

Chapter 2

Who helps whom?

Investigating predictors of adolescent
help relationships

In this chapter, we investigated adolescent help relations by examining social networks based on the question '*Who helps you with problems (for example, with homework, with repairing a flat [bicycle] tire, or when you are feeling down)*'. The effects of individual characteristics (academic achievement, depressive symptoms, and peer status) on receiving help and giving help were examined, and we investigated the contribution of (dis)similarity between adolescents to the development of help relations. Sex, structural network characteristics, and friendship relations were taken into account. The findings demonstrated that (dis)similarity in sex, depressive symptoms, and peer status is an important driving factor underlying the emergence of help relations in the peer context, and that help is segregated based on these characteristics. As such, help should be defined in terms of benefitting *particular* others.

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INTRODUCTION

Help falls under the definition of prosocial behavior, which has been defined as '*voluntary behaviour that benefits others or promotes harmonious relations with others*' (e.g., providing emotional or practical help) (Dovidio, Piliavin, Schroeder, & Penner, 2006; Eisenberg et al., 1999). Giving and receiving help become salient interactions already in the very early stages of life: Young children tend to respond prosocially to parental or peer distress, are willing to share objects, and comfort upset others (Eisenberg, Fabes, & Spinrad, 2006). As regards receiving help, children depend mainly on their parents, who take up a central role in the provision of practical and emotional support (Furman & Burhmester, 1992; Larson & Richards, 1991). During the transition to adolescence, however, the context in which giving and receiving help take place partly shifts from parents to peers: Adolescents seek to achieve a higher degree of autonomy from their parents (Allen & Land, 1999; Berndt, 1982), and gradually spend less time with their parents from late childhood into adolescence (Larson & Richards, 1991). Instead, they spend a substantial portion of their waking hours at school in the presence of peers, diminishing the role of parents as help providers. Indeed, although parents remain key instrumental help providers, peers become an important addition to adolescents' social support system (Del Valle, Bravo, & López, 2010; Hombrados-Mendieta, Gomez-Jacinto, Domingues-Fuentes, Garcia-Leiva, & Castro-Trave, 2012), given their familiarity with the challenges age-mates face (Furman & Burhmester, 1992) and their day-to-day contact.

This shift in context from parents to peers also influences how giving and receiving help are perceived by adolescents: Given the importance of peers in shaping adolescents' behaviors and relationships (Adler & Adler, 2003; Baumeister & Leary, 1995; Ormel, Lindenberg, Steverink, & Verbrugge, 1999), *which* peers to give help to and from *which* peers to receive help become salient questions at this age. Traditionally, research on adolescent help in the peer context has overlooked this relational nature, and mainly focused on explaining adolescent prosocial tendencies as an individual outcome (see for a review Eisenberg, Fabes, & Spinrad, 2006; some exceptions notwithstanding; Baerveldt, Van Duijn, Vermeij, & Van Hemert, 2004; Lomi, Snijders, Steglich, & Torlò, 2011). Consequently, we know to some extent who is likely to help others, but which peers profit from this help, and what characterizes these peer help relations remains largely unknown.

To shift the focus to receivers of help and help relations among peers, in this study we aimed to answer the question 'who helps whom?'. We identified adolescent help relationships with peers (i.e., peer relationships of help giving / receiving) by asking participants to nominate those peers who '*help you with problems (for example, with homework, with repairing a flat [bicycle] tire, or when you are feeling down)*'. In doing so, we aimed to examine (1) which characteristics predict receiving help; (2) which characteristics predict giving help; and (3) the extent to which (dis)similarity in characteristics between adolescents contributes to the development of help relationships. Specifically, we were

interested in the role of academic achievement, depressive symptoms, and peer status, these being indicators of problems in the adolescent school context and arguably related to the need for help. Also, we were interested in how peer rejection and popularity shape help relations, as social standing is a prominent predictor of prosocial behavior and relationship formation (Dijkstra, Cillessen, & Borch, 2013; Greener, 2000; Munch & Kinchen, 1995). Because prosocial behavior is of higher saliency in girls' than boys' peer relations (Colarossi, 2001; Rose & Rudolph, 2006), we additionally took the role of sex into account.

Finally, findings of previous studies on social relations show that relationships are not only a consequence of individuals' behaviors and characteristics, but may also emerge as the result of other processes occurring in networks, such as returning help received (reciprocity) and the tendency to form helping groups (transitivity) (Veenstra, Dijkstra, Steglich, & Van Zalk, 2013). Moreover, help relations may emerge as a consequence of friendships, given their key role in (emerging) friendships and friendship quality (Bowker et al., 2010; Bukowski, Hoza, & Boivin, 1994; Parker & Asher, 1993). The social network approach implemented in RSiena (Snijders, Van de Bunt, & Steglich, 2010) enabled us to map out adolescents' help relations with peers, allowing us to investigate how characteristics and behaviors shape help relations, while taking into account network processes and the overlap between help and friendship.

THEORETICAL BACKGROUND

In our introduction we described help as part of prosocial behavior, i.e., voluntary behavior with the intent to benefit others. Looking at motivations for prosocial behavior, this definition seems to relate closely to the concept of altruism: Behavior with the intrinsic intent to benefit others, that is, helping without expecting anything in return, such as material or social benefits (Aronson, Wilson, & Akert, 2013; Eisenberg & Mussen, 1989). Of course, helpers are—at least in part— intrinsically motivated to benefit others, but other motives have been found to play a significant role as well. For example, receivers of help may consider whether they want to receive help from certain more or less able others (Ackerman & Kenrick, 2008; Nadler, 1987; 2015), and givers may take into account the effort it takes to help (Eisenberg et al., 2006; Schroeder & Graziano, 2015; Wentzel, Filisetti, & Looney, 2007). Social goals are important motives behind giving and receiving help as well: Importantly, previous researchers maintained that adolescents' behavior can be explained in part by their wish to attain status and affection among peers (Adler & Adler, 2003; Baumeister & Leary, 1995; Ormel et al., 1999). Considering the consequences of asking for help from and giving help to particular peers, we consider help relations to be instrumental in the attainment of status and affection goals. Indeed, help is an important way in which adolescents attain social goals; the exchange of help intensifies positive relations with peers (Reid, Landesman, Treder, & Jaccard, 1989; Sullivan, Marshall & Schonert-Reichl, 2002), and givers and receivers of help may consider whether they want

to associate with peers who have a particular status (Dijkstra, Cillessen, & Borch, 2013; Dijkstra, Cillessen, Lindenberg, & Veenstra, 2010). At the same time, asking peers for help or giving help to particular peers may, as will be explained in the following, pose a threat to one's social status (Ackerman & Kenrick, 2008; Middleton & Midgley, 1997; Nadler, 2015). From this perspective, we argue that asking for and giving help may complicate the realization of status and affection goals for adolescents with certain characteristics. At the same time, these goals may sensitize help seekers and givers to specific characteristics of their peers.

WHICH ADOLESCENTS RECEIVE HELP MORE OFTEN?

Intuitively, one would expect disadvantaged individuals (here; low achievers, adolescents having depressive symptoms, or adolescents with a low peer status) to ask for help more often. These individuals are likely more in need of help and may consequently mobilize their social network to fulfill their needs. However, the mobilizing of peers might have social repercussions as it requires disclosure of vulnerabilities and shortcomings. This disclosure may not only form a substantial threat to adolescents' self-esteem (Bohns & Flynn, 2010; Fisher, Nadler, & Whitcher-Alagna, 1982; Nadler, 2015), but may also hinder their goal achievement among peers as admitting failure in the academic, emotional, or social domain may signal that one is dumb, inferior, or 'uncool' (Ackerman & Kenrick, 2008; Middleton & Midgley, 1997). In line with this reasoning, Ryan, Hicks, and Midgley (1997) found that lower achieving students perceived seeking help as a threat to their self-esteem, and tended to avoid help-seeking (see also Ryan & Shin, 2011). Moreover, Sawyer and colleagues (2012) found in their vignette study that adolescents having depressive symptoms intended to seek help from their friends less frequently. Further evidence for this mechanism comes from studies demonstrating that adolescents concerned with avoiding negative peer evaluations were more likely to not discuss or to trivialize their problems among friends (Ryan et al., 1997; Shin & Ryan, 2012) or schoolmates (Roussel, Elliot, & Feltman, 2011). To sum up, we argue that adolescents actually experiencing problems tend to avoid consulting their peers, as seeking help may compromise their peer status. Following this, we expect that

nominating others as helpers (i.e., receiving help) is associated negatively with depressive symptoms and peer rejection, and positively with academic achievement and popularity (Hypothesis 1)

WHICH ADOLESCENTS GIVE HELP MORE OFTEN?

Our second question concerns who is attractive to approach for help. Following the 'basking in reflected glory' literature, likeable and popular peers are attractive peers to approach for help (Dijkstra et al., 2010; Dijkstra et al., 2013): Associating with peers who are well-liked and popular among classmates positively affects one's own social standing in the peer group. As such, adolescents more likely seek help from high-status peers.

The same mechanism possibly holds for low achievers and adolescents with depressive symptoms. Having low achievement or symptoms of depression both predict a low social status among peers (Agoston & Rudolph, 2013; Fekkes, Pijpers, Fredriks, Vogels, & Verloove-Vankorick, 2006; Krygsman & Vaillancourt, 2017; Valås, 1999; Van der Sande, Hendrickx, Boor-Klip, & Mainhard, 2017). This may in part be explained by the relatively poor social skills of low achievers and depressed adolescents, but likely also by the image of being stupid or ill resulting from not being able to perform well in school or suffering from emotional problems. We propose that associating with peers who have a low peer status does not allow adolescents to profit from peers' status, leading them to seek help from peers who do not experience issues in the academic, emotional, or social domain.

Looking at seeking help as a means to achieve instrumental goals (e.g., gaining information or solutions for problems), we would also argue that well-adjusted peers are asked for help more often, as their help is likely more useful. Of course, higher achievers are typically approached for help with academic problems (Lomi et al., 2011), but their intelligence might also attract help-seekers who struggle with other types of difficulties, as intelligent peers may have a reputation for 'knowing things'. Adolescents suffering from depressive symptoms may in particular be less approachable for help. Not only does depression typically coincide with poorer social skills or aggressive behaviors towards peers (Agoston & Rudolph, 2013), adolescents with depression are also found to focus on their own emotions and feelings when confronted with peers' problems, which hampers effective provision of support (Carrera et al., 2013; Liew et al., 2011). Following this, we expect that

being nominated as a helper (i.e., giving help) is associated negatively with depressive symptoms and peer rejection, and positively with academic achievement and popularity (Hypothesis 2)

WHO HELPS WHOM?

Reasoning from a status perspective, there are two competing views on the role of the combination of receiver and giver characteristics in the emergence of help relationships. On the one hand, the need for help and the preference for receiving help from a specific other suggest that particularly peers who possess complementary characteristics would help each other. That is, one would expect help relations between, for example, a low and a high academic achiever. In line with this, it has been suggested that adolescents who differ from each other tend to help each other, as admitting incompetence to peers with different characteristics and behaviors feels less threatening for one's status and self-esteem than doing so to similar peers (referred to as 'comparison stress'; Nadler, 1987; 2015): The notion that one differs from a particular peer helps justifying that one's competencies may also differ from those of peers.

The suggestion that less competent adolescents would approach more competent helpers would, however, imply that help-seekers are placed in an unfavorable

and dependent (status) position relative to their help-givers. From a goal perspective it is quite unlikely that help-seekers would manoeuvre themselves into such status-costly relationships. In line with a similarity attraction approach (Byrne, 1971; McPherson, Smith-Lovin, & Cook, 2001), we propose that individuals are more likely to establish help relationships with similar others. Similarity ensures that needs are more easily understood and communication runs more smoothly. This mutual understanding decreases the likelihood of being rejected or ridiculed by the similar peer, and minimizes threats to the status position as a consequence. Exemplifying adolescents' tendency to interact with similar others, it has been demonstrated that depressed adolescents seek out other depressed peers as friends (Van Zalk, Kerr, Branje, Stattin, & Meeus, 2010) with whom they discuss their problems (Rose, 2002). Building on this latter approach, we expect that

adolescents similar in academic achievement, depressive symptoms, peer rejection, and popularity are more likely to nominate each other as helpers (Hypothesis 3)

SEX, FRIENDSHIP, AND STRUCTURAL NETWORK EFFECTS

Sex. Previous research has shown that the tendency to help others is more pronounced in girls, and that helping is more normative in girls' relationships (Bukowski et al., 1994; Colarossi, 2001; Hall, 2011; Rose & Rudolph, 2006). As such, girls mobilize their peers for help more easily than boys. Additionally, from the perspective of the help-seeker, girls may be more preferred as providers of help: They generally display higher levels of empathy than boys (Hopmeyer-Gorman, Schwarz, Nakamoto, & Mayeux, 2011; Sears, Graham, & Campbell, 2009). Looking at reciprocal help relations, however, a somewhat different picture emerges. Nelson-Le Gall and DeCooke (1987) found that academic help exchanges took place more frequently in same-sex dyads, even though girls were viewed as academically more competent. This is in line with the findings of Baerveldt and colleagues (2004), who found that helping mainly took place within same-gender relations. Given these findings, we expect that girls (are) nominate(d) more (as) helpers, and that adolescents of the same sex are more likely to nominate each other as helpers.

Friendship. Importantly, previous research has established a clear link between friendship and help, implying that giving and receiving help may result from friendship affiliation. The association between help and friendship was reflected in research suggesting that help distinguishes friends from non-friends (e.g., Bigelow, 1975; Furman, 1984; Furman & Burhmester, 1992; Newcomb & Bagwell, 1995), and that friends expect each other to help (Fehr, 2004; Hall, 2012), suggesting that help and friendship overlap. In addition, the processes leading to the emergence of these relations also show similarities. For example, the similarity attraction approach holds for the emergence of friendships as well (Veenstra & Dijkstra, 2011). Given these findings, we expect that friends are more likely to nominate each other as helpers. Because the present study was focused on the effects of (similarity in) individual characteristics over and above the effects of friendship, it was necessary to take this key covariate into account, in order to ensure

that any association found would refer to (processes leading to) help relations instead of friendships.

Structural network effects. Lastly, relationships may emerge not as a result of (similarity in) particular characteristics or friendship, but as a result of structural, endogenous network effects accounting for changes in relationships. Controlling for these effects overcomes bias in the effects of individual characteristics (Veenstra & Steglich, 2012). Building on research on friendship relations, in our analyses, we controlled for the most common network effects (Veenstra et al., 2013): That is, the general tendency to nominate peers as helpers (outdegree) and the tendency to reciprocate help nominations (reciprocity). Moreover, we accounted for group formation tendencies (transitivity and balance) and for the variation in the extent to which individuals nominate peers as helpers and receive nominations for helping (i.e., out- and indegrees). For a further explanation of these effects, we refer to the methods section and Table 2.1.

METHODS

PROCEDURE

In the present study, we use data from the SNARE-project (Social Network Analysis of Risk behavior in Early adolescence; see Dijkstra et al., 2015), a study aimed at investigating the social and behavioral development of (early) adolescents. Prior to the data collection, all eligible students and their parents received an information letter, in which they were asked to participate. If students wished to refrain from participation, or if their parents disagreed with their children's participation, they were requested to send a reply card or email within ten days. We emphasized during every assessment that participation was anonymous and could be terminated at any point in time. The SNARE study has been approved by the ethics committee of one of the participating universities. During the assessments, a teacher and research assistant(s) were present. The research assistant gave a brief introduction, and the students then filled in the questionnaire on the computer during class. The assessment of the questionnaires took place during regular school hours within approximately 45 minutes. The students who were absent that day were, if possible, assessed within a month.

PARTICIPANTS

We examined the networks of all first and second grade classrooms of one participating secondary school in the north of the Netherlands (N classrooms = 40; N students = 868). For this study, we used data of the first three regular waves; October 2011, (wave 1), December 2011 (wave 2), and April 2012 (wave 3). At wave 1, students were on average 13.20 years old, 49.4% were boys, and 49.4% were Dutch. Students had, on average, a slightly lower SES than the average Dutch SES. Between waves 1 and 2, five students entered school and two students left the school; and between waves 2 and 3, nine students left school and two students entered school. They were part of the network

across all waves, but were assigned with structural zeros when they were not (yet/ anymore) in school, meaning that they could not (be) nominate(d) (by) classmates. Also, at wave 2, one student's data were found to be unreliable and were deleted. Across the school year, a total of 15 students refused consent to participate in the study. All their data, including responses preceding their refusal, were deleted. This resulted in a sample of 852, 856, and 849 participants at wave 1, wave 2, and wave 3 respectively.

MEASURES

In the present study, academic achievement, depressive symptoms, peer rejection, popularity, sex, and friendship at wave 1 and 2 were used to predict changes in help relations from wave 1 to 2 and 2 to 3. Peer nominations were examined within classrooms, and participants could nominate an unlimited number of same- and cross-sex classmates on each peer nomination question.

Help relationships within classrooms at wave 1, 2, and 3 were assessed using a peer nomination procedure. Participants were asked to nominate classmates who '*help you with problems (for example, with homework, with repairing a flat [bicycle] tire, or when you are feeling down)*' (adapted from Baerveldt et al., 2004; Dijkstra, Lindenberg, Verhulst, Ormel, & Veenstra, 2009; Dunfield, Kuhlmeier, O'Connell, & Kelley, 2011; Tremblay, Vitaro, Gagnon, Piché, & Royer, 1992). Note that the implication of this question is that giving help is represented by an incoming nomination, and receiving help by an outgoing nomination. Help networks for each classroom at all waves were represented by a directed adjacency matrix, with 0 and 1 representing absence and presence, respectively, of a nomination between individual i and j . Some participants named (almost) everyone in their classroom as helper, whereas they hardly named anyone at the preceding and/or next assessment. In addition, their nominations were hardly or not reciprocated. These extreme (out)degree outliers may have interpreted the question differently from their classmates. We recoded their outgoing nominations as missing. This was the case for 6, 6, and 8 participants on the three respective waves. Their incoming nominations were retained. Similar strategies to handle extreme outdegree outliers have been used in previous research (e.g., Light, Greenan, Rusby, Nies, & Snijders, 2013). On average, the number of helpers (outdegree) across the waves was 2.39 ($SD = 2.70$).

Academic achievement at wave 1 and 2 was assessed by asking participants to rate their performance on Dutch language and mathematics on a 5-point scale from *insufficient* (1) to *excellent* (5). Scores on these two items were summed to obtain the total performance for every student, resulting in an average score of 6.91 ($SD = 1.43$) across wave 1 and 2.

Depressive symptoms at wave 1 and 2 were assessed using three items from a self-report scale on depression (based on Kandel & Davies, 1982). The internal consistency of these three items was $\alpha = .81$ for wave 1 and $\alpha = .85$ for wave 2. Participants were asked how often during the preceding month s/he felt unhappy, miserable, and down; felt nervous and tense; and worried too much. The items were rated on a 5-point scale

ranging from *never* (1) to *always* (5). Scores on the items were summed and divided by three to obtain mean levels of depressive symptoms for every participant, resulting in an average score of 2.09 ($SD = 0.87$) across wave 1 and 2.

Peer rejection at wave 1 and 2 was based on the peer nomination question '*which classmates do you dislike*' (Card, 2010). A proportion score was calculated by taking the number of nominations received on peer rejection and dividing them by the number of participants in the classroom minus 1. On average, participants scored .10 ($SD = .13$) on peer rejection, meaning that participants were rejected by 10% of the classroom on average.

Popularity at wave 1 and 2 was also assessed using peer nominations. Participants nominated classmates on the questions '*which classmates are most popular*' and '*which classmates are least popular*' (LaFontana & Cillessen, 2002). Popularity was calculated by subtracting the proportion scores (i.e., the number of nominations received divided by the number of participants in the classroom minus 1) of least popular peer nominations from most popular peer nominations. On average, participants scored .03 ($SD = .29$) on popularity, meaning that students received about as many nominations for most popular as for least popular on average.

As for the control variables, sex was measured at wave 1, and was coded 0 for girls and 1 for boys. Friendships within classrooms at wave 1 and 2 were assessed using the peer nomination question '*who are your best friends*'. Friendship networks for each classroom at all time points were represented by a directed adjacency matrix, with 0 and 1, respectively, representing absence and presence of a nomination between individuals i and j . On average, the number of friends was 4.58 ($SD = 3.19$).

ANALYTICAL STRATEGY

To model the development of help relationships, we used the Simulation Investigation for Empirical Network Analyses software package in R (RSiena; Ripley, Snijders, Boda, Vörös, & Preciado, 2018), software instantiating stochastic actor-based statistical models of social network dynamics (Snijders, 1996; Snijders et al., 2010). The focus of the present study was on modeling changes in networks (i.e., help relationships) from one observation moment to the next. The model interprets the observed, compound change of help patterns as the result of a series of unobserved, smallest possible changes taking place between observation moments, where a smallest possible change is either the termination of an existing help relation between two participants, or the creation of a new one. The nature of network changes is modelled by an objective function, expressing under which conditions actors will create, maintain, or dissolve a help relation. The parameters in the model (see Model specification) express these different conditions. Estimates are obtained in an iterative Monte-Carlo procedure, alternating until convergence between the sampling of network change sequences (based on the model parameters), and the updating of model parameters (based on discrepancies between the observed data and the simulated end networks of the sampled change sequences; Snijders, 2001). Parameters are tested in

the same way as in other generalized linear models, using t -ratios (parameter estimate divided by its standard error).

Parameter values are interpreted as the contribution to actor's objective function. Thus, the higher the value of an effect in the objective function, the stronger the tendency to create or maintain a help nomination. A value of $b = -0.5$ for the alter effect of peer rejection means that if alter increases one unit on the scale of peer rejection, this subtracts 0.5 on ego's objective function for asking help of that particular alter. These estimates are log-odds, but we also expressed the effects as odds by taking the exponential function of the parameter estimate, and calculated their confidence interval (for calculations see Ripley et al., 2018). Odds indicate the impact of a parameter on the probability of a participant nominating a helper. Note, however, that this *ceteris paribus* assumption is problematic, given that network parameters correlate and co-occur, and given that ego, alter, and similarity effects are highly intertwined. Thus, odds should be interpreted with caution.

In order to increase statistical power, we combined the classrooms into four school-location networks. Because participants were not allowed to nominate helpers outside their classroom, we used the so-called structural zero coding between classrooms so that the software would not interpret these between-class non-nominations as regular non-nominations (i.e., as valid indicators that help was not received). After fitting the same model specification to all school locations' data, we aggregated the results in a meta-analysis (Snijders & Baerveldt, 2003), in which a significant chi-squared test indicated heterogeneity between location parameters. In the meta-analysis, standard errors were determined based on random effects combinations; that is, between-location differences were accounted for and the total variance was (re-)partitioned into between- and within-location randomness.

Once convergence was reached for all four school locations, we assessed the goodness of fit of our model by investigating to what degree the models could explain additional features of the help networks that were not explicitly included in the model specification, viz., activity regarding nominating helpers (outdegree distribution), popularity regarding receiving nominations for helping (indegree distribution), and subgroup structure in the help network (triad census).

Model specification. The first part of the analysis consisted of the specification of network effects. The network effects that were used in the final model and their explanations can be found in Table 2.1. While controlling for both reciprocal (i.e., mutual) and unidirectional (i.e., one-sided) nominations made in the friendship network, we included the following basic network effects: Outdegree, the general tendency to nominate others as helpers; reciprocity, the tendency to help those who help you; and group formation tendencies such as transitivity, the tendency to nominate helpers-of-helpers as your own helpers. In addition, we added degree-related effects to account for variation in degrees (the tendency to be nominated as a helper, and to nominate others as helpers, respectively). To increase the goodness of fit of our models, we added

the balance parameter a posteriori; it indicates participants' (group formation) tendency to help each other because they are being helped by the same third-party helpers. Individual-level attributes were included as so-called ego, alter, and similarity effects. The ego effect captures the effect of covariates on nominating others as helpers. The alter effect captures the effect of covariates on being nominated as a helper. The same/similarity effect captures the tendency to form help relations with others who are similar on particular covariates. In case of a significant same/similarity effect, we constructed ego-alter selection tables in order to gain more insight into the effect of the predictors on network evolution. Indeed, individuals may not vary in the degree to which they receive or give help (ego and alter effects), but they might vary in whom they mention as helpers (similarity effects). A selection table gives more insight into such findings (Ripley et al., 2018). The values in this table represent the contribution to actors' objective function if they nominate completely similar peers (diagonal values in the table) versus completely dissimilar peers as helpers (off-diagonal values in the table).

Table 2.1
Explanation of parameters in the RSiena network effects model

Effect	RSiena name	Explanation	Graphical representation	
			Wave <i>N</i>	Wave <i>N</i> +1
Outdegree	density	Tendency to nominate others as helper	$i \longrightarrow j$	$i \longrightarrow j$
Reciprocity	recip	Tendency to reciprocate help	$i \longrightarrow j$	$i \longleftrightarrow j$
Transitivity	transTrip	Tendency to have ties with helpers-of-helpers	$i \xrightarrow{h} j$	$i \xrightarrow{h} j$
Balance	balance	Tendency to form relations with others who have a similar set of outgoing nominations to ego	$i \xrightarrow{h} j$	$i \xrightarrow{h} j$
Outdegree popularity	outPop	Tendency of actors with high outdegrees to attract incoming nominations	$i \xrightarrow{h} j$	$\rightarrow i \xrightarrow{h} j$
Friendship	X	Tendency to form relations with actors whom one nominates as friend	$i \cdots \rightarrow j$	$i \longrightarrow j$
Ego effect	egoX	Tendency of actors with higher values on X to have a higher outdegree	i	$i \longrightarrow$
Alter effect	altX	Tendency of actors with higher values on X to have a higher indegree	i	$\longrightarrow i$
Similarity effect	same/simX	Tendency of relations to occur more often between actors with the same or similar values on X	$i \quad j$	$i \longrightarrow j$
			$i \quad j$	$i \longrightarrow j$

RESULTS

DESCRIPTIVE RESULTS

Descriptive statistics of the help networks are presented in Table 2.2. In the following section, we provide the ranges over the waves. Participants indicated that they received help from two to three classmates (outdegree). Helping was quite common, as only 11%-15% of the participants were not reported as helpers (zero indegree), and 21%-26% reported not being helped (zero outdegree). Furthermore, 15%-18% of the participants gave help only (indegree only), and 5%-6% received help only (outdegree only). The proportion of help nominations given in the classroom, based on the ratio of actual and possible relations, was about 13% (density). 45%-49% of the nominations were mutual (reciprocal). In 54-58% of the cases, helpers of helpers were nominated as one's own helper (transitivity), and 77%-90% of the help relations were formed among participants of the same sex. To be able to perform longitudinal social network analyses, a sufficient fraction of help nominations should remain stable (Jaccard index). Averaged across waves and classrooms, about 25 new nominations emerged, 25 nominations dissolved, and 27 nominations remained stable across waves. The Jaccard indices were 38% for wave 1 to wave 2, and 33% for wave 2 to wave 3. Given that a Jaccard index of above 30% is recommended (Veenstra & Steglich, 2012), the stability of the networks was sufficient. Descriptives of the other study variables at wave 1 and 2, and *t*-tests for differences between boys and girls can be found in Table 2.3.

Correlations between receiving help (outdegree) and giving help (indegree) and the study variables for boys and girls separately, of which the most consistent correlations are discussed, can be found in Table 2.4. In general, giving and receiving help were positively interrelated for both boys and girls. Furthermore, giving help was negatively related to peer rejection, and positively to popularity. Receiving help was only positively related to popularity, but not consistently. Finally, both giving and receiving help were positively related to giving and receiving friendship nominations, although more consistently and often more strongly for girls. There were no strong and consistent correlations of giving and receiving help with academic achievement and depressive symptoms. We also examined whether students that did not give or receive *any* nominations for help (zero outdegree or zero indegree, respectively) differed from those who gave or received at least one nomination (results available upon request). Consistent with the correlations, we found that those involved in giving or receiving help were less rejected, more popular, and gave and received more friendship nominations. Finally, to get an indication whether our theoretical idea that lower achievers and adolescents with depressive symptoms have a lower peer status, and are therefore not mentioned as helper, is supported by the data, we examined the correlations between peer rejection and popularity, and achievement and depressive symptoms (results available upon request). There were no indications that lower achievers or depressed youth had a lower peer status.

RSIENA ANALYSES

Results of the RSiena network analyses can be found in Table 2.5, in which mean parameter estimates b , standard errors SE , levels of significance p , odds, and their confidence intervals

Table 2.2
Descriptive statistics of the sample, help, and friendship

Sample						
	Wave 1	Wave 2	Wave 3			
<i>N</i> participants	852	856	849			
<i>N</i> locations	4	4	4			
<i>N</i> classrooms	40	40	40			
<i>M</i> classroom size	21.27	21.43	21.35			
<i>N</i> students absent	10	29	33			
<i>M</i> age	13.20	13.37	13.70			
% Boys	49	49	49			
Help relations			Friendship relations			
	Wave 1	Wave 2	Wave 3	Wave 1	Wave 2	Wave 3
<i>M</i> outdegree ^a	2.43	2.47	2.27	4.30	4.86	4.59
<i>SD</i> outdegree ^a	2.68	2.85	2.58	2.97	3.35	3.25
<i>SD</i> indegree ^a	1.65	1.57	1.54	2.28	2.45	2.29
% zero indegree ^a	11	11	15			
% zero outdegree ^a	21	23	26			
% indegree only	15	18	17			
% outdegree only	5	6	6			
% isolates	6	5	9			
% density ^a	13	13	12	23	26	25
% reciprocity ^a	49	45	47	66	65	65
% transitivity	58	56	54	66	66	66
% same sex ^a	77	90	89	74	75	75
<i>N</i> nominations	2189	2224	2047	3851	4370	4120
Help relations ^b						
	1	2				
<i>N</i> 0- 1 ^a	25	24				
<i>N</i> 1- 0 ^a	23	28				
<i>N</i> 1- 1 ^a	29	25				
% jaccard index	38	33				
% distance	62	68				

Note: Descriptive statistics with ^a were calculated per classroom network and subsequently divided by 40. All other statistics were calculated over the full sample. ^b 1 and 2 refer to the transitions between wave 1 and wave 2, and wave 2 and wave 3, respectively.

are presented. Results of the chi-squared tests (χ^2 and p -value) indicate heterogeneity between the four school locations. Table 2.6 presents the ego-alter selection results.

WHO RECEIVES AND GIVES HELP, AND WHO HELPS WHOM?

Academic achievement. The negative ego effect for academic achievement suggests that higher achievers received help less often ($b = -0.17$, $SE = 0.02$, $p < .001$). We found no significant alter or similarity effect ($b = 0.01$, $SE = 0.02$; $b = 0.17$, $SE = 0.23$).

Depressive symptoms. Depressive symptoms did not predict receiving help ($b = 0.01$, $SE = 0.04$), and negatively predicted giving help, but the effect size was small ($b = -0.02$, $SE = 0.00$, $p < .001$). The similarity effect was significant ($b = 0.26$, $SE = 0.10$, $p < .01$). Table 2.6 shows that adolescents less likely (receive) help (from) dissimilar peers based on depressive symptoms: Whereas the values on the diagonal (expressing a preference for similarity) were relatively small (0.08 and 0.04), the larger off-diagonal values show that high-depressed adolescents less likely received help from low-depressed peers (-0.14) and vice versa (-0.26). Thus, depressed adolescents gave help less often, and adolescents less likely received help from dissimilarly depressed peers.

Peer rejection. Peer rejection positively predicted receiving help ($b = 1.02$, $SE = 0.42$, $p < .01$), and negatively predicted giving help ($b = -0.78$, $SE = 0.27$, $p < .001$). Zooming in on these results, Table 2.6 shows that high-rejected adolescents mentioned low- and high-rejected peers as their helpers (0.28 and 0.26). However, low-rejected adolescents were unlikely to report high-rejected peers as their helpers (-1.16) (similarity effect; $b = 0.60$, $SE = 0.17$, $p < .001$). Thus, high-rejected students received help more often but gave help less often. Also, they received help from low- and high-rejected peers, but they did not give help to low-rejected peers.

Popularity. Popularity did not predict variation in receiving and giving help ($b = 0.15$, $SE = 0.21$; $b = -0.41$, $SE = 0.25$). However, the similarity effect was significant ($b = 0.79$, $SE = 0.12$, $p < .001$). Table 2.6 demonstrates that low-popular adolescents were more likely to report low-popular peers (0.29) than high-popular peers (-1.20) as helpers. High-popular adolescents did not report low- and high-popular peers as helpers (-0.25 and -0.15). Thus, low-popular peers did not receive help from dissimilarly popular peers, and high-popular adolescents did not receive help from similarly and dissimilarly popular peers.

Sex. Sex did not predict receiving help ($b = 0.08$, $SE = 0.10$), but negatively predicted giving help ($b = -0.15$, $SE = 0.03$, $p < .001$). Thus, boys were less often reported as helpers. The similarity effect was also significant ($b = 0.50$, $SE = 0.12$, $p < .001$). Table 2.6 suggests an aversion to (receiving) help (from) cross-sex peers, a tendency that was stronger for girls (-0.36) than for boys (-0.13).

Friendship. The positive friendship covariate indicates that befriended adolescents tended to help each other more often ($b = 0.88$, $SE = 0.06$, $p < .001$).

Structural network effects. The outdegree (density) parameter reflects the basic tendency to nominate helpers. It was negative and significant ($b = -1.99$, $SE = 0.09$, p

< .001), indicating that adolescents were highly selective in nominating classmates as helpers. The positive value of the reciprocity parameter ($b = 1.72, SE = 0.09, p < .001$) indicates that help relations tended to become mutual, and the positive transitive triplets effect ($b = 0.45, SE = 0.08, p < .001$) signifies the tendency to nominate helpers-of-helpers as one's own helper. The small negative balance parameter indicates that people tended not to help each other if they were being helped by the same third-party helpers ($b = -0.08, SE = 0.02, p < .001$). Lastly, the negative outdegree popularity effect ($b = -0.29, SE = 0.03, p < .001$) indicates that participants who received help more often tended to give help less often over time.

School location heterogeneity. According to chi-squared tests there was significant school location heterogeneity in several parameter estimates (which is common in meta-analytic network studies). However, this did not give rise to concerns about the validity of our results (results available upon request): Significant parameter estimates in the meta-analysis were generally significant in all locations, and differed in size only, not in sign (i.e., they were more pronounced in some locations). In addition, most non-significant parameter estimates in the meta-analysis were not significant across all locations or significant in only one location. However, in two school locations we found a tendency towards helping similar peers with respect to academic achievement (positive

Table 2.3
Descriptives and *t*-tests for differences between boys and girls (waves 1 and 2 for each variable)

Variable	Min- Max	<i>M</i> girls	<i>SE</i>	<i>M</i> boys	<i>SE</i>	<i>t</i> -value
Academic achievement	0- 10	6.97	1.35	6.89	1.37	0.96
		6.93	1.46	6.85	1.63	0.76
Depressive symptoms	0- 5	2.27	.84	1.94	.82	5.58**
		2.25	.91	1.92	.92	5.11**
Peer rejection ^a	0- 1	.08	.11	.09	.11	-2.21*
		.10	.13	.12	.12	-1.23
Popularity ^a	-1- +1	.01	.26	.02	.30	-0.57
		.02	.29	.05	.31	-0.57
Giving help ^a	0- 1	.16	.10	.10	.08	9.98**
		.16	.09	.10	.08	10.63**
Receiving help ^a	0- 1	.16	.14	.10	.15	5.21**
		.17	.16	.10	.15	6.52**
Being befriended ^a	0- 1	.23	.13	.22	.12	0.47
		.26	.14	.25	.14	0.82
Befriending ^a	0- 1	.23	.15	.23	.17	-0.03
		.26	.16	.27	.20	-0.73

Note: Descriptives of variables with ^a are based on proportion scores (i.e., indegree/outdegree divided by number of classmates minus 1). Average indegrees and outdegrees are identical by definition (up to non-response, that is), but their standard deviations are not, which makes their separate testing meaningful.

* $p < .05$; ** $p < .01$.

Table 2.4
Correlations among giving help (indegree help) and receiving help (outdegree help) with the study variables, and sex differences

Variable name	Giving help						Receiving help								
	W		Boys		Girls		Z-score		Boys		Girls		Z-score		
	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2	
Giving help ^a	1														
	2	.50***	.49***	.13**	.28***	.12*	2.10*	2.10*	.13**	.28***	.12*	2.10*	.13**	.28***	-2.40*
Receiving help ^a	1	.27***	.13**	.27***	.22***	.22***	2.10*	2.10*	.27***	.22***	.27***	.22***	.27***	.22***	3.00**
	2	.12*	.28**	.12*	.28**	.17*	-2.40*	-2.40*	.17*	.25***	.17*	-2.40*	.17*	.25***	3.00**
Academic achievement ^a	1														
	2				.12*										
Depressive symptoms ^a	1														
	2	-.15**		-.15**	-.11*	-.11*			-.10*		-.10*		-.10*		.12*
Peer rejection ^a	1	-.24***	-.22***	-.24***	-.33***	-.33***			-.22***	-.22***	-.22***	-.22***	-.22***	-.22***	
	2	-.24***	-.27***	-.24***	-.40***	-.40***	2.11*	2.11*	-.27***	-.27***	-.27***	-.27***	-.27***	-.27***	
Popularity ^a	1	.40***	.38***	.40***	.37***	.37***			.25***	.25***	.25***	.25***	.25***	.17**	
	2	.39***	.39***	.39***	.39***	.39***			.30***	.30***	.30***	.30***	.30***	.20***	
Being befriended ^a	1	.62***	.47***	.62***	.55***	.55***	3.08**	3.08**	.47***	.47***	.47***	.47***	.47***	.26***	
	2	.56***	.42***	.56***	.65***	.65***	2.66**	2.66**	.55***	.55***	.55***	.55***	.55***	.28***	
Befriending ^a	1	.19***	.23***	.19***	.24***	.24***			.17***	.17***	.17***	.17***	.17***	.17**	
	2	.22***	.13**	.22***	.32***	.32***	2.44*	2.44*	.16**	.16**	.16**	.16**	.16**	.26***	2.43*

Note: Non-significant correlations (in absolute value, all below .097) are left out of the table for clarity. Significant sex differences for significant correlations are indicated with Z-score and *p*-value. Variables with ^a are proportion scores (i.e., indegree/outdegree divided by number of classmates minus 1). * *p* < .05; ** *p* < .01; *** *p* < .001.

similarity effect). Moreover, in one school location, depressed adolescents were found to receive help more often, whereas in another school location, they were found to receive help less often. Generally, though, we could not distinguish a clear pattern in this heterogeneity; that is, there was no location that consistently showed stronger effects or a greater number of significant effects.

Table 2.5
RSiena estimates of selection effects in help networks, and differences across school locations

	<i>b</i>	<i>SE</i>	odds	lower	upper	estimate	χ^2 (sign.) (<i>df</i> = 3)
Structural network effects							
Outdegree	-1.99***	0.09		0.12	0.16	0.18	18.27***
Reciprocity	1.72***	0.09		4.65	6.72	0.19	4.23
Transitivity	0.45***	0.08		1.35	1.83	0.15	36.66***
Balance	-0.08***	0.02		0.86	0.97	0.05	54.18***
Outdegree popularity	-0.29***	0.03		0.70	0.80	0.07	9.53*
Friendship	0.88***	0.06		2.13	2.74	0.13	11.83**
Ego effects: Which adolescents receive help more often?							
Sex (boy = 1)	0.08	0.10	1.09	0.90	1.32	0.19	15.24**
Academic achievement	-0.17***	0.02	0.84	0.82	0.87	0.03	5.59
Depressive symptoms	0.01	0.04	1.01	0.93	1.09	0.08	13.05**
Peer rejection	1.02**	0.42	2.77	1.21	6.32	0.84	13.25**
Popularity	0.15	0.21	1.16	0.77	1.74	0.41	6.64
Alter effects: Which adolescents give help more often?							
Sex (boy = 1)	-0.15***	0.03	0.86	0.81	0.91	0.06	1.63
Academic achievement	0.01	0.02	1.01	0.98	1.05	0.04	6.07
Depressive symptoms	-0.02***	0.00	0.98	0.97	0.98	0.01	0.07
Peer rejection	-0.78***	0.27	0.46	0.27	0.77	0.53	6.95
Popularity	-0.41	0.25	0.67	0.41	1.09	0.50	8.37*
Similarity effects: Which adolescents help each other more often?							
Sex	0.50***	0.12	1.65	1.30	2.08	0.24	42.73***
Academic achievement	0.17	0.23	1.02	0.97	1.07	0.46	13.98**
Depressive symptoms	0.26**	0.10	1.07	1.02	1.12	0.21	4.12
Peer rejection	0.60***	0.17	1.81	1.31	2.51	0.33	4.62
Popularity	0.79***	0.12	2.21	1.75	2.79	0.24	1.75

Note. * $p < .05$; ** $p < .01$; *** $p < .001$; 95% CI(odds) = $\exp(\ln(OR) \pm (1.96 * SE(\ln(OR))))$

Table 2.6

Selection table for help networks showing strength of attraction for each variable separately, based on depressive symptoms, peer rejection, and popularity (low – high), and sex (girl – boy)

Variable	Value ego	Value alter	
		Low	High
Depressive symptoms	Low	0.08	-0.26
	High	-0.14	0.04
Peer rejection	Low	0.07	-1.16
	High	0.28	0.26
Popularity	Low	0.29	-1.20
	High	-0.25	-0.15
Sex	Girl	0.29	-0.36
	Boy	-0.13	0.22

Note: Values are derived from Table 2.5. Calculations based on Ripley et al., 2018

DISCUSSION

The present study is, to our knowledge, the first in which adolescent help relations with peers were examined using a longitudinal social network framework to shed light on the relational instead of individual aspects of help. The findings demonstrate that this framework is suitable for investigating help in the peer context (i.e., the help networks were stable enough to analyze, and the results across school locations were fairly constant); and meaningful: We showed that giving and receiving help were steered partly by a preference for (not) forming help relations with (dis)similar others, and by tendencies to form relations with others as a result of general preferences for relationship formation.

WHO RECEIVES HELP, WHO GIVES HELP, AND WHO HELPS WHOM?

From the perspective that adolescents are driven by status and affection goals (Adler & Adler, 2003; Baumeister & Leary, 1995; Ormel et al., 1999), it was expected that especially well-adjusted adolescents (here: higher academic achievers, adolescents having a lower level of depressive symptoms, and higher status adolescents) would be involved in receiving and giving help more often, and that adolescents would tend to (receive) help (from) similar others. Although concurrent associations between giving and receiving help and peer rejection, popularity, and friendship suggested that givers and receivers were higher in peer status, longitudinal associations, which will be discussed now, were less straightforward.

Who receives and gives help? The hypothesis with respect to receiving help was not supported. Longitudinal analyses showed that sex, depressive symptoms, and popularity were unrelated to receiving help. Also, contrary to the expectations and this general trend, it was found that lower achievers and peer-rejected adolescents received help more often. Although these results were unexpected, low achievement and being

rejected by peers may reflect a need for help. As such, these adolescents may mobilize their peers for social support. Lower achievers may not be hampered by status concerns to ask peers for help, as having a lower achievement may signal indifference or nonchalance regarding teachers' expectations, which might be labelled as cool (Cillessen & Van den Berg, 2012; Schwartz, Gorman, Nakamoto, & McKay, 2006). In fact, academic achievement was unrelated to peer status amongst our participants. Additionally, some researchers suggest that rejection may stimulate adolescents to (re-)establish relationships with peers (Maner, DeWall, Baumeister, & Schaller, 2007). Thus, socially excluded adolescents may actively seek to reconnect with their peers by asking them for help (see Erdley & Asher, 1999; Hawley, Little, & Pasupathi, 2002; Wentzel & Erdley, 1993).

Our hypothesis about giving help was partly supported. Generally, we expected that help of maladjusted adolescents would be less useful, and that associating with these adolescents would compromise one's peer status. In line with the expectations, adolescents having depressive symptoms and peer-rejected adolescents gave help less often. Academic achievement and popularity were, however, not related to giving help. We thus found differences in associations between the two peer status measures: Perhaps, the desirability to associate with popular peers may be less universal than for (not) associating with rejected peers: For some adolescents, associating with popular peers may be intimidating and may trigger feelings of inferiority. This notion might have mitigated the expected positive association of popularity with giving help.

Generally, it was challenging to provide a coherent image of typical givers and receivers of help based on the characteristics taken into account in this study. Although it can be explained why each separate characteristic is unrelated to giving or receiving help or related to help in an unexpected way, it is challenging to provide a convincing empirical or theoretical image of givers and receivers of help. This result, as well as a reflection on our proposed underlying mechanism, will be further discussed in the limitations section.

Who helps whom? In line with our hypothesis, it was found that adolescents preferred to (receive) help (from) others who were similar on depressive symptoms, peer rejection, popularity, and sex. This result seemed to be largely driven by an aversion to receiving help from dissimilar peers, a tendency reflected by Rosenbaum's (1986) dissimilarity-repulsion hypothesis, stating that instead of similarity being the driving force of relationship formation (McPherson et al., 2001), it is mainly dissimilarity that prevents individuals from establishing (help) relations (*cf.* Laursen et al., 2010). This aversion towards helping dissimilar others seemed to be stronger for some than for others. For example, girls more strongly disliked to receive help from boys than boys did from girls. Moreover, the similarity effect for peer rejection was likely driven by the strong aversion of low-rejected students to mention high-rejected peers as helper – high-rejected students mentioned classmates low and high in rejection as helpers. Furthermore, we found that low-popular students preferred to be helped by peers similar in status, but that high-popular students tended to avoid peers with a low and high status. These latter two findings suggest that high-status adolescents tend to be more protective of their status:

They less likely affiliate with low-status others or peers who may threaten one's status position. It might also mean that a 'default selection' process is taking place, implying that low-status peers do not prefer to help similar others, but that their high-status peers refuse affiliation, and are therefore not available (see Deptula & Cohen, 2004). The finding that rejected adolescents mentioned helpers who were low- and high-rejected additionally aligns with the proposed idea that rejected adolescents try to connect with (any) other peer in order to (re)gain acceptance.

In conclusion, adolescents seem to be selective regarding whom they (receive) help (from), with (dis)similarity functioning as selection criterion. Generally speaking, the preference for similarity resulted in a segregated help network in which well-adjusted and maladjusted adolescents were hardly connected to each other through help. Importantly, these results suggest that prosocial behavior should be defined in terms of benefitting (relationships with) *particular* others (see Kuhlmeier, Dunfield, & O'Neill, 2014; Martin & Olson, 2015; Nadler, 2015). That is, prosocial behavior is likely more exclusive than some conceptualizations suggest.

NETWORK CHARACTERISTICS

In addition to individual characteristics that predict help relations, we were interested in the general pattern describing help networks. The results demonstrated that help networks partly reproduce the behavior of other types of positive networks. Similar to friendship and likeability networks, help relations were reciprocal and clustered in groups (Huitsing et al., 2012; Sentse, Kiuru, Veenstra, & Salmivalli, 2014; Veenstra et al., 2013). However, these tendencies were less pronounced in help networks (Huitsing et al., 2012; Veenstra et al., 2013); we found that adolescents who received help more often gave help less often over time, suggesting an inclination counter to reciprocity. Also, adolescents did not receive help from peers who were helped by the same helpers, indicating a less pronounced tendency to form help groups. Thus, there are differences in the preconditions leading to friendship and liking on the one hand, and help on the other hand. A possible explanation for this discrepancy is that reciprocity and group formation in liking or friendship networks may occur when peers positively evaluate each other, whereas reciprocity and group formation tendencies in help networks may additionally depend on needs, or the ability to meet others' needs, and may thus be more atypical of help networks. To conclude, the help networks in this study showed characteristics typical of networks, but also some distinct features. In our view, it is worthwhile to further investigate these networks.

LIMITATIONS, STRENGTHS, AND FUTURE RESEARCH

In interpreting the results, it is prudent to bear in mind the limitations of the method we chose to assess the giving and receiving of help. Importantly, given the general nature of the question, it was not known what kind of help was exchanged. Specific instances of help would probably have related more clearly to specific individual characteristics;

help with homework would have shown stronger associations with givers' and receivers' academic achievement, and emotional help with their depressive symptoms. Essentially, our results suggest that general help relates less to specific skills or characteristics, but more to general predictors of relationship formation, such as network tendencies, similarity, and social standing. Second, use of more specific measurements would allow examination of whether different forms of help show distinct relational (network) patterns. For example, whereas (seeking) emotional help is likely to be limited to a few trustworthy peers, practical help may face less strict boundaries (Baerveldt et al., 2004). This may have consequences for the way in which networks are structured, such as their density and the extent to which peers cluster in help groups. The benefit of this broad measure of help however, was that the presence or absence of nominations for giving or receiving help was likely less dependent on the need for help or the ability to provide help.

A second issue pertains to the testability of our theorized underlying mechanism. We argued that status and affection concerns partly influence who helps whom and that, therefore, individuals with particular characteristics were not involved in giving or receiving help. First, it is important to emphasize that status and affection are two different concepts, referring to popularity and acceptance, respectively (Parkhurst & Hopmeyer, 1998). Consequently, they may relate differently to giving and receiving help. For example, help may increase peer acceptance (Erdley & Asher, 1999; Maner et al., 2007; Wentzel & Erdley, 1993) but help only does not necessarily increase popularity, unless it is combined with dominant behaviors (Dijkstra et al., 2009; LaFontana & Cillessen, 2002). Similarly, asking for help may increase peer acceptance, but may decrease popularity as it signals incompetence and dependency (Ackerman & Kenrick, 2008; Middleton & Midgley, 1997). Furthermore, the notion that concerns about social status functions as mechanism explaining giving and receiving help was only partially supported; peer status was moderately related to giving or receiving help, but characteristics believed to reflect a low peer status (low achievement, higher levels of depressive symptoms) were actually not related to peer status in our sample. Thus, the exact role of peer status in the explanations of help relations is not entirely clear, and likely modest. As such, more research is needed to examine the interaction of different forms of social status with individual characteristics in the prediction of help relations; in this way, we may gain more insight into the social barriers and facilitators to giving and receiving help.

Lastly, we asked participants to name their helpers, but it is unclear how participants interpreted this question: Do receivers of help ask their helpers more often, or do helpers decide to help? Conceivably, this problem does not distort the structure of networks, but it complicates research into why people give or receive help, as this could depend on the skills or willingness of helpers, or on the courage and initiative of help-seekers. As a first step towards exploring this question in a network context, future network researchers may examine whether perceptions of givers and receivers about their help relation align (*cf.* Oldenburg et al., 2015).

Given these limitations, what does this help peer nomination question measure?

First, we presumably measured longstanding help relations: We found that 30% to 40% of the receivers mentioned the same helper across a time span of three months, which means that the stability of help relations falls within the range of stability found in friendships (25 to 60%; Veenstra et al., 2013). Thus, the question presumably measures '*whom do you generally turn to for help with problems*'. Given that it may measure a longer standing, relatively stable relationship, the potential of future research will be in focusing on the influence of (characteristics of) adolescents' help relations on behaviors or well-being, or the influence of characteristics of different contexts on their development.

Second, the general pattern of associations was consistent across the school locations included in our meta-analysis, indicating that the interpretation of the question was similar across contexts. Nonetheless, we found heterogeneity in the strength of associations. Although this is typical for network studies (DeLay, Laursen, Kiuru, Salmela-Aro, & Nurmi, 2013; Light et al., 2013; Ojanen, Sijtsema, & Rambaran, 2013), our findings underline the importance of including contextual factors to explain the emergence and development of peer (help) relations (Carlo, Fabes, Laible, & Kupanoff, 1999; Harris, 1995). An example has been set by Wölfer and colleagues (2012), who highlighted the role of embeddedness in affective networks for the development of empathy. Others suggested that classroom norms may impact the degree to which help is given and sought (Chang, 2004; Ryan, Gheen, & Midgley, 1998; Wentzel, Battle, Russell, & Looney, 2010). These findings inspire to further explore the role of wider network features and contextual norms in the emergence of peer help relations.

Not only should broader network features and classroom characteristics be taken into account in explaining help, the peer help context should also be integrated in adolescents' wider social support system. Importantly, although peers are salient helpers at this age, peers do not substitute but complement parental and teacher support (Levitt et al., 2005; Van Beest & Baerveldt, 1999; Wentzel, 1998; Wentzel et al., 2010). Surely, although peers are familiar with the problems age-mates face, they do not have as much life experience as parents or teachers, and may provide less accurate or suitable advice than adults. Moreover, social problems (e.g., being rejected or bullied) may be discussed with adults, as it might be too embarrassing to discuss these problems with peers, or the availability of supportive peers might be lacking. These notions encourage a deeper inquiry into the role peers, parents, and teachers fulfill in helping adolescents to deal with their problems.

Relatedly, age likely influences the organization of help relations. The increasing dependency on the help of peers from childhood into adolescence implies that the peer help network becomes larger, and its actors more interconnected. More research is needed to better capture changes in help networks over time, taking into account the role of the multitude of contexts in which help takes place, distinguishing the types of help that are provided, and taking into account age-related differences in network structure and predictors.

CONCLUDING REMARKS

In spite of its limitations, the present study has moved forward in conceiving of help as inherently relational, and has shown that it is fruitful to do so. Thus, care should be taken when giving and receiving help are considered in isolation from the network context in which this takes place, especially since our relational approach has underlined that help is exclusive (i.e., directed towards *particular* others). The findings of this study indicate that adolescents less likely (receive) help (from) dissimilar peers, emphasizing (dis)similarity as an important driving factor underlying the emergence and development of help relations in the peer context.