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The role of language competence in building peer relationships in early childhood : a social network perspective

THE ROLE OF LANGUAGE COMPETENCE IN BUILDING PEER RELATIONSHIPS IN EARLY CHILDHOOD: A SOCIAL NETWORK PERSPECTIVE

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Abstract

Engaging in positive relationships with peers is highly important for children's learning and development. In the present study, social network analyses were used to investigate how children's language competence affects their peer relationships in the context of early childhood classrooms. A total of 13 classrooms (N = 248 children) participated. Children's language competence was measured using tests for oral communicative competence and receptive vocabulary knowledge. Furthermore, a sociometric method was used to obtain network data. Outcomes of social network analyses showed that children are more likely to form relationships with children with high and similar levels of receptive vocabulary knowledge. In addition, weak support was found for the hypothesis that children form relationships with children with high levels of oral communicative competence.

The moment children enter early childhood classrooms, they become part of a larger social network and are faced with the challenge of building relationships with peers (Rubin et al., 2015). These first peer relationships are highly important for children's learning and development. Previous research has shown that children who are not able to build positive relationships with peers are shut out from interactions in which children can practice communicating, giving and receiving feedback, and resolving conflicts. Being rejected and shut out from interaction can ultimately lead to low(er) academic performance (Furrer et al., 2014; Rubin et al. 2018; Wentzel, 2017). In addition, it has been found that satisfying peer relationships have a positive effect on children's wellbeing, academic functioning, and future romantic relationships (Holder & Coleman, 2015; Kiuru et al., 2015). Because of the significance of children's early relationships with peers, it is important to examine possible predictors in order to promote opportunities for children to build positive relationships with peers. Previous studies have indicated that children's levels of language competence are related to their relationships with peers (Van der Wilt et al., 2018a, 2018b). Although a connection between language competence and peer relationships has been established (see Troesch et al., 2016; Van der Wilt et al., 2019), not much is known about the role of language competence in building social networks. Therefore, in the present study social network analyses were used to investigate how children's language competence affects their peer relationships.

Language competence is a broad concept that consists of multiple aspects (Conti-Ramsden & Durkin, 2012). The present study specifically focused on oral communicative competence and receptive vocabulary knowledge. Oral communicative competence entails a combination of knowledge, skills, and attitudes that enables children to use language in an appropriate and effective manner in different social contexts (Hymes, 1972; also see Savignon, 2017). Receptive vocabulary knowledge refers to the understanding of the meaning of words that are heard or read (Vatalaro et al., 2018). Previous research has shown that both oral communicative competence and receptive vocabulary knowledge play a role in building and maintaining peer relationships. That is, children with high levels of oral communicative competence and receptive vocabulary knowledge have been found to be more liked by their peers than children with low levels (Cheung & Elliot, 2017; Van der Wilt et al., 2018a, 2018b).

Previous findings regarding the link between children's language competence and their relationships with peers can be explained by the social exchange theory. According to the social exchange theory, social relationships are built on a consideration of costs and benefits (Cook & Rice, 2003; Cropanzano & Mitchell, 2005; also see Homans, 1961). An important assumption is that one seeks relationships with people who are able to provide something

valuable (Cropanzano & Mitchell, 2005). Regarding the role of language competence in peer relationships, the social exchange theory indicates that children tend to prefer peers with high levels of language competence, since the interactions with such peers are expected to be more rewarding, stimulating, and satisfying (Menting et al., 2011). This could explain why children with high levels of language competence have been found to be more liked by their peers than children with low levels.

Both the social exchange theory and findings of previous research suggest that children have a tendency to build relationships with peers who have well-developed language skills. However, previous studies into the role of language competence in peer relationships primarily used linear regression analyses (Cheung & Elliot, 2017; Van der Wilt et al., 2018a, 2018b). In social network analysis, we adopt a relational/structural perspective; we do not investigate the (linear) relation between individuals' language competence and their relationships with peers, but we explore the role of language competence in network development in early childhood classrooms. This is important, as social structures enhance or limit the opportunities (e.g., for further development of language competence) an individual has (Froehlich et al., 2020). Besides, the social exchange theory is merely one of the theories on the formation of social relationships that is frequently used in the context of social network analysis. Investigating other theories and principles deriving from it could provide new insights regarding the role of language competence in peer relationships. One principle that is known to highly influence social relationships is the principle of homophily (McPherson et al., 2001).

Homophily indicates that friends are likely to be similar with regard to sociodemographic, behavioral, and interpersonal characteristics (McPherson et al., 2001). It has been demonstrated, for example, that play groups during free play time (i.e., play situations that are not configured or managed by teachers) in early childhood classrooms are highly gender segregated: Boys prefer to play with boys and girls prefer to play with girls (Martin et al., 2014). In addition, research has indicated that children tend to connect to peers who are similar in age (Shutts et al., 2010). Homophily, however, has been shown to be also applicable to individuals' knowledge, skills, and abilities. Research in high schools has demonstrated, for instance, that friends are likely to be similar in social skills and academic achievement (Flashman, 2012; Pijl et al., 2011). With regard to the role of language competence in early peer relationships, the homophily theory would indicate that children with similar levels of language competence tend to connect to each other. However, whether the principle of homophily also holds for children's early language competence is unknown. Therefore, besides (re-)investigating hypotheses based on the social exchange theory, the present study also tested hypotheses derived from the theory of homophily.

To summarize, two different theoretical frameworks (i.e., the social exchange theory and the homophily theory) were used to investigate the role of language competence in children's early peer relationships. Based on the social exchange theory, the expectation is that children build relationships with peers who might provide something valuable. Hence, in the present study, the following hypotheses were tested: Children are more likely to form relationships with children with high levels of oral communicative competence (Hypothesis 1a); Children are more likely to form relationships with children with high levels of receptive vocabulary knowledge (Hypothesis 1b). In addition, based on the homophily theory, the expectation is that children who are similar connect to each other. In this study, we examined the following hypotheses: Children with similar levels of oral communicative competence are more likely to form relationships with one another (Hypothesis 2a); Children with similar levels of receptive vocabulary knowledge are more likely to form relationships with one another (Hypothesis 2b). The hypotheses were tested using social network analyses.

Methods

Ethical Considerations

For the present study, ethical approval was obtained from the Scientific and Ethical Review Board of the Faculty of Behavioural and Movement Sciences of the Vrije Universiteit Amsterdam. Teachers who wanted to participate in the study were asked to hand out the information letters and permission forms to their pupils' parents. In the parents' information letter, the purpose and procedure of the study was explained, and it was clearly stated that participation of the child was completely voluntary. Parents were asked to sign the permission form and to indicate (yes or no) whether they permitted their child to participate in the test administrations. Children who did not receive permission were excluded from the study. All data were anonymized as soon as possible and were saved on a secured drive of the university.

Sample

In total, $N = 334$ children from 18 early childhood classrooms participated in the study. The children's ages ranged from 3.1 to 7.0 years ($M = 5.05$, $SD = 0.66$) and there were somewhat more girls ($n = 183$) than boys ($n = 150$). Most of the children were born in the Netherlands (91.6%). Other countries of birth were in Europe (1.5%), Asia (0.9%), Africa (0.6%), South America (0.6%), and North America (0.3%). In the Netherlands, Dutch is the main language that is spoken in early childhood classrooms. For 87.1 percent of the children, Dutch was the main language spoken at home. Other home

languages were English (1.2%), Arabic (1.2%), Aramaic (0.9%), Kurdish (0.6%), and other non-Western (3.3%) and Western (1.5%) languages. Parents' educational levels were low (7.2%), average (48.5%), or high (38.0%).

Instruments

Children's language competence was measured using two instruments: the Nijmegen Test for Pragmatics to measure children's oral communicative competence and the Peabody Picture Vocabulary Test to measure children's receptive vocabulary knowledge.

Oral communicative competence. Children's level of oral communicative competence was measured with the Dutch Nijmegen Test for Pragmatics (Embrechts et al., 2005). This test consists of three subscales; in the present study, only the communicative functions subscale was administered as this scale is most relevant for measuring oral communicative competence. Besides, it takes quite long to administer the total test (i.e., 30–45 minutes; Embrechts et al., 2005). The communicative functions subscale consists of 22 items and is designed to measure whether children are able to use language for different functions, such as providing instruction (see Appendix for an overview of the items of this test). During the individual test administration, the test assistant tells the child a story by referring to large color pictures. The story is about two children, Peter and Lotje, who live in a house with their parents and find themselves in different social situations. One item goes as follows: "Dad and Peter are playing a game. Peter does not yet know how it works. Dad does. Peter wants Dad to explain the game to him. What does Peter ask?" As this example illustrates, the items are aimed to elicit a verbal response from the child.

Total test administration took approximately ten minutes and was audiorecorded so the responses of the children could be scored afterwards. Children's responses were dichotomously scored. One point was ascribed to a correct response (e.g., for the previous example: "Could you explain it to me?") and zero points were ascribed to an incorrect response (e.g., "He does not get it"). In order to assess children's level of oral communicative competence, a total score was calculated by summing the number of correct responses. The reliability of the communicative functions subscale has been found to be satisfactory (Cronbach's alpha coefficient of 0.82; Embrechts et al., 2005), and this was also the case in the present study (Cronbach's alpha coefficient of 0.85).

Receptive vocabulary knowledge. Children's receptive vocabulary knowledge was assessed using the Dutch version of the Peabody Picture Vocabulary Test, third edition (Schlichting, 2005). This is a standardized test

that is frequently used to measure receptive vocabulary (Dunn & Dunn, 1997). In the present study, we followed the approach of Mulder et al. (2014) and, based on children's age, selected three sets of items (i.e., set 5, 6, and 7). Together, these sets consist of 36 items (item 49 to 84) which increase in difficulty. During the individual test administration, the participant is shown four black-and-white line drawings. With each item, the test assistant reads a word aloud and asks the participant to point to the picture that represents the word in question best. For example, one item goes as follows: "Could you point to the picture of a person who is laughing?" In this case, one can choose between pictures of a person who is crying, who is drinking tea, who is looking shocked, and who is laughing.

In the present study, test administrations took approximately five minutes. A total score was computed by subtracting the number of errors from the total number of items. Previous research into the reliability of the Peabody Picture Vocabulary Test has indicated that its internal consistency is good (average Guttman's lambda-2 coefficient of 0.93 for children aged four to seven years; Schlichting, 2005). The reliability of the three sets was also high in the present study (Cronbach's alpha of 0.80).

Network data. Peer nominations were used to obtain the network data. During the nomination procedure, participants are typically asked to nominate others to indicate who their friends are, with whom they like to work, et cetera. In the present study, children were asked to nominate classmates they liked to play with (positive nomination) and classmates they did not like to play with (negative nomination), but we only focused on the positive nominations in the analyses. To support children in nominating their peers, they were first shown a picture of their classmates and were asked to name each child in the picture. Next, children were asked: "With whom do you (not) like to play?" ("Is there someone else you (do not) like to play with?"). Children were asked to nominate at least one peer. In the analyses, we included a maximum of four nominations per child. The total procedure took approximately five minutes per child. The reliability of the peer nomination procedure was examined by Wu et al. (2001) by calculating test-retest correlations over an eight-week period in a sample of four- to five-year-old children. With a reliability coefficient of 0.79, the peer nomination procedure proved to be a reliable method for obtaining network data in early childhood.

Analyses

Missing data. There were multiple missing values on the measurements of both oral communicative competence (8.7%) and receptive vocabulary knowledge (5.1%). Missing values were imputed using the commonly used Expectation-Maximization (EM) method after finding no statistically reliable

deviation from randomness (Little's MCAR test $X^2(282) = 301.40$, $p = 0.204$). Classrooms in which less than 80% responded in the network data were excluded from the analyses, given the sensitivity of sociometric network analysis concerning missing data (Froehlich & Brouwer, 2021; Wasserman & Faust, 1994). This was the case for four classrooms. Moreover, one class was excluded from the analysis because the nomination data was captured in a different format. Hence, a total of 13 early childhood classrooms ($N = 248$ children) were included in the final sample used in our analyses.

Data-analysis plan. Hypotheses were tested using exponential-family random graph modeling (ERGM; Lusher et al., 2013)such as reciprocated ties and triangles. A social network can be thought of as being built up of these local patterns of ties, called network configurations xe \"network configurations\", which correspond to the parameters in the model. Moreover, these configurations can be considered to arise from local social processes, whereby actors in the network form connections in response to other ties in their social environment. ERGMs are a principled statistical approach to modeling social networks. They are theory-driven in that their use requires the researcher to consider the complex, intersecting and indeed potentially competing theoretical reasons why the social ties in the observed network have arisen. For instance, does a given network structure occur due to processes of homophily xe \"actor-relation effects:homophily\", xe \"homophily\" \\t \"see actor-relation effects\" reciprocity xe \"reciprocity\", transitivity xe \"transitivity\", or indeed a combination of these? By including such parameters together in the one model, a researcher can test these effects one against the other, and so infer the social processes that have built the network. Being a statistical model, an ERGM permits inferences about whether, in our network of interest, there are significantly more (or fewer) using the statnet package for R (R Development Core Team, 2007; Statnet Development Team; see also Handcock et al., 2008). ERGMs enable the statistical analysis of social networks by treating the observed network (in our case, the data recorded in multiple early childhood classrooms) as one realization of possible networks with similar underlying characteristics (Robins et al., 2007). Put differently, we sought to understand the extent to which our proposed model could explain the networks observed in the early childhood classrooms. The model was tested using Markov Chain Monte Carlo Maximum Likelihood Estimation (MCMCMLE) for each class. For every estimation, goodness-of-fit plots and MCMC statistics were evaluated for model fit and convergence. The results were then pooled through meta-analysis using restricted maximum likelihood estimation to give estimates of the overall effects.

To test the hypotheses derived from the social exchange theory (Hypothesis 1a and Hypothesis 1b), we introduced multiple main effects of covariates for in-edges (ERGM term "nodeicov") in our analyses. Specifically, network

statistics based on oral communicative competence (Hypothesis 1a) and receptive vocabulary knowledge (Hypothesis 1b) were used. The question was whether children who scored higher on these variables received more positive nominations from their peers. Next, in order to test the hypotheses based on the homophily theory (Hypothesis 2a and Hypothesis 2b), absolute differences of nodal attribute levels (ERGM term "absdiff") was used to investigate homophilic effects based on oral communicative competence (Hypothesis 2a) and receptive vocabulary knowledge (Hypothesis 2b). This model term can indicate whether ties are created between children with similar levels of oral communicative competence and receptive vocabulary knowledge disproportionally more (or less) often than in a random graph. A negative estimate indicates homophily (i.e., the larger the differences are, the less likely tie formation becomes). As covariates in terms of homophilous behavior, we included the terms based on gender and age.

As a final step, we included endogenous network terms to control for the possible effects on tie-generation. In particular, we focused on three types of endogenous network effects: The edges terms stand for the general propensity of the existence of ties (i.e., the density of a network). The terms gwideg and gwodeg, the geometrically weighted in-and out-degree distributions, were also controlled for in order to account for transitivity. We also controlled for reciprocity (mutual term) and the geometrically weighted dyadic shared partners term (gwdsp), which accounts for shared actors between dyads of actors. The term gwdsp takes into account that pairs of individuals may be not only connected directly, but connected through (multiple) indirect links they have with shared partners. Note that the more common term for geometrically weighted edge-wise shared partners (gwesp, which assumes a direct connection among the two individuals in focus) was not included. This is because the model then would not converge for a few classrooms. However, for the other classrooms, the data show a statistically insignificant effect of gwesp and no differences in the patterns of findings in the rest of the model, which gives confidence in this procedure. The model was constrained by the maximum number of outdegrees, which was set to four (the maximum number of nominations that were included from the survey data).

Results

Descriptive Statistics

The descriptive statistics of the main variables are provided in Table 1. In addition, Figure 1 shows four exemplary networks of four early childhood classrooms to illustrate the data of the current study. While the general context is the same across classrooms, the figures show different structures (e.g., note

the two visible sub-groups in class S5LK2 or the less centralized network of class S5LK3) and composition (e.g., children in class S5LK3 seem to be relatively young and homogeneous in terms of age).

Table 1
Descriptive Statistic of the Main Variables

	Minimum	Maximum	Mean	Standard deviation
Oral communicative competence	0	22	13.44	4.83
Receptive vocabulary knowledge	6	35	21.66	6.08
Network data				
Nominations provided	0	8	2.02	1.66
Nominations received	0	10	5.06	2.61

Figure 1
Visualization of the networks of four classrooms from the sample (randomly selected) for the purpose of illustration
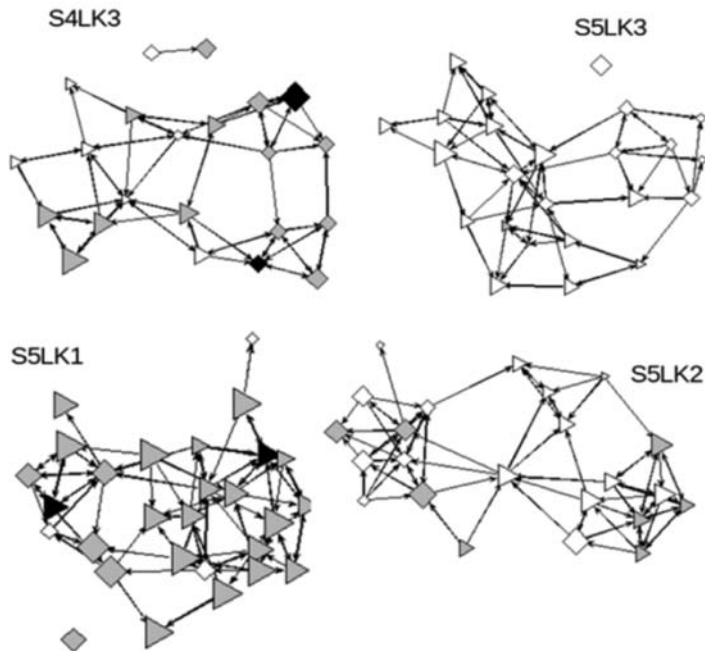
Note: node size signifies receptive vocabulary knowledge (the bigger the node, the higher the level of receptive vocabulary knowledge); node shape signifies gender (triangle = girl, square = boy), node color signifies age group (white = young, gray = middle, black = old); edges represent directed friendship nominations.

Hypotheses Testing

Hypothesis 1a and Hypothesis 1b were both based on the social exchange theory. Hypothesis 1a assumed that children are more likely to form relationships with peers with high levels of oral communicative competence. Hypotheses 1b assumed that children are more likely to form relationships with peers with high levels of receptive vocabulary knowledge. The outcomes of our analyses provided support for Hypothesis 1b and weak support for Hypothesis 1a. Specifically, whereas the observed nodeicov term based on oral communicative competence was slightly above the alpha-level of 0.050 in the meta-analysis ($0.014, p = 0.054$), the nodeicov term based on receptive vocabulary knowledge was statistically significant ($0.01, p = 0.035$).

Hypothesis 2a and Hypothesis 2b were derived from the homophily theory and assumed that children with similar levels of oral communicative competence are more likely to form relationships with one another (Hypothesis 2a) and children with similar levels of receptive vocabulary knowledge are more likely to form relationships with one another (Hypothesis 2b). The hypothesis regarding homophily in oral communicative competence, as represented by the absdiff term, was not supported by the studied data ($-0.009, p > 0.10$). In contrast, the hypothesis regarding homophily in receptive vocabulary knowledge showed a significant effect of -0.01 ($p = 0.020$) across the sampled classrooms.

Besides the previously described effects, endogenous network effects, which are based on our general understanding of how social networks are formed (unrelated to the domain of this article), played a large role in explaining the nomination data. Specifically, we included five such terms (edges, gwideg, gwodeg, mutual, and gwdsp) in our model, all of which showed statistically significant effects (see Table 2). This suggests that the general density, reciprocity, transitivity, and distributions of in- and outdegrees help to explain the networks' structures. In terms of probabilities, these endogenous network terms suggest that the general propensity to nominate someone is 16% ($EXP(-1.645)/(1+ EXP(-1.645))$) or that the propensity to reciprocate a friendship nomination is 86%. Note that the meta-analysis indicated heterogeneity across the classrooms for the matching genders and the edges term when we take a conservative alpha level of 10%. The former means that while we note a general tendency for ties to exist among pairs of pupils of the same gender, the strength of this effect varies across classrooms. This may be attributed to, for instance, the specific classrooms' cultures or the general mix of genders present in the classroom. Heterogeneity indicated for the edges term means that the observed density of connections varied between classrooms. This may be due to attributes of the classrooms not taken into consideration for the analyses, such as a classrooms' social climate or even cultural factors beyond the classroom, number of children in the classroom, interpersonal teacher behavior, and the length of time that the pupils in the classroom have known each other.

Table 2
Outcomes of ERGM analyses

	Estimate	p	Qp
Social exchange theory			
Oral communicative competence (nodeicov)	0.014	0.054[†]	0.407
Receptive vocabulary knowledge (nodeicov)	0.013	0.035*	0.472
Homophily theory			
Oral communicative competence (absdiff)	−0.009	0.287	0.232
Receptive vocabulary knowledge (absdiff)	−0.014	0.020*	0.622
Age (absdiff)	−0.318	0.000**	0.326
Gender (nodematch)	0.935	0.000**	0.052
Endogenous terms			
Edges (edges)	−1.645	0.000**	0.076
Distributions indegree (gwideg)	−0.844	0.000**	0.985
Distributions outdegree (gwodeg)	−0.972	0.000**	0.901
Reciprocity (mutual)	1.779	0.000**	0.287
Geometrically weighted dyadwise shared partner distribution (gwdsp)	−0.147	0.000**	0.478

Note. **$p < 0.01$; * $p < 0.05$, [†]$p < 0.10$

Discussion

The aim of the present study was to investigate how language competence affects peer relationships in early childhood classrooms. Outcomes confirmed that children are more likely to form relationships with children with high levels of receptive vocabulary knowledge (Hypothesis 1b) and similar levels of receptive vocabulary knowledge (Hypothesis 2b). Weak support was found for the hypothesis that children are more likely to form relationships with children with high levels of oral communicative competence (Hypothesis 1a); the data did not support the hypothesis that similar levels of oral communicative competence play a role in young children's network formation (Hypothesis 2a).

The finding that children are more likely to form relationships with children with high levels of receptive vocabulary knowledge coincides with outcomes of previous studies showing that children with high levels of receptive vocabulary knowledge are more liked by peers (Cheung & Elliot, 2017). This finding can be explained by the social exchange theory in which it is argued that one tends to build relationships with people who can provide something valuable (Cook & Rice, 2010). That is, children with high levels of receptive vocabulary knowledge might be able to provide something valuable, because their language competence (i.e., vocabulary knowledge) helps them to understand others' verbal messages which, in turn, facilitates

verbal communication with others and diminishes the chance of peer conflicts (Menting et al., 2011). In contrast, children with poor receptive vocabulary knowledge have been shown to experience problems in interpreting and understanding verbal expressions, which is likely to result in problematic peer relationships (Menting et al., 2011). The present study provides further support for the beneficial role of children's language competence, and specifically their receptive vocabulary knowledge, in building peer relationships.

Besides the finding that children are more likely to form relationships with children with high levels of receptive vocabulary knowledge, outcomes also indicated that children are more likely to form relationships with children with similar levels of receptive vocabulary knowledge. This indicates that children tend to connect with peers who are not only similar in gender (Martin et al., 2014) and age (Shutts et al., 2010), but also in receptive vocabulary knowledge. This finding is in line with the homophily theory: People tend to connect to others who are similar to themselves (McPherson et al., 2001). The present study adds to previous studies by showing that, besides the social exchange theory, the homophily theory is also applicable to the role of receptive vocabulary knowledge in peer relationships.

In contrast to the outcomes with regard to the hypotheses on receptive vocabulary knowledge, weaker support was found for the hypotheses on oral communicative competence. The finding that children were more likely to form relationships with children with high levels of oral communicative competence was less pronounced than in previous studies in which it was shown that children with high levels of oral communicative competence received significantly more positive nominations from their peers (i.e., were more liked) than children with low levels (Van der Wilt et al., 2018a, 2018b). This could be explained by methodological differences between the studies. That is, in previous studies children were allowed to nominate up to three peers whereas the current study included a maximum number of four nominations per child. Moreover, there were differences in the data-analysis approach: Previous research used linear regression analyses, whereas the present study used social network analyses. Future research is required in order to investigate exactly how these methodological differences explain differences in outcomes.

In addition, the outcomes of our analyses did not support the hypothesis that children are more likely to form relationships with children with similar levels of oral communicative competence. This outcome contradicts findings of previous research in which friends were likely to be similar in abilities such as social skills (Pijl et al., 2011). It is important to note however, that these studies were conducted within the context of high schools. This could indicate that similarities that are not directly observable (e.g., certain skills such as language skills) only start to play a role in peer relationships when children

are older. An important question then, however, is why children in the present study were more likely to build relationships with children with higher and similar levels of receptive vocabulary knowledge, but not with higher and similar levels of oral communicative competence. The answer to this question might be found in differences between these two aspects of children's language competence. Specifically, research has shown that the development of receptive vocabulary knowledge is relatively stable and predictable (Bornstein et al., 2004). During early childhood, children rapidly learn new words and steadily build their vocabulary. In contrast, children's oral communicative competence is highly dependent on the (affordances of the) pragmatic context: In one context (e.g., in a dyadic play activity with a friend) children can show advanced levels of oral communicative competence, whereas in another context (e.g., in a conversation with an unknown peer) children might show relatively low levels of oral communicative competence (cf. Hodges, 2009). This could indicate that young children only use relatively stable and predictable similarities such as gender, age, and – as the present study shows – receptive vocabulary knowledge to select their friends.

In interpreting the present study's findings, it is important to note that language competence might partially reflect an underlying construct, such as socioeconomic status (SES). It has been demonstrated that children from low SES and language minority homes demonstrate lower levels of the language skills that are required, valued, and tested in school (e.g., Betancourt et al., 2015; Fernald et al., 2013; Hoff, 2013; Huttenlocher et al., 2010; Luo et al., 2021; Pungello et al., 2009). In other words, both family SES and the language that is spoken at home predict children's scores on mainstream and monolingual language tests. The question is whether the present study only measured children's language competence or also measured, for example, SES. If language competence is partially a reflection of SES, the present study's findings indicating that children prefer peers with similar or higher levels of vocabulary could also indicate that children prefer peers with a similar or higher SES. Further research (e.g., qualitative research into children's own perspective regarding reasons for selecting friends) is needed to clarify this matter.

Although the current study provided interesting outcomes, there were also several limitations. One limitation is that the hypotheses were based on two theoretical frameworks (i.e., the social exchange theory and the homophily theory) that are commonly used in research on social networks. Other theories, such as theories on altruism, are not frequently used in this area of research, but might advance our understanding of the complexity of building social relationships in (early childhood) education. As the present study did not take such theories into account, it is unknown whether these theories and principles derived from them might also or even better explain the role of language

competence in peer relationships. Therefore, future research into the role of language competence in peer relationships should also take other theories than the social exchange theory and the homophily theory into account.

A second limitation concerns the language tests that were used in the present study. Specifically, language tests are generally based on the assumption that language is a fixed (or innate) ability that is reflected in the test performance (McNamara, 2001). Several researchers, however, have critiqued this fixed ability thinking (Bradbury, 2019; Hoff, 2013; Marks, 2013; McNamara, 2001; Messick, 1989; Wolbring, 2014). For example, considering language as a fixed ability ignores the fact that children's language acquisition is highly influenced by their language experiences, which are shaped by the cultural and social contexts in which the children live (Hardin et al., 2010; Hoff, 2013; Hoff & Tian, 2005; Marks, 2013; Ryan & Mercer, 2012). Future research should adopt a more socially oriented conception of language and combine standardized tests with observations of children's language learning experiences (Hoff & Tian, 2005; McNamara, 2001). In addition, the use of monolingual language tests (as were used in the present study) has been challenged, because they might be biased toward certain populations (Hoff, 2013). It has been argued that the unique linguistic strengths of low SES children and bilingual children are not captured by standard language tests, which are based on mainstream expectations (Hoff, 2013). As a result, the language competence of children from nonmainstream backgrounds might be considered deficient (instead of different), whereas their competency would not at all be deficient according to the norms of their own group (Hoff, 2013). We argue that more research is needed on how to value children's prior language experiences when assessing their language competence.

A final limitation is that this study specifically focused on the role of language competence, whereas it has been shown that variables such as social competence are also involved in children's peer relationships (Bierman & Powers, 2009). In addition, as previously discussed, language competence might be a reflection of some underlying construct, such as socioeconomic status. Hence, future studies should include additional factors that might be related both to language competence and children's relationships with peers.

The findings of the present study have several practical implications. The finding that children tend to seek out peers with high levels of receptive vocabulary knowledge as well as peers with similar levels of receptive vocabulary knowledge seems to indicate that children with high levels do not tend to connect to children with lower levels. However, previous research has indicated that it is important for children with advanced abilities to connect to children with low abilities, as the latter group can benefit from the first group (Justice et al., 2011). The tendency of children to connect to peers with similar or higher levels of receptive vocabulary knowledge might

indicate that children with low levels of receptive vocabulary knowledge are excluded from certain learning opportunities and peer interactions. Teachers should therefore carefully think about how they can compose play groups in early childhood classrooms in such a way that children can learn from each other and that all children have the possibility to engage in meaningful social relations that promote their language development.

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Appendix

List of the sub-skills assessed by the communicative function subscale of the Nijmegen Test for Pragmatics (Embrechts et al., 2005).

Sub-skill	Description
Requesting explanation	Asking for an explanation in order to clarify something
Requesting clarification	Asking for a further explanation
Describing feelings	Expressing emotions and feelings
Providing a suggestion	Providing ideas in order to solve a problem
Providing information	Providing new information in order to provide a clear picture
Providing instruction	Providing assignments that need to be followed
Asking for information	Asking for information in order to get a clear picture
Asking for action	Request for performing an action
Talking about what others are doing	Talking about the activities of others
Asking about a wish	Asking about the needs or wishes of someone else
Providing an explanation	Clarifying the consequences of something
Negotiating	Trying to reach agreement