

Social Development and Language Development:

What is the Relationship?

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Abstract

Research has demonstrated that delays in social development and academic development tend to correlate in the teenage years. In light of this, the present study aimed to explore the nature of the relationship between social development and language development in a sample of children in their second and third years at school. It also aimed to determine whether this correlation was large enough to suggest that children who present with delayed language development should also be screened for delays in social development and vice versa. The vocabulary development of 71 children was assessed using the *Peabody Picture Vocabulary Test*, while their teachers also completed the *Canterbury Social Development Scale* as a measure of social development. Only small correlations were found. It was concluded that social development and language development are largely independent aspects of child development during the early school years. The implications of this result, including the need for a combination of early identification and early intervention for children presenting with language and/or behavioural difficulties, are discussed.

Chapter 1

Introduction and Literature Review

Two of the most common developmental difficulties in childhood are behavioural problems and language impairments. Prevalence varies, but up to about 5% of school children develop persistent antisocial behaviours (Church, 2003) and approximately 6% - 7% experience problems in speech and language development (Tomblin, Smith & Zhang, 1997).

Developmental research suggests that children who develop persistent behavioural problems during the early years are at increased risk for continuing to engage in antisocial behaviour throughout the lifespan (Webster-Stratton, Reid & Hammond, 2004). These children also tend to experience greater peer and teacher rejection and this limits their opportunity to learn appropriate social skills and behaviours (Stormont, Lewis & Beckner, 2005).

Research also suggests that children who present with delays in the development of language at an early age tend to fall further and further behind as the years pass (Duff, Tomblin & Catts, 2015). Vocabulary, for instance, determines the rate of progress in learning to read (Biemiller, 2010), and sufficient vocabulary knowledge is a likewise well-known prerequisite for continued improvements in reading comprehension beyond the age of 8 (Silva, Williams & McGee, 1987).

Many people believe that social skills and language skills can develop independently of each other, so that a child with delayed language development may, or may not, be socially delayed as well. Others believe that a child with delayed social development is likely to be academically delayed as well, see, for example, Metcalfe, Harvey and Laws (2015). There certainly seems to be a relationship between antisocial development and school

failure (Fergusson & Lynskey, 1998; Fergusson & Woodward, 2000; Moffit, Caspi, Harrington & Milne, 2002).

Social Development

The term “social development” refers to how people get along with each other. It refers to the behaviour patterns, feelings, attitudes and concepts one manifests in relation to others (Schaffer, 1996). In 6- and 7-year olds, competent social development includes the ability to form positive relationships with family, friends and teachers; as well as the ability to manage one’s own thoughts, feelings and needs effectively. At this age socially competent children also have the capacity to understand and respond appropriately to the requests, feelings and needs of others as well (KidsMatter, 2013).

Components of Social Development

Some of the most important aspects of social development during middle childhood include self-regulation, empathy, social skills, and ideas about friendship.

Self-regulation refers to the ability to control one’s positive and negative emotional reactions. A socially developed 6- and 7-year old child competently regulates his or her emotions to a comfortable level at which they can accomplish their goals. They are, therefore, more motivated to engage in activities that bring high levels of negative arousal down to tolerable levels, and to initiate or continue behaviours that promote positive emotions (Eisenberg, 1995).

Empathy is the capacity to sense another’s emotions coupled with the ability to imagine what someone else might be thinking or feeling. Socially-adept 6- and 7-year old children understand that other people have different perspectives, and, as a consequence, are more likely to display empathy and sympathy in order to handle situations of conflict as

opposed to resorting to grabbing, hitting or insisting that another child obey (Mayeux & Cillessen, 2003).

Acquiring social skills is another element of social development, and involves the child's ability to approach others positively, to take turns easily, negotiate and to compromise with other children. Children of this age also learn to interact non-verbally with other children using cues such as smiles, waves and nods and, in addition, to express both frustration and anger effectively without escalating disagreements (Kostelnik, Gregory, Soderman & Whiren, 2012).

A further element of social development is the ability to make and maintain friendships. Peers not only serve an important socialising function but also help to shape emotional knowledge and social skills. Though peer relationships do not yet have an enduring quality at this age (Hartup, 2006), they provide ample opportunity for children to learn new skills and refine current ones (Rubin, Bukowski & Parker, 2006).

Prosocial behaviour, defined by psychologists as "intentional, voluntary behaviour intended to benefit another" (Eisenberg, 1992, p. 3), is another significant aspect of social competence. Sharing, caring, helping, cooperating, comforting and other prosocial acts begin to increase in middle childhood, and children aged 6- to 7-years can typically be observed offering to help but waiting for a peer to accept before actually helping (Azmitia, 1996).

Some children, however, fail to acquire age-appropriate social skills such as empathy, perspective-taking, social problem-solving and self-regulation. They struggle to interact effectively with others and, as a result, may become rejected by their peers (Troop-Gordon & Asher, 2005). Some of these children realise that they are disliked by peers and, after repeated attempts to gain peer acceptance, eventually give up and become socially withdrawn (Harrist, Zaia, Bates, Dodge & Pettit, 1997).

Other rejected children, in order to get their type of needs met, develop a range of antisocial behaviours including bullying, hitting, swearing, throwing tantrums and refusing to comply with adult instructions (Patterson, 1982). Although disruptive and uncooperative in social situations they may believe that their peers like them. They also interrupt play partners more often and fail to take turns in a systematic way (Zakriski & Coie, 1996).

Antisocial development is often characterised by aggression, not only physical aggression but also verbal aggression such as threatening, degrading, teasing and shaming. Two types of aggression are frequently distinguished: hostile aggression, covering acts for which harm is the major goal; and instrumental aggression, including actions harmful in form but motivated by non-aggressive reasons such as the wish to participate (Dodge, Coie & Lynam, 2006).

Although, in more recent times, the term “antisocial” has been commonly used to describe children who engage in elevated rates of antisocial behaviour, a number of other labels have also been used over the past 40 years. These include use of the terms children with “oppositional defiant disorder”, children with “conduct disorder”, children with “conduct problems”, children with “behaviour problems”, children with “externalising behaviour problems”, and so on (Church, 2003).

Importance of Social Development

The benefits of social competence are numerous. Social proficiency makes a huge difference, both in how children feel about themselves and in how others perceive them. For instance, research has found that socially competent children are happier and interact with peers more successfully than do less socially competent children. It has also found that they are more popular with peers and satisfied with life, and that they are typically perceived as more desirable companions by others (Epstein, 2009).

When Webster-Stratton and Lindsay (1999) examined differences in the social competence of two groups of 4- to 7-year old children: typically-developing children and aggressive, clinically-diagnosed ODD or CD children, they found that children with conduct problems had acquired significantly fewer prosocial problem-solving strategies and positive social skills. More frequent negative conflict management skills and developmentally delayed peer play skills were also displayed when compared with the comparison children.

Children who have positive peer relationships also look forward to coming to school, become more involved in learning activities and, it is claimed, achieve more academically in the classroom (Ladd, Birch & Buhs, 1999). Children who are rejected by peers, on the other hand, are more prone to feelings of loneliness and, it is claimed, may begin to perform poorly academically as a consequence (Buhs & Ladd, 2001).

Several studies have found that social development during the early years also predicts success as an adult. For example, Jones, Greenberg and Crowley (2015) found that the level of social skills observed in kindergarten predicted a number of outcomes in young adulthood. These included higher educational achievement, more stable employment, reduced criminal activity and lower rates of both substance abuse and poor mental health.

Studies of young children with high rates of antisocial behaviour have also found a correlation with criminal behaviour later in life. For example, Fergusson and Lynskey (1997) found that the children who engaged in the highest rates of defiance, tantrums, and antisocial behaviour during childhood were the same children who were most at risk of offending later in adolescence and adulthood. Four years later Fergusson and Horwood (2001) reported that children with both early conduct problems and early attentional problems were at an increased risk of developing later delinquency, substance abuse and school failure. All in all, the relationship between early behaviour problems and later offending is well-established and has been observed in a number of separate longitudinal studies (Church, 2003).

Origins of Prosocial and Antisocial Development

Much research has examined the ways in which children develop along prosocial and antisocial developmental paths. Early in a child's life the immediate family is their main social environment, however this environment expands to include peers, teachers and many other adult figures during middle childhood.

Generally, young children develop prosocial behaviour through parents' positive reinforcement whenever they display desirable behaviours and non-reinforcement from parents whenever they behave inappropriately. Parents of antisocial children, however, tend to be inconsistent and unpredictable in their responses to their child's actions. Often they are harsher and have little positive involvement with their children (Patterson, 1982).

Parents may also inadvertently reinforce their child's inappropriate behaviour through the process of negative reinforcement. For example, the parent makes a request, the child fails to comply, a coercive exchange between the child and parent results, and the parent withdraws the request with the result that the child avoids having to comply. In other words, the child's refusal is negatively reinforced. Research shows that such interactions make up approximately 10% to 15% of the total interaction in families with a child displaying antisocial behaviour (Patterson, 1982).

Children who engage in antisocial behaviours also receive less positive reinforcement for engaging in more prosocial behaviours (Dadds, 1997). This limits the number of opportunities these children receive to develop prosocial habits. Effective parents, on the other hand, intervene in such a way that antisocial behaviours are consistently ignored or punished while only prosocial behaviours are rewarded (Snyder & Stoolmiller, 2002).

For example, Snyder and Patterson (1995) compared the conflict-resolution tactics of typically-developing children and those of children demonstrating aspects of antisocial

development. They found that, for the children with antisocial development, coercive tactics worked more often than constructive tactics; whereas, for the typically-developing children, constructive tactics worked more often than coercive tactics.

Antisocial children, as a result, learn the effectiveness of coercive strategies, such as tantrums, crying and destruction, to either get what they want or, more commonly, to avoid something they do not want (Patterson, 1982). Once these aversive patterns of interaction are established coercive responses become increasingly entrenched, and this leads to two sets of problems: antisocial behaviour and a lack of prosocial skills (Patterson, DeBaryshe & Ramsey, 1989).

A child's behaviour also shapes their social environment upon reaching school. Research has found that children who are popular with peers behave in positive, supporting, non-punitive, and nonaggressive ways towards most other children (Underwood, 1997). Cooperative and responsible behaviour in the classroom also predicts early school success, as well as the development of better relationships with both teachers and peers (Thompson & Goodman, 2009).

Antisocial behaviour, on the other hand, leads to a number of negative outcomes. First, children who display aggressive behaviour are often rejected by prosocial peers and this reduces their opportunity to develop prosocial skills. Antisocial children have also been found to be deficient in a number of their social-cognitive skills, including peer group entry skills, their perception of peer group norms, their response to provocation, and their interpretation of prosocial interactions (Patterson, DeBaryshe & Ramsey, 1989). This inability to manage appropriate classroom behaviour often leads to missed learning opportunities and this, in turn, may result in the children's academic development falling behind (Patterson, DeBaryshe & Ramsey, 1989).

Finally, research suggests that antisocial children are treated more harshly by teachers than children who exhibit normal social development. It is now well established that teachers are more likely to sanction a child's inappropriate behaviour than to reinforce that same child's appropriate behaviour. Teachers also attend positively to children with disruptive behaviour less often, and this also occurs even when those same children display more socially appropriate behaviours (Goldstein & Brooks, 2007).

Given the multiple adverse outcomes associated with continued development along an antisocial developmental pathway, early detection is important. It is clear that early identification, combined with effective early remedial action, offers the best opportunity to intervene and set these children along more socially-desirable developmental pathways.

Language Development

Language is a “shared code that represents concepts through the use of arbitrary symbols and rules that govern those symbols” (Levey, 2014, p. 5). The process of language development begins early in human life with infants being born ready to acquire new language. Although there is considerable individual variation in the development of language, babies often begin cooing as early as one month old, and babbling typically begins at about 6 months of age (Mitchell & Kent, 1990).

Children's first words usually appear around 12 or 13 months of age (Fenson, Dale, Reznick, Bates, Thal & Pethick, 1994). Some children begin to use words at 8 months, however, while others do not do so until 18 months (MacWhinney, 2005). Learning the rules for organising words into grammatical sentence forms enables children to understand and generate an almost infinite variety of meaningful sentences over time (Owens, 2016).

Language acquisition has interested speech and language theorists for years, and all theories addressing the development of language address the nature-versus-nurture debate.

On the one hand, nativists argue that the capacity for language is innate; that all children have what is called a language acquisition device (LAD) which provides them with all the knowledge required in order to easily and quickly acquire all the rules specific to the language they will speak (Chomsky, 1965).

Behavioural psychologists, while recognising that a child must have the right anatomical equipment to acquire language, emphasise the influence of the environment. In particular, they argue that language is learned and acquired as a result of both imitation and the selective reinforcement of correct and non-reinforcement of incorrect responses by parents and other surrounding adults (Skinner, 1957).

Language development consists of a number of components. The first, phonology, is the development of the structure and sequence of speech sounds. The second, semantics, refers to the development of vocabulary and the way in which underlying ideas are expressed in words and word combinations. Once vocabulary development is underway, a child's grammar, particularly syntax and morphology, begins to develop and this is followed by pragmatics, that is, the guidelines for engaging in appropriate and effective communication (Berk, 2013). Given the overall importance of vocabulary for everyday communication, this has generated the most research attention.

Vocabulary Development

Vocabulary development for most children is fast and efficient. A typical child acquires a vocabulary of more than 500 words before the age of 3 years with over 2,000 words acquired by 5 years of age (Owens, Metz & Haas, 2000). Children continue to add to their vocabulary at a rate of 5,000 to 10,000 words a year during middle childhood (Anglin, 1993). Aiding this ability to quickly acquire and retain new words or concepts is a process known as fast mapping. Upon hearing a new or novel word, children are often able to use

pre-existing word knowledge and contextual cues to immediately determine the meaning of the new word (Hulit, Fahey & Howard, 2015). New words and their meanings can also be acquired from as few as two exposures (Cepeda, Pashler, Vul, Wixted & Rohrer, 2006).

The primary influence on vocabulary development during the early years is language interaction with others. Before learning to read, children are introduced to new words on a daily basis via interactions with parents, teachers, other adults and older children (Hart & Risley, 1995). Contextual cues are also used to expand their understanding of words. When listening to parents talk and teachers teach, watching television or reading a book or magazine, for example, children will typically use the words they already know to infer the meaning of those that they do not know (Hulit, Fahey & Harvard, 2015).

Once children reach about 6- or 7-years of age, however, written language emerges as another influence on the development of vocabulary. Highly motivated children, who read well and often, acquire significantly larger vocabularies than children who are less interested in reading and whose reading skills are not as well developed (Verhoeven & van Leeuwe, 2011; Gathercole, Willis, Emslie & Baddeley, 1992). As children begin to read more they also encounter more abstract and complex concepts and words because these words are found more often in written language than in mundane daily conversation (Hulit, Fahey & Harvard, 2015).

Two types of vocabulary development are commonly distinguished: the development of receptive vocabulary and the development of expressive vocabulary. A child's receptive vocabulary consists of the words the child understands when hearing or reading them whilst a child's expressive vocabulary, on the other hand, consists of the words which the child uses when speaking (Reynolds & Fletcher-Janzen, 2009). Research has shown that a typical 6- and 7-year old has a receptive vocabulary containing between 20,000

- 24,000 words and an expressive vocabulary of about 2,600 words (Reynolds & Fletcher-Janzen, 2009).

Vocabulary and Reading Comprehension

A well-developed vocabulary is one of the best known predictors of school success (Toppelberg & Shaprio, 2000). There is also a strong relationship between vocabulary size and reading comprehension. Children who begin school with large vocabularies acquire new word meanings more rapidly than children with smaller vocabularies (Hart & Risley, 1995), and they are more likely to become proficient readers. For these children, reading is more likely to be a rewarding experience as well.

This is important because children learn the meaning of many new words simply by encountering them in texts and inferring their meaning from context (Dunn & Dunn, 2007). Evidence suggests, however, that children with limited vocabularies often struggle to achieve comprehension (Joshi, 2005), and there are many studies showing that expressive and receptive vocabulary development during the early years strongly predicts reading ability in later years, especially Years 3 and 4 of primary school (Scarborough, Neuman & Dickinson, 2009; Lesaux & Kieffer, 2010). In fact, there is even evidence to suggest that overall reading comprehension and success is better predicted by vocabulary development than by phonological development (Roth, Speece & Cooper, 2002).

Reading development in children with small vocabularies is also noticeably slowed, and research has shown that struggling readers read, on average, between one-half and one-quarter the number of words read by children who are skilled readers (Anderson, Wilson & Fielding, 1988). Frustration on reading tasks may even lead these children to avoid reading altogether. The result can be a negative cycle in which vocabulary growth is delayed, further undermining the development of reading ability as well (Dunn & Dunn, 2007).

Finally, research has shown that continued improvement in reading skills, beyond the age of 8, is heavily dependent on the level of vocabulary acquisition during the early stages of childhood. For example, Silva, Williams and McGee (1987) found, in the Dunedin Child Development Study, that the children with the lowest levels of language development at age 3 also had significantly lower reading test scores at ages 7-, 9- and 11-years.

Origins of Language Delay

At 2 years of age, expressive language delays are thought to affect up to 15% of the population (Horwitz, Irwin, Briggs-Gowan, Heenan, Mendoza & Carter, 2003). Some of these children will be known as late talkers, and will catch up to their peers over time. For the others, however, language difficulties may persist throughout childhood. Estimates vary considerably, but it is thought that about 6% to 7% of school-aged children have difficulties with language acquisition (Tomblin, Smith & Zhang, 1997). If unresolved, such delays can cause difficulties in both learning and socialisation which can last into adolescence and beyond (Law, Garrett & Nye, 2010).

Children may fail to develop language in a typical manner for a variety of reasons. Some of these reasons are as follows.

Biological Factors

Stanton-Chapman, Chapman, Bainbridge and Scott (2002) found that a gestational age of 37 weeks or earlier and/or low birth weight are both associated with an increased incidence of language impairment in children. A family history of speech and language difficulties has also been found to predict delayed language outcomes in a sample of 4-year olds (Reilly et al., 2010).

Language development is also heavily dependent on intact hearing. Any hearing loss reduces a child's ability to develop language and hence vocabulary (Fligor, 2014), and

there are several studies to show that hearing-impaired children develop both reduced vocabulary and reduced levels of reading skill (Bess, Dodd-Murphy & Parker, 1998; American Speech-Language-Hearing Association, 2009).

Environmental Factors

The number of learning opportunities experienced by individual children during the early years varies considerably and this variation in opportunity to learn is another strong predictor of rate of language development.

Hart and Risley (1995), for example, recorded the in-home conversations of low-socioeconomic status (SES) (on public welfare), mid-SES (working class), and high-SES (professional) families to explore the early language experiences of 2- to 3-year old children. Average parental utterances per hour were highest in the households of the professional parents and lowest in the households of the welfare parents. Hoff (2003) also studied the transcripts of in-home interactions between high-SES mothers and mid-SES mothers and their 2-year old children in order to assess vocabulary growth over a 10-week period.

Both of these studies employed direct observation and an actual count of the rate of occurrence of learning opportunities, and both studies found that the higher SES mothers talked more to their children than the lower SES mothers. Likewise, they both found that the college-educated mothers talked more, used richer vocabularies, produced more contingent replies to their children's speech, issued fewer directives, and asked more questions than the high school-educated mothers. In both studies rate of vocabulary growth was greatest in the homes where the most parent-child interaction was occurring.

In addition, children from low-income families tend to read less outside of school than children from high-income families (Allington & McGill-Franzen, 2013; Valli, Croninger, Chambliss, Graeber & Bluese, 2008). This may be due not only to a lack of books

and parental modelling of reading in the home but also to the existence of smaller libraries in schools serving low-income families (Guice, Allington, Johnston, Baker & Michaelson, 1996).

The Relationship between Early Social Development and Early Language Development

The relationship between early social development and early language development remains less well understood. Investigators have tended to examine different forms of social behaviour in separate studies, and this has limited the integration of any potential findings.

Firstly, studies of poorly socialised teenagers and teenagers who engage in elevated rates of antisocial behaviour find that these teenagers frequently have low levels of academic achievement, or have often left school with no qualifications. Longitudinal research, in particular, has routinely reported correlations between low levels of social development and low levels of academic achievement amongst school leavers. Fergusson and Lynskey (1998), for example, found that children who exhibited conduct problems at age 8 also had elevated rates of educational underachievement at the age of 18.

Fergusson and Woodward (2000), likewise, found that peer relationship problems at age 9 predicted increased risk of underachievement and unemployment at age 18. When compared with children with low rates of early peer relationship problems, problematic peer relationships also appeared to place these teenagers at an increased risk for truancy and early school leaving. These observations together have led some researchers to conclude that academic development and social development are correlated.

Research has also consistently found a correlation between delayed social development, including persistent antisocial behaviour, in the early primary school years and antisocial behaviour in young adulthood. Fergusson and Lynskey (1998), as an example,

reported that conduct problems at age 8 predicted juvenile offending in adolescence; while Jones, Greenberg and Crowley (2015) similarly reported that the delayed development of prosocial skills at ages 5 and 6 predicted crime outcomes in young adulthood.

These results raise the question of whether effective intervention in early childhood can help improve children's social skills in a lasting way. Early social competence serves as an important marker for several long-term adult outcomes ranging from physical health to crime to substance abuse (Jones, Greenberg & Crowley, 2015). Assessing social skills in early childhood, therefore, may be useful for assessing whether children are at risk for deficits in non-cognitive skills later in life.

There is also a high correlation between delayed academic development during the early primary school years and school failure during the secondary school years. In fact, once a child begins to fall behind academically that child tends to fall further and further behind as the years pass. This is called the Matthew Effect, and describes the notion that the rich get richer and the poor get poorer. Delays in the vocabulary growth of children falling behind, for instance, often tend to increase over time (Duff, Tomblin & Catts, 2015).

Investigators who have studied the correlation between social development and language development in 4- to 7-year olds, however, have so far reported mixed and conflicting results. Olson and Hoza (1993), for example, examined vocabulary ability and conduct problems in a sample of 4- and 5-year old children. They observed only small and unreliable correlations between aggressive problem behaviour and scores on the *Peabody Picture Vocabulary Test – Revised (PPVT-R)*, and concluded that aggression may have different developmental origins for boys and girls.

Arnold (1997) also studied the correlation between externalising behaviour problems and a number of emergent academic skills using a sample of low-SES boys. Misbehaviour,

defined as aggressive, hostile or noncompliant acts, was found to be fairly strongly correlated with scores on the *PPVT-R* at age 5. He concluded that co-occurrence between the two may begin at an early age and strengthen across time, and argued the potential benefits of early identification and treatment.

In a further study, by Doctoroff, Greer and Arnold (2006), correlations between literacy scores and a number of observable social behaviours were assessed using a sample of 123 ethnically and socioeconomically diverse 4.5-year old children. Although prosocial behaviour was found not to be significantly correlated with lower levels of literacy development, emergent literacy difficulties were related to higher solitary play and more frequent displays of negative affect.

McClelland, Cameron, Connor, Farris, Jewkes and Morrison (2007) have also investigated the relationship between behavioural regulation and literacy, vocabulary and mathematic skills in a sample of 5-year olds. Behavioural regulation, including paying attention, following instructions and inhibiting inappropriate actions, was found to be moderately correlated with vocabulary scores at age 5. Importantly, these behaviours were also found to predict gains in vocabulary development in the sample 6 months later.

Research more recently completed by Arnold, Kupersmidt, Voegler-Lee and Marshall (2012), likewise, examined the relationship between social functioning and emergent academic development in a sample of 467 children aged 4- to 5-years old. Aggression scores and scores on the *Social Skills Rating System (SSRS)*, although significant, were found to be only weakly correlated with vocabulary scores on the *PPVT-3*. They concluded that this result may reflect the multiple influences on early academic development.

Metcalf, Harvey and Laws (2013), finally, assessed the relationship between academic skills and externalising behaviour problems in a longitudinal study of children from

ages 3- through 6-years. When controlling for SES and family stress, scores of aggression, as measured by the *Behavior Assessment System for Children (BASC)*, were not found to correlate with scores on the *Kaufman Survey of Early Academic and Language Skills (KSEALS)* at 6 years of age.

These conflicting results raise the question as to whether or not there is a correlation between early social development and early language development. It remains unclear, however, whether researchers have simply yet to determine the best way of measuring this correlation; or whether there is, in fact, little or no correlation between social development and language development during the early years.

This is an important question. If the development of social competence follows a trajectory which is independent from the development of academic skills, this has implications for both the diagnosis and the remediation of social learning delays on the one hand, and academic learning delays on the other hand.

Measuring Social Development and Vocabulary Development

Social Development

A number of scales exist to measure social development. The 46-item social skills and 12-item antisocial behaviour scales stemming from the 67-item long *Social Skills Improvement System (SSiS)* (Gresham & Elliott, 2008), for example, have commonly been used as diagnostic tools. Available commercially, the scale takes around 15 to 20 minutes to complete. As it has only been standardised for use in the United States of America, however, the *SSiS* would require adaptation for use in New Zealand schools.

Another common, but insufficiently reliable, measure of social development is the *Strengths and Difficulties Questionnaire (SDQ)* (Goodman, 1997). The *SDQ* is designed for both teachers and parents to use on children aged 3- to 17-years, takes approximately 3

minutes to complete, and is readily available on the internet. Overall the scale consists of 25 items covering five dimensions. However, only ten items measure aspects of antisocial behaviour and the development of social skills specifically.

A widely used measure is the diagnostic *Behavior Assessment System for Children (BASC-2)* (Reynolds & Kamphaus, 2004). It is designed to measure internalising and externalising behaviour problems and adaptive skills in three age groups; preschool children aged 2- to 5-years, children aged 6- to 11-years and adolescents aged 12- to 21-years old. With only eight items measuring social development and twenty measuring aspects of antisocial behaviour, however, it is once again an inadequate scale alone.

One suitable measure of child behaviour in New Zealand classrooms is the *Canterbury Social Development Scale (CSDS)* (Church, Tyler-Merrick & Hayward, 2006). This is a 30-item rating scale consisting of brief descriptions of 15 antisocial behaviours and 15 positive social behaviours which are likely to occur in the classroom or at an early childhood centre. Each item is rated on a 5-point scale from 'never' through to 'very frequently'.

There exist four versions of the *CSDS* each individually tailored to a particular age group: Kindergarten (ages 3 - 4 years), Years 1 - 4 (ages 5 - 8 years), Years 5 - 8 (ages 9 - 12 years) and Years 9 - 10 (ages 13 - 14 years). Responses to the antisocial items can be reverse scored so that the total score provides a measure of the level of social development, while a cut-point of 106 is used to distinguish children with antisocial development from those with normal social development (Church, Tyler-Merrick & Hayward, 2006).

The *CSDS* has been chosen as the measure of social development for the present study. This is because the scale can be completed by the classroom teacher, takes no more than 10 minutes to complete, and is written in the New Zealand idiom. Moreover, unlike the

other measures outlined above, the *CSDS* was (a) designed specifically to measure both prosocial and antisocial behaviour and (b) designed specifically for the use of teachers in New Zealand classrooms (Church, Tyler-Merrick & Hayward, 2006).

The *CSDS* also has high predictive accuracy. Scales completed by teachers under normal end-of-year conditions were found to predict antisocial development with about 95% accuracy (Church, Tyler-Merrick & Hayward, 2006). Adopted for use in Tyler-Merrick's thesis (2014), for instance, the scale had strong accuracy (97%) in predicting children at risk of antisocial development; in addition to strong sensitivity (96.6%) and specificity (97.3%) with a PPV of 96.6% and NPV of 97.3% respectively.

Vocabulary Development

As the focus of this study is children's receptive vocabulary, tests designed to measure this aspect of vocabulary were sought. One possible measure is the 76-item receptive vocabulary subtest of the *Comprehensive Receptive and Expressive Vocabulary Test (CREVT-3)* (Wallace & Hammill, 2013). Suitable for children aged 5 years and above, this test involves a combination of word-photo and word-definition items designed to quickly identify children whose oral vocabulary is significantly smaller than that of their peers.

Another possible measure is the *Preschool Language Scale (PLS-5)* (Zimmerman, Steiner & Pond, 2012). This offers a comprehensive developmental language assessment. In particular, it contains an auditory comprehension subscale to measure the vocabulary development of children up to and including the age of 7. Testing takes approximately 45 - 60 minutes to complete, however. This rules it out as too time consuming for the present study.

The *Receptive and Expressive One-Word Picture Vocabulary Tests (ROWPVT-4)* (Brownell, 2000) are a further valid but time-consuming measure of vocabulary development.

Counterparts to each other, the tests are individually administered to individuals ranging in age from 2- through to 80-years. In particular, the receptive vocabulary test assesses an individual's ability to match spoken words with 190 full-colour picture items.

The *Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4)* (Dunn & Dunn, 2007) is an individually administered, norm-referenced instrument that assesses receptive vocabulary for individuals aged 2 years 6 months through 90 years and older. Widely considered the gold standard, two parallel forms of the *PPVT-4* exist (Form A and Form B). Each version contains training items and 228 test items, divided into 19 sets of 12 items each. Each item consists of four full-colour pictures as response options on each test page.

Of the aforementioned measures, the *PPVT-4* was chosen as the measure of receptive vocabulary for the present study. This is because it only takes 10 to 20 minutes to complete, is easy to administer, and is quick to score. The *PPVT-4* has been used extensively in clinical settings. It has also been used as a measure against which other measures of vocabulary can be compared.

The current version was standardised on a representative sample of more than 5,500 representative individuals. Moreover, all validity and reliability coefficients for the *PPVT-4* are greater than .90, while its test-retest correlations similarly range from .92 to as high as .96. The *PPVT-4* has also been shown to generate results which are consistent with a number of other standard measures of vocabulary (Dunn & Dunn, 2007).

Aims of the Present Study

To date, research exploring the nature of the relationship between delays in language development and the development of antisocial behaviour has generated conflicting conclusions.

What is well-established, however, is that antisocial development beginning in early childhood can be life-course persistent. The early primary school years offer a chance to prevent the development of both life-course persistent antisocial behaviour problems and academic failure, but prevention is only possible if delays in social development and delays in academic development can be reliably identified and identified early.

This observation has motivated a research project with the following aims:

1. To what extent are social development and vocabulary development correlated in children in their second and third years at school?
2. Is this correlation large enough to suggest that children with delayed language development should also be screened for delays in social development?
3. Is this correlation large enough to suggest that children with delayed social development should also be screened for delays in language development?

Chapter 2

Method

Experimental Design

The present research project took the form of a correlational study describing the relationship between social development and vocabulary development in a sample of Christchurch children in their second and third years at school.

Participants

The aim of the study was to obtain a diverse sample of 60 or more children in their second or third years at school. Ethical approval for the research was obtained from the University of Canterbury Educational Research Human Ethics Committee in January 2016. Approval is documented in Appendix 1.

Beginning in March 2016, a number of primary schools in the Christchurch and surrounding Canterbury area were approached and asked if they were interested in participating in the proposed research. Information sheets, reproduced in Appendix 2, describing the purpose of the project, the activities involved and the time frames expected were given to the school's principal and/or deputy principal.

One Decile 8 full primary school indicated an interest in joining the study and an additional five Decile 3 primary schools in Christchurch also expressed an interest in joining the study. These approaches generated a sample of 13 Year 2 and Year 3 teachers who in turn recruited a sample of 71 child participants. An overview of the demographic information for all six participating schools is shown in Table 1.

Table 1. *Demographic details of participating schools*

	Decile Level	Roll	Number of Participating Teachers	Number of Participating Children	Percent (%)
School 1	8	356	4	30	42.3
School 2	3	246	2	18	25.4
School 3	3	183	2	9	12.7
School 4	3	211	2	8	11.3
School 5	3	152	2	4	5.6
School 6	3	136	1	2	2.8

Note: Decile level and roll numbers taken from June 2015 Ministry of Education statistics.

Recruitment of teachers

Once the principal and/or deputy principal had agreed that their school would take part in the research, informal meetings with the Year 2 and Year 3 teachers at the various schools were held to discuss the project. During these meetings, teachers were given information sheets identical to that given to the principals. These described the purpose of the project, the activities involved and the time frames expected. The teachers were also given the opportunity to ask questions and raise any concerns about the research. No concerns were raised in these meetings. They were then given the consent form, reproduced in Appendix 2, to sign.

In total 13 teachers, all female, consented to participate. The number of teachers from each school ranged from one teacher in School 6 to four teachers from School 1, and two teachers each from the remaining four schools. Each teacher agreed to complete a *Canterbury Social Development Scale (CSDS)* for each child in their classroom whose parents gave consent for them to participate in the study. As recognition for their contribution, each school received koha in the form of a \$10 voucher for each child assessed. It was the school's responsibility to decide upon the use of the \$10 voucher. This was done in

consultation with participating teachers given that they completed the *CSDS* in their own time.

Recruitment of participants

Children were eligible to participate in the study if:

- (a) they were in their second or third year at school, and
- (b) they spoke English at home.

Eligible children were chosen at random using procedures acceptable to the individual schools. Some teachers selected every second or third child from their class list, while others selected every child in their classroom. Teachers were asked to hand every selected child an envelope to be passed on to the child's parents or caregivers. As can be seen from Appendix 3, this envelope contained:

- (a) an information sheet for the parents/caregivers, which (a) explained that their child had been nominated for a research project and (b) described the study's purpose and the activities involved,
- (b) a consent form for the parents/caregivers to sign,
- (c) a demographic form for the parents/caregivers to complete,
- (d) an information sheet for the child explaining in simple language the study and what they would have to do, together with
- (e) an assent form for the parents/caregivers to read and complete with their child at home.

The information sheets included two footnotes, one stating that the research had been given ethical approval, and one giving the contact details for the Chair of the Educational Research Human Ethics Committee, to whom any complaints could be directed. Parents/caregivers and children were also given the opportunity to ask any questions, and

they were made aware that they could withdraw consent at any stage during their participation in the study.

If the parents/caregivers agreed to their child taking part in the study, they were asked to complete and return the consent and assent forms to their child's teacher. An envelope, addressed to the researcher, was provided for this purpose. Returned envelopes were then collected by the researcher at a time suitable to the teachers. At some schools a further letter, reproduced in Appendix 4, was sent home to the parents/caregivers reminding them about the study and offering to provide another envelope should they require one.

In a few cases, envelopes were incomplete upon return. Either an additional envelope was sent home to the parents/caregivers to be completed and returned to their child's teacher, or an email was sent to their personal email to obtain the missing information. Only children whose parents/caregivers had completed and returned all the required forms were included in the study.

Each participating child was assigned a research code number to protect his or her anonymity, and all the data collected was securely stored in locked storage at the University of Canterbury.

Description of the sample

A total sample of 71 children in their second and third years of school took part in the current study. Participants ranged in age from 70 to 95 months (5 years 10 months – 7 years 11 months), with a mean of 83.31 months (6 years 11 months) and a standard deviation of 6.8 months. The sample comprised 45.1% male and 54.9% female children (32 male and 39 female). Children were of European (69%), New Zealand Maori (21.1%), Pacific Island (4.2%), Asian (2.8%) and African (2.8%) ethnicity.

A total of 71 parents/caregivers (5 male and 66 female) also completed demographic forms. Parents/caregivers fell into the following age groups: 20-30 years (18.3%), 31-40 years (64.8%), 41-50 years (14.1%), and 51-60 years (2.8%); and were of European (73.2%), New Zealand Maori (14.1%), Pacific Island (4.2%), Asian (5.6%), and African (2.8%) ethnicity. The parents/caregivers' highest form of education was also collected: No Qualification (19.7%), Sixth Form/NCEA Level 3 (19.7%), Tertiary Qualification (40.8%), University Degree (18.3%), and Higher Degree (1.4%).

Settings

All children in the study were individually administered the *PPVT-4* at their school. In agreement with the teachers the testing took place in unused classrooms, school libraries or else small office rooms adjoining classrooms. All areas were adequately lit and ventilated, and furnished with a desk or table and two chairs of appropriate size. In some instances, there was considerable classroom noise during testing, and occasional interruptions from children or teachers needing to come through the rooms. All vocabulary testing was undertaken by the author.

Teachers were asked to complete the *CSDS* at a period of time convenient to them but when they knew they would be free of any interruptions. This could have been either at school or at home. Instructions for administering the *CSDS* are shown in Appendix 5.

Measurement Procedures

Peabody Picture Vocabulary Test (PPVT-4)

Form A of the *Peabody Picture Vocabulary Test, Fourth Edition* was individually administered to every child participating in the study. The author and child were seated across the corner of a desk or table from each other. For each item, the author said a word, and the child responded by selecting the picture that best illustrated that word's meaning from

the four picture alternatives. An example is reproduced in Appendix 6. The sets are arranged in order of increasing difficulty to ensure that only the sets appropriate for the child's vocabulary level are administered.

The author introduced the children to the test before administering the training items and then progressed through the sets until the child made 8 or more errors in one set. Children were offered a sticker as thanks for participating in the testing. Record forms, reproduced in Appendix 7, were used to record item responses, errors, item scores on each set, and the total raw score. Raw scores were then converted to standard scores using norms for the 5:11-7:11 age ranges in the testing manual. On the *PPVT-4* scale, a standard score of 100 represented the average score for a child in that age bracket.

Canterbury Social Development Scale (CSDS)

Teachers completed one Form B of the *Canterbury Social Development Scale*, designed for use with children in Years 1 through 4, for every child participating in the project from their classroom. When completing the scales, the teachers were asked to take into account only the behaviour which they had seen for themselves and only behaviour they had seen during the past four weeks. They were also asked to record their immediate or first impression.

Scoring of the *CSDS* was completed by the author. Parts 1 and 2 of the scale each recorded a total score out of 75. Scores on Part 2 were reverse scored to ensure that higher scores on both Part 1 and Part 2 of the scale represented advanced social development. The two scores were then added together in order to obtain a total score out of 150 to determine the child's overall level of social development.

Data Marking and Collation

Before administration, the administration and scoring processes of the *PPVT-4* were piloted with a couple of same-age children. Scoring sheets for each of the children in the study were also checked twice the day after data collection. Data for all the participants, including the child and parent demographic information, was then entered into an IBM SPSS Statistics spreadsheet and double checked the next day for any errors in the entry of data.

Using SPSS, the data was further analysed for errors using Descriptive Statistics and Frequencies in order to check for any outliers and inflated means in the data. The database was found to be clean.

Data Analysis

Using version 22 of SPSS, the following statistical analyses were performed. First, means and standard deviations were computed for each of the variables in the study. A correlation matrix was then generated to examine the correlations between the respective scores on the *CSDS* and *PPVT-4* and the child and parent demographic variables. Because they were not justified by the data, Regression and Receiver Operator Characteristic (ROC) Analyses were not performed, however.

Chapter 3

Results

Descriptive Data

Table 2 presents the means and standard deviations for each of the vocabulary and social development variables. The means and standard deviations are also presented for the boys and girls separately. As the table shows, on average the boys in the study scored better on the *PPVT-4* while the girls, on average, obtained higher scores on both the social skills and absence of antisocial behaviour dimensions of the *CSDS*.

Table 2. *Descriptive statistics for sample boys and sample girls*

	<i>M</i>	<i>SD</i>	Boys (n = 32)		Girls (n = 39)	
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
PPVT Raw Score	119.01	17.40	124.59	17.61	114.44	16.02
PPVT Standard Score	104.46	11.91	108.72	12.79	100.97	10.00
CSDS Part 1 Social Skills	62.92	11.45	60.81	12.71	64.64	10.15
CSDS Part 2 Absence of Antisocial Behaviour	66.07	10.91	64.16	10.82	67.64	10.87
CSDS Total	128.90	21.52	124.84	23.15	132.23	19.77

Correlational Analyses

Pearson correlation coefficients were then computed to assess the relationship between vocabulary development and social development.

Table 3. *Correlation coefficients for measures of child vocabulary development and social development*

	PPVT Raw Score	PPVT Standard Score
PPVT Standard Score	** .882	
CSDS Total	* .242	.189

**. Correlation significant at the 0.01 level (2-tailed).

*. Correlation significant at the 0.05 level (2-tailed).

As shown in Table 3, there was a small correlation between vocabulary development, as measured by both the *PPVT-4* raw and standard scores, and social development, as measured by the *CSDS* total score. The scatterplots in Figures 1 and 2 provide a visual picture of this result. Overall, the relationship is weak and reveals almost no observable correlation between vocabulary development and social development.

A small gender effect was, however, observed. Correlations between both the raw scores and standard scores on the *PPVT-4* and the *CSDS* total score were higher for the females in the study ($r = .329$, $p < .05$ and $r = .317$, $p < .05$) than the males in the study ($r = .294$ and $r = .220$).

Figure 1. Scatterplot of relationship between PPVT-4 raw scores and CSDS total score

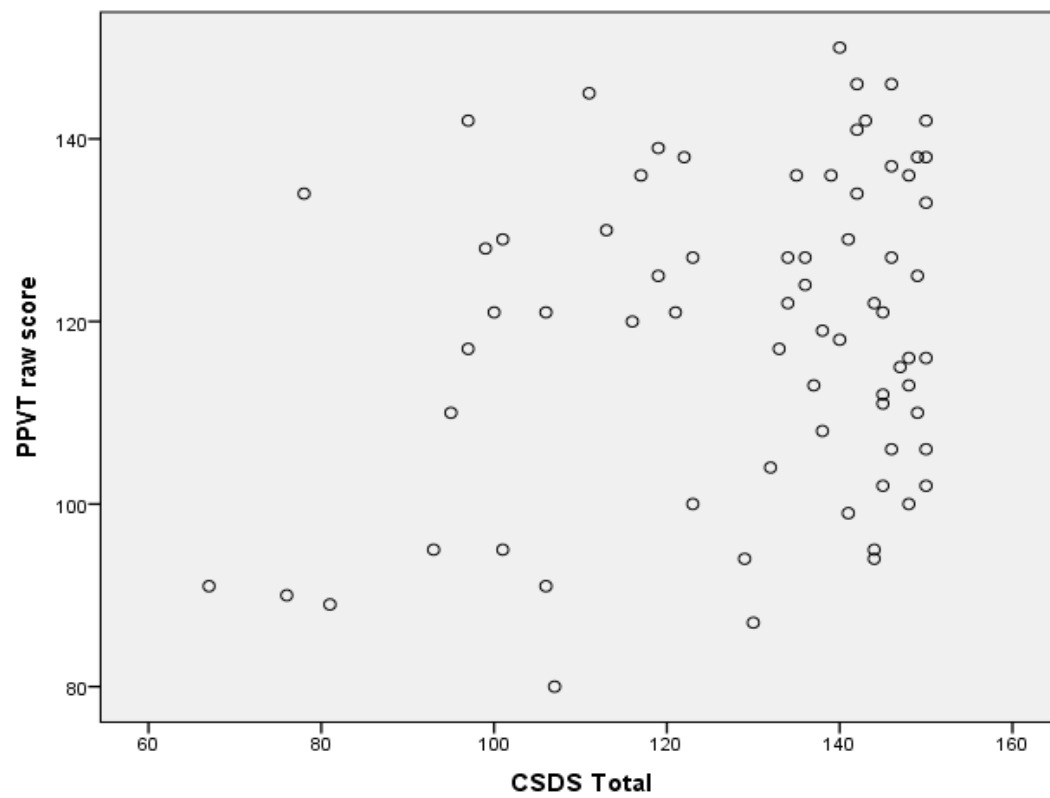
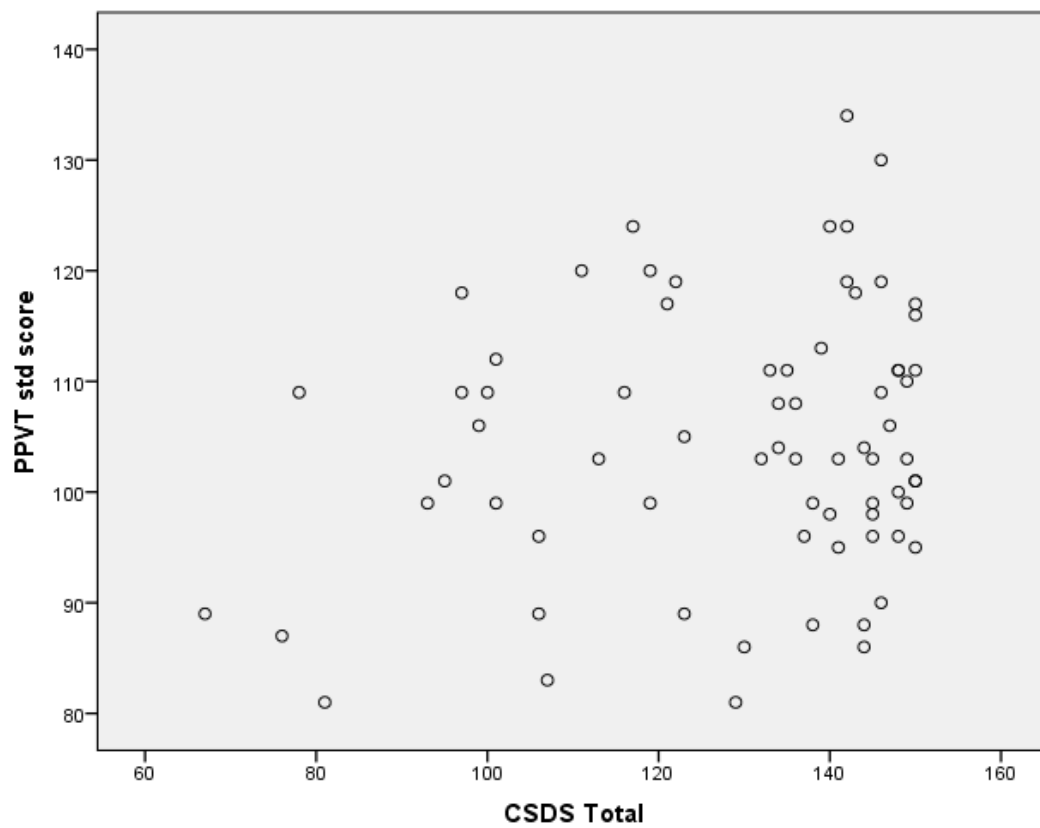


Figure 2. Scatterplot of relationship between PPVT-4 standard scores and CSDS total scores



Pearson correlation coefficients between the key vocabulary and social development variables and the various child and parent demographic variables were also computed. These are shown in Table 4.

Table 4. *Correlation coefficients between child and parent demographics, the vocabulary development, and the social development measures in the children*

	PPVT Raw Score	PPVT Standard Score	CSDS Part 1 Social Skills	CSDS Part 2 Absence of Antisocial Behaviour	CSDS Total
Child Age	*.371	-.094	.064	.152	.109
Parent Age	.090	.124	.225	.130	.182
Parent Gender	-.102	-.180	.003	-.054	-.027
Parent Ethnicity	-.060	-.150	.106	.121	.120
Parent Education	*.293	*.285	*.253	.190	.232
School Decile	*.277	.217	*.302	.171	*.251

*. Correlation significant at the 0.05 level (2-tailed)

As can be seen in Table 4, children's age was moderately correlated with raw scores ($r = .371$, $p < .01$) on the *PPVT-4*, but there was little or no correlation with standard scores ($r = -.094$) on the *PPVT-4* or the *CSDS* total score ($r = .109$). The children's scores on the *PPVT-4* and *CSDS* respectively were also unrelated to parent gender and the ethnicity of parents, and only slightly correlated with parent education. Finally, the correlations between the decile ratings of the schools and the children's performance on the *PPVT-4* raw scores and standard scores, as well as *CSDS* total scores, were also weak.

Chapter 4

Discussion

The overarching aim of the present research was to explore the relationship between social development and language development using a sample of children in their second and third years at school. The aim was to measure the extent to which these two variables were correlated and, then, to assess whether this correlation was large enough to suggest that children with delayed language development should also be screened for delays in social development and vice versa.

Correlational analyses, however, revealed little to no correlation between social development and language development at this age. Instead, these results indicate that well-socialised 6- and 7-year old children are just as likely to have poor vocabulary development as advanced vocabulary development; and, conversely, that 6- and 7-year old children with delayed vocabulary development are just as likely to exhibit prosocial development as they are to exhibit antisocial development.

This suggests that vocabulary development and social development tend to be driven by unrelated influences during the early years. Given the lack of correlation, further regression and ROC analyses could not be performed and the predictive utility for screening language-delayed children at this age for delays in social development and vice versa could not be assessed.

Social Development and Language Development

The present finding that social development and language development are only weakly associated during the first few years at school is not a unique finding. Other researchers have reported similar results.

Arnold et al. (2012), for instance, reported that 4- and 5-year old children's *SSRS* scores weakly predicted both pre-literacy development ($r = .13$) and *PPVT-3* scores ($r = .19$), and that aggression also only weakly predicted levels of pre-literacy development ($r = -.11$) and *PPVT-3* scores ($r = -.08$). Metcalfe, Harvey and Laws (2013), likewise, found that aggressive behaviour as measured by the *BASC* was not correlated with early academic and language skills ($r = .16$) in a sample of 6-year old children.

Doctoroff, Greer and Arnold (2006), meanwhile, reported that prosocial behaviour in the classroom was not significantly correlated with emergent literacy skills ($r = .14$) in a sample of 4.5-year old children. Literacy problems in boys, but not girls, were however associated with aggressive misbehaviour and fewer prosocial interactions. This finding may indicate a gender effect, and suggests that more direct screening of literacy skills might be necessary to identify girls in need of early intervention.

In an unusual result, Olson and Hoza (1993) found that aggressive problem behaviour at ages 4 and 5 was associated with low scores on the *PPVT-R* only for the girls in their sample. Arnold (1997), in contrast, reported a relationship between externalising behaviour problems and academic skills, including *PPVT-R* scores, in a sample of low-SES boys. This relationship was found to increase with age from 3- to 6-years old, and suggests that the relationship between misbehaviour and academic achievement may increase with age.

Other studies have reported similar findings. Benner, Nelson and Epstein (2002), for example, observed that 71% of children ranging in age from 4- to 19-years with emotional and behavioural disorders (EBD) also had clinically significant language deficits and that this correlation increased as the children aged. McClelland et al. (2007) also found not only that behavioural regulation scores correlated with vocabulary scores at age 5 but also predicted vocabulary gains 6 months later.

Overall, the results of previous research exploring the relationship between social development and language development at ages 4- to 7-years, using a range of different measurement procedures, appear to be in line with the findings of the present study.

The results of the present study also provide further evidence for the view that, during the first few school years, social development and vocabulary development are likely to be independent aspects of child development. It appears likely that, at least initially, social development and language development are a function of different variables.

For example, it seems likely that children learn prosocial behaviour whenever their parents reinforce desirable behaviours and ignore or dissuade undesirable behaviours. Antisocial behaviours, on the other hand, develop when parents tend to be inconsistent and unpredictable in their responses to their children and, inadvertently, reinforce antisocial behaviour by, for example, giving in to child tantrums (Patterson, 1982).

Children's language development, on the other hand, seems to depend on the frequency of exposure to high quality spoken language in the home environment. Not all families may read and interact with their children on a regular basis, and there is research to show that children's rate of vocabulary growth is greatest in households with the most parent-child interactions (Hart & Risley, 1995; Hoff, 2003).

A number of studies support the presence of the family environment as a possible third variable. El Nokali, Bachman and Votruba-Drzal (2010) have shown that increased parental involvement during the early years is associated with a reduction in children's behavioural problems. As parents become more informed about their children's social difficulties at school, it is possible that they may become more willing to address and reinforce these more positive behaviours in the home environment as well.

Similarly, Dearing, Kreider, Simpkins and Weiss (2006) reported that increased family-school involvement predicted improvements in the literacy levels of 10- and 11-year old children. The improvements were most pronounced in children of less educated mothers; indicating that increased family involvement in low income and low educated families is most likely to improve the literacy achievement of children.

Learning stimulation, particularly access to educational objects and experiences in the home environment, has also been found to correlate with both social development and language development in children. Across all ages, ethnicities and socioeconomic groups, a decrease in behaviour problems and an increase in language competence were both found increasingly to correlate with family efforts to provide learning stimulation and promote achievement (Bradley, Corwyn, Burchinal, McAdoo & Coll, 2001).

While differences in the family environment may account for the lack of association between social development and language development during the first few years at school, it is important to bear in mind that this finding may be specific to younger children. There is considerable evidence to suggest that stronger correlations between antisocial behaviour and academic delays emerge during early adolescence (e.g. Fergusson & Lynskey, 1998; Fergusson & Woodward, 2000).

The correlation, evident in the later years, may be explained in part by the effect of antisocial behaviour on the number of learning opportunities afforded these children over time. Antisocial development results in different reactions from teachers, parents and peers than prosocial development. For example, antisocial children are more difficult to manage in the classroom and, as research shows, these children receive less instruction from teachers than well-socialised children (Goldstein & Brooks, 2007).

Parents of antisocial children, likewise, tend to be inconsistent, unpredictable and often to have little positive involvement with their children (Patterson, 1982). The lack of positive parent-child interactions may greatly reduce the number of learning opportunities for these children outside of the school environment. Antisocial children, in the same way, are less popular with prosocial peers and this may further reduce the number of learning opportunities for these children as they approach adolescence (Buhs & Ladd, 2001).

The effects of the missed learning opportunities are cumulative. This may explain why social development and language development, although barely associated during the first few years at school, become increasingly strongly correlated during the teenage years.

Children who fall behind academically also tend to fall increasingly further behind as the years pass in a phenomenon known as the Matthew Effect (Duff, Tomblin & Catts, 2015). A narrow window of opportunity, before the age of 8, exists where there is still a chance to remediate some of these academic difficulties. Research shows that delaying remedial action beyond age 6 or 7 progressively reduces the chances that these children will be able to catch up with same age peers even with the very best remedial teaching (Church, 2015).

In light of the present results and the research outlined above, it is proposed that the lack of a correlation between social development and language development in the present study likely reflects the independent nature of these two aspects of child development; with certain aspects of parent behaviour, including positive and negative reinforcement, shaping social development and other aspects, such as the number of learning opportunities provided, shaping the development of language.

Implications

The most important implication arising from the findings of the present study is that social development and language development appear to be largely independent of each other at the age of 6- and 7-years old.

Children experiencing difficulties early in life, either socially or academically, are at an increased risk for social and academic difficulties persistent throughout the life course. As our results reveal, however, children who fall behind in one area, be it social development or language development, may not necessarily fall behind in the other.

For this reason, early intervention must be tailored to the specific domain:

Social Development

A significant number of children engage, at some point in their early childhood, in behaviours considered both unacceptable and difficult to manage for parents and teachers alike. For most, these behaviours represent only a passing phase. For children who fail to acquire self-control over these coercive and aggressive responses during the first five years of life, however, these antisocial behaviours tend to persist throughout adolescence and into adulthood (Moffit et al., 2002).

Because persistent antisocial behaviour seriously hinders the social development of young children; it follows that the earlier these delays in socialisation can be identified, the earlier behavioural interventions can be implemented. Early intervention, in particular, can reduce the risk of a number of long-term adverse outcomes including school failure, peer rejection and later offending (Patterson. DeBaryshe & Ramsey, 1989).

As the majority of school-aged children attend school, the school is probably the best setting for both the early identification of and intervention for social difficulties. Often

disruptive behaviour in the classroom is maintained by both the positive and negative reinforcement it produces for the misbehaving child (Heckaman, Conroy, Fox & Chait, 2000). One of the most efficacious school-based interventions is differential attention. This involves teachers attending to children behaving in a prosocial manner and withdrawing this attention whenever children are behaving inappropriately (Webster-Stratton & Reid, 2002). Attending to appropriate rather than inappropriate behaviour at a rate of at least four to one has been found to greatly reduce incidences of antisocial behaviour even in children with established conduct problems (Wood, Umbreit, Liaupsin & Gresham, 2007).

Combined parent and teacher management training programmes such as First Step to Success (Walker, Kavanagh, Stiller, Golly, Severson & Feil, 1998) have also proven successful for remediating behavioural problems. Effective out-of-school interventions, including parent management training programmes such as the Triple P programme (Sanders, Markie-Dadds & Turner, 2003) and the Incredible Years programme (Webster-Stratton, 2000), are also options for intervention.

The aim of these programmes is to empower the child's parents and teachers to set boundaries, resist coercive child behaviour and differentially reinforce prosocial and antisocial child behaviour (Tyler-Merrick & Church, 2012). Numerous well-controlled clinical trials have confirmed the effectiveness of these interventions. Hence, it is critical that accurate but easily administered diagnostic screening procedures such as the three-gate procedure described by Tyler-Merrick (2014) become more widely used in schools.

Language Development

Children presenting with delays in the acquisition of language, if not remediated, have long been known to continue falling further and further behind as the years pass. Equally,

children who arrive at school with well-developed language and reading skills tend to pull further and further ahead with each passing year (Duff, Tomblin & Catts, 2015).

This phenomenon, known as the Matthew Effect, appears quite early in the life course. Delayed vocabulary development, for example, is noticeable as early as 4 years of age; while delays in phonemic awareness usually emerge by age 5. Children arrive at school with varying degrees of language development as a result.

As a number of studies have demonstrated, sufficient vocabulary knowledge is a prerequisite for continued improvements in reading comprehension, especially during the early school years (Cunningham & Stanovich, 1997; Lesaux & Kieffer, 2010; Scarborough, 1998). Approximately 6% of school children are thought to fall behind in reading development exclusively as a result of inadequate prior vocabulary acquisition (Nation, Cocksey, Taylor & Bishop, 2010).

In another year-long study of 5- and 6-year old children in 12 low decile New Zealand schools, children who entered school with both limited expressive and receptive vocabularies, despite making good progress in letter knowledge and phonemic awareness, also made markedly lower than expected progress in word recognition, writing words, and text reading (McNaughton, Phillips & MacDonald, 2003).

The influence of the Matthew Effect is most apparent during a child's fourth year at school. As the vocabulary demands of school texts begin to increase at this time, the point of reading shifts from "learning to read" to "reading to learn" (Chall & Jacobs, 2003). It follows that children with impoverished vocabularies begin to experience an increased difficulty in comprehending the content of reading material.

In spite of the evidence, Year 1 to 4 teachers in New Zealand are not routinely required to assess the vocabulary development of children upon arrival at school and, as a

consequence, at-risk children may be falling through the cracks. The earlier the educational needs of these language-delayed children are addressed, the less likely it is that they will fail to catch up with their peers.

To assist in the prevention of delays in vocabulary development, attentive and timely intervention is essential. Any remedial efforts, in particular, must include intensive vocabulary building as well as regular decoding and reading practice (Hirsh, 2003). Early identification, ideally before the age of 8, coupled with early and effective intervention may assist in reducing the number of children who are at risk of delayed language and literacy development.

Study Limitations and Future Work

During the early years, the home environment has been shown to play a crucial role in the development of social skills and language. The current study, however, lacked a measure of variables related to the home environment. For this reason, future research examining the relationship between social development and language development should also include an assessment of the family environment.

Another limitation of the present study was the lack of detailed reliability data for the *CSDS*. However, there is data on the high predictive accuracy of the scale (Church, Tyler-Merrick & Hayward, 2006), and there is considerable evidence that teachers tend to be quite accurate in identifying children who do and do not engage in persistent antisocial behaviour (e.g. Lane, 2003).

The ability of teachers to accurately identify prosocial and antisocial behaviour may in part be due to the numerous opportunities they have to observe each child in a number of classroom activities over an extended period of time. They also come into contact with large numbers of typically developing children daily; enabling them to correctly judge whether a

child's development falls within or outside the normal developmental range for their age group.

Behavioural rating scales are not without concerns, however. Many of the current rating scales were produced overseas, usually in the United States of America or the United Kingdom (e.g. the *SSiS*, *SDQ*). As a result, any differences in the dialect of the questions must be translated before being suitable for use in New Zealand settings. Similarly, some scales contain many general questions and questions of this nature are especially susceptible to different interpretations by different raters.

It is also important to note that antisocial behaviour is not always indicative of antisocial development in young children. It is only the relative frequency of antisocial and prosocial responses to social demands which accurately identifies antisocial development (Tyler-Merrick & Church, 2012). These issues are important because intervention is only possible if at-risk children can be accurately identified at an early age.

Because no standardised procedure exists in New Zealand, a multiple gating procedure, involving a teacher referral phase, a behaviour rating scale phase, and a direct observation phase, will usually be necessary to ensure accurate identification. Ideally, repeating this screening procedure at yearly intervals during the first few years at school would ensure the best strike rate for early identification (Tyler-Merrick & Church, 2012).

As previously mentioned, the vocabulary knowledge of new entrants is also not routinely assessed currently in New Zealand primary schools. Whether this is due to a lack of training, a lack of resources, a lack of funding or a lack of time is unclear.

Teachers do, however, have a school entry kit which they can use to assess the academic development of new entrants. Presently, only the literacy, numeracy and oral language skills of new entrants are assessed using this *School Entry Assessment (SEA)*. In

general, however, teachers, report finding the language assessment of the *SEA* too time consuming and difficult to score and interpret for routine use (Dixon & Williams, 2000).

Given the teacher's concerns and resistance to the *SEA*, any such future vocabulary test must be short and easily administered in the classroom. New entrant children in New Zealand currently begin school on their fifth birthday and, because this results in a staggered entry, an argument can be made for teachers to routinely assess the vocabulary development of new entrant children, especially if the child's vocabulary seems somewhat limited.

Final Conclusions

An examination of the relationship between social development and language development in 71 Year 2 and 3 children found only a small correlation. It was thus concluded that social development and language development are probably independent aspects of child development at this age and should be treated as such in practice. Given that there is a high correlation between antisocial development and school failure in the later school years, it follows that early and regular screening to identify at-risk children and tailored remedial action is required during the early school years. As numerous studies have shown, only early identification combined with effective early intervention can minimise the risk of long-term adverse outcomes.

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Appendix 1

HUMAN ETHICS COMMITTEE
Secretary, Lynda Griffioen
Email: human-ethics@canterbury.ac.nz



Ref: 2015/44/ERHEC

11 January 2016

Emily Barber
Department of Psychology
UNIVERSITY OF CANTERBURY

Dear Emily

Thank you for providing the revised documents in support of your application to the Educational Research Human Ethics Committee. I am very pleased to inform you that your research proposal "Social development and vocabulary development" has been granted ethical approval.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 17 December 2015.

Should circumstances relevant to this current application change you are required to reapply for ethical approval.

If you have any questions regarding this approval, please let me know.

We wish you well for your research.

Yours sincerely

A handwritten signature in dark ink, appearing to read 'L. Griffioen'.

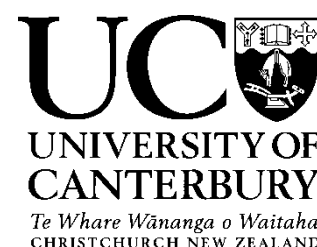
pp Patrick
Shepherd
Chair

Educational Research Human Ethics Committee Please note that ethical approval relates only to the ethical elements of the relationship between the researcher, research participants and other stakeholders. The granting of approval by the Educational Research Human Ethics Committee should not be interpreted as comment on the methodology, legality, value or any other matters relating to this research.

F E S

Appendix 2

Emily Barber
Department of Psychology
University of Canterbury
Cell Phone: 027 466 9632
Email: edb14@uclive.ac.nz



Social Development and Vocabulary Development: What is the relationship?

Information Sheet for Schools and Teachers

My name is Emily Barber and I am a postgraduate-student at the University of Canterbury currently studying towards my Master's degree in Psychology. I am particularly interested in developmental psychology and, for my Master's thesis, I will be assessing the relationship between social development and vocabulary development in a sample of young school-aged children.

What is the purpose of the study?

Young children vary with respect to the rate at which they develop. For example, some 6- and 7-year old children are more socially mature than others and some 6- and 7-year old children have developed more advanced language skills than others.

Although many people believe that social development and language development can occur independently of each other, others believe that a child with advanced language development is likely to be socially advanced as well.

In this study I plan to measure the level of social development and language development of a sample of 6- and 7-year old children in an attempt find out which of these two views best describes the development of young New Zealand children.

What would the school have to do?

I am presently recruiting a small sample of Year 2 and 3 teachers to assist, and would like to formally invite your school to participate in my study. Teachers who agree to assist will be asked to:

- Send home information sheets describing my study together with consent forms to the parents/guardians of selected children.
- Monitor the return of the children's assent forms and the parents/guardians' consent forms.
- Work with the researcher regarding the selection of children to participate in the study. This could be either all of the children whose parents/guardians consent, or a randomly selected half of the children whose parents/guardians consent.
- Provide a private setting at the school where the researcher can individually administer the *Peabody Picture Vocabulary Test (PPVT-4)* to assess the vocabulary development of each participating child. Each test will take approximately 10 minutes.
- Complete a *Canterbury Social Development Scale (CSDS)* for each participating child in their classroom. Each scale will take approximately 8-10 minutes, and will need to be completed at a time convenient to the teacher but within a three-week time window.

- Teachers will receive two scores for each child assessed, and the responsibility will rest with them to make a professional decision regarding appropriate remedial teaching responses for children with very low scores.
- In recognition of the teacher's contributions, each school will receive Koha in the form of a \$10 grocery or petrol voucher for each child assessed. It will be the school's responsibility to decide on the type of voucher to be received.

It is important to note that participation in this study is voluntary. If your school does take part, participating teachers will have the right to withdraw from the study at any time without penalty. If a teacher withdraws, I will do my best to remove any information relating to that teacher's children provided this is practically achievable.

It is slightly possible that one or two children may indicate a desire to stop the testing. Any such request will be complied with immediately, and the child will be thanked for their participation before being taken back to their classroom.

I will take particular care to ensure the confidentiality of all data gathered for this study. I will also take care to ensure your school's anonymity in any publications of the findings. All the data will be securely stored in password protected facilities and locked storage at the University of Canterbury for five years following the study. It will then be destroyed.

The results of this study will be used in my master's thesis. A thesis is a public document and will be available through the UC Library. The study may also be published. A summary copy of the final study will be provided to the school and to those parents/guardians who have requested it. Parents/guardians will also be offered a copy of their child's individual test results.

If you have any questions about the study at any stage, please contact me (details above), or my supervisors Dr Jacki Henderson, University of Canterbury, (jacki.henderson@canterbury.ac.nz) and Dr John Church, University of Canterbury, (john.church@canterbury.ac.nz).

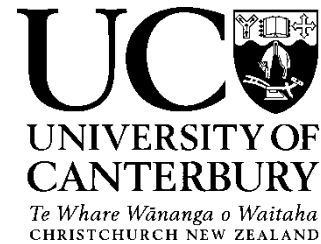
This study has received ethical approval from the University of Canterbury Educational Research Human Ethics Committee. However, if you have any complaints about the study you may contact the Chair, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

Teachers who agree to participate in this study are please requested to complete the attached consent form and to return it to the school ready for Emily to collect within one week of receipt.

Thank you for considering taking part in this project.

Emily Barber

Emily Barber
Department of Psychology
University of Canterbury
Telephone: +64 3-- ----; Cell Phone: 027 466 9632
Email: edb14@uclive.ac.nz



Social Development and Vocabulary Development: What is the relationship?

Consent Form for Teachers

I have been given a full explanation of this project and an opportunity to ask questions.

I understand what will be required of me if I agree to take part in this project.

I understand that my participation is voluntary and that I may withdraw at any stage without penalty.

I understand that any information or opinions I provide about the children in my classroom will be kept confidential to the researcher and her supervisors, and that individual children will not be identified in any published or reported results.

I understand the risks associated with taking part and how they will be managed.

I understand that all data collected for this study will be kept in locked and secure facilities at the University of Canterbury and will be destroyed after five years. I understand that I can request a summary copy of the study to be sent to me when the study is completed in 8 months time.

I understand that if I require further information I can contact the researcher, Emily, or her supervisors, Dr Jacki Henderson and Dr John Church. If I have any complaints, I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee.

By signing below, I agree to participate in this research project.

Name: _____ Date: _____

Signature: _____

Please send me a Summary Report of this project when completed in 8 months time:

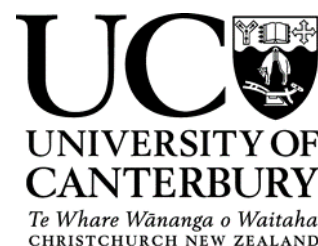
Yes ☐ No ☐

If yes, please send the report to this email address: _____

PLEASE HAVE THIS FORM SIGNED AND READY FOR EMILY TO COLLECT AT SCHOOL WITHIN ONE WEEK OF RECEIPT.

Appendix 3

Emily Barber
Department of Psychology
University of Canterbury
Cell Phone: 027 466 9632
Email: edb14@uclive.ac.nz



Social Development and Vocabulary Development: What is the relationship?

Information Sheet for Parents/Caregivers

My name is Emily Barber and I am a postgraduate-student at the University of Canterbury currently studying towards my Master's degree in Psychology. I am particularly interested in developmental psychology and, for my thesis research, I am carrying out a project assessing the relationship between social development and vocabulary development in a sample of 6- to 7-year old children.

What is the purpose of the study?

Young children vary with respect to the rate at which they develop. For example, some 6- and 7-year old children are more socially mature than others and some 6- and 7-year old children have developed more advanced language skills than others.

Although many people believe that social development and language development can occur independently of each other, others believe that a child with advanced language development is likely to be socially advanced as well.

This study will be measuring the level of social development and language development of a sample of 6- and 7-year old children in an attempt find out which of these two views best describes the development of young New Zealand children.

What would my child have to do?

I am presently recruiting a sample of 6-7 year old children to assist, and would like to formally invite your child to participate in my study. If you agree to your child's participation:

- I will measure your child's vocabulary development using the *Peabody Picture Vocabulary Test (PPVT-4)*. Testing will occur in a suitably private setting at the school. This test takes about 10 minutes to complete. I say a word and show the child four pictures. Then I ask the child to pick the picture which matches the word, and this process continues until the child has made several mistakes.
- Your child's classroom teacher will complete the *Canterbury Social Development Scale (CSDS)* as a measure of your child's social development. This asks the teacher to place your child on a 5-point scale with respect to each of 30 social skills such as following instructions, persistence, playing appropriately with others, turn taking, and so on.
- Your child's teacher will receive your child's vocabulary score and social development score so that they can make a professional decision regarding appropriate remedial teaching should that be indicated.

Your child's participation in this study is completely voluntary. If you do agree for them to participate, you have the right to withdraw your child from the study at any time without penalty. If you do withdraw your child, I will do my best to remove any information relating to your child provided this is practically achievable.

It is important to understand that a number of other children from your child's class will also be participating in the study, and that your child's teacher will have access to the results of your child's vocabulary test.

I will take particular care to ensure the confidentiality of all data gathered for this study. I will also take care to ensure your child's anonymity in any publications of the findings. All the data will be securely stored in password protected facilities and locked storage at the University of Canterbury for five years following the study. It will then be destroyed.

There is a very slight possibility that one or two children may indicate a desire to stop the testing. Any such request will be complied with immediately, and the child will be thanked for their participation before being taken back to their classroom.

The results of this study will be used to write up my master's thesis. A thesis is a public document and will be available through the UC Library. The study may also be published. A summary copy of the final study will be provided to the school and made available to interested parents/caregivers. If you so request, you will also be provided with a copy of your child's individual test results.

If you have any questions about the study at any stage, please contact me (details above), or my supervisors Dr Jacki Henderson, University of Canterbury, (jacki.henderson@canterbury.ac.nz) and Dr John Church, University of Canterbury, (john.church@canterbury.ac.nz).

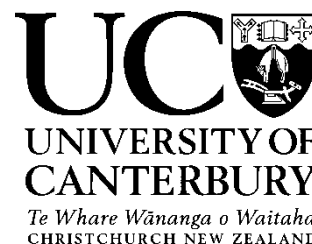
This study has received ethical approval from the University of Canterbury Educational Research Human Ethics Committee. However, if you have any complaints about the study you may contact the Chair, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

If you agree to let your child participate in this study, please complete the attached parent/caregiver consent form and return it to your child's teacher along with your child's signed assent form within the next two school days.

Thank you for considering this request.

Emily Barber

Emily Barber
Department of Psychology
University of Canterbury
Cell Phone: 027 466 9632
Email: edb14@uclive.ac.nz



Social Development and Vocabulary Development: What is the relationship?

Consent Form for Parents/Caregivers

I have been given a full explanation of this project and an opportunity to ask questions.

I understand what will be required of my child if I agree to allow them take part in this project and that my child's participation is voluntary and that we may withdraw at any stage without penalty.

I understand that any information relating to my child will be kept confidential to the researcher and her supervisors, and that my child will not be identified in any published or reported results.

I understand the risks associated with taking part and how they will be managed.

I understand that all data collected for this study will be kept in locked and secure facilities at the University of Canterbury and will be destroyed after five years. I understand that I can request a summary copy of the study to be sent to me when the study is completed in 8 months time.

I understand that if I require further information I can contact the researcher, Emily, or her supervisors, Dr Jacki Henderson and Dr John Church. If I have any complaints, I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee.

By signing below, I agree to my child participating in this research project.

Name: _____

Date: _____

Signature: _____

Please send me a Summary Report of this project AND/OR my child's individual test results when completed in 8 months time:

Yes ☐ No ☐

If yes, please send to my email address: _____

OR my postal address: _____

PLEASE SIGN AND RETURN THIS FORM TO YOUR CHILD'S TEACHER ALONG WITH YOUR CHILD'S SIGNED ASSENT FORM WITHIN THE NEXT TWO SCHOOL DAYS.

Emily Barber
Department of Psychology
University of Canterbury
Cell Phone: 027 466 9632
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Social Development and Vocabulary Development: What is the relationship?

Demographic Form for Parents/Caregivers

Name: _____

Age: ☐ 20-30 ☐ 31-40 ☐ 41-50 ☐ 51-60 ☐ 61-70 ☐ 71-80

Please tick the appropriate boxes:

Gender: ☐ Male ☐ Female ☐ Other

Which ethnic group do you belong to?

- ☐ New Zealand European
- ☐ Māori
- ☐ Samoan
- ☐ Cook Island Māori
- ☐ Niuean
- ☐ Tongan
- ☐ Chinese
- ☐ Indian
- ☐ Other

What is your highest form of education?

- ☐ No Qualification
- ☐ Sixth Form School Certificate/Year 13 NCEA Level 3
- ☐ University Degree
- ☐ Other Tertiary Qualification
- ☐ Higher Degree (e.g. Master's or PhD)

Emily Barber
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Social Development and Vocabulary Development: What is the relationship?

Information and Assent Form for Child

(To be read to the child by a parent/caregiver)

A university student named Emily is doing a project as part of her university studies. She is going to come to your school and give some of the children a word test. You have been selected as one of the children who will be allowed to take the test.

This is how the test will work. Emily will say a word and show you four pictures. Then she will ask you which picture matches the word and write down your answer. She will keep doing this until you come to words that you don't know.

If you decide that you want to stop at any time during the activity all you have to do is to tell Emily and she will stop and take you back to your classroom.

As well as doing the word test, your teacher will also tell Emily how you get on with other children in your classroom.

If you change your mind about helping Emily with her study no one will be upset with you.

If you would like to do the word test, Emily will give you a secret code name. This means that only Emily and your teacher will know how you did matching the pictures to words. Emily will keep the code name in a safe place.

Would you like to do Emily's test? If yes, then you can write your name here:

Child's name: _____ Date: _____

Appendix 4

Emily Barber
Department of Psychology
University of Canterbury
Cell Phone: 027 466 9632
Email: edb14@uclive.ac.nz



Dear parent/caregiver,

My name is Emily and, a few days ago, your child was invited to participate in my thesis study exploring the relationship between social development and vocabulary development in young school-aged children.

Your child's teacher handed your child an envelope containing information sheets detailing the project together with demographic and consent/assent forms for you and your child to complete, sign and return to school should you agree to participate in my study.

As your forms have not yet been returned, this is a friendly reminder letter in case you still have an interest in joining my study. If you are but require another envelope, please do not hesitate to ask your child's teacher.

Thank you again for considering my request.

Emily Barber

Appendix 5

Social Development Project



Social Development Scale

To be completed by the classroom teacher. Use this Scale for Year 1 to Year 4 students.

(please circle where necessary)

School:	Student Initials:			Gender: Girl <input type="checkbox"/> Boy <input type="checkbox"/>
DOB:	Age: yrs months			Ethnicity:
Year: <i>(please circle)</i>	Year 1	Year 2	Year 3	Year 4
Does this student have a disability?				Yes <input type="checkbox"/> No <input type="checkbox"/>
If yes, name the disability				
Has the teacher of this student received RTLB assistance within the past 12 months?				Yes <input type="checkbox"/> No <input type="checkbox"/>
Does the teacher of this student currently receive RTLB assistance?				Yes <input type="checkbox"/> No <input type="checkbox"/>
Is this student on the RTLB waiting list?				Yes <input type="checkbox"/> No <input type="checkbox"/>
Is this student currently receiving 2 or more hours per day of teacher aide assistance?				Yes <input type="checkbox"/> No <input type="checkbox"/>
For how long have you had day-to-day contact with this student?				weeks
This scale completed by: <i>(initials only)</i>				Date:

For Office Use Only	Part 1	
	Part 2	
	Total	

Instructions for Teachers

The scale which follows consists of descriptions of 30 different social behaviours.

- 1 Please decide whether each of these behaviours is one which the named student engages in 'very frequently', 'often', 'about half the time', occasionally' or 'not at all' and **place a circle** around the appropriate number.
- 2 When making these decisions, please take into account **only the behaviour which you yourself have seen**. It is most important that you do not allow your judgement to be influenced by what other people have told you.
- 3 When making these decisions, please take into account only the behaviour which you have seen **during the past four weeks**. It is most important that you do not allow your judgement to be affected by events which have happened at some earlier time.
- 4 When making these decisions, please record your **immediate or first impression**. Do not spend time pondering over individual behaviours.
- 5 Please complete every item. An incomplete scale cannot be used.
- 6 Each scale takes about 10 minutes to complete. Please select a period of time when you know that you will be free from interruptions to complete the scale.
- 7 After completion, please return your Scale(s) to the Principal.

Thank you for your assistance.

Part 1

(Please circle one number for each item)

		very frequently	often	about half the time	occasionally	never
1	Follows established classroom rules.	5	4	3	2	1
2	Complies promptly with teacher instructions.	5	4	3	2	1
3	Gets started on required tasks as soon as this is signalled or requested.	5	4	3	2	1
4	Persists with (continues to work on) set tasks when left unsupervised.	5	4	3	2	1
5	Uses polite remarks/requests to gain the attention of peers.	5	4	3	2	1
6	Responds appropriately when other students try to interact socially with him/her.	5	4	3	2	1
7	Shows interest in what others are saying during conversations, e.g. by nodding, smiling, commenting etc.	5	4	3	2	1
8	Shows appreciation when others offer to help, e.g. by smiling, saying 'thank you', etc.	5	4	3	2	1
9	Takes his/her turn when others are waiting.	5	4	3	2	1
10	Completes required tasks to an acceptable standard (given his/her present level of ability).	5	4	3	2	1
11	Compromises with others when conflicts or disagreements arise.	5	4	3	2	1
12	Behaves sympathetically when others are unhappy, upset or embarrassed.	5	4	3	2	1
13	Approaches peer groups in a way which results in acceptance into the current group activity or conversation.	5	4	3	2	1
14	Associates with a range of typically developing peers	5	4	3	2	1
15	Expresses anger appropriately (without becoming destructive or violent).	5	4	3	2	1

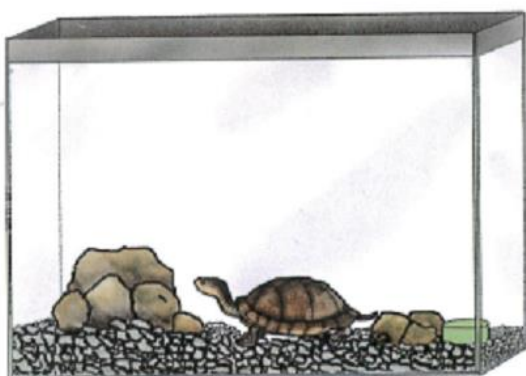
Part 2

(Please circle one number for each item)

		<i>very frequently</i>	<i>often</i>	<i>about half the time</i>	<i>occasionally</i>	<i>never</i>
16	Ignores initial requests and directions even though he/she has heard them.	1	2	3	4	5
17	Reacts in a cheeky or impertinent way to requests or directions from those in authority.	1	2	3	4	5
18	Continues talking after others have indicated that they would like to comment or that they would like to get on with something else.	1	2	3	4	5
19	Interrupts or annoys others when they are working or relaxing on their own.	1	2	3	4	5
20	Disrupts the play or the activities of the other children.	1	2	3	4	5
21	Uses demands where others would use requests.	1	2	3	4	5
22	Continues to plead, nag, or whine after his/her initial request or demand has been refused.	1	2	3	4	5
23	Tries to get own way by throwing tantrums e.g. by sulking or shouting, or swearing and refusing to co-operate.	1	2	3	4	5
24	Continues to behave inappropriately after being reprimanded, warned, or asked to stop.	1	2	3	4	5
25	Says things which indicate that he/she doesn't care about the consequences of his/her inappropriate behaviour.	1	2	3	4	5
26	Shouts others down when he/she disagrees with them.	1	2	3	4	5
27	Blames others when reprimanded for behaving inappropriately.	1	2	3	4	5
28	Interrupts others when they are speaking.	1	2	3	4	5
29	Acts violently towards others, e.g. shoves, hits, punches, or kicks others.	1	2	3	4	5
30	Behaves in ways which result in other students actively avoiding having to talk, play, or work with him/her.	1	2	3	4	5

Appendix 6

↑ Item 75



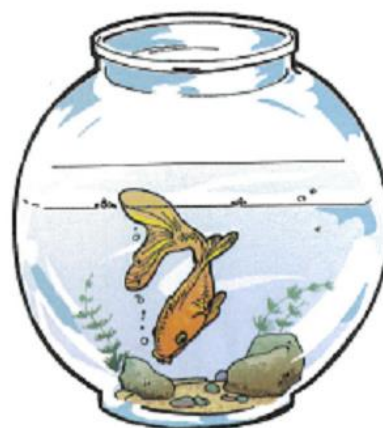
1



2



3



4

Appendix 7

• **Complete Set Rule:** Administer all 12 items in the set in order, starting with the first item in the set.

• **Basal Set Rule:** One (1) or zero (0) errors in a set.

• **Ceiling Set Rule:** Eight (8) or more errors in a set.

▼ Start Ages 2:6–3:11				SET 1
1. ball	1	2	3	4 E
2. dog	1	2	3	4 E
3. spoon	1	2	3	4 E
4. foot	1	2	3	4 E
5. duck	1	2	3	4 E
6. banana	1	2	3	4 E
7. shoe	1	2	3	4 E
8. cup	1	2	3	4 E
9. eating	1	2	3	4 E
10. bus	1	2	3	4 E
11. flower	1	2	3	4 E
12. mouth	1	2	3	4 E
Number of Errors				

▼ Start Age 4				SET 2
13. pencil	1	2	3	4 E
14. cookie	1	2	3	4 E
15. drum	1	2	3	4 E
16. turtle	1	2	3	4 E
17. red	1	2	3	4 E
18. jumping	1	2	3	4 E
19. carrot	1	2	3	4 E
20. reading	1	2	3	4 E
21. toe	1	2	3	4 E
22. belt	1	2	3	4 E
23. fly	1	2	3	4 E
24. painting	1	2	3	4 E
Number of Errors				

				SET 3
25. dancing	1	2	3	4 E
26. whistle	1	2	3	4 E
27. kicking	1	2	3	4 E
28. lamp	1	2	3	4 E
29. square	1	2	3	4 E
30. fence	1	2	3	4 E
31. empty	1	2	3	4 E
32. happy	1	2	3	4 E
33. fire	1	2	3	4 E
34. castle	1	2	3	4 E
35. squirrel	1	2	3	4 E
36. throwing	1	2	3	4 E
Number of Errors				

▼ Start Age 5				SET 4
37. farm	1	2	3	4 E
38. penguin	1	2	3	4 E
39. gift	1	2	3	4 E
40. feather	1	2	3	4 E
41. cobweb	1	2	3	4 E
42. elbow	1	2	3	4 E
43. juggling	1	2	3	4 E
44. fountain	1	2	3	4 E
45. net	1	2	3	4 E
46. shoulder	1	2	3	4 E
47. dressing	1	2	3	4 E
48. roof	1	2	3	4 E
Number of Errors				

▼ Start Age 6				SET 5
49. peeking	1	2	3	4 E
50. ruler	1	2	3	4 E
51. tunnel	1	2	3	4 E
52. branch	1	2	3	4 E
53. envelope	1	2	3	4 E
54. diamond	1	2	3	4 E
55. calendar	1	2	3	4 E
56. buckle	1	2	3	4 E
57. sawing	1	2	3	4 E
58. panda	1	2	3	4 E
59. vest	1	2	3	4 E
60. arrow	1	2	3	4 E
Number of Errors				

▼ Start Age 7				SET 6
61. picking	1	2	3	4 E
62. target	1	2	3	4 E
63. dripping	1	2	3	4 E
64. knight	1	2	3	4 E
65. delivering	1	2	3	4 E
66. cactus	1	2	3	4 E
67. dentist	1	2	3	4 E
68. floating	1	2	3	4 E
69. claw	1	2	3	4 E
70. uniform	1	2	3	4 E
71. gigantic	1	2	3	4 E
72. furry	1	2	3	4 E
Number of Errors				