Psychology*, 24, 191-217. doi:10.1521/jscp.24.2.191.62271
- Caprara, G. V., Steca, P., Cervone, D., & Artistico, D. (2003). The contribution of self-efficacy beliefs to dispositional shyness: On social-cognitive systems and the development of personality dispositions. *Journal of Personality*, 71(6), 943-970. doi:10.1111/1467-6494.7106003

- Caspi, A., Elder, G. H., & Bem, D. J. (1988). Moving away from the world: Life-course patterns of shy children. *Developmental Psychology*, 24(6), 824-831. doi:10.1037/0012-1649.24.6.824
- Cheek, J. M. (1983) The Revised Cheek and Buss Shyness Scale (RCBS). Unpublished manuscript, Wellesley College, Wellesley, MA.
- Cheek, J.M., & Buss, A.H. (1981). Shyness and sociability. *Journal of Personality and Social Psychology*, 41, 330-339. doi:http://dx.doi.org/10.1037/0022-3514.41.2.330
- Cicchetti, D., & Toth, S. L. (2005). Child maltreatment. *Annual Review of Clinical Psychology*, 1, 409-438. doi:10.1146/annurev.clinpsy.1.102803.144029.
- Cicchetti, D., Toth, S.L., Nilsen, W.J., & Manly, J.T. (2016). What do we know and why does it matter? The dissemination of evidence-based interventions for child maltreatment. In K. Durkin & H. R. Schaffer (Eds.), *The Wiley handbook of developmental psychology in practice: Implementation and impact* (pp. 369-406). Oxford: Wiley Blackwell.
- Clegg, J., Hollis, C., Mawhood, L., & Rutter, M. (2005). Developmental language disorders—a follow-up in later adult life. Cognitive, language and psychosocial outcomes. *Journal of Child Psychology and Psychiatry*, 46(2), 128-149. doi:10.1111/j.1469-7610.2004.00342.x
- Cohen, N. J., Menna, R., Vallance, D. D., Barwick, M. A., Im, N., & Horodezky, N. B. (1998). Language, social cognitive processing, and behavioral characteristics of psychiatrically disturbed children with previously identified and unsuspected language impairments. *Journal of Child Psychology and Psychiatry*, 39, 853-864. doi:10.1111/1469-7610.00286
- Conti-Ramsden, G., & Botting, N. (2004). Social difficulties and victimization in children with SLI at 11 years of age. *Journal of Speech, Language, and Hearing Research*, 47(1), 145-161. doi:10.1044/1092-4388(2004/013)

- Conti-Ramsden, G., & Botting, N. (2008). Emotional health in adolescents with and without a history of specific language impairment (SLI). *Journal of Child Psychology and Psychiatry*, 49, 516–525. doi:10.1111/j.1469-7610.2007.01858.x
- Conti-Ramsden, G., & Durkin, K. (2016). Language impairment and adolescent outcomes. In K. Durkin & R. Schaffer (Eds.), *The Wiley handbook of developmental psychology in practice: Implementation and impact* (pp. 407 - 439). Oxford: Wiley Blackwell.
- Conti-Ramsden, G., Simkin, Z., & Botting, N. (2006). The prevalence of autistic spectrum disorders in adolescents with a history of specific language impairment (SLI). *Journal of Child Psychology and Psychiatry*, 47, 621-628. doi: 10.1111/j.1469-7610.2005.01584.x
- Cooley, C. H. (1902). *Human nature and the social order*. New York: Charles Scribner's Sons.
- Coopersmith, S. (1967). *The antecedents of self-esteem*. San Francisco: W.H. Freeman.
- Coplan, R.J., Closson, L., & Arbeau, K. (2007). Gender differences in the behavioral associates of loneliness and social dissatisfaction in kindergarten. *Journal of Child Psychology and Psychiatry*, 48, 988-995. doi:10.1111/j.1469-7610.2007.01804.x
- Coplan, R. J., & Evans, M. A. (2009). At a loss for words? Introduction to the special issue on shyness and language in childhood. *Infant and Child Development*, 18, 211-215. doi: 10.1002/icd.620
- Coplan, R. J., & Rubin, K. H. (2010). Social withdrawal and shyness in childhood: History, theories, definitions and assessment. In K.H. Rubin & R.J. Coplan (Eds), *The development of shyness and social withdrawal in childhood and adolescence* (pp. 3 – 20). New York: Guilford.
- Crozier, W. R. (1995). Shyness and self-esteem in middle childhood. *British Journal of Educational Psychology* 65, 85-95. doi:10.1111/j.2044-8279.1995.tb01133.x

- Dennissen, J. J., Asendorpf, J. B., & Van Aken, M. A. (2008). Childhood personality predicts long-term trajectories of shyness and aggressiveness in the context of demographic transitions in emerging adulthood. *Journal of Personality*, 76, 67-100. doi:10.1111/j.1467-6494.2007.00480.x
- Durkin, K., & Conti-Ramsden, G. (2007). Language, social behavior, and the quality of friendships in adolescents with and without a history of specific language impairment. *Child Development*, 78, 1441–1457. doi:10.1111/j.1467-8624.2007.01076.x
- Durkin, K., & Conti-Ramsden, G. (2010). Young people with specific language impairment: A review of social and emotional functioning in adolescence. *Child Language Teaching and Therapy*, 26, 105-121. doi: 10.1177/0265659010368750.
- Durkin, K., Conti-Ramsden, G., & Simkin, Z. (2012). Functional outcomes of adolescents with a history of specific language impairment (SLI) with and without autistic symptomatology. *Journal of Autism and Developmental Disorders*, 42, 123-138. doi: 10.1007/s10803-011-1224-y.
- Eccles, J. S., Wigfield, A., Flanagan, C. A., Miller, C., Reuman, D. A., & Yee, D. (1989). Self-concepts, domain values, and self-esteem: Relations and changes at early adolescence. *Journal of Personality*, 57, 283-310. doi:10.1111/j.1467-6494.1989.tb00484.x
- Fujiki, M. & Brinton, B. (2015). Social communication assessment and intervention for children with language impairment. In Hwa-Froelich, D. A. (Ed.). *Social Communication Development and Disorders*. New York: Psychology Press.
- Fujiki, M., Brinton, B., & Clarke, D. (2002). Emotion regulation in children with specific language impairment. *Language Speech and Hearing Services in Schools*, 33, 102–111. doi:10.1044/0161-1461(2002/008)

- Fujiki, M., Brinton, B., Morgan, M., & Hart, C. H. (1999). Withdrawn and sociable behavior of children with language impairment. *Language, Speech, and Hearing Services in Schools, 30*(2), 183-195. doi:10.1044/0161-1461.3002.183
- Fujiki, M., Spackman, M. P., Brinton, B., & Hall, A. (2004). The relationship of language and emotion regulation skills to reticence in children with specific language impairment. *Journal of Speech, Language, and Hearing Research, 47*(3), 637-646. doi:10.1044/1092-4388(2004/049)
- Grühn, D., Kotter-Grühn, D., & Röcke, C. (2010). Discrete affects across the adult lifespan: Evidence for multidimensionality and multidirectionality of affective experiences in young, middle-aged and older adults. *Journal of Research in Personality, 44*, 492-500. doi:10.1016/j.jrp.2010.06.003.
- Hart, K. I., Fujiki, M., Brinton, B. & Hart, C. H. (2004). The relationship between social behavior and severity of language impairment. *Journal of Speech, Language, and Hearing Research, 47*, 647–662. doi:10.1044/1092-4388(2004/050)
- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical analysis in the new millennium. *Communication Monographs, 76* (4), 408-420. doi:10.1080/03637750903310360
- Hawker, D. S., & Boulton, M. J. (2000). Twenty years' research on peer victimization and psychosocial maladjustment: A meta-analytic review of cross-sectional studies. *Journal of Child Psychology and Psychiatry, 41*, 441-455. doi: 10.1111/jcpp.2000.41.issue-4
- Hill, E. L. (2001). Non-specific nature of specific language impairment: A review of the literature with regard to concomitant motor impairments. *International Journal of Language & Communication Disorders, 36*, 149-171.

- Hopko, D. R., Stowell, J., Jones, W. H., Armento, M. E., & Cheek, J. M. (2005). Psychometric properties of the revised Cheek and Buss shyness scale. *Journal of Personality Assessment, 84*, 185-192. doi: [10.1207/s15327752jpa8402_08](https://doi.org/10.1207/s15327752jpa8402_08).
- Hunter, S. C., Durkin, K., Heim, D., Howe, C., & Bergin, D. (2010). Psychosocial mediators and moderators of the effect of peer-victimization upon depressive symptomatology. *Journal of Child Psychology and Psychiatry, 51*, 1141-1149. doi: [10.1111/j.1469-7610.2010.02253.x](https://doi.org/10.1111/j.1469-7610.2010.02253.x).
- Jerome, A. C., Fujiki, M., Brinton, B., & James, S. L. (2002). Self-esteem in children with specific language impairment. *Journal of Speech, Language, and Hearing Research, 45*, 700-714.
- Johnson, C. J., Beitchman, J. H., & Brownlie, E. B. (2010). Twenty-year follow-up of children with and without speech-language impairments: Family, educational, occupational, and quality of life outcomes. *American Journal of Speech-Language Pathology, 19*, 51-65. doi: [10.1044/1058-0360\(2009/08-0083](https://doi.org/10.1044/1058-0360(2009/08-0083).
- Knox, E., & Conti-Ramsden, G. (2007). Bullying in young people with a history of specific language impairment (SLI). *Educational and Child Psychology, 24*, 130-141
- Law, J., Reilly, S., & Snow, P. C. (2013). Child speech, language and communication need re-examined in a public health context: A new direction for the speech and language therapy profession. *International Journal of Language & Communication Disorders, 48*, 486-496. doi: [10.1111/1460-6984.12027](https://doi.org/10.1111/1460-6984.12027).
- Law, J., Rush, R., Schoon, I., & Parsons, S. (2009). Modeling developmental language difficulties from school entry into adulthood: Literacy, mental health, and employment

- outcomes. *Journal of Speech, Language, and Hearing Research*, 52(6), 1401-1416.
doi:10.1044/1092-4388(2009/08-0142)
- Lawrence, B., & Bennett, S. (1992). Shyness and education: The relationship between shyness, social class and personality variables in adolescents. *British Journal of Educational Psychology*, 62, 257-263. doi: 10.1111/j.2044-8279.1992.tb01019.x
- Leonard, L.B. (2014). *Children with Specific Language Impairment*. Cambridge, MIT Press.
- Lindsay, G., & Dockrell, J. (2000). The behaviour and self-esteem of children with specific speech and language difficulties. *British Journal of Educational Psychology*, 70(4), 583-601. doi:10.1348/000709900158317.
- Lindsay, G., Dockrell, J. Letchford, B., & Mackie, C. (2002). Self esteem of children with specific speech and language difficulties. *Child Language Teaching and Therapy*, 18(2), 125-143. doi:10.1191/0265659002ct231oa.
- Lindsay, G., Dockrell, J. E., & Mackie, C. (2008). Vulnerability to bullying in children with a history of specific speech and language difficulties. *European Journal of Special Needs Education*, 23, 1-16. doi: <http://dx.doi.org/10.1080/08856250701791203>.
- Lindsay, G., Dockrell, J., & Palikara, O. (2010). Self-esteem of adolescents with specific language impairment as they move from compulsory education. *International Journal of Language & Communication Disorders*, 45, 561-571.
- Liu, J., Chen, X., Zhou, Y., Li, D., Fu, R., & Coplan, R. J. (2016). Relations of shyness—sensitivity and unsociability with adjustment in middle childhood and early adolescence in suburban Chinese children. *International Journal of Behavioral Development*, in press, doi: 0165025416664195.

- Maggio, V., Grañana, N. E., Richaudeau, A., Torres, S., Giannotti, A., & Suburo, A. M. (2013). Behavior problems in children with specific language impairment. *Journal of Child Neurology*, 29(2), 194–202. doi:10.1177/0883073813509886
- Mann, M. M., Hosman, C. M., Schaalma, H. P., & de Vries, N. K. (2004). Self-esteem in a broad-spectrum approach for mental health promotion. *Health Education Research*, 19, 357-372. doi:http://dx.doi.org/10.1093/her/cyg041
- Mendle, J., & Ferrero, J. (2012). Detrimental psychological outcomes associated with pubertal timing in adolescent boys. *Developmental Review*, 32(1), 49-66. doi:10.1016/j.dr.2011.11.001
- Mok, P. L., Pickles, A., Durkin, K., & Conti-Ramsden, G. (2014). Longitudinal trajectories of peer relations in children with specific language impairment. *Journal of Child Psychology and Psychiatry*, 55, 516-527. doi:10.1111/jcpp.12190
- Nilsson, K. K., & López, K. J. (2016). Theory of Mind in children with Specific Language Impairment: A systematic review and meta-analysis. *Child Development*, 87, 143-153. doi: 10.1111/cdev.12462
- Orth, U., Robins, R. W., & Widaman, K. F. (2012). Life-span development of self-esteem and its effects on important life outcomes. *Journal of Personality and Social Psychology*, 102(6), 1271. doi:10.1037/a0025558
- Petersen, I. T., Bates, J. E., D’Onofrio, B. M., Coyne, C. A., Lansford, J. E., Dodge, K. A., ... & Van Hulle, C. A. (2013). Language ability predicts the development of behavior problems in children. *Journal of Abnormal Psychology*, 122, 542-557. doi:10.1037/a0031963
- Phillips, S. D., & Bruch, M. A. (1988). Shyness and dysfunction in career development. *Journal of Counseling Psychology*, 35, 159–165. doi:10.1037/h0090462

- Redmond, S. M. (2011). Victimization among students with specific language impairment, attention-deficit/hyperactivity disorder, and typical development. *Language, Speech, and Hearing Services in Schools, 42*, 520–535. doi:[10.1044/0161-1461\(2011/10-0078\)](https://doi.org/10.1044/0161-1461(2011/10-0078))
- Redmond, S. M. (2016). Language impairment in the attention-deficit/hyperactivity disorder context. *Journal of Speech, Language, and Hearing Research, 59*, 133-142. doi:[10.1044/2015_JSLHR-L-15-0038](https://doi.org/10.1044/2015_JSLHR-L-15-0038).
- Redmond, S.M. & Rice M.L. (1998). The socio-emotional behaviors of children with Speech and Language Impairment: Social adaption or social deviance? *Journal of Speech, Language and Hearing Research, 41*, 688-700. doi:[10.1044/jslhr.4103.688](https://doi.org/10.1044/jslhr.4103.688)
- Rice, K. G., Cunningham, T. J., & Young, M. B. (1997). Attachment to parents, social competence, and emotional well-being: A comparison of Black and White late adolescents. *Journal of Counseling Psychology, 44*(1), 89-101. doi:<http://dx.doi.org/10.1037/0022-0167.44.1.89>
- Robins, R. W., & Trzesniewski, K. H. (2005). Self-esteem development across the lifespan. *Current Directions in Psychological Science, 14*, 158 –162. doi:[10.1111/j.0963-7214.2005.00353.x](https://doi.org/10.1111/j.0963-7214.2005.00353.x)
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Rowell, H. C., & Coplan, R. J. (2013). Exploring links between shyness, romantic relationship quality, and well-being. *Canadian Journal of Behavioural Science, 45* (4), 287-295. doi:<http://dx.doi.org/10.1037/a0029853>
- Schmitt, D.P., & Allik, J. (2005). Simultaneous administration of the Rosenberg Self-Esteem Scale across 53 nations: Exploring the universal and culture-specific features of global self-esteem. *Journal of Personality and Social Psychology, 89*, 623-642. doi:[10.1037/0022-3514.89.4.623](https://doi.org/10.1037/0022-3514.89.4.623)

- Schoon, I., Parsons, S., Rush, R., & Law, J. (2010). Children's language ability and psychosocial development: A 29-year follow-up study. *Pediatrics*, 126(1), e73-e80. doi:10.1542/peds.2009-3282.
- Schwartz, C. E., Snidman, N., & Kagan, J. (1999). Adolescent social anxiety as an outcome of inhibited temperament in childhood. *Journal of the American Academy of Child & Adolescent Psychiatry*, 38, 1008-1015. doi:http://dx.doi.org/10.1097/00004583-199908000-00017
- Semel, E., Wiig, E.H, & Secord, W.A. (2006). *Clinical Evaluation of Language Fundamentals-4^{uk}* (CELF-IV UK). London: Pearson Assessment.
- Smith, H. M., & Betz, N. E. (2000). Development and validation of a scale of perceived social self-efficacy, *Journal of Career Assessment*, 8, 283-301. doi:10.1177/106907270000800306
- Smith Watts, A. K., Patel, D., Corley, R. P., Friedman, N. P., Hewitt, J. K., Robinson, J. L., & Rhee, S. H. (2014). Testing alternative hypotheses regarding the association between behavioral inhibition and language development in toddlerhood. *Child Development*, 85, 1569-1585. doi: 10.1111/cdev.12219
- StataCorp (2013). Stata statistical software: Release 13.1 [Computer Software] College Station, TX: Stata Corp LP.
- Stritzke, W. G. K., Nguyen, A., & Durkin, K. (2004). Shyness and computer-mediated communication:A self-presentational theory perspective. *Media Psychology*, 6, 1–22. doi:10.1207/s1532785xmep0601_1
- Timler, G., Olswang, L., Coggins, T. (2005). Social communication interventions for preschoolers: Targeting peer interactions during peer group entry and cooperative play. *Seminars in Speech and Language*, 26, 170–180. doi: 10.1055/s-2005-917122

- Törnqvist, M. C., Thulin, S., Segnestam, Y., & Horowitz, L. (2009). Adult people with language impairment and their life situation. *Communication Disorders Quarterly*, 30, 237-254. doi:10.1177/1525740108326034
- Trzesniewski, K. H., Donnellan, M. B., Moffitt, T. E., Robins, R. W., Poulton, R., & Caspi, A. (2006). Low self-esteem during adolescence predicts poor health, criminal behavior, and limited economic prospects during adulthood. *Developmental Psychology*, 42, 381. doi:10.1037/0012-1649.42.2.381
- Van Daal, J., Verhoeven, L., & Van Balkom, H. (2007). Behaviour problems in children with language impairment. *Journal of Child Psychology and Psychiatry*, 48, 1139-1147. doi:10.1111/j.1469-7610.2007.01790.x
- Voci, S. C., Beitchman, J. H., Brownlie, E. B., & Wilson, B. (2006). Social anxiety in late adolescence: The importance of early childhood language impairment. *Journal of Anxiety Disorders*, 20, 915-930. doi: <http://dx.doi.org/10.1016/j.janxdis.2006.01.007>.
- Wadman, R., Durkin, K., & Conti-Ramsden, G. (2008). Self-Esteem, shyness, and sociability in adolescents with specific language impairment (SLI). *Journal of Speech, Language, and Hearing Research*, 51, 938-952. 10. doi:10.1044/1092-4388(2008/069)
- Watson, J., & Nesdale, D. (2012). Rejection sensitivity, social withdrawal, and loneliness in young adults. *Journal of Applied Social Psychology*, 42, 1984-2005. doi:10.1111/j.1559-1816.2012.00927.x
- Wechsler, D. (1999). *Wechsler abbreviated scale of intelligence (WASI)*. London: Psychological Corporation.
- Whitehouse, A. J., Watt, H. J., Line, E. A., & Bishop, D. V. (2009). Adult psychosocial outcomes of children with specific language impairment, pragmatic language impairment and autism. *International Journal of Language & Communication Disorders*, 44(4), 511-528. doi:10.1080/13682820802708098

Yew S.G, & O'Kearney, R. (2013). Emotional and behavioural outcomes later in childhood and adolescence for children with specific language impairments: Meta-analyses of controlled prospective studies. *Journal of Child Psychology and Psychiatry*, 54, 516-24. doi:10.1111/jcpp.120

Table 1. Group differences for variables of interest at ages 17 and 24

	Age 17				Age 24			
	LI Mean	AMP Mean	<i>t</i> statistic	Effect	LI Mean	AMP Mean	<i>t</i> statistic	Effect
	(SD)	(SD)		Size <i>d</i>	(SD)	(SD)		Size <i>d</i>
Receptive Language	75.8 (17.9)	99.9(12.1)	t(179)=-10.6***	-1.6	83.5(18.6)	106.2(8.9)	t(168)=-10.2***	-1.6
Expressive Language	73.3 (16.8)	100.2 (13.4)	t(176)=-11.9***	-1.8	81.6(18.9)	105.6(12.1)	t(167)=-9.9***	-1.5
Core Language	68.9 (18.4)	102.6(13.7)	t(178)=-13.9***	-2.1	69.3(20.7)	100.0(13.9)	t(167)=-11.3***	-1.7
Nonverbal IQ	93.4 (16.5)	106.4 (10.9)	t(179)=-6.2***	-0.9	98.8(15.8)	111.9 (10.3)	t(167)=-6.4***	-1.0
Shyness	34.8(8.1)	27.5(8.1)	t(179)= 6.0***	0.9	35.3(9.4)	25.9(8.3)	t(165)= 6.8***	-1.1
Global Self-Esteem	30.1(4.0)	32.1(3.6)	t(179)=-3.5***	-0.5	30.0 (4.8)	32.8 (4.4)	t(165)=-3.9***	-0.6
Social Self Efficacy	n/a	n/a	n/a	n/a	77.8 (19.9)	92.7(17.8)	t(164)=-5.1***	-0.8

*** $p < .001$. Correlations between 17 and 24 year measures of core language = 0.9; nonverbal IQ = 0.9; shyness = 0.6; and self-esteem = 0.6

