The Development of Emotional Support Capacities in Adolescent Friendships: A Transactional, Iterative Process with Implications for Functioning in Adult Romantic Relationships

Meghan A. Costello

Charlottesville, Virginia

A predissertation research project presented to the

graduate faculty of the University of Virginia

in candidacy for the Degree of

Master of Arts

Department of Psychology

University of Virginia

July 2020

Primary Mentor: Joseph Allen, Ph.D.

Secondary Mentor: Noelle Hurd, Ph.D.

Abstract

This study examined the reciprocal and tandem development of friendship quality, emotional support behaviors, and emotional support competence in friendship across adolescence and into adult romantic relationships. A diverse, representative community sample of 184 adolescents and their closest friends were assessed via questionnaires and an observational lab task annually from age 13 to 18. Participants completed questionnaires and the lab task again with their romantic partners at age 24. Results indicated that a cross-lagged panel model of target participant-reported friendship quality, observed support received from a peer, and peer-reported emotional support competence best fit these data. Additional analyses indicated that these reciprocal relationships carry forward, predicting levels of support and secure attachment in romantic relationships into adulthood, after covarying gender and income, and regardless of whether adolescents maintained the same or different best friendships during their teen years. Findings are interpreted as suggesting that the teen best friendship is a vital context for practicing and developing emotional support competence, a years-long process that ideally unfolds in a positive feedback loop: Repeatedly engaging in security-enhancing, rewarding, and skill-honing emotional support interactions may prepare adolescents for relatively higher-functioning support systems in the future (within friendships and partnerships), while neglecting to engage in these interactions may stifle the development of these capacities.

Emotional Support Development in Adolescent Friendships: An Iterative, Dyadic Process with Implications for Functioning in Adult Romantic Relationships

In adolescence, close peers become a salient source of emotional support (Furman & Buhrmester, 1992). This study examines the hypothesis that repeated supportive interactions within a close friendship operate as part of a feedback loop which may either scaffold or hinder the development of lifelong emotional support capacities. In order to better understand emotional support development, the present study examined interrelationships between friendship quality, interpersonal competence, and emotional support behaviors with peers as they develop across adolescence and into adult romantic partnerships.

Positive peer and romantic relationships offer myriad benefits for overall functioning, including reductions in mental health symptomatology and improvements in physical health, social functioning, and well-being across the lifespan (Hughes & Waite, 2009; Horn, Xu, Beam, Turkheimer, & Emery, 2013). Emotionally supportive experiences, specifically, have been shown to alleviate distress and promote physical health and psychological well-being (Lewandowski, Rosenberg, Jordan Parks, & Siegel, 2011; Uchino, Cacioppo, & Keicolt-Glaser, 1996). In addition to more immediate and direct benefits of a given supportive exchange, supportive interactions between relational partners may display a degree of long-term reciprocity. The give-and-take within emotionally supportive partnerships may serve an experiential learning function, honing emotional support skills and enhancing attachment security over time. The opportunity for egalitarian relationships within which to build these skills arises in adolescence, as close peer relationships take on growing developmental salience (Roisman, Masten, Coatsworth, & Tellegen, 2004).

Adolescent peer support and the transition of primary attachment figure from parent to peer to romantic partner across adolescence has been the focus of study for decades (Mikulincer & Shaver, 2020; Frederick, Demaray, Malecki, & Dorio, 2018; Watson, 2017; Feeney, 2016; Oudekerk, Allen, Hessel, & Molloy, 2015; Thompson, 2015; Reis, 2014; Allen & Land, 1999; Waters & Sroufe, 1983; Bowlby, 1982). However, much of this work only indirectly relates to tracking of emotional support *development*, as it is limited to studies that are a) primarily cross-sectional, b) focused on *adult* support capacities, c) situated within the context of supportive teacher-student relations in school, d) describing the caretaker-child relationship, and/or e) relatively short-term. Furthermore, previous work calls for a greater understanding of social mechanisms involved in one-to-one peer relationships, in light of growing interest in peers as an indicator of functioning in clinical and nonclinical populations (Gillard et al., 2017; Rogers, 2017 from Watson, 2017). While peer support has been analyzed as a predictor of functional and mental health outcomes, questions remain about how the social process leading to these outcomes unfolds and develops.

The present study used intensive, multi-reporter, longitudinal data to examine how these capacities develop and interrelate across adolescence and into adulthood. It was designed to provide insight to friendship quality and support behaviors as components of a self-sustaining feedback loop, within which adolescents may develop capacities that persist into adult romantic relationships. It examined the hypothesis that the iterative process that occurs in high quality, invested peer relationships facilitates teens' ability to take risks within the context of that friendship, allowing for formative learning to occur.

Attachment Security in Adolescent Peer Relationships

Repetition may play a key role in emotional support development across adolescence. Broaden-and-build theory suggests that repeated positive experiences with close others encourages future investment in similar interactions (Frederickson, 2011), enhancing attachment security by reinforcing the belief that others will respond favorably and consistently to calls for support (Mikulincer & Shaver, 2020; Bowlby, 1982). Unfortunately, not every adolescent will regularly interact with reliably supportive partners. Differences in responsiveness across dyads may promote increasingly effective support within some relationships while leaving others lagging behind. Teens with greater baseline support capacities may form more responsive peer relationships which encourage the use and development of emotional support skills over time. In contrast, if a teen does not have well-developed baseline emotional support capacities or has very negative emotional support experiences, they may use peers as a source of emotional support less often (or the peers may become a source of emotional distress), precluding them from comparable levels of skill development.

Development in Tandem: Friendship Quality and Supportive Behaviors

Attachment security begins influencing this process before an adolescent engages in support-seeking. For an adolescent to ask for emotional support, they must feel confident that their peer's response will be sufficient to justify emotional vulnerability. Taking this risk within a secure relationship is both more likely and more useful, as secure relationships facilitate learning from social risks regardless of how receptive the partner is (Wentzel, 2016). Secure relationships serve as a learning ground for broad social skills as well as specific elements of emotional support, including expressions of care, concern, assurance, and encouragement (Shulman, Laursen, Kalman, & Karpovsky, 1997; Buhrmester, 1990; Burleson & MacGeorge, 2002). Teens in lower quality, less secure friendships may not disclose their emotional needs to

their peers or may receive a negative response when they ask for support. Regardless of the reasons that teens do not disclose their emotional needs (e.g., previous negative experiences with the friend, distrust or dislike of the friend, negative expectations of the friend, etc.), the learning experiences which cascade into emotional support capacities into adulthood likely do not occur as often or as successfully within less secure friendships.

Once a teen expresses their desire for support, their peer must then engage in some sort of response. This response is another crucial ingredient in skill- and security-development. Existing evidence (within caretaker-child and romantic partner dyads) repeatedly suggests that responsiveness in the face of a need enhances attachment security, relationship satisfaction, and psychological well-being; all of which promote increased future engagement with the responsive individual (Reis, 2014; Haydon, Collins, Salvatore, Simpson, & Roisman, 2012). If a peer responds in a way that the support-seeker deems "sufficient," the support-seeker is also more likely to endorse immediate reductions in depressive symptoms, highlighting the short-term benefits of peer support (Priem & Solomon, 2014). When functioning optimally, this process of support seeking and provision becomes self-sustaining, as positive interactions with peers predict similar behaviors within future exchanges, which become increasingly more frequent and more rewarding, facilitating a cascade to functioning in adulthood (Stotsky, Bowker, & Etkin, 2019; Szwedo, Hessel, Loeb, Hafen, & Allen, 2017). However, if a peer lacks the skills or motivation to respond positively to a teen's bids for emotional support, this process stalls, as the teen may hesitate to seek help from this peer in the future.

In sum, a careful reading of work on attachment theory, relationship quality, and support processes gives rise to the hypothesis that a teen's reported friendship quality and observed support received from a peer will co-develop across adolescence. In line with the broaden-and-

build theory of attachment, teens develop and maintain high-quality relationships in tandem with repeated emotionally supportive interactions.

Skill Development

Repeated emotional support interactions may also promote skill refinement over time. The close peer dyad provides a developmentally unique context within which to explore emotional support interactions, as teens do not experience a truly egalitarian relationship prior to their close friendships. Within these partnerships, adolescents take turns filling the role of 'needing support' and the role of 'providing support,' enabling both partners to benefit from the bidirectional exchange over time (Mikulincer & Shaver, 2016). This process fosters positive expectations of the other person and of the self, allowing for iterative skill practice and development (Waters & Waters, 2006). Additionally, the intimacy fostered by repeated vulnerable exchanges might contribute to adolescents' feeling of security and comfort, allowing friends to support one another even more effectively (Bauminger, Finzi-Dottan, Chason, & Har-Even, 2008).

This process can break down at several points if a member of the dyad lacks emotional support competence. A teen may be unable to identify the emotional support that they need, or they may lack the ability to effectively articulate their desire for support. If a teen successfully communicates a need, their peer still may not engage in these interactions, or they may do so ineffectively or insufficiently. Regardless of how this breakdown occurs, a lack of competence inhibits the dyad from honing their emotional support skills. This may also function to slow the co-development of security as it inherently indicates a lack of consistent responsiveness.

These theories motivate a second core hypothesis that reciprocal relationships will be observed between friendship quality, teen emotional support competence, and emotional support

provided by a peer. These relationships will function such that each construct contributes to growth in the other two constructs over time. In essence, this describes a more complex feedback loop. This loop captures the iterative developmental process that occurs when emotionally supportive interactions occur effectively and both adolescents feel motivated to engage in similar interactions more as time passes, enabling those interactions to become increasingly more effective as the teens gain practice. High-quality friendships characterized by emotionally supportive interactions and budding emotional support competence set the stage for growing capacities across these domains throughout adolescence. This also suggests that teens who lack in these three domains may not benefit from this iterative development, as the feedback loop becomes stalled by a deficit in friendship quality, supportive behaviors, and/or emotional support competence.

From Adolescence to Adulthood

The way that this feedback loop plays out across adolescence may have implications for functioning across the lifespan. Interpersonal experiences within close friendships set the stage for similar social processes in adult romantic relationships (Oudekerk, Allen, Hessel, & Molloy, 2015). As adolescents grow into adulthood, developmental task focus shifts from forming close friendships to forming romantic relationships (Waters & Sroufe, 1983; Roisman, Masten, Coatsworth, & Tellegen, 2004). Developing the capacity to ask for support from a close peer in adolescence plays a potentially crucial role in one's capacity to seek similar support from a romantic partner in adulthood. If the adolescent friendship functions optimally, an individual can best prepare to enter a romantic relationship which serves as an emotionally supportive structure in adulthood. As such, the emotional support system developed in adolescent close friendships is

hypothesized to directly predict the functioning of the emotional support system in adult romantic relationships.

The Present Study

The present study sought to better understand the development of close peer emotional support systems across adolescence and their relationship to emotional support within romantic partnerships in adulthood. This study utilized multi-reporter data in a socio-demographically diverse community sample followed intensively for a six-year period in adolescence and followed-up in adulthood to examine the following specific hypotheses:

1. A feedback loop exists between broad friendship quality and observed support received such that these two constructs develop in tandem across adolescence.
2. A cycle will be observed between target teen-reported friendship quality, peer-reported target teen competence in emotional support processes, and observed peer emotional support provision, such that the development of each construct contributes to the development of the other two constructs.
3. Emotional support processes within adolescent peer relationships will predict the way similar emotional support processes function in adult romantic relationships, such that more skilled adolescents will engage with emotional support more effectively in adulthood.

Method

Participants

This study was part of a longitudinal investigation of adolescent social development in familial and peer contexts. Participants included 184 seventh and eighth graders (86 males and 98 females). Adolescents were assessed annually; this study utilizes the annual age 13 (M_{age} =

13.35, *SD* = 0.64) through age 18 (M_{age} = 18.38, *SD* = 1.04) assessments with peers as well as the age 24 (M_{age} = 23.99, *SD* = 1.12) assessment with romantic partners (see Table 1 for detailed age information). Adolescents were originally recruited from the seventh and eighth grades of a public middle school drawing from suburban and urban populations in the Southeastern United States. Students were recruited via an initial mailing to all parents of students in the school along with follow-up contact efforts at school lunches (total school population was approximately 600 students). Families of adolescents who indicated interest in the study were contacted by telephone. Of all students eligible for participation, 63% agreed to participate either as target participants or as peers who participated in interactions tasks with the target teen. Once a student participated as a peer, they were no longer eligible to be a primary participant. 38% of the core sample of 184 participants were in the 7th grade at the start of the study and 62% were in the 8th grade. All participants provided informed assent before each interview session, and parents provided informed consent. The sample was racially/ethnically and socioeconomically diverse: 107 adolescents (58%) identified themselves as Caucasian, 53 (29%) as African American, 15 (8%) as of mixed race/ethnicity and 9 (5%) as being from other identity groups, which approximately mirrors the distribution of the catchment area for the school from which the sample was drawn. Adolescents' parents reported an annual median family income in the $40,000–$59,999 range, relative to a national median household income of approximately $39,000 at the time (US Census Bureau, 1999). Each year, target adolescents nominated their closest friend to be included in survey and observational measures with them in the study. At the final assessment time point, participants' romantic partners were invited to participate in survey and observational measures after reporting a relationship of at least 3 months in duration

($M_{duration}$ = 2.67 years, *SD* = 2.28 years). Of the 112 couples that participated, 111 self-identified as heterosexual and 1 as a same-sex couple.

Table 1. Ages by Assessment Timepoint

	Participant Ages		Close Peer Ages		Romantic Partner Ages	
Assessment	**Mean**	***SD***	**Mean**	***SD***	**Mean**	***SD***
Time 1	13.35	0.64	13.46	0.83	-	-
Time 2	14.27	0.77	14.45	0.87	-	-
Time 3	15.21	0.81	15.03	0.97	-	-
Time 4	16.35	0.87	16.05	1.13	-	-
Time 5	17.32	0.88	16.91	1.42	-	-
Time 6	18.38	1.04	18.47	1.86	-	-
Time 7	23.99	1.12	-	-	25.61	3.89

Procedures

In the initial introduction and throughout each session, confidentiality was explained to all family members, and adolescents were told that their parents would not be informed of any of the answers they provided. A Confidentiality Certificate, issued by the U.S. Department of Health and Human Services protected all data from subpoena by federal, state, and local courts.

Attrition Analysis

Of the 184 teens who participated at Age 13, 95% also participated at Age 24. Individuals who did not participate at age 24 did not differ from teens who did on any baseline measures (friendship quality, emotional support behaviors, and interpersonal competence), gender, or familial income. Attrition is thus not likely to have distorted any of the findings reported. Despite this, to best address any possible biases due to attrition in longitudinal analyses or missing data within waves, we used full-information maximum-likelihood methods. These methods have been found to yield the least-biased estimates when all available data are used for longitudinal analyses (vs. listwise deletion of missing data; Arbuckle, 1996); thus, the entire original sample of 184 was utilized for these analyses. The full sample provides the best possible

estimates of variances and covariances in measures of interest and was least likely to be biased by missing data.

Measures

Overall Quality of Relationship with Peers *(age 13-18).* The Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987) was used annually to assess adolescents' perceptions of the overall quality of their relationship with their peers in terms of the degree of trust, communication, and alienation in the relationship. A composite score of the adolescent's perceptions of the overall quality of this relationship was obtained from 25 five-point Likert scale items, such as "They respect my feelings" (1-Never true, 2-Seldom true, 3-Sometimes true, 4-Often true, 5-Almost always true). This composite measure has been shown to have good test-retest reliability and has been related to measures of psychological well-being, self-satisfaction, decreased depression, higher likelihood of seeking social support, and less symptomatic response to stressful life events (Armsden & Greenberg, 1987). Internal consistency was excellent; Cronbach's α ranged from 0.92-0.94.

Peer-Rated Emotional Support Competency *(age 13-18).* The Interpersonal Competency Questionnaire (Buhrmester, 1990) was annually administered to target teen's nominated closest peer, to assess that peer's perception of the target teen's interpersonal abilities. Peers responded to questions, such as "How good is this person at making someone feel better when they are unhappy or sad?" on a scale from 1-Poor at this (the teen would be so uncomfortable and unable to handle this situation that it would be avoided if at all possible) to 5-Extremely good at this (the teen would feel very comfortable and could handle this situation well). Eight items were summed together to obtain the Emotional Support subscale. Scores have previously been found to be related to sociability, self-esteem, and reduced anxiety and

depression, but is discrete from perceived intimacy in the relationship (Buhrmester, 1990). Internal consistency was excellent; Cronbach's α ranged from 0.91-0.95.

Emotional Support Received *(age 13-18, 24).* Target teens and their nominated close friends participated in an observed social interaction task in private offices within a University building annually from age 13 to 18. At age 24, participants engaged in this same task with a romantic partner. In the six-minute task, participants ask their interaction partner for advice on a self-selected topic. This interaction was then coded for the level of Emotional Support Received form the interaction partner using the Supportive Behavior Task Coding System for Adolescent Peer Dyads (Allen et al., 2001).

The *Emotional Support Received* code describes the level to which the partner attempts to understand and support the feelings raised by the participant, through processes such as sympathizing, naming the emotion, eliciting further emotion, or making a commitment to be emotionally available. Scores range from 0 = no attempt to emotionally support; to 4 = clear recognition of emotional distress, attempts to draw the speaker out, and clear expressions of warmth, concern, and sympathy throughout most of the interaction. The Intraclass Correlations for this variable ranged from 0.61-0.78, which is considered in the good- to excellent-range for this statistic (Cicchetti & Sparrow, 1981).

Partner-Rated Support in Relationship *(age 24).* The Network of Relationships Inventory (NRI; Furman & Buhrmester, 1985) was administered to participants' romantic partners at age 22 to assess partners' perception of the relationship. Partners responded to questions, such as "When you are feeling down or upset, how often do you depend on this person to cheer you up?" on a scale from 1 = never/none to 5 = extremely much. Three items from the NRI were summed to obtain the Support subscale, which assesses the degree to which

individuals perceive the relationship as a source of support. Internal consistency was good, Cronbach's α = 0.81.

Romantic Attachment Security *(age 24).* Secure attachment will be assessed using participant self-report of the Experiences in Close Relationships questionnaire (Brennan, Clark, & Shaver., 1998). The Experiences in Close Relationships questionnaire is a 36-item measure, which assesses avoidant (18 items) and anxious attachment (18 items) to a current romantic partner. Items are scored on a 7-point Likert scale where 1 = disagree strongly, 4 = neutral/mixed, and 7 = agree strongly, where several items are reverse coded so that higher scores indicate greater anxious or avoidant behaviors. For the purposes of this study, the total sum score of all items will be reversed so that higher scores will reflect more secure attachment to remain consistent with the other variables (i.e. higher scores reflect greater or more of that particular construct). The Experiences in Close Relationships questionnaire has demonstrated strong validity with theoretical accounts of attachment dimensions (Bartholomew, 1990). The total sum score of the Experiences in Close Relationships questionnaire demonstrates excellent internal consistency (Cronbach's α = .96).

Results

Descriptive Statistics

Raw variable means, standard deviations, maximum and minimum reported values, and sample sizes for all examined variables are presented in Table 2; variable intercorrelations are presented in Table 3. All variables were standardized prior to primary analysis.

Table 2. Variable Descriptive Statistics

Variable	Friendship Quality					Emotional Support Competence					Emotional Support Received				
	M	***SD***	**Min**	**Max**	**N**	***M***	***SD***	**Min**	**Max**	**N**	***M***	***SD***	**Min**	**Max**	**N**
Age 13	102.21	13.93	58	125	183	27.56	6.48	13	40	173	1.07	1.04	0	3.75	179
Age 14	103.26	12.98	63	125	165	26.99	6.39	12	40	156	0.89	0.91	0	3.75	164
Age 15	101.91	14.50	74	125	162	27.61	6.52	8	40	142	1.05	0.98	0	4.00	149
Age 16	103.82	13.44	62	125	162	27.88	7.14	8	40	142	1.13	0.99	0	4.00	146
Age 17	106.76	14.24	67	125	166	29.44	6.08	14	40	145	0.67	0.87	0	3.50	141
Age 18	106.50	13.96	53	125	137	29.04	5.85	12	40	122	0.57	0.80	0	2.75	129
Variable	**Romantic Attachment**					**Supportiveness in Relationship**					**Emotional Support Received**				
	M	***SD***	**Min**	**Max**	**N**	***M***	***SD***	**Min**	**Max**	**N**	***M***	***SD***	**Min**	**Max**	**N**
Age 24	499.38	110.05	174	720	173	12.42	2.19	6	15	101	0.55	0.70	0	3.5	90

Table 3. Variable Correlations

	2	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**
Friendship Quality																				
1. Age 13	.56***	.51***	.32***	.43***	.31***	.06	.17*	.14	.08	.12	.03	.13	.17*	.18*	.13	.21*	.07	.12	-.05	.10
2. Age 14	--	.58***	.53***	.46***	.44***	.008	.26**	.28**	.21*	.18*	.13	.14	.08	.18*	.18*	.09	.08	.16	-.04	.14
3. Age 15		--	.63***	.61***	.53***	.03	.26**	.30***	.15	.22*	.13	.09	.05	.22**	.07	.13	.18	.24**	.03	.18
4. Age 16			--	.66***	.62***	.12	.24**	.34***	.21*	.21*	.14	.11	.04	.24	.05	.12	.13	.30***	-.05	.18
5. Age 17				--	.63***	.09	.29***	.39***	.20*	.25**	.25**	.14	.14	.26**	.18*	.17*	.17	.22**	-.03	.16
6. Age 18					--	-.003	.23**	.26**	.10	.07	.20*	.03	.04	.22*	-.04	.15	.13	.28**	-.05	.22
Support Competence																				
7. Age 13						--	.25**	.26**	.23**	.15	.19*	.10	.15	.14	-.12	.13	.10	.11	-.13	-.02
8. Age 14							--	.43***	.37***	.33***	.07	.18*	.34***	.26**	.22*	.13	.20*	.01	-.14	.01
9. Age 15								--	.46***	.29**	.26**	.07	.02	.20*	.22*	.23*	.30**	.05	-.15	.05
10. Age 16									--	.43***	.38***	.10	.20*	.26**	.29***	.06	.19*	-.01	-.08	.02
11. Age 17										--	.36***	-.02	.12	.19*	.16	.15	.21*	.15	-.24	-.02
12. Age 18											--	.15	.07	.23*	.32***	.30**	.18*	.01	.12	-.15
Support Received																				
13. Age 13												--	.19*	.15	.15	.17*	.13	-.02	.03	.04
14. Age 14													--	.27**	.31***	.21*	.23**	-.08	.06	.20
15. Age 15														--	.17	.31***	.24**	-.03	-.07	.25*
16. Age 16															--	.14	.20*	.06	-.15	.17
17. Age 17																--	.33***	-.05	-.08	.16
18. Age 18																	--	-.08	-.22	.22
Outcomes																				
19. Attachment																		--	-.01	.04
20. Supportiveness																			--	-.06
21. Support Received																				--

*$p < .05$, **$p < .01$, ***$p < .001$

Primary Analyses

R program OpenMx (Boker et al., 2020) was used to perform model comparisons on a series of cross-lagged autoregressive models to examine the prospective and reciprocal associations between friendship quality, observed support received, and emotional support competence across adolescence and comparable skills with a romantic partner at age 24. All structurally similar paths were constrained to be equal (e.g., all predictions from "friendship quality" to "support received" are assigned the same beta weight; all predictions of "friendship quality" to "friendship quality" are assigned the same beta weight; etc.). In each comparison, all potential cross-lagged and autoregressive associations were initially compared to a model of only autoregressive relationships (i.e., construct stability). All models include intercorrelations of baseline variables, to account for the relations between the three constructs.

Hypothesis 1. *Friendship quality and support received develop in tandem across adolescence.*

A nested model comparison was performed to investigate the relationship between friendship quality and support received across adolescence. An autoregressive, cross-lagged panel model was compared to a model of autoregressive construct stability alone. This model comparison indicated that the cross-lagged model best fit the data, and that all paths were statistically significant (see Tables 4 and 5, Figure 1).

Table 4. Hypothesis 1: Nested Comparison of Cross-Lag and Stability Models

Base Model	Comparison	-2logL	df	diffLL	diffdf
Cross-Lag	.	4908.978	1854	.	.
Cross-Lag	Stability	4930.309	1856	21.331***	2***

***p < .001

Table 5. Hypothesis 1: Cross-Lagged Paths 95% Confidence Intervals

Path	Estimate	Lower CI	Upper CI
Friendship Quality → Friendship Quality	0.598	0.543	0.653
Friendship Quality → Support Given	0.104	0.032	0.176
Support Given → Friendship Quality	0.094	0.021	0.167
Support Given → Support Given	0.181	0.107	0.254

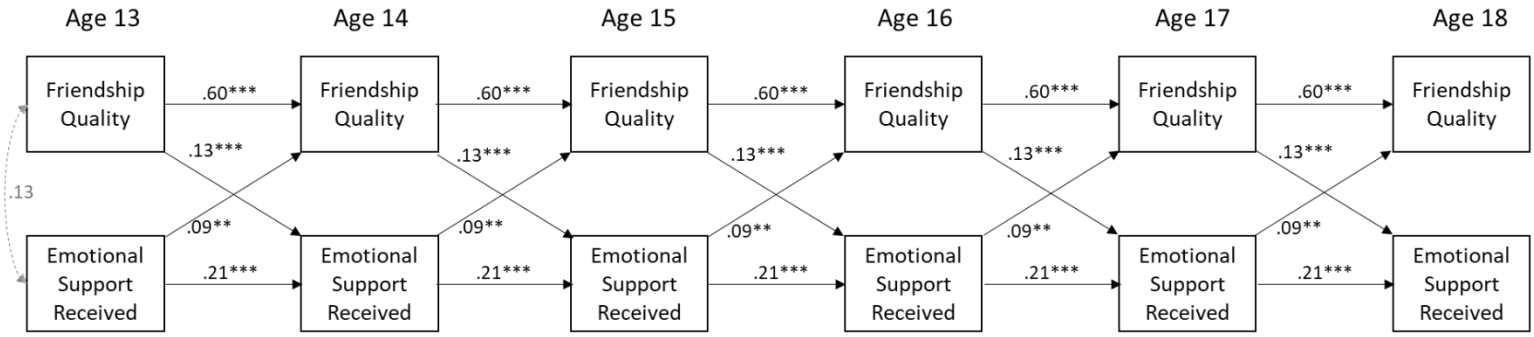

Figure 1. Autoregressive and cross-lagged relationships between Friendship Quality and Emotional Support Received from a peer across adolescence.
** p <.01; *** p <.0001

Hypothesis 2. *A complex feedback loop will be observed between friendship quality, emotional support competence, and emotional support received.*

A nested path model comparison was performed in order to investigate whether developmental relationships can be observed among friendship quality, support competence, and support given over time, or whether these capacities develop in isolation across adolescence (see Table 6). The cross-lagged model was identified as the best fit for these data, and 95% Confidence Intervals were calculated for path estimates (See Tables 6 and 7, Figure 2).

Table 6. Hypothesis 2: Nested Comparison of Cross-Lag and Stability Models

Base Model	Comparison	-2logL	df	diffLL	diffdf
Cross-Lag	.	7256.581	2715	.	.
Cross-Lag	Stability	7316.051	2721	59.471***	6***

***p < .001

Table 7. Hypothesis 2: Full Cross-Lagged Paths 95% Confidence Intervals

Path	Estimate	Lower CI	Upper CI
Support Competence → Support Competence	0.347	0.274	0.419
Support Competence → Friendship Quality	0.052	-0.008	0.111
Support Competence → Support Received	0.132	0.057	0.207
Friendship Quality → Support Competence	0.134	0.067	0.203
Friendship Quality → Friendship Quality	0.598	0.543	0.653
Friendship Quality → Support Received	0.104	0.032	0.176
Support Received → Friendship Quality	0.094	0.021	0.167
Support Received → Support Competence	0.079	0.021	0.137
Support Received → Support Given	0.181	0.107	0.254

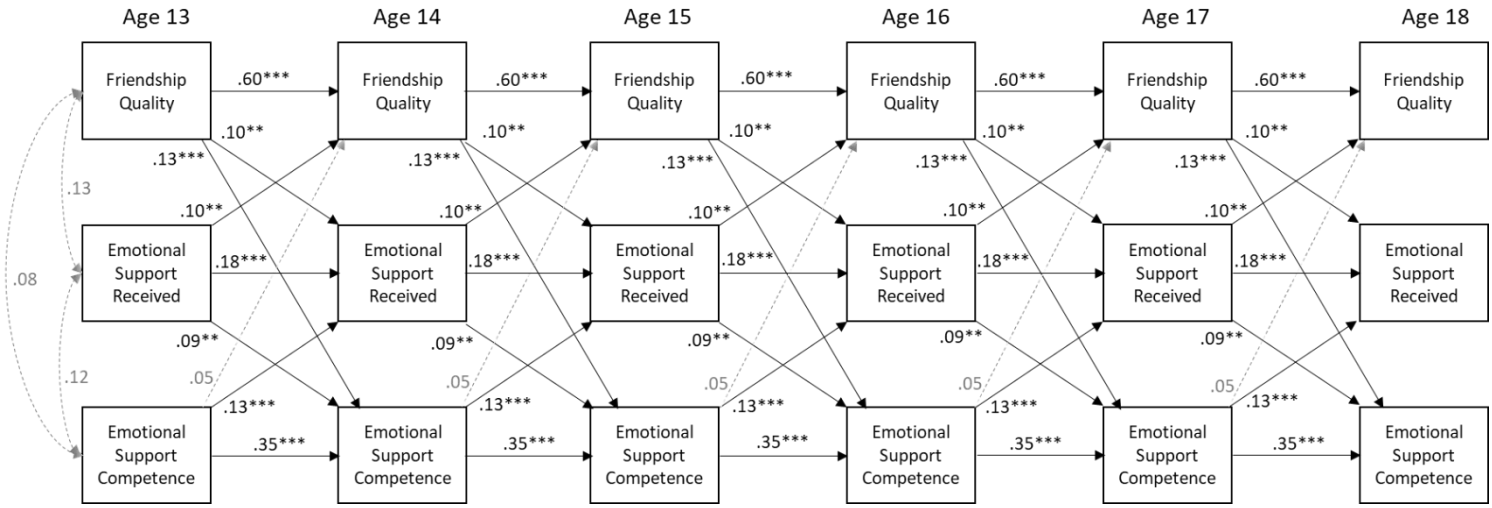

Figure 2. Autoregressive and cross-lagged relationships between Friendship Quality, Emotional Support Received, and Emotional Support Competence across adolescence.
** p <.01; *** p <.0001

Hypothesis 3. *Emotional support processes within adolescent peer relationships will directly predict emotional support functioning in adult romantic relationships.*

In order to determine whether support development extends beyond adolescent peer relationships into adult romantic relationships, the determined best-fit model was maintained and extrapolated to adulthood. A nested path model comparison was performed of a fully cross-lagged model and a model of construct stability through age 24. Outcome variables were selected to correspond to peer variables as closely as possible: self-reported attachment to romantic partners broadly, partner-reported experiences of support within the relationship, and observed

support received from partner in an advice-seeking task. This model comparison suggested that the data was best described by the model in which these outcomes were predicted from adolescent peer support and friendship quality (see Tables 8 and 9, Figure 3).

Table 8. Hypothesis 3: Nested Comparison of Cross-Lag and Stability Models

Base Model	Comparison	-2logL	df	diffLL	diffdf
Cross-Lag	.	9263.362	3419	.	.
Cross-Lag	Stability	9279.975	3425	16.613*	6*

*p < .05, **p < .01, ***p < .001

Table 9. Hypothesis 3: Final Model Paths, 95% Confidence Intervals

Path	Estimate	Lower CI	Upper CI
Support Competence → Support Competence	0.347	0.274	0.419
Support Competence → Support Received	0.132	0.057	0.207
Support Competence → Friendship Quality	0.051	-0.015	0.117
Friendship Quality → Support Competence	0.133	0.065	0.201
Friendship Quality → Friendship Quality	0.607	0.553	0.661
Friendship Quality → Support Received	0.104	0.033	0.177
Support Received → Friendship Quality	0.095	0.022	0.169
Support Received → Support Competence	0.090	0.033	0.146
Support Received → Support Received	0.181	0.107	0.254
Outcomes: Relationship Support Processes (age 24)			
Friendship Quality → Romantic Attachment	0.237	0.073	0.397
Friendship Quality → Relationship Support	0.245	0.041	0.441
Friendship Quality → Support Received (partner)	0.270	0.065	0.459
Support Received (peer) → Support Received (partner)	0.203	0.001	0.401
Support Received (peer) → Romantic Attachment	-0.131	-0.383	0.046
Support Received (peer) → Relationship Support	-0.191	-0.383	0.004
Support Competence → Romantic Attachment	-0.091	-0.271	0.093
Support Competence → Support Received (partner)	-0.206	-0.437	0.037
Support Competence → Relationship Support	0.155	-0.083	0.386

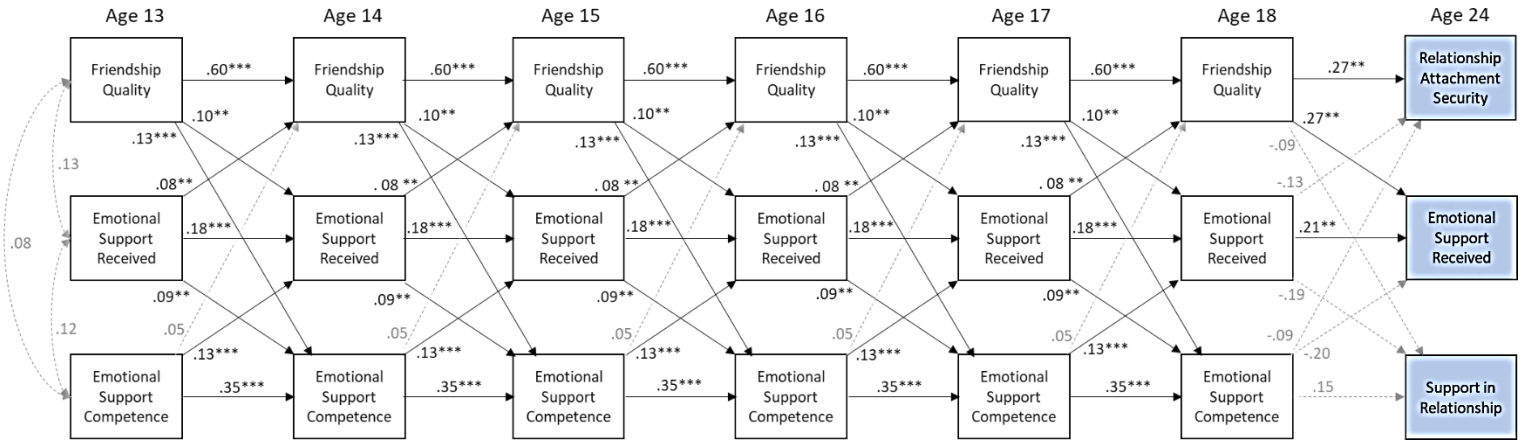

Figure 3. Autoregressive and cross-lagged relationships between Friendship Quality, Emotional Support Received, and Emotional Support Competence across adolescence predicting development of Romantic Attachment and Support Received in Romantic Relationships at Age 24.
** p <.01; *** p <.0001

Post Hoc Analyses

After the final, cross-lagged model of support development from adolescence to adulthood was identified, several potential moderators and covariates were assessed.

Friendship Stability as a Moderator

We considered the possibility that continuity (or lack of continuity) of closest friend over time might interact with the development of friendship quality, supportive behaviors, and support skills within peer dyads. After the final model was identified, the model was calculated again accounting for participation of the same close friend vs. another friend for subsequent years. A variable for same vs. different close friend across each one-year period was used to create interaction terms for each pair of subsequent waves. Predictions from these interaction terms to the corresponding variable were assessed for significance within the model. No significant moderation was identified, suggesting that these findings apply similarly for teens in this sample whether they consistently participated with the same peer or different peers across adolescence.

Demographic Moderators

We also considered the possibility that demographic factors may moderate the development of relationship quality, support competence, and support received year-by-year. Participant gender and familial income were tested separately as moderators of each path within the model. No significant moderation was identified for gender or income, suggesting that the predictions within this model apply similarly for male and female teens and for teens across the spectrum of socioeconomic status.

Demographic Covariates

Finally, we assessed gender and adolescent family income (both assessed at Age 13; see Table 10 for intercorrelations with all variables analyzed) for possible covariation. Path estimates and significance values of the final model remained consistent when these covariates were entered. Several significant predictions to baseline qualities emerged within the model: Gender predicted baseline Friendship Quality ($\beta = 0.23$, $p < .001$) and Emotional Support Competence ($\beta = 0.29$, $p < .001$) such that self-identified female participants rated their friendships as higher quality and were rated by their friends as better at giving emotional support. Baseline familial income was associated with higher Friendship Quality ($\beta = 0.29$, $p < .001$) and Emotional Support Received from a peer ($\beta = 0.18$, $p < .05$) such that more economically privileged adolescents rated their friendships as higher quality and received more support from peers. The inclusion of these demographic variables in the model significantly improved model fit, according to nested model comparison (see Table 11, Figure 4).

Table 10. Variable Correlations with Demographic Variables

Variable	Friendship Quality		Support Competence		Support Received	
	Gender (0=M, 1=F)	Family Income	Gender (0=M, 1=F)	Family Income	Gender (0=M, 1=F)	Family Income
1. Age 13	.18*	.27***	.26***	.03	.08	.16*
2. Age 14	.26**	.05	.36***	.05	.33***	.07
3. Age 15	.26**	.03	.28***	.10	.29***	.09
4. Age 16	.35***	-.12	.26**	.08	.27***	.16
5. Age 17	.37***	.07	.35***	-.06	.25**	.06
6. Age 18	.18*	-.01	.26**	.00	.22*	.23**
Variable	**Attachment Security**		**Supportiveness**		**Support Received**	
7. Age 24	-.09	.06	-.08	-.02	-.35***	.09

p < .05, **p* < .01, ***p* < .001

Table 11. Post Hoc: Nested Comparison of Cross-Lag and Moderated Models

Base Model	Comparison	-2logL	df	diffLL	diffdf
Moderated Model	.	15082.13	5464	.	.
Moderated Model	Cross-Lagged	13121.95	5470	39.817***	6***

***p < .001

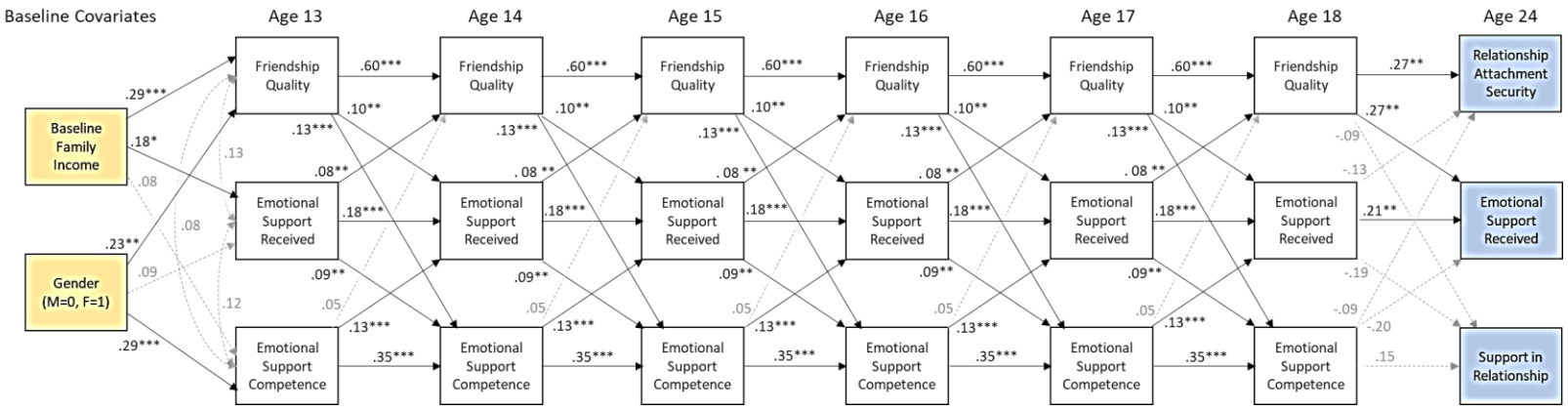

Figure 4. Autoregressive and cross-lagged relationships between Friendship Quality, Emotional Support Received, and Emotional Support Competence across adolescence predicting development of Romantic Attachment and Support Received in Romantic Relationships at Age 24; covarying Baseline Family Income and Participant Gender.

** *p* <.01; *** *p* <.0001

Discussion

These analyses suggest that friendships serve as a vital context that potentially facilitates (or precludes) recursive and self-sustaining social development processes. Friendships characterized by safety and encouragement, mutual exchange, and norms about supportive

exchanges may maximize opportunities for adolescents to practice these interactions with one another. This aligns with the cyclical, security-enhancing processes described by the "broaden and build" theory of attachment (Mikulincer & Shaver, 2020). Early theories conceptualize attachment as a developmental process between caretaker and infant, in which repeated lessons about caregivers' responsiveness shape infants' expectations and interactions with those caregivers (Bowlby, 1982). A similar process may occur within adolescent peer dyads, as teens adjust whether they persist in seeking emotional support, depending on their peer's responses.

As indicated by the post-hoc analyses, demographic differences appear to play a significant role in adolescents' baseline capacities, the downstream effects of which can be very meaningful when discussing feedback loops that occur over a decade. The identified predictions are commensurate with previous work on the role of gender socialization and economic privilege in social development (Gillespie, Lever, Frederick, & Royce, 2015; Cohen & Garcia, 2008). With regard to gender differences: Female participants tended to report greater friendship quality and receive higher ratings of emotional support competence from their female friends, but did not show any differences from boys in the amount of emotional support that they received from a peer. This is consistent with the notion that girls tend to *report* receiving more support from peers and being more satisfied with that support than boys, while showing similar levels of emotional disclosure within friendships (Gillespie, Lever, Frederick, & Royce, 2015; Colarossi & Eccles, 2000; Furman & Buhrmester, 1992; Pouwelse, Bolman, Lodewijkx, & Spaa, 2011). This discrepancy in reporting suggests that there may be a difference in perception, expectations, or function of emotional support within female vs. male friendships, though support has been linked to greater self-esteem and reduced depressive symptoms for both male and female teens (Moran & Eckenrode, 1991). Considering the differences predicted by familial income:

economic disadvantage is accompanied by structural injustices and stressors. Pressures surrounding difficulties with housing and food security likely affect parents' ability to support their children and teens' capacity to cope with emotionally laden social demands (Cohen & Garcia, 2008; Ceballo & Hurd, 2008). In addition to this layer of stress, economically disadvantaged teens also may have reduced access to programming that their privileged peers may use to hone social skills (White & Gager, 2007). For economically privileged teens, resource advantage may have facilitated opportunities to practice navigating emotional conversations, and spared them the chronic stress, cognitive demand, and emotional turmoil that their less advantaged peers must endure (Evans & Kim, 2013). These disparities, while contributing to (and indicative of) structural barriers, do not mean that disadvantaged teens are doomed to follow a harmful trajectory based on their family's socioeconomic status. In the face of layered challenges, these teens show gains in psychological health, academic functioning, and physical health when they engage in socially supportive relationships (Demaray & Malecki, 2002; Aronowitz, 2005). In community samples consisting of variety in gender, SES, and intersectionality, the development of secure, supportive relationships has been identified as a predictor of social functioning and increasing social skills over time (McElhaney, Allen, Stephenson, & Hare, 2009; Allen et al., 2002). In sum, the identified baseline differences predicted from gender and income reinforce the conclusion that, while these friendships may operate differently based the adolescents that comprise each individual dyad, the formation and maintenance of adaptive friendships may benefit *all* adolescents.

For supportive interactions to occur within any given dyad, an adolescent must first feel comfortable approaching their friend and disclosing emotional need to them. After the first emotional support-seeking interaction occurs, a feedback loop may follow. The identified model

suggests that friendship quality each year predicts relative changes in teens' ability to give their friend support and in the amount of emotional support that they receive from that friend. Within a high-quality friendship, an adolescent may have greater chances of receiving a thoughtful, appropriate response, encouraging future engagement. As adolescents continue to practice and improve their skills, emotional exchanges may repeatedly become reinforced simply by the adolescents' successful management of the conversations. Notably, the opposite process can also occur: a lack of supportive peer experiences may limit some adolescents' opportunities to practice these skills and develop security. Adolescents who experience supportive interactions as unproductive or upsetting may avoid seeking emotional support in the future, stalling opportunities for skill and security development.

Within the model, receiving greater emotional support each year predicts relative increases in friendship quality and in the amount of emotional support skill that a teen is attributed. This appears to reflect the mutual experiential learning that occurs within emotional support processes (Fulkner & Kalathil, 2012). Regardless of whether a given individual acts as support-seeker or support-provider, they can receive benefits to well-being and social skills from these interactions (Mourra et al., 2014; Davidson et al., 2012; Allen et al. 2002). The more often adolescents practice seeking and giving emotional support, the better skilled they may become (and, likely, the more often they use these skills in the future, contributing to even greater development), and the relatively higher they rate their friendship quality. This is commensurate with previous work showing that adults endorse feelings of achievement, usefulness, and competence after serving as a peer supporter (Rebeiro Gruhl et al., 2016; Austin et al., 2014). The extent to which a peer benefits from this "helper-therapy" may encourage them to continue to engage in supportive interactions (Watson, 2017; Reissman, 1965).

If these interactions continue to occur with increasing frequency for the teens within high-quality friendships, these friendships may become expected sources of emotional support. This corresponds with the model's suggestion that greater competence in *providing* emotional support each year predicts relative increases in the amount of emotional support that a teen *receives* from their friend the following year. Teens may co-develop support skills within their friendships, with both members of the dyad offering meaningful contributions to experiential learning (Kolb, 2014; Bandura, 1969). The apparent reciprocal development of emotional support competence and emotional support reception also suggests that as teens' skills improve, they are more likely to continue to engage and use these skills in relevant interactions with close peers. This further reinforces the interpretation that repeated practice contributes to increasing development across adolescence.

As suggested by the *post-hoc* analyses, this practice may occur across different friendships, as the model fits similarly for teens who brought in the same peer and different peers across the six years of annual lab visits. This implies that these experiential learning processes can extend outside of the specific context of a single friendship. Previous work suggests that a given teen's different close friendships may function in similar ways, as teens tend to select friends that show similar qualities to themselves (Kossinets & Watts, 2009). Even though the interaction partner differs, the interaction dynamics may be comparable, maintaining teens' developmental trajectories across friendships. While on the surface this seems somewhat deterministic, it may also indicate a potential point of intervention ripe for investigation in future work. If a problematic cycle is identified and interrupted by the introduction of a new social dynamic (i.e., through skill-development, novel interaction partners, etc.), the adolescents' trajectories may shift.

Looking to adulthood, the identified model suggests that both friendship quality and support received work together to predict support received in future romantic relationships. Notably, teens' support skills did not predict any of the tested outcomes. Additionally, the amount of support romantic partners attribute to their relationship at age 24 is not predicted by any of the variables tested in adolescence. Note that while peers reported on participants' support competence across adolescence, the same measure was not administered to romantic partners, and thus the Network of Relationships Inventory support subscale was used as the closest available stand-in. Nevertheless, this pattern of statistical relationships suggests that lifespan development of support-seeking and support-provision may be driven primarily by underlying attachment processes, rather than the specific skills developed within a given relationship. While skills with peers in adolescence may relate to the amount of support received from peers, it seems that these skills may not directly translate to future relational partners' perceptions. Rather, the process of developing high quality, supportive relationships shapes adolescents' experiences in their future relationships. Attachment theory suggests that this trajectory may be best understood by the formation of expectations about the way that close relationship partners respond to social support (Mikulincer & Shaver, 2016; Bowlby, 1982). This may function adaptively or maladaptively. Adolescents whose interactions proceed well with peers in adolescence may expect relationship partners to act as secure sources of emotional support, shaping the way that they select relational partners and the way that they interact with them (Latty-Mann & Davis, 1996; Simpson, Rholes, & Nelligan; 1992). Conversely, adolescents who do not experience supportive, secure friendships in adolescence may not expect partners to respond well to calls for support, and thus may not prioritize emotional support when selecting a partner or may not attempt to engage the partner in emotional support interactions. The model

suggests that emotional support skills within adolescence play an indirect role in this process, as they influence attachment security development. Skilled adolescents may experience more adaptive development because they have more opportunities to engage in security-enhancing interactions, informing their expectations of relationships in adulthood.

Similar developmental cascades have been observed within this cohort, as studies repeatedly find that social capacities within adolescence, broadly, predict future functioning in adult romantic relationships. Adolescents' capacity to express need for and receive emotional support predicts their future ability to advocate for autonomy within disagreements, their eventual job and functional independence, and the relationship satisfaction that they endorse with adult romantic partners (Oudekerk, Allen, Hessel, & Molloy, 2015; Szwedo, Hessel, Loeb, Hafen & Allen, 2017). This repeated identification of meaningful long-term predictions from these supportive interactions suggests that these findings do not merely reflect a positive give-and-take within teen friendships. While these capacities reflect adolescent social functioning in the short-term, they may also extend beyond these high school friendships and promote skill development that persists into adulthood.

Several limitations of this study warrant consideration. These measures offer a small window into adolescents' rich social lives which undoubtedly vary across time and across different interaction partners outside of the observed task. Additionally, although these findings suggest that the adolescent close peer dyad serves an important role in adolescents' development of emotional support capacities, the study did not consider the emotional *content* discussed during supportive interactions. Contextual information is limited within this analysis, and emotional support capacities may develop differently depending on the types of stressors adolescents face and the extent of alternative sources of support and stress in their lives. The

types of topics that teens might seek emotional support about range from romantic prospects, disputes with parents, experiences of overt or covert prejudice, and fears regarding poverty and food insecurity – teens may be differentially equipped to handle and respond to these widely varying emotional challenges. Additionally, future work is needed to better understand nuances of how emotional support development proceeds across adolescence. For instance, the present study was somewhat limited by sample size, and thus, could not provide insight into whether a critical period arises during adolescence, during which the processes observed may be particularly intense or closely linked. Additionally, while peer perception of participants' skills was assessed annually in adolescence, the same measure was not given to romantic partners at age 24, and so inferences about the role of skill employment in adult support interactions are limited. Finally, the type of information collected about participants and about their partners in adolescence was not identical. As such, interpretations involving actor-partner modeling or the long-term functioning of the peer supporter cannot be obtained from this sample.

Future research should consider the types of stressful emotions or events that adolescents discuss within their supportive interactions, to determine whether there is an optimal level of stress for adolescents' interpersonal development. If we identify the types of stress that adolescents can productively handle among their peers, we may be able to intervene in situations that peers struggle to navigate on their own. Other work might consider the possibility of intervening on adolescents that incite a relatively negative trajectory, by introducing novel interaction dynamics into their social experience, to determine how best to foster functioning support systems for every adolescent. Finally, future efforts might consider approaching these analyses from a dynamical systems lens, in order to account for the variation in sampling time

and better describe this development as a continuous process, rather than one that occurs in discrete stages.

Ultimately, these findings reinforce the conclusion made by extant literature that supportive adolescent peer experiences serve important developmental functions. Teens' close friendships appear pivotal for the co-development of both involved teens, as this iterative social learning unfolds and lends itself to changes in friendship quality, social support, and social skills across adolescence. These key positive relationship experiences do not occur naturally for every adolescent, and the implication that adolescents without these formative experiences may develop less effective emotional support systems raises some concern. The iterative nature of the social learning process suggests that, while some teens seem to be set on a harmful downward trajectory, potential points-of-intervention occur throughout adolescence. It remains evident that interventions must target these adolescents who lack these pivotal connections, in order to promote social-emotional learning and long-term social functioning.

References

Allen, J. P., Hall, F. D., Insabella, G. M., Land, D. J., Marsh, P. A., & Porter, M. R. (2001). *Supportive Behavior Task Coding Manual*. Charlottesville, VA: University of Virginia.

Allen, J. P., Marsh, P., McFarland, C., McElhaney, K. B., Land, D. J., Jodl, K. M., & Peck, S. (2002). Attachment and autonomy as predictors of the development of social skills and delinquency during midadolescence. *Journal of Consulting and Clinical Psychology, 70*(1), 56–66. https://doi.org/10.1037/0022-006X.70.1.56

Allen, J.P., Narr, R.K., Kansky, J., & Szwedo, D.E. (2019). Adolescent Peer Relationship Qualities as Predictors of Long-Term Romantic Life Satisfaction. *Child Development(1).* https://doi.org/10.1111/cdev.13193

Arbuckle, J. L. (1996). Full information estimation in the presence of incomplete data. In G. A. Marcoulides, & R. E. Schumacker (Eds.), *Advanced structural equation modeling: Issues and Techniques* (pp. 243–277). Mahwah, NJ: Lawrence Erlbaurn Associates.

Armsden, G.C. & Greenberg, M.T. (1987). The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence, 16,* 427-454. https://doi.org/10.1007/BF02202939

Aronowitz, T. (2005). The Role of "Envisioning the Future" in the Development of Resilience Among At-Risk Youth. *Public health nursing, 22*(3), 200-208. DOI: 10.1111/j.0737-1209.2005.220303.x

Austin, E, Ramakrishnan A, Hopper K. (2014). Embodying recovery: A qualitative study of peer work in a consumer run service setting. *Community Mental Health Journal, 50,* 879–85. DOI: 10.1007/s10597-014-9693-z

Bandura A. (1969). *Social-learning theory of identificatory processes.* Handbook of Socialization theory and research. Illinois: Rand McNally & Company, vol. 213. p. 262

Bauminger, N., Finzi-Dottan, R., Chason, S., & Har-Even, D. (2008). Intimacy in adolescent friendship: The roles of attachment, coherence, and self-disclosure. *Journal of Social and Personal Relationships, 25*(3), 409-428. DOI: 10.1177/0265407508090866

Boker SM, Neale MC, Maes HH, Wilde MJ, Spiegel M, Brick TR, Estabrook R, Bates TC, Mehta P, von Oertzen T, Gore RJ, Hunter MD, Hackett DC, Karch J, Brandmaier AM, Pritikin JN, Zahery M, Kirkpatrick RM, Wang Y, Goodrich B, Driver C, Massachusetts Institute of Technology, Johnson S, Association for Computing Machinery, Kraft D, Wilhelm S, Medland S, Falk CF, Keller M, Manjunath B G, The Regents of the University of California, Ingber L, Shao Voon W, Palacios J, Yang J, Guennebaud G, Niesen J (2020). *OpenMx 2.17.3 User Guide.*

Bowlby, J. *Attachment and Loss: Vol. 1.* Attachment, 2nd ed.; Basic Books: New York, NY, USA, 1982

Brennan, K.A., Clark, C.L., Shaver, P.R. (1998). Self-report measurement of adult attachment. In J.A. Simpson & W.S. Rholes (Eds.), *Attachment Theory and Close Relationships*, (46-76). New York: Guilford Press.

Buhrmester, D. (1990). Intimacy of Friendship, Interpersonal Competence, and Adjustment during Preadolescence and Adolescence. *Child Development, 61*(4). https://doi.org/10.1111/j.1467-8624.1990.tb02844.x

Burleson, B. R., & MacGeorge, E. L. (2002). *Supportive communication*. In M. L. Knapp and J. A. Daly (Eds.), Handbook of interpersonal communication (3rd ed., pp. 34–424). Thousand Oaks, CA: Sage.

Ceballo, R., & Hurd, N. (2008). Neighborhood context, SES, and parenting: Including a focus on acculturation among Latina mothers. *Applied Development Science, 12*(4), 176-180. https://doi.org/10.1080/10888690802387997

Cicchetti, D.V. & Sparrow, S.A. (1981). Developing Criteria for Establishing Interrater Reliability of Specific Items: Applications to Assessment of Adaptive Behavior. *American Journal of Mental Deficiency*, *86*(2), 127-37.

Cohen, G. L., & Garcia, J. (2008). Identity, belonging, and achievement: A model, interventions, implications. *Current Directions in Psychological Science*, *17*(6), 365-369. https://doi.org/10.1111/j.1467-8721.2008.00607.x

Colarossi, L.G. & Eccles, J.S. (2000). A prospective study of adolescents' peer support: gender differences and the influence of parental relationships. *Journal of Youth and Adolescence, 29*, 661-678. https://doi.org/10.1023/A:1026403922442

Davidson L, Bellamy C, Guy K, Miller R. (2012). Peer support among persons with severe mental illnesses: a review of evidence and experience. *World Psychiatry, 11*, 123–8. DOI: 10.1016/j.wpsyc.2012.05.009

Demaray, M. K., & Malecki, C. K. (2002). The relationship between perceived social support and maladjustment for students at risk. *Psychology in the Schools*, *39*(3), 305-316. https://doi.org/10.1002/pits.10018

Evans, G. W., & Kim, P. (2013). Childhood poverty, chronic stress, self-regulation, and coping. *Child Development Perspectives*, *7*(1), 43-48. https://doi.org/10.1111/cdep.12013

Faulkner A, Kalathil J. (2012*). The freedom to be, the chance to dream: Preserving user-led peer support in mental health.* London: Together for Mental Wellbeing

Feeney, J.A. (2016). *Adult romantic attachment: Developments in the study of couple relationships.* In Handbook of Attachment: Theory, Research, and Clinical Applications, 3rd ed.; Cassidy, J., Shaver, P.R., Eds.; Guilford Press: New York, NY. pp. 435–463.

Fischer, A. H., Rodriguez Mosquera, P. M., van Vianen, A. E. M., & Manstead, A. S. R. (2004). Gender and Culture Differences in Emotion. *Emotion, 4*(1), 87-94. doi:10.1037/1528-3542.4.1.87

Frederick, S.S., Demaray, M.K., Malecki, C.K., & Dorio, N.B. (2018). Can social support buffer the association between depression and suicidal ideation in adolescent boys and girls? *Psychology in the Schools, 55*(5). https://doi.org/10.1002/pits.22125

Fredrickson, B.L. The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*, 218–226. https://doi.org/10.1037/0003-066X.56.3.218

Furman, W. & Buhrmester, D. (1985). Children's perceptions of the personal relationships in their social networks. *Developmental Psychology, 21*(6), 1016-1024. https://doi.org/10.1037/0012-1649.21.6.1016

Furman, W. & Buhrmester, D. (1992). Age and Sex Differences in Perceptions of Networks of Personal Relationships, *Child Development, 63*(1). https://doi.org/10.1111/j.1467-8624.1992.tb03599.x

Gillard S, Foster R, Gibson S, et al. (2017). Describing a principles based approach to developing and evaluating peer worker roles as peer support moves into mainstream mental health services. *Mental Health and Social Inclusion, 21,* 133–43. DOI 10.1108/MHSI-03-2017-0016

Gillespie, B.J., Lever, J., Frederick, D., & Royce, T. (2014). Close adult friendships, gender, and the life cycle. *Journal of Social and Personal Relationships.* https://doi.org/10.1177/0265407514546977

Haydon, K.C.; Collins, W.A.; Salvatore, J.E.; Simpson, J.A.; Roisman, G.I. (2012). Shared and distinctive origins and correlates of adult attachment representations: The developmental organization of romantic functioning. *Child Development, 83,* 1689–1702. doi: 10.1111/j.1467-8624.2012.01801.x

Horn, E. E., Xu, Y., Beam, C. R., Turkheimer, E., & Emery, R. E. (2013). Accounting for the physical and mental health benefits of entry into marriage: A genetically informed study of selection and causation. *Journal of Family Psychology, 27*(1), 30– 41. https://doi.org/10.1037/a0029803

Hughes, M. E., & Waite, L. J. (2009). Marital biography and health at mid-life. *Journal of Health and Social Behavior, 50,* 344– 358. https://doi.org/10.1177/002214650905000307

Kolb, D.A. (2014). *Experiential learning: Experience as the source of learning and development*, 2nd ed; FT Press, 2014

Kossinets, G., & Watts, D. J. (2009). Origins of homophily in an evolving social network. *American Journal of Sociology, 115*(2), 405– 450. https://doi.org/10.1086/599247

Latty-Mann, H., & Davis, K. E. (1996). Attachment Theory and Partner Choice: Preference and Actuality. *Journal of Social and Personal Relationships*, *13*(1), 5–23. https://doi.org/10.1177/0265407596131001

Lewandowski, J., Rosenberg, B. D., Jordan Parks, M., & Siegel, J. T. (2011). The effect of informal social support: Face-to-face versus computer-mediated communication. *Computers in Human Behavior, 27,* 1806–1814. doi:10.1016/j.chb.2011.03.008

McElhaney, K. B., Allen, J. P., Stephenson, J. C., & Hare, A. L. (2009). *Attachment and autonomy during adolescence*. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology: Individual bases of adolescent development* (p. 358–403). John Wiley & Sons Inc. https://doi.org/10.1002/9780470479193.adlpsy001012

Mikulincer, M.; Shaver, P.R. *Attachment in Adulthood: Structure, Dynamics, and Change*, 2nd ed.; Guilford Press: New York, NY, USA, 2016.

Mikulincer, M. & Shaver, P.R. (2020). Enhancing the "Broaden and Build" Cycle of Attachment Security in Adulthood: From the Laboratory to Relational Contexts and Societal Systems. *International Journal of Environmental Research and Public Health, 17*, 2054: doi: 10.3390/ijerph17062054

Moran, P.B. & Eckenrode, J. (1991). Gender differences in the costs and benefits of peer relationships during adolescence. *Journal of Adolescent Research,* https://doi.org/10.1177/074355489164002

Mourra S, Sledge W, Sells D, et al. (2014). Pushing, patience and persistence: Peer providers; perspectives on supportive relationships. *American Journal of Psychiatric Rehabilitation, 17*, 307–28. https://doi.org/10.1080/15487768.2014.967601

Narr, R.K., Allen, J.P., Tan, J.S., & Loeb, E.L. (2017). Close friendship strength and broader peer group desirability as differential predictors of adult mental health. *Child development, 90*(1). https://doi.org/10.1111/cdev.12905

Oudekerk, B.A., Allen, J.P., Hessel, E.T., & Molloy, L.E. (2015). The Cascading Development of Autonomy and Relatedness from Adolescence to Adulthood, *Child Development, 86*(2), 472-485. https://doi.org/10.1111/cdev.12313

Priem, J.S. & Solomon, D.H. (2014). Emotional Support and Physiological Stress Recovery: The Role of Support Matching, Adequacy, and Invisibility. *Communication Monographs, 82*(1), 88-112. https://doi.org/10.1080/03637751.2014.971416

Pouwelse, M., Bolman, C., Lodewijkx, H., & Spaa, M. (2011). Gender differences and social support: Mediators or moderators between peer victimization and depressive feelings? *Psychology in the Schools, 48*(8). https://doi.org/10.1002/pits.20589

Raby, K. L., Roisman, G. I., Fraley, R. C., & Simpson, J. A. (2015). The enduring predictive significance of early maternal sensitivity: Social and academic competence through age 32 years. *Child Development, 86,* 695– 708. https://doi.org/10.1111/cdev.12325

Rebeiro Gruhl, K.L., LaCarte, S., & Calixte, S. (2016). Authentic peer support work: Challenges and opportunities for an evolving occupation. *Journal of Mental Health, 25,* 78–86. doi: 10.3109/09638237.2015.1057322.

Riessman F. (1965). The "helper" therapy principle. *Social Work, 10,* 27–32.

Reis, H.T. *Responsiveness: Affective interdependence in close relationships*. In Mechanisms of Social Connection: From Brain to Group; Mikulincer, M., Shaver, P.R., Eds.; American Psychological Association: Washington, DC, USA, 2014; pp. 255–271.

Roisman, G. I., Masten, A. S., Coatsworth, J. D., & Tellegen, A. (2004). Salient and emerging developmental tasks in the transition to adulthood. *Child Development, 75,* 123– 133. https://doi.org/10.1111/j.1467-8624.2004.00658.x

Rogers, ES. (2017). Peer support services: State of the workforce-state of the field in the USA. *Mental Health and Social Inclusion, 21,* 168–75

Shulman, S., Laursen, B., Kalman, Z., & Karpovsky, S. (1997). Adolescent Intimacy Revisited. *Journal of Youth and Adolescence, 26*(5), 597-617. https://doi.org/10.1023/A:1024586006966

Simpson, J. A., Rholes, W. S., & Nelligan, J. S. (1992). Support seeking and support giving within couples in an anxiety-provoking situation: The role of attachment styles. *Journal of personality and social psychology*, *62*(3), 434. https://doi.org/10.1037/0022-3514.62.3.434

Stotsky, M.T., Bowker, J.C., & Etkin, R.G. (2019). Receiving Prosocial Behavior: Examining the Reciprocal Associations between Positive Peer Treatment and Psychosocial and Behavioral Outcomes. *Journal of Research on Adolescence*. https://doi.org/10.1111/jora.12537

Szwedo, D.E., Hessel, E.T., Loeb, E.L., Hafen, C.A., & Allen, J.P. (2017). Adolescent support seeking as a path to adult functional independence. Developmental Psychology, 53(5), 949-961. http://dx.doi.org/10.1037/dev0000277

Thompson, R.A. (2015). *Relationships, regulation, and early development*. In Handbook of Child Psychology and Developmental Science: Socioemotional Processes; Lamb, M.E., Lerner, R.M., Eds.; Wiley: Hoboken, NJ, USA, 2015; pp. 201–246.

Uchino, B. N., Cacioppo, J. T., & Keicolt-Glaser, J. K. (1996). The relationship between social support and physiological processes: A review with emphasis on underlying mechanisms and implications for health. *Psychological Bulletin*, *119*, 488–531. doi:10.1037//0033-2909.119.3.488

US Census Bureau (1999). Money income in the United States: Current population reports. Consumer Income, 0–206.

Waters, E., & Sroufe, L. A. (1983). Social competence as a developmental construct. *Developmental Review*, 3, 79– 97. https://doi.org/10.1016/0273-2297(83)90010-2

Waters, H.S. & Waters, E. (2006). The attachment working models concept: Among other things, we build script-like representations of secure base experiences. *Attachment and Human Development, 8,* 185–198. DOI: 10.1080/14616730600856016

Watson, E. (2017). The growing pains of peer support. *Mental Health and Social Inclusion*. DOI: 10.1108/MHSI-03-2017-0017

Wentzel, K.R. (2016) *Teacher-student relationships*. In Handbook of Motivation at School, 2nd ed.; Wentzel, K.R., Miele, D.B., Eds.; Routledge: New York, NY; pp. 211–230.

White, A. M., & Gager, C. T. (2007). Idle hands and empty pockets? Youth involvement in extracurricular activities, social capital, and economic status. *Youth & Society, 39*(1), 75-111. https://doi.org/10.1177/0044118X06296906