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The impact of language skills and social competence on play behaviour in toddlers

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ABSTRACT

In this study, the relationship between play, language skills and social competence is explored in a sample ($n=1005$) of 33-month-old toddlers in a Norwegian early childhood education setting – Barneleges – based on two observational materials (*Tras* and *Alle med*). The study has two aims: (1) to investigate whether there is a relationship between social functioning and language proficiency at an early age; and (2) to identify the unique contributions made by language skills and social competence, respectively, to toddlers' functioning in play. Toddlers with very low language-skill scores were compared with toddlers with very high scores. Each child had been assessed independently by two staff members, familiar with the child in informal situations at Barneleges, over a period of three months. It was found that there is a relationship between toddlers' functioning in play and their language proficiency, but that toddlers' functioning in play is better explained by their social competence than by their language skills.

KEYWORDS

late talkers; social competence; play; Barnelege/early childhood education and care (ECEC) institutions

Norway has an extensive history of early childhood education and current-day *Barneleges* (ages 1–5) are grounded in Froebel's kindergarten. *Barnelege* translates most closely to kindergarten but is distinct in design from standard American and Canadian preschools and kindergartens, so equivalent English terms are not available (McTigue et al. [forthcoming](#)). The percentage of Norwegian children aged between one and two years who are enrolled in a Barnelege has increased by 42 percentage points in the past 13 years and as many as 95% of Norwegian three-year-olds now attend Barnelegen (Statistics Norway 2014). This dramatic increase in the number of toddlers attending Barnelegen has become not only a political, but also a pedagogical concern, with calls being made for more research to be carried out in relation to the youngest children at Barnelegen.

Play is one of the most prominent activities in small children's lives, and participation in play contributes to the development of complex competencies (Ministry of Education and Research 2011). For this reason, it is an important policy goal that Barnelegen should serve as an arena where all children are able to participate in play (Ministry of Education and Research 2007) cross social groups, age, languages and cultural differences (Ministry of Education and Research 2011). It can be assumed that language skills are important for participation in play, and there is research showing that late talkers are at risk of

externalising and internalising problems (Hawa and Spanoudis 2014) and that language difficulties are associated with social challenges (Aro et al. 2012). The aim of the present study was to investigate more closely the relationship among play, language skills and social competence in toddlers (aged 33-months) attending Barnehen.

Play, language and social competence

Play is a key factor in the development of cognitive functions as well as in language acquisition (Vygotsky 1978). Although language acquisition is a robust biological attribute in its core feature (Spinath et al. 2004), the opportunities for social interaction provided by the environment is crucial for the development of language – and social skills, both of which facilitate interaction with other people. Language competence enables the child to communicate intentions clearly, make explicit agreements and negotiations, which promotes effective interaction (Säljö 2001). Good social skills, on the other hand, encompass the adjustment and regulation of behaviour, cognition and emotions, and help the child to get along with his or her peers and to prevent or avoid undesirable social responses (Ladd 2005).

Social functioning and language

Previous research has shown that children with language difficulties struggle in their interaction with others. The association between language skills and social difficulties has been found to exist in pre-schoolers (Yew and O’Kearney 2013), in older children and adolescents (Durkin and Conti-Ramsden 2010; Helland et al. 2014) and in adults (Beitchman et al. 2001), but few have explored the relationship between social functioning and language skills in children under the age of three. The present study therefore focused on social functioning, specifically in play situations at Barnehen.

When it comes to older children, those who have language difficulties are found to be less attractive playmates (Hadley and Rice 1991), to use inappropriate social strategies (Brinton and Fujiki 1982) and to report feeling lonely more frequently than their peers (Marton, Abramoff, and Rosenzweig 2005). Despite compelling evidence about the relationship between language and behavioural problems, an inconsistent pattern emerges in young children. For example, in a community-based sample, three- and five-year-olds ($n = 8671$) with below-average language skills were rated significantly higher in terms of the presence of behavioural problems than children with above-average language skills (Hartas 2011). By contrast, in another study of children aged 18- to 35-months, language skills and emotional/behavioural difficulties were generally not correlated, as explored in two clinical samples ($n = 83$, $n = 103$) (Rescorla, Ross, and McClure 2007). Although, children with language difficulties were more likely to score lower in social skills compared to their peers, Fujiki et al. (1999) found no consistent pattern of association between language difficulties and social behaviour in their study.

Reporting on a large cross-sectional and a smaller longitudinal study, McCune (1995) showed that developments in play behaviour coincided with or were closely followed by developments in language, in both the cross-sectional and the longitudinal sample (children aged eight- to 24-months; $n = 102$). For a majority of the sample, children’s play developed with increasing complexity. Here it should be noted that children with

delayed language development present delay in symbolic play (Rescorla and Goossens 1992), and are often found to engage in simplistic forms of play, which might exclude them from more complex play with others. Moreover, reticence – for example involving withdrawal from play and interaction – is also a frequently reported trait in children with language difficulties (Fujiki et al. 2001; Irwin, Carter, and Briggs-Gowan 2002; Rescorla et al. 2007; Stanton-Chapman et al. 2007). Thus, being a late developer may make a child less likely to have access to the interactional situations required for further development, making it difficult to catch up.

Hence early intervention may be called for, but inconsistent results with regard to a possible association between social problems and language difficulties in toddlers require additional research to discover: (1) whether there is a relationship between language proficiency and social functioning at an early age; and (2) whether toddlers with poor language skills differ from their peers when it comes to play in a Barnehave setting.

Given that having good language skills promotes both interaction as such and the opportunity to influence the course of interaction (Bruner 1990), we hypothesise that toddlers with high language scores (HLS) will have better play functioning than toddlers with low language scores (LLS). Therefore, a comparison of these two groups might be a way to capture the role of language skills in toddlers' play.

Social functioning and social competence

Studies of children (aged seven- to 10-years) with language difficulties show that, compared with peers without such difficulties, they use non-verbal strategies and inappropriate negotiation and conflict resolution strategies in interaction more often (Marton et al. 2005) and have poorer social competence at the ages of 48- and 61-months (Stanton-Chapman et al. 2007). At an earlier age (20- to 30-months), the use of non-verbal social strategies actually seems to be more important for play than verbal skills (Monaco and Pontecorvo 2010; Engdahl 2011); children found to be successful in play with their peers are also found to possess good social strategies (Engdahl 2011; Gulay 2011). In this study, we refer to the use of social skills (self-regulation, co-operation, empathy, self-assertion and positive relationships with peers) as 'social competence' (Gresham and Elliott 1990; Hauge and Lamer 2005).

There is consensus that language and social cognition is associated (Bishop 2014). And findings from a study by Horwitz et al. (2003) suggests that there is a relationship between language problems and poor social competence in toddlers, as language delay and behavioural problems were not associated when social competence was adjusted for. However, little is known about the relative impact of social competence and language skills on toddlers play in Barnehave, and it has not been established whether social competence may indirectly reflect the relationship between toddlers' language skills and play behaviour. It is also unclear what the differences are between toddlers with low versus high levels of language skills. Knowing more about the impact of social competence on the play behaviour of toddlers with low and high language-skill scores, respectively, might be useful to take appropriate action, in order to include toddlers who do not participate in play at Barnehave to a sufficient extent.

The aim of the present study was to investigate whether there is a relationship among toddlers' play, language skills and social competence. More specifically, we wanted to find

out whether there is a relationship between toddlers' play and their language skills and, if so, to find out what characterises the play of toddlers with high versus low language-skill scores. Further, based on the assumption that social competence might conceivably be a more important factor for play than language, we wanted to find out whether social competence explains toddlers' play behaviour better than their language skills do, and whether toddlers with low language-skill scores have as much social competence as toddlers with high language-skill scores.

The research questions asked were as follows:

1. Do toddlers with LLS have poorer play functioning than toddlers with HLS? If so, what differences can be seen between the two groups in play?
2. Is toddlers' play behaviour better explained by social competence than by language skills? If so, what differences can be seen between the LLS group and the HLS group in terms of social competence?

Method

This study builds on baseline measurements from a longitudinal, multidisciplinary project called 'The Stavanger Project – The Learning Child', conducted in collaboration between the National Centre for Reading Education and Research at the University of Stavanger and the municipality of Stavanger, Norway (for more information about the project, see Reikerås, Løge, and Knivsberg [2012]).

The data used in this study come from the first stage of the project, which focused on observations of language skills, social skills and play in children at the age of 33-months.

Participants

The participants included 1005 children in 185 units at 87 Barneleges. For a child to be included in this study, observations had to have been registered in all three areas: Language, Play and Social Competence (see 'Variables' below). A total of 998 toddlers (49% girls) satisfied this criterion. In this sample, 100 children (10%) (49 girls) had language scores at the 11th percentile or below; they made up the LLS group (the 11th percentile was calculated separately for boys and girls to control for the effect of gender). There were 102 children (10%) (49 girls) whose language scores were at the 91st percentile or above; they made up the HLS group (the 91st percentile was calculated separately for boys and girls to control for the effect of gender). A group consisting of 113 children (11.3%) (61 girls) with average language scores is used for purposes of comparison; this group is referred to below as the 'average group'.

Data collection

Data were collected through structured observation of the children's competencies during play and daily activities by trained members of staff at the Barneleges. Using Barnelege staff as observers not only enables the collection of data about many children, but is also a method that is non-intrusive and non-disruptive in relation to everyday life at the

Barnehave. This is important because the rationale for the choice to observe play and daily-life situations was to identify competencies in naturalistic and meaningful situations at Barnehave rather than measuring skills in an isolated test situation (Bagnato, Neisworth, and Pretti-Frontczak (2010). This procedure is in line with the socio-pedagogical traditions of Norwegian Barnehages, where children's free play and daily-life activities are more central than teacher-driven activities (OECD 2006).

Each child was observed for a period of three months, ending when the child reached the age of 33-months. Several observations of each child were made in each of the various activities chosen. A written note was made when at least two members of staff had independently observed a child as mastering, partly mastering or not mastering a task. For a skill to be registered as mastered (2 points), it had to be in line with the observational question in the material. If the child showed emerging mastery of a skill, such as being able to perform a task with a little help that skill was registered as partly mastered (1 point), and if there was no observed mastery of a skill the child was awarded 0 points. The graduate Barnehave teacher in each unit bore principal responsibility for ensuring the quality of the observations. After the data had been handed over to the project for processing, the observational material was returned to the Barnehages to be used in the planning and implementation of pedagogical programmes, for co-operation with parents and, where appropriate, for the purpose of municipal services targeting children at risk.

Instruments

Tras and *Alle med* are observational materials widely used at Norwegian Barnehages to document children's development over time and to detect negative trends in their language and socio-emotional development, respectively. The materials are based on clinical and theoretical knowledge of child development, and they build on experiences from work with children at Barnehave. *Tras* and *Alle med* have been piloted several times. A description of how the materials were developed is given in Espenakk et al. (2003) and Horn, Ottem, and Solheim (2011) for *Tras*, and in Løge et al. (2006) and Løge (forthcoming) for *Alle med*. The authors provide detailed information about reliability and validity.

Each material consists of a handbook describing the observations to be carried out and a registration form for each child whose skills and competencies are to be observed. The observational questions reflect an increasing level of difficulty. The scoring system is the same for both *Tras* and *Alle med*. For the present project, supplementary user manuals containing scoring examples and specifications were produced (Helvig and Løge 2006). These specifications made it easier for the Barnehave staff to make their observations and also enhanced the quality of the data.

Ethical considerations

Research with young children involves specific ethical requirements to the research process. Children deserve special consideration as participants, they usually have less power in child-adult relations, and they are vulnerable, deserve respect and must be met in a way that does not expose them to any physical or psychosocial risk of being harmed. The children should experience participation as meaningful and rewarding and they shall by no means come out weakened from participating in this study. In general,

the research project should be neutral or even empowering for the children's everyday lives in the Barnehege.

The employees also have an unconditional right to be treated respectfully and shall at any time be informed of all significant aspects of the study. For both adults and children must be guaranteed that they will not be identified in the data analysis and results presentation. Anonymity, both at an individual and institutional level, must be complied with in all phases of the study.

The national research-ethical regulations as formulated by the Data Protection Official for Research at the Norwegian Social Science Data Services address the significant ethical criteria, that have to be followed by all national research projects which generates data about or of people in Norway. The Data Protection Official for Research has approved the study to be carried out. Accordingly, this study builds on freely-given consent on the basis of a specific and informed declaration. Participation for each individual child is based on parents'/caretakers'/guardians' informed, written consent on behalf of their children. The parents'/caretakers can withdraw their child/children from the project whenever they want without giving any reason for the withdrawal.

Variables

This study covers three sets of measures: Play, Social Competence and Language. While the two observational materials contain a total of 14 subscales, three subsets of items were selected for this study.

Play

The *Alle med* observational material (Løge et al. 2006) consists of six 15-item scales: 'Play', 'Well-being', 'Everyday activities', 'Motor skills', 'Language' and 'Socio-emotional development'. From the 'Play' scale, eight of the 15 items were selected to make up the Play measure in the present study. The scores on the various items were added, yielding a continuous scale ranging from 0 to 16 (Cronbach's $\alpha = .73$). The selection of items was based on content and on frequency, discrimination and reliability analysis. The items chosen were 'Tries out toys', 'Functional play', 'Varied play repertoire', 'Emerging pretend play', 'Plays with other children', 'Stays in play', 'Engages in construction play', 'Active in role play' and 'Participates in rule-based play'.

Social competence

The Social Competence measure was obtained from the 'Socio-emotional' scale and the 'Well-being' scale of *Alle med*. The sum of nine items was used, yielding a scale ranging from 0 to 18. This gave a good fit with regard to continuousness and reliability (Cronbach's $\alpha = .81$). The items used are 'Shares toys', 'Masters turn-taking', 'Shows empathy', 'Co-operates with other children', 'Has some self-control, shows emotions without taking them out on others', 'Shows acceptable emotional expressions with regard to anger, anxiety and frustration', 'Shows initiative and is socially active without acting superior or pushing others down', 'Approaches others in a positive way' and 'Has formed friendships'.

Language

The *Tras* observational material (Espenakk et al. 2003) consists of eight sub-scales with nine items each. Based on frequency, discrimination and reliability analysis, 27 items were selected from the scales of ‘Word production’, ‘Sentence production’, ‘Communication’ and ‘Language comprehension’. The scores on each item were added up, yielding a continuous scale ranging from 0 to 54 (Cronbach’s alpha = .93). Information about the items included is provided in the Appendix.

Analyses

The data were analysed by means of descriptive statistics, frequency analysis and sequential multiple regression using IBM SPSS Statistics v. 21. To perform the regression analysis, dummy variables were created for each of the three language-score groups, with the average group serving as the reference category. The dummy variables were entered in step 1 of the models. The Social Competence measure was then entered in step 2 to determine whether social competence independently contributed to play beyond what language skills contributed. Preliminary analyses were conducted to ensure that there was no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity.

Results

Language

Table 1 presents the mean and distribution of the language variable by the total sample and by language groups. The Language measure was close to having a normal distribution over the total sample (skewness and kurtosis close to zero), and the mean for the total sample and the Average Language Group corresponds. Higher standard deviation and dispersion suggests a higher degree of heterogeneity within the the LLS and HLS group than in the Average Language Group.

Play

As can be seen in Table 2, the mean Play score of the HLS group was twice the mean Play score of the LLS group, and the dispersion was approximately the same for the two groups. The mean score of the average group was about the same as for the total sample; the highest-performing toddlers in this group scored 14 out of 16 points.

Table 1. Language measure.

	N	M (SE)	SD	Min	Max	Skew/kurt
Total	998	22.32 (.35)	11.12	0	54	.29/- .68
Low language scores	100	6.55 (.35)	3.51	0	11	-.26/-1.18
Average language scores	113	22.12 (.14)	1.51	20	24	-.12/-1.41
High language scores	102	41.63 (.50)	5.03	35	54	.73/ -.21

Note: Mean scores and dispersion for the total sample and for toddlers with low, average and high language scores.

Table 2. Play measure.

	N	M (SE)	SD	Min	Max	Skew/kurt
Total	998	8.28 (.09)	2.81	0	16	.11/.03
Low language scores	100	5.39 (.22)	2.22	0	12	-.02/1.21
Average language scores	113	8.49 (.18)	1.91	3	14	-.40/.22
High language scores	102	11.32 (.26)	2.67	4	16	-.38/-.25

Note: Mean scores and dispersion for the total sample and for toddlers with low, average and high language scores.

Social Competence

Table 3 shows that the HLS group has a higher mean score on the Social Competence measure than both the LLS group and the average group of toddlers. Although some toddlers in the LLS group scored as much as 16 out of 18 points, the mean of 2.2 suggests that this group generally scores low on social skills.

Play skills of toddlers with high and low language scores

It can be seen in Table 4 that toddlers in the LLS group have quite often mastered the items 'Function play' (88%), 'Varied play repertoire' (74%) and 'Emerging pretend play' (54%). However, few members of that group have mastered more complex forms of interaction play (0–11%). This suggests that, generally, the LLS group have not been observed to master types of play that involve other children or that are language-dependent. By contrast, a large proportion of the members of the HLS group obtained the maximum score on the items 'Plays with other children' (88%) and 'Stays in play' (70%). Further, as many as 40% and 29% of the members of the HLS group, respectively, had attained full mastery of social construction play and complex role play, suggesting that a relatively large proportion of toddlers in this group engage in many different forms of interaction play.

Social skills of toddlers with high and low language scores

Table 5 shows that, overall, few toddlers in the LLS group have been observed to fully master social skills beyond the sharing of toys. By contrast, about 70% of the toddlers in the HLS group master turn-taking, empathy and co-operation, suggesting that a relatively large proportion of toddlers with HLS possess skills that reflect self-regulation and emotions.

The inter-relationship among Play, Language and Social Competence

Table 6 shows the results of the stepwise regression at each of the two steps, where the Play score is the dependent variable. In step 1, 53% of the variance in the Play score was explained by the Language variable. The HLS group had a statistically significantly

Table 3. Social competence measure.

	N	M (SE)	SD	Min	Max	Skew/kurt
Total	998	4.78 (.11)	3.50	0	18	1.36/1.99
Low language scores	100	2.26 (.21)	2.14	0	16	3.42/17.32
Average language scores	113	4.53 (.23)	2.47	0	11	.52/.28
High language scores	102	9.10 (.47)	4.71	1	18	.24/-.95

Note: Mean scores and dispersion for the total sample and for toddlers with low, average and high language scores.

Table 4. Mastery of types of play in toddlers with low, average and high language scores (percentages).

	LowLanguage	AverageLanguage	HighLanguage
Function play	88	98	98
Varied play repertoire	74	92	97
Emerging pretend play	54	83	97
Plays with other children	11	70	88
Stays in play	8	38	70
Engages in construction play	2	4	40
Active in role play	0	1	29
Participates in rule-based play	0	0	7

Table 5. Mastery of types of social skills in toddlers with low, average and high language scores (percentages).

	Low Language	Average Language	High Language
Shares toys	63	80	85
Masters turn-taking	11	38	67
Shows empathy	9	45	76
Co-operates with other children	1	2	44
Has some self-control	2	3	34
Shows acceptable emotional expressions	1	0	11
Shows initiative and is socially active	0	0	16
Approaches others in a positive way	1	2	26
Has established friendships	4	10	46

Table 6. Stepwise regression analysis predicting the unique contribution of Language and Social Competence, respectively, to Play scores.

		B	SE (B)	β
Step 1	Constant	8.49	.21	
	High language scores	2.84	.31	.41**
	Low language scores	-3.10	.31	-.44**
Step 2	Constant	6.48	.21	
	High language scores	.82	.28	.12*
	Low language scores	-2.09	.25	-.30**
	Social Competence	.44	.03	.58**

Note: Dependent variable: Play. The average group served as reference category.

* $p < .01$.

** $p < .001$. $R^2 = .53$ (step 1), $.72$ (step 2). $\Delta R^2 = .20$ (step 2). $n = 315$.

higher Play score than the average group ($\beta = .41$, $p < .000$), and the average group had a statistically significantly higher Play score than the LLS group ($\beta = -.44$, $p < .000$). Statistically significant differences were also found for Social Competence, with HLS preceding high Social Competence scores.

The model was considerably improved at step 2 of the analysis, as shown by the highly significant R^2 changes. Adding Social Competence to the model as a predictor for Play in step 2 increased the explained variance by 20%. With all predictors included in the equation, the total explained variance was 72%. Social Competence had a higher beta value ($\beta = .58$, $p < .001$) and was a stronger predictor than Language (the LLS group had $\beta = -.30$, $p < .001$; and the HLS group had $\beta = .12$, $p < .001$).

The model was relevant, with 53% of the variance in Play score explained by Language and a marked increase in R^2 at step 2 with a further 20% of the variance in the Play score explained at the last step. Although Language did remain a strong predictor of Play at step 2, Social Competence turned out to be the variable most strongly related to Play.

Discussion

The aim of this study was to investigate whether there is an association between social functioning and language proficiency in Norwegian toddlers at the age of 33-months, against the background of the fact that the relationship between social problems and language skills in toddlers is unclear in the literature (Hartas 2012). A further aim was to identify the unique contribution of language skills and social competence, respectively, to toddlers' functioning in play; that issue will be discussed later.

Language skills are associated with play

The results, taken together, show that language skills are a significant and independent predictor of behaviour in play, suggesting that there is indeed a relationship between how well toddlers function in play with peers and their language skills at the age of 33-months. This is in line with theories emphasising language as the most powerful tool for interaction (Vygotsky 1962). Previous research has documented a relationship between behavioural problems and language difficulties in older children, but behavioural problems do not consistently correlate with language skills in toddlers (Horwitz et al. 2003 Rescorla et al. 2007). Turning the focus from behaviour problems to social functioning in naturalistic settings in the Barnehave, this study has thus expanded on previous correlation studies by revealing that there is a relationship between social functioning and language skills in toddlerhood.

Specifically, the results confirm the hypothesis that the LLS group has poorer play function than the HLS and average groups. Only a small percentage of the toddlers in the LLS group engaged in complex play (Table 4) whereas many more HLS toddlers did, which is in line with previous findings (McCune 1995). Few LLS toddlers were observed as being active in role play, as participating in social construction play and as being able to stay in play over time. Given that complex forms of social play require a high level of language skills, it can be argued that children with poor language skills are likely to be less successful in such forms of play simply because of their inadequate linguistic proficiency. Indeed, the high percentage of average-group toddlers who had also not yet mastered these forms of play may suggest that role play and social construction play do not belong among the activities typically undertaken by toddlers at the age of 33-months.

However, the results suggest that the main difference between the LLS group and the HLS group does not relate to the complexity of play. Rather, the most profound difference between them seems to concern social versus solitary play, given that none of the types of play generally mastered by the LLS group ('Function play', 'Varied play repertoire', 'Emerging pretend play') actually involves playing with others (Løge et al. 2006). Only a small percentage of the toddlers in the LLS group received the full score for 'Plays with other children' (11%) and 'Stays in play' (8%) during the three-month period of observation. Their counterparts in the HLS group scored much higher (88%/70%). This indicates that toddlers with LLS spend a large part of their time at Barnehave playing alone. A similar trend has been observed in previous research: toddlers with language difficulties tend to withdraw socially (Caulfield et al. 1989; Rescorla et al. 2007; Stanton-Chapman et al. 2007).

It has been argued that a lack of linguistic skills may drive children with language difficulties away from their peers, either by their own choice (Brinton et al. 2000) or as a

result of exclusion by their peers (Rice, Sell, and Hadley 1991; Rice 1993). However, the data studied here do not reflect this aspect any more specifically than what has been referred to in the previous paragraph, and more research is needed to shed light on why toddlers with LLS tend to engage in solitary play in Barnehaven. Even so, one observation worth making on the basis on the present study in this respect is that, given that the LLS group is very heterogeneous, our results would seem to indicate that toddlers with LLS in general are at risk of experiencing obstacles to social play at Barnehaven, not only those who have specific language impairments.

Experience from interaction with peers is crucial for attaining the ability to act in line with the dominant social practices governing play within a given culture (Säljö 2001). Hence toddlers who do not participate much in social play will have poorer conditions to acquire social codes for how to enter into, initiate and maintain play with others, etc. (Gallagher 1993, 1999). The LLS toddlers' solitary play at Barnehaven might therefore also reflect their lack of social skills (Hadley and Rice 1991).

Play is better explained by social competence than by language skills

Language proficiency independently explained 53% of the variance in toddlers' play, but our results show that social competence explained even more of that variance ($\Delta R^2 = .20$). This is in line with other studies suggesting that toddlers' metacommunicative skills in general are more important than their verbal skills when it comes to play and interaction (Alvestad 2010; Monaco and Pontecorvo 2010; Engdahl 2011) and may suggest that poor social competence, more than poor language skills, accounts for play difficulties in toddlers.

Most of the LLS toddlers in this study were found to have poor social skills in terms of adjusting to others (turn-taking, co-operation, self-control) and taking others' perspective (empathy), which would seem to support previous research showing that language difficulties are associated with poor social skills in toddlerhood (Stanton-Chapman et al. 2007) and that social understanding and language are strongly related (Bishop 2014). The above-mentioned types of social skills are in fact ones that older children with language difficulties also struggle with (Fujiki, Brinton, and Todd 1996) which may reflect that poor social competence is a feature that follows children with language difficulties from a very early age.

Further, the toddlers in the HLS group are generally rated as having better social skills than those in the LLS group, suggesting that toddlers with HLS are more flexible in interaction with others and better able to take others' perspective. Those are strategies that are associated with social success (Gresham and Elliott 1990; Rubin et al. 2013) as they usually lead to agreement among the children and let them get along. However, toddlers' use of non-verbal vs verbal strategies are highly dependent upon whether there is agreement among the children in the play group or not. Non-verbal strategies are mainly used in play where there is consensus among the children (Alvestad 2010). When disagreement occurs, toddlers with good language skills have the advantage of using verbal language to negotiate their opinion and maintain the ongoing play (Brinton, Fujiki, and McKee 1998). As the LLS toddlers in the current study perform poorly on social skills, social strategies do not compensate for poor language and social interaction play may therefore become troublesome.

Based on the findings, first, that the HLS group outperforms the LLS group in both play and social competence, and, second, that social competence facilitates play more than language does, we argue that social competence can be seen as a mediating link between play and language.

However, it is worth noting that, although there are strong theoretical grounds for claiming that differences in social competence reflect differences in cognitive development (Vygotsky 1978), it is also possible that the poor social skills observed in the LLS group might reflect the lack of opportunities available to these toddlers in their Barnehave setting when it comes to using what social competence they possess. Given that social competence can be seen only in social interaction, the social skills of the LLS toddlers are difficult to observe because they tend to play alone at Barnehave. They might possess social skills and show them in other contexts, for example at home with their closest family.

Finally, although the present study does not enable any conclusions to be drawn about issues of causality in the relationship among play, social competence and language, it does support the notion that poor social skills and language difficulties are two co-occurring problems (Marton et al. 2005) which have consequences for play. It also confirms the need to look deeper into factors that might hinder or facilitate social play in toddlers with poor language skills.

Strengths and limitations

Like any study, this has its strengths and limitations. When it comes to strengths, the opportunity to use a large, community-based sample is an obvious one. The examination of contextual patterns of toddlers' proficiencies in naturalistic settings within the Barnehave also yielded information about their linguistic and social functioning in a context relative free of adult direction, where opportunities to meet, interact with and select playmates are abundant (Fujiki et al. 2001). These interactions are likely to be filled with conflicts, negotiations and different forms of play, which may provide rich information on the social behaviour and linguistic skills of toddlers. The choice to explore functioning in play instead of behavioural difficulties made it possible to discern a link between social aspects and language – such as has been found to exist in older children – even in toddlers under the age of three. With regard to limitations, using ratings made by Barnehave staff of toddlers' language skills and social competence certainly has its disadvantages, but it should be emphasised that, in practice, teacher reports are an important basis for decisions about further referral in that they offer a normative view of children's linguistic and social competence (Hartas 2012). Further, since the Barnehages were able to keep the observational materials relating to the toddlers in their own groups, the information could be used in ways that might benefit individual children.

It could also be argued that using observational materials in research entails certain limitations because of a lack of standardisation. On the other hand, standardisations relating to the behaviour of toddlers in free play could result in the overlooking of proficiencies that, say, shy, withdrawn or language-deprived children may manifest in naturalistic situations. However, it is true that more research using different methodological approaches is needed to increase our knowledge about social functioning in toddlers with LLS.

Conclusion and implications

Taken collectively, the findings from this study offer support for a view of social functioning and play as context-bound and as affecting and being affected by children's levels of language. One conclusion to be drawn is that there is an association between social functioning and language, even under the age of three. In this context, two issues should be emphasised. The first is that the LLS group engages less in social play than the HLS group does. Against the background of the policy goal for Barnehaugen to be an arena where all children have access to play regardless of their social group, age and linguistic and cultural background (Ministry of Education and Research 2011), ensuring such access for toddlers with weak language skills should be a focus for intervention.

The second issue is that the LLS group is rated as having very poor social competence. Social skills are dependent on participation in interaction with others. In light of the results showing that social competence explains toddlers' play behaviour more than language skills do, specific interventions to promote the social skills of late talkers might be one way to increase these toddlers' participation in social play. Further, having adults teach such toddlers social strategies that may be used in play contexts, for example, to initiate play or to include oneself in play in a positive way, might be beneficial for children with weak language skills in that it could increase their opportunities to engage in social play at Barnehaugen, thus helping them to help themselves acquire the social skills they need.

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Appendix

Items included in the Language measure:

1. Does the child use language in a manner that matches the situation?
2. Is the child able to participate in a dialogue for an increased time?
3. Is the child able to formulate his or her wishes verbally?
4. Is the child able to tell a story in a somewhat coherent manner?
5. Is the child able to easily make him- or herself understood?
6. Can the child find the right object by mentioning the associated verb? (e.g. Show me what we can draw with).
7. Does the child understand expressions containing prepositions? (e.g. 'leave the car behind the horse', 'Put the book on the table').
8. Is the child able to identify at least three or four different colours by name?
9. Does the child understand sentences with negative? (e.g. Please give me the cup that is *not* yellow).
10. Is the child able to categorise objects? (e.g. clothes, furniture, toys).
11. Does the child understand different type of comparative adjectives? (e.g. colder, tallest, less).
12. Does the child use verbs?
13. Does the child use personal pronouns referring to him- or herself?
14. Does the child use colour words?
15. Does the child use interrogatives such as *what*, *who*, *where*?
16. Has the child started to use general category words? (e.g. animals, foods, toy).
17. Is the child able to use the plural form of nouns?
18. Does the child use the past-tense form of verbs?
19. Is the child able to use words expressing shape, size and number?
20. Does the child use phrases containing two to three words?
21. Has the child started to ask questions (by intonation or using question-words)?
22. Does the child use expressions containing *no* or *not*?
23. Is the child able to form sentences up to four words in an acceptable order?
24. Does the child use sentences containing prepositions?
25. Is the child able to link sentences using conjunctions such as *and* and *but*?
26. Does the child use the interrogatives *how* and *why*?
27. Is the child able to express the past and future through verb tense?