Distinguishing Autonomous and Directive Forms of Goal Support: Their Effects on Goal Progress, Relationship Quality, and Subjective Well-Being

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Abstract

Three studies examined the relations of autonomy support and directive support to goal progress over 3 months. Autonomy support was defined in terms of empathic perspective-taking, whereas directive support was defined in terms of the provision of positive guidance. Results from Study 1 revealed that autonomy support between romantic partners was significantly positively related to goal progress over 3 months, and that the beneficial effect of autonomy support was mediated by enhanced autonomous goal motivation. Study 2 involved female friend dyads and extended the goal progress results to include both self-reports and reports by peers. Study 3 showed that autonomy support similarly promoted progress at vicarious goals. Across three studies, autonomy support was also significantly associated with improved relationship quality and subjective well-being. Directive support was marginally associated with better goal progress across the three studies and unrelated to relationship quality or well-being.

Keywords

autonomy support, directive support, goal progress, self-determination theory, well-being

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One important way that individuals strive to organize and give meaning to their lives is by setting personal goals. For example, a college student may decide at the beginning of the school year that she wants to improve her study habits and begin an exercise program. Whether the student succeeds at these goals will depend on a host of personal factors, such as whether she has autonomous motivation toward her goal and confidence in her ability to perform the actions needed to reach her goal (Koestner, 2008). But the student's goal progress will also depend, at least partly, on interpersonal factors, such as how much support she receives from others. Previous research has shown that social support can facilitate progress on personal goals because it enhances feelings of perceived competence, transforms the interest level of goal-related activities, and helps individuals generate effective coping strategies (Aspinwall, 2004). Research has also identified interpersonal behaviors that forestall goal progress, such as intrusiveness (Feeney, 2004) and undermining (Ruehlman & Wolchik, 1988). The present investigation explored the role of autonomy support in facilitating personal goal pursuit.

Self-determination theory (SDT) offers a unique perspective for understanding interpersonal support and motivation for goal-related behavior. The theory suggests that motivation for any behavior varies in the degree to which it is experienced as autonomous (self-determined) or controlled in nature (Deci & Ryan, 2000). Individuals are considered autonomously motivated to the extent that they experience goals and decisions to be self-generated and freely chosen, rather than controlled by external or internal pressure. SDT suggests that autonomy support establishes the context for the development of self-directed, personally meaningful choice by creating an environment that allows intrinsic motivation to thrive and/or by creating an environment in which

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external motives can be fully integrated into the developing self (Deci & Ryan, 2000). Autonomy support is provided by acknowledging an individual's feelings and unique perspective, by refraining from excessive control and pressure, by encouraging choices and options (Koestner, Ryan, Bernieri, & Holt, 1984; Reeve, Bolt, & Cai, 1999; Silva et al., 2010).

Autonomy-supportive environments have been consistently associated with better self-regulation, and interventions delivered in an autonomy-supportive fashion have been associated with better goal functioning (Grolnick & Ryan, 1989; Joussemet, Koestner, Lekes, & Houlfort, 2004; Koestner, Horberg, Powers, et al., 2006; Powers, Koestner, & Gorin, 2008). In turn, autonomous self-regulation has shown consistent associations to greater persistence in the face of adversity, better learning, superior task performance, more effective coping, better health outcomes, and better goal functioning (Deci & Ryan, 2000). Researchers have examined the roles of both autonomy support and autonomous self-regulation in relation to a variety of health-related goals, such as losing weight, quitting smoking, or maintaining a treatment regimen (Powers et al., 2008; Williams, Gagne, Ryan, & Deci, 2002; Williams, Grow, Freedman, Ryan, & Deci, 1996). The preponderance of this research has examined the role of autonomy support from health care providers; however, a measure of autonomy support that patients perceived from their "important others" (Important Other Climate Questionnaire [IOCQ]) was developed by Williams et al. (2006). These researchers demonstrated that such support was associated with increases in perceived autonomy and perceived competence, as well as better outcomes in smoking cessation and dietary intervention trials. Furthermore, the measure of autonomy support from important others provided variance distinct from a measure of autonomy support from the health care providers in that study. When allowed to compete for variance, both sources of support contributed to smoking outcomes, but the "important other" measure appeared to be the more consistent predictor of dietary outcomes (Williams et al., 2006). This finding demonstrates the importance of partner support, and suggests that autonomy support from significant others may be even more important than the support of health care providers.

The studies demonstrating the positive associations between autonomy support and goal progress have, by and large, not distinguished it from other forms of support. In one goal study, Powers and his colleagues (2008) showed that the effects of autonomy support could be distinguished from more directive support from significant others. Directive support was assessed with items, such as "my family and friends repeatedly reminded me of my goal." Participants reported significantly greater weight loss over time when they perceived their family and friends as autonomy supportive of their efforts; however, no such association was found for more directive forms of "support." Another study showed that autonomy support from a friend or relationship partner predicted weight loss over a year in the context of a randomized controlled study (Gorin, Powers, Koestner, Raynor, & Wing, 2011). In contrast, direct encouragement of healthy eating by friends and partners was significantly negatively related to weight loss over the year and other measures of directive support were not associated with outcomes. An example of an item assessing directive support was "my friend encouraged me not to eat high-salt, high-fat foods when tempted to do so." Additional evidence is needed to establish that a meaningful distinction can be drawn between attempts at support that are perceived as autonomy support and other forms of support, and to establish that this distinction yields meaningful differences in the prediction of goal progress.

Autonomy support of goal pursuit may also be associated with improved relationship quality and personal well-being. Research by Brunstein, Dangelmayer, and Schulteiss (1996) showed that interpersonal support of personal goals can have important effects within close relationships, but the types of support examined did not include autonomy support. Self-determination researchers have shown that autonomy support in relationships will have salutary effects on both the relationships and well-being, but this research has not examined personal goals. LaGuardia and Patrick (2008) suggested that close friends and romantic partners are central figures and that need fulfillment within these important relationships is vital to relational functioning and well-being. These authors maintain that attachment security fosters personal well-being as well as relationship satisfaction because secure attachments provide for the satisfaction of basic psychological needs. Autonomy support provides sensitive responding to partner initiatives and encourages exploration. Two important remaining questions are the effects of support for autonomy on goal progress *specifically*, and whether the type of relationship matters in predicting goal progress from partner support. There are data suggesting that the impact of support from the "most important person in your life" is more highly associated with goal progress than support from less important others, but such data are scarce (Ruehlman & Wolchik, 1988). Therefore, what remains to be established is not only the unique association between autonomy support for personal goals and goal progress but also the possible differential effects of autonomy support in different types of close relationships (e.g., romantic, friendship, family).

The mechanism by which autonomy support for goal progress would lead to greater goal progress, relationship quality, and personal well-being has been delineated by SDT. Thus, research supports the contention that interpersonal support of autonomy results in improved functional outcomes because it bolsters autonomous motivation (Williams et al., 2006). Autonomous motivation for personal goals is typically assessed in terms of the perceived locus of causality, with autonomy reflected in pursuing goals because of intrinsic motivation and links with important personal values (Koestner, Otis, Powers, Pelletier, & Gagnon, 2008).

A central proposition of SDT is that personal goals are often not fully personal, in the sense of being self-endorsed

(Ryan, Sheldon, Kasser, & Deci, 1996). As Sheldon and Houser-Marko (2001) noted,

> although all idiographic goals are self-generated in a nominal sense, not all personal goals are "personal" in an experiential sense, that is, some people have little feeling of choice in pursuing their goals, despite the fact that they themselves generated them. (p. 153)

The issue of ownership and personal endorsement is particularly germane with respect to "vicarious" goals that one adopts because, in this case, one believes that important others would like one to pursue it. For example, a young man may try to dress more fashionably because his girlfriend wants him to present himself better, or a middle-aged woman may begin to behave in more environmentally friendly ways because her teenage daughter has highlighted the importance of such behavior. We define vicarious goals as "goals that are adopted and pursued because of other people in one's life." It is particularly interesting to explore the impact of support from important others in relation to vicarious goals, because such goals seem to risk being experienced as directive or even controlled rather than autonomous. However, it is possible that the specific behaviors of the person who prompted the vicarious goal (autonomy supportive vs. directive) may determine how one internalizes the goal and whether one can generate the motivation required to persist in goal striving.

Present Investigation

The present investigation included three prospective studies that examined the relations of autonomy support versus directive support to goal progress. Autonomy support was defined in terms of empathic perspective-taking ("my friend understands how I see my goals"), whereas directive support was defined in terms of the provision of positive guidance ("my friend reminds me what I need to be doing"). Study 1 included male–female romantic partners, whereas Study 2 involved female friends. Participants in both of these studies listed multiple personal goals and were then followed over 3 months regarding the goal support they received and the progress they achieved. Study 3 included individual participants who reported on the supportive behaviors of an important person in their lives as they pursued a single vicarious goal over a 2-month period. Study 1 included a measure of autonomous goal motivation to assess mediation, whereas Study 2 included a friend-reported measure of goal progress. In all three studies, measures of relationship quality and subjective well-being were also collected.

In all studies, we hypothesized that autonomy support would be significantly positively related to goal progress. We also expected that autonomy support would be associated with secondary benefits as reflected in enhanced relationship quality and personal well-being. We expected directive support to be unrelated to goal progress, relationship quality, and subjective well-being. Furthermore, it was hypothesized that goal-related autonomous motivation would mediate the impact of support on goal progress (Koestner et al., 2006). Finally, we expected that the autonomy support would be relevant in both romantic relationships and friendships, and for both self-initiated and vicarious goals. That is, we expected the beneficial effects of autonomy support to hold true across various types of relationships and goals. Importantly, we expected to obtain all these findings while controlling for the effects of directive support.

Study 1

Participants were male–female romantic partners who set goals in four domains (academic, health, couple, and friendship) and were followed up three times throughout a college semester. Participants rated the extent to which their partner provided autonomous and directive support at the first follow-up. Goal progress was assessed at each follow-up. Finally, relationship quality and subjective well-being were assessed at baseline and at the final follow-up.

Our first goal was to establish a distinction between two forms of goal support: autonomous and directive. We hypothesized that autonomy support would be significantly related to goal progress when controlling for the effects of directive support. Autonomy support for goal pursuits was also expected to be associated with enhanced relationship quality and improved well-being over time.

Our second goal was to explore the role of goal motivation as a possible mediating factor in the relation between autonomy support and goal progress. An extensive social-psychological literature suggests that the experience of autonomy support should promote intrinsic and identified forms of motivation, which are commonly combined to form an index of autonomous motivation. In the context of personal goals, a reliable positive association has been obtained between autonomous goal motivation and goal progress over periods extending from a few days to several months (Koestner, 2008).

Method

Participants and Procedure. Participants were 62 heterosexual couples (124 participants), 18 to 37 years old, with a mean age of 21.52 ($SD = 3.51$). Participants were recruited through advertisements posted online and around Montreal university campuses for a study on "social support and goal progress in romantic relationships." Those interested contacted the researchers via email, and were informed about the general purpose and procedure of the study, and that they needed a romantic partner to participate with them. There were two components of the study. For the first part, participants came into the lab in pairs and each filled out an hour-long survey about their goals. Participants were followed up three times at 3- to 4-week intervals. At each follow-up, they were reminded of their goals and were asked to complete a 10-min

online survey about their goal progress. Monetary compensation of Canadian $40 was provided to each participant. In total, 116 participants completed the entire study, and only 3 participants did not respond to any of the follow-ups.

Measures

Goal descriptions. Participants were asked to indicate four goals they were trying to pursue during the semester, one in each of the academic, health, relationship, and friendship domains. Examples of goals were "get a 3.7 GPA" (academic goal); "eat a more balanced diet" (health goal); "be more patient and caring with partner," "open up about my feelings" (relationship goal); and "stay close with friends back home," "spend more time with them" (friendship goal).

Goal support from romantic partner. Perception of the partner's support of personal goals was measured with 15 items at the first follow-up. In all, 11 items were adapted from the Powers et al. (2008) study of autonomous versus directive support for weight loss. The items were adapted so that they would apply to diverse types of goals. (The Powers et al., 2008, study focused specifically on a weight-loss goal.) We also generated 4 new items to assess directive support because Powers et al. (2008) had included only 4 such items, compared with the 8 items for autonomy support. Participants rated support using a 7-point Likert-type scale ranging from 1 = *not at all true* to 7 = *very true*. Examples of items include "I feel that my partner understands how I see things with respect to my goals" (autonomy support) and "My partner helps me problem solve about my goals" (directive support).

Goal autonomous motivation. After each goal, participants were asked to rate their motivation for pursuing that goal on a 9-point Likert-type scale, from 1 = *not at all for this reason* to 9 = *completely for this reason*, on items that assessed identified and intrinsic reasons for goal pursuit (Sheldon & Elliot, 1999). A summary measure of autonomous goal motivation at baseline was calculated as the mean of all identified and intrinsic items for the four goals (Koestner et al., 2008). The resulting eight-item scale had only modest reliability ($\alpha = .60$).

Goal progress. Goal progress for each goal was assessed at each of the three follow-ups using 3 items: "I have made a lot of progress toward my goal," "I feel like I am on track with my goal plan," and "I feel like I have achieved my goal." Ratings were made on a 7-point Likert-type scale from 1 = *strongly disagree* to 7 = *strongly agree*. This measure of goal progress has been used in previous studies (Koestner, Lekes, Powers, & Chicoine, 2002; Sheldon & Kasser, 1998). The 3-item scale was reliable, alpha ranging from .82 to .92 across the four goals and the three follow-ups. Goal progress for each goal at one follow-up was correlated with the other follow-ups, $r = .48$ to .79, all ps $< .001$. A summary of self-reported goal progress was calculated by taking the mean of the three follow-up reports across all four goals. The internal reliability of this 12-item goal progress measure was good ($\alpha = .82$).

Relationship quality. Five items were used to assess closeness and trust in the relationship (Fletcher, Simpson, & Thomas, 2000). Items included the following: "How close are you and your partner?" and "I trust my partner." The internal reliability of this scale was excellent ($\alpha = .85$).

Subjective well-being. Two scales were used to assess well-being. Participants completed a nine-item scale of affect (Emmons, 1992) that included four positive (e.g., joyful) and five negative (e.g., frustrated) items, and the five-item Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). All items were rated on a scale from 1 = *strongly disagree* to 7 = *strongly agree*. These scales were administered at baseline and at the final follow-up. Subjective well-being was calculated as the mean across the measures (after reversing the negative affect score). Each of the scales was internally reliable, all alphas > .80.

Results

Preliminary Analyses. The 15 goal support items were subjected to a principal components analysis with Oblimin rotation. Two factors with Eigenvalues above 1.0 emerged and accounted for 58% of the variance. The first had an Eigenvalue of 5.63 and the second had a value of 3.05. Table 1 shows the factor loadings from the structure matrix for all items. The first six items loaded on the first factor, which appears to reflect autonomy support, whereas the next seven items loaded on the second factor, which appears to reflect directive support. Two items cross-loaded highly and were dropped from further analyses. The six autonomy-support items yielded an internal reliability of .88, whereas the seven directive-support items yielded a reliability of .84. Goal-related autonomy-support and directive-support scales were calculated as the mean of the items that loaded on the respective factor. The scales were positively correlated ($r = .19$, $p < .05$).

Central Analyses

Goal Progress, Relationship Quality, and Well-Being. Due to the dyadic nature of the data, we could not conduct conventional correlational and multiple regression analyses that assume independence of observations. Table 2 thus provides the correlations, which adjust for the degree of nonindependence between dyad members (Gonzalez & Griffin, 1999; O'Connor, 2004), as well as descriptive statistics for all the variables in the study. For our main analyses, we conducted multilevel analyses in which the two partners' data were treated as repeated observations nested within dyad. Degrees of freedom were based on the Satterthwaite approximation. All variables were centered prior to the analyses, so the regression coefficients (slopes) can be interpreted as the predicted change in the dependent variable, expressed in *SD* units that would be predicted by a 1 *SD* change in the predictor variable.

Table 1. Factor Loadings for Goal Support Items: Study 1

	1	2
1. I feel that my partner understands how I see things with respect to my goals.	.77	.21
2. I am able to be open with my partner about my goals.	.82	.20
3. My partner listens to how I would like to do things regarding my goals.	.85	.22
4. I feel able to share my feelings about my goals with my partner.	.79	.20
5. My partner conveys confidence in my ability to make changes toward my goals.	.84	.20
6. I feel that my partner accepts me whether or not I reach my goals.	.59	−.22
7. My partner repeatedly reminds me of my goals.	.00	.84
8. My partner has been reminding me about what I need to be doing about my goals.	.05	.78
9. My partner emphasizes the importance of reaching my goals.	.30	.78
10. My partner has been problem solving about my goal attainment plans.	.04	.72
11. My partner makes sure that I really understand the importance of reaching my goals without pressuring me to do so.	.36	.64
12. My partner consistently calls attention to situations where I can control my behavior.	−.47	.41
13. My partner has been praising me when I follow my goal attainment plan.	.39	.52
14. My partner tries to understand how I see my goals and whether I control my progress toward them.	.48	.66
15. My partner has been reassuring me that I will succeed.	.57	.46

It can be seen from Table 2 that participants reported greater autonomy support for their goals than directive support, $t = 16.00$, $p < .0001$. Participants indicated high levels of well-being and relationship quality with the support provider. They also reported moderate goal progress. Autonomy support was significantly positively related to goal progress, as measured by self-report and friend report. Goal progress was highly related to well-being at the final follow-up.

Three separate multilevel modeling analyses were conducted to examine the relations of autonomy support and directive support to goal progress, relationship quality, and well-being. The analyses for relationship quality and well-being controlled for initial levels of the variable. Goal progress was significantly positively related to autonomy support, $\beta = .17$, $SE = .086$, $t(97) = 1.94$, $p = .05$, and marginally positively related to directive support, $\beta = .13$, $SE = .074$, $t(108) = 1.72$, $p < .10$.[1] Relationship quality at the final follow-up was significantly positively related to baseline levels of relationship quality, $\beta = .54$, $SE = .117$, $t(94) = 4.69$, $p < .001$. Autonomy support was a significant positive predictor of increases in relational quality, $\beta = .34$, $SE = .074$, $t(99) = 4.62$, $p < .001$. There was no relation of relationship quality to directive support, $\beta = .02$, $SE = .062$, $t(96) = 0.29$, *ns*. Subjective well-being at the final follow-up was significantly positively related to baseline levels of well-being, $\beta = .59$, $SE = .101$, $t(104) = 5.78$, $p < .001$. Change in subjective well-being was unassociated with both autonomy support, $\beta = .10$, $SE = .099$, $t(102) = 0.98$, *ns*, and directive support, $\beta = .11$, $SE = .076$, $t(91) = 1.41$, *ns*.

Autonomous Goal Motivation As a Mediator. A series of analyses were conducted to examine whether autonomous motivation mediated the relation between autonomy support and goal progress. First, autonomous goal motivation at the second follow-up was regressed on autonomy goal motivation at baseline, and autonomy support and directive support. Baseline autonomous goal motivation was strongly related to later autonomous motivation, $\beta = .53$, $t(105) = 5.84$, $p < .001$. Autonomy support was significantly positively related to later autonomous goal motivation, $\beta = .31$, $t(105) = 4.21$, $p < .01$. Directive support was unrelated to later autonomous goal motivation ($\beta = -.07$, *ns*).

Next, goal progress across the final three follow-ups was regressed on autonomous motivation at baseline and autonomous motivation at the second follow-up. Baseline autonomous goal motivation was significantly related to later goal progress, $\beta = .25$, $t(103) = 2.30$, $p < .05$. Autonomous goal motivation at the second follow-up was also significantly related to goal progress, $\beta = .21$, $t(96) = 2.30$, $p < .05$.

Finally, to examine the impact of the mediator on the relation of autonomy support to goal progress, we repeated the regression of goal progress on autonomy support and directive support, but also including autonomous goal motivation at the second follow-up. The relation of autonomy support to goal progress was then reduced to nonsignificance ($\beta = .10$, *ns*) suggesting that autonomous goal motivation was indeed a significant mediator of the relation between autonomy support and goal progress. A Sobel test confirmed that mediation was significant ($Z = 3.22$, $p < .001$). The Sobel test indicates whether a mediator variable significantly carries the influence of an independent variable to a dependent variable; that is, whether the indirect effect of autonomy support on goal progress through autonomous goal motivation was significant.

Brief Discussion

The results of Study 1 provided initial support for the distinction between autonomous and directive forms of goal support. Factor analyses revealed two fairly homogeneous

Table 2. Correlations, Means, and Standard Deviations: Study 1

	Correlations					
Dependent variable	1	2	3	4	*M*	*SD*
1. Autonomy support, Time 2	—				6.02	0.89
2. Directive support, Time 2	.19**	—			4.03	1.16
3. Goal progress, Time 2, Time 3, Time 4	.23**	.20**	—		4.61	0.90
4. Well-being, Time 4	.40***	.09	.54***	—	5.19	0.76
5. Relationship quality, Time 4	.58***	.29***	.23**	.46***	6.18	0.86

*$p < .10$. **$p < .05$. ***$p < .01$.

factors that were internally consistent and only moderately correlated. Autonomy support of goal pursuits was significantly positively related to greater goal progress over time, whereas directive support was marginally related. Furthermore, the results showed that the positive effects of autonomy support appear to be mediated by changes in participants' motivation for their goals. That is, participants whose romantic partners supported their autonomy as they pursued their personal goals reported more identified and intrinsic motivation over time. Besides fostering greater goal progress, the results also showed that autonomy support was associated with improving relationship quality. Neither autonomy support nor directive support was associated with changes in subjective well-being.

Study 2

In this study, participants were pairs of female friends who set goals in three domains (academic, health, and leisure) and were followed up three times throughout a college semester. Participants rated the extent to which their friends provided autonomous and directive support at the first follow-up. Goal progress was assessed at each follow-up. Friend ratings of progress were also obtained. Finally, relationship quality and subjective well-being were assessed at baseline and at the final follow-up.

Method

Participants and Procedure. Participants were 105 pairs of female friends (210 participants), 17 to 32 years old, with a mean age of 20.19 (*SD* = 1.91). We chose female friends because we believed male friendship pairs would be very difficult to recruit. Participants were recruited through advertisements posted online and around Montreal university campuses for a study on "friendship and goals." Those interested contacted the researchers via email, and were informed about the general purpose and procedure of the study, and that they needed a friend to participate with them. There were two components of the study. For the first part, participants came into the lab in pairs and each filled out an hour-long survey about their own and their friend's goals. All participants agreed to have their goals disclosed to their friend; each wrote down their goals on a piece of paper that was given to the other friend. Participants were followed up three times at 3- to 4-week intervals. At each follow-up, they were reminded of their goals and their friend's goals and were asked to complete a 20-min online survey about their goal progress. Monetary compensation of Canadian $40 was provided to each participant. In total, 196 participants completed the entire study, and only 4 participants did not respond to any of the follow-ups. (A previous article by Powers, Koestner, Zuroff, Milyavskaya, & Gorin, 2011, used this same data set to explore the relation of perfectionism to goal progress. That article did not make use of any of the variables reported in this study except for goal progress.)

Measures

Goal descriptions. Participants were asked to indicate three goals they were trying to pursue during the semester, one in each of the academic, health, and leisure domains. Examples of goals were "obtain a letter grade improvement in my worst class," "get into the Honors program" (academic goal); "do yoga twice a week," "stop eating junk food on my lunch breaks" (health goal); and "learn to play guitar," "allotting time for writing, reading, and painting" (leisure goal).

Goal support from the friend. The two scales derived in Study 1 were used. The autonomy-support and directive-support items were interspersed and the referent for items was changed from "my partner" to "my friend." Factor analyses and reliability statistics were highly similar to those reported in Study 1.

Self-reported goal progress. This variable was assessed for each goal in the same way as in Study 1. A summary of self-reported goal progress for each goal was calculated by taking the mean of the three follow-up reports for that goal. A global goal progress score was calculated as the mean across the three goals. The nine-item goal progress measure evidenced good reliability ($\alpha = .78$).

Friend rating of goal progress. Each participant was rated by her friend on the progress she made toward her goals using the same three items: for example, "My friend has made a lot of progress toward this goal." These ratings were made in reference to the actual written goals that their friend's had

Table 3. Correlations, Means, and Standard Deviations: Study 2

	Correlations						
Dependent variable	1	2	3	4	5	*M*	*SD*
1. Autonomy support, Time 2	—					5.79	0.90
2. Directive support, Time 2	.29***	—				3.62	1.22
3. Self-report goal progress, Time 2, Time 3, Time 4	.28***	.16**	—			4.04	0.94
4. Friend-report goal progress, Time 2, Time 3, Time 4	.23**	.05	.49***	—		4.41	1.03
5. Subjective well-being, Time 4	.37***	.10	.28***	.13	—	4.82	0.96
6. Relationship quality, Time 4	.60***	.31***	.07	.12	.34**	5.61	1.00

*$p < .10$. **$p < .05$. ***$p < .01$.

listed. The three-item scale was reliable, alphas ranging from .80 to .90 across the three goals and the three follow-ups. A summary of friend-reported goal progress was calculated by taking the mean of the three follow-up reports for the three goals. The internal reliability of this nine-item goal progress measure was good ($\alpha = .83$).

Relationship quality. The same five items used in Study 1 were again used, but the items were changed to refer to the participant's "friend" rather than "partner." The internal reliability of this scale was excellent ($\alpha = .84$).

Subjective well-being. Subjective well-being, consisting of positive and negative affect and life satisfaction, was assessed both at the initial testing and at the final follow-up. The same scales as in Study 1 were used.

Results

Goal Progress, Well-Being, and Relationship Quality. Table 3 provides the descriptive statistics for all the variables in the study. Analyses similar to those used in Study 1 were used, using statistics applicable to nondistinguishable dyads (e.g., Gonzalez & Griffin, 1999). The table shows that participants reported greater autonomy support for their goals than directive support, $t(203) = 23.85$, $p < .0001$. Participants indicated high levels of relationship quality and well-being. They reported moderate goal progress, as did their friends. Both autonomy support and directive support were significantly positively correlated with goal progress, but only autonomy support was significantly associated with friend-rated progress. There was a strong positive relation between self-report and friend report of goal progress. The goal progress measures were significantly related to well-being at the final follow-up.

Four separate multilevel modeling analyses were conducted to examine the relations of autonomy support and directive support to goal progress (self-reported and friend reported), relationship quality, and well-being. The analyses for relationship quality and well-being controlled for initial levels of these variables. Self-reported goal progress was significantly positively related to autonomy support, $\beta = .22$, $SE = .075$, $t(192) = 2.95$, $p < .01$, and marginally to directive support, $\beta = .11$, $SE = .060$, $t(196) = 1.85$, $p = .07$.[2] Peer-reported goal progress was significantly positively related to autonomy support, $\beta = .21$, $SE = .089$, $t(165) = 2.34$, $p < .05$, but unrelated to directive support, $\beta = .04$, $SE = .067$, $t(177) = 0.64$, *ns*.

Relationship quality at the final follow-up was significantly positively related to baseline levels of relationship quality, $\beta = .49$, $SE = .056$, $t(135) = 8.71$, $p < .001$. Autonomy support predicted increases in relationship quality over time, $\beta = .43$, $SE = .058$, $t(166) = 7.39$, $p < .001$, whereas directive support was marginally related, $\beta = .08$, $SE = .047$, $t(165) = 1.72$, *ns*.

Finally, well-being at the final follow-up was significantly positively related to baseline levels of well-being, $\beta = .60$, $SE = .064$, $t(184) = 9.40$, $p < .001$. Change in well-being was also significantly positively associated with autonomy support, $\beta = .21$, $SE = .066$, $t(190) = 3.18$, $p < .001$, but not directive support, $\beta = -.04$, $SE = .049$, $t(191) = -0.88$, *ns*.

Brief Discussion

Study 2 supported the distinction between autonomous and directive goal support in the context of friendship relationships. Using prospective data in which perceived support was measured at the first follow-up and goal progress was measured across all three follow-ups, we showed that autonomy support was significantly related to greater goal progress, whereas directive support was marginally related. Peer reports confirmed the significant association of autonomy support (but not directive support) with greater goal progress.

In addition, using prospective data, we were able to show that autonomy support was significantly positively related to both relationship quality and subjective well-being measured at the final follow-up (and controlling for baseline indicators of these variables). Together, these results point to a broad set of positive outcomes that result from the

receipt of autonomy support from a friend, as one pursues important personal goals over time.

Examining the results of Studies 1 and 2, it is noteworthy that the effects of autonomy support seemed to be similar across two distinct types of coequal relationships (friendships and romantic relationships). The one exception concerns subjective well-being where autonomy support from a friend was significantly related to greater well-being over time, whereas the same support from a romantic partner appeared to have had no effect.

Study 3

The aim of this study was to explore the role of support in another type of goal context. Rather than examining self-generated personal goals, Study 3 focused on goal support and goal progress on vicarious goals. Vicarious goals are defined as "goals that you have adopted for yourself and are pursuing because of other people in your life." Specifically, we asked participants to identify one vicarious goal that they were currently pursuing. Examples of vicarious goals include "my father would like me to find a job that I would really enjoy" and "my romantic partner would like me to take better care of my health." Participants were contacted 2 months later and asked to report the kind of support they were receiving for the vicarious goal from the person who had instigated the goal. They were also asked to report goal progress, relational quality, and well-being. The latter two variables had also been assessed at baseline.

It is particularly interesting to explore the impact of support from important others in relation to vicarious goals. Unlike self-initiated goals, vicarious goals would seem to risk being experienced as controlled rather than autonomous. However, it is possible that the specific behaviors of the close other who prompted the vicarious goal (autonomy supportive vs. directive) may be especially important in determining whether one can generate the motivation required to persist in goal striving. In the present study, we did not stipulate the nature of the relationship that participants had with the person who was supporting their vicarious goal. Instead, we simply asked from where the vicarious goal came, and then coded the nature of the relationship. Our hypotheses were identical to the preceding studies. We expected autonomy support to be uniquely associated with greater goal progress, relationship quality, and personal well-being.

Method

Participants and Procedure. Participants were 426 university students, 18 to 58 years old, with a mean age of 26.50 (*SD* = 7.53). Participants were recruited through university mailing lists for a study on "interpersonal relationships and goals." Individuals interested in taking part in the study were directed to an online survey website that contained the questionnaire. All measures were completed online. Participants were invited to provide their email address for a follow-up. Out of the 364 participants who accepted to be contacted again for the follow-up and who provided a valid email address, 220 participants actually completed the follow-up questionnaire. These participants constitute the final sample. Participants were offered a Canadian $10 Amazon.ca gift certificate on completion of the follow-up questionnaire.

Measures

Goal descriptions. Participants were asked to indicate a vicarious goal they were currently trying to pursue. Examples of goals were "my romantic partner would like me to have more self-confidence" and "my mother wants me to stop smoking."

Goal support from goal provider. Participants completed the six-item scale of autonomy support (α = .88) and the seven-item scale of directive support (α = .82) described in the previous studies.

Goal progress. Goal progress for the vicarious goal was assessed using two items: "Please rate the extent to which you made progress on this goal during the last 2 months" was scored on a 9-point Likert-type scale from 1 = *not at all* to 9 = *totally*, and "I feel like I am on track with my goal plan" was scored on a 9-point Likert-type scale from 1 = *do not agree at all* to 9 = *totally agree*. The mean of the two items was used as an index of goal progress (α = .85).

Relationship quality. Relationship quality was assessed using the six-item Quality of Marriage Index (QMI; Norton, 1983) adapted to reflect the quality of relationship with a close other. Sample items include "my relationship with my close other makes me happy" and "we have a good relationship." Responses were scored on a 7-point Likert-type scale from 1 = *not at all true* to 7 = *very strongly*. The six items yielded an internal reliability of .94 and .96 at baseline and at the follow-up, respectively.

Subjective well-being. Subjective well-being was assessed in terms of positive and negative affect and life satisfaction. The same scales were used as in Studies 1 and 2.

Results

Preliminary Analyses. Analyses revealed no significant differences between participants who did and did not complete the follow-up questionnaire on baseline well-being, $F(1, 426) = 1.13$, $p = .29$; baseline relationship quality, $F(1, 424) = 0.70$, $p = .40$; gender, $F(1, 421) = 1.18$, $p = .28$; and age, $F(1, 423) = 0.17$, $p = .68$.

Central Analyses. Table 4 provides the descriptive statistics and correlations for all the main variables in the study. It can be seen that participants reported greater autonomy support for their goals than directive support. Participants indicated high levels of relationship quality and well-being. They also reported moderate goal progress. A moderate and positive correlation was found between autonomous and directive support. Both autonomy support and directive support were positively related to relationship quality, but the correlation

Table 4. Correlations, Means, and Standard Deviations: Study 3

	Correlation coefficients					
Dependent variable	1	2	3	4	*M*	*SD*
1. Autonomy support, Time 2	—				5.39	1.26
2. Directive support, Time 2	.47***	—			4.47	1.31
3. Goal progress, Time 2	.23***	.17**	—		6.79	1.77
4. Well-being, Time 2	.29***	.13*	.13*	—	5.29	0.85
5. Relationship quality, Time 2	.59***	.30***	.20***	.32***	5.66	1.16

Note: Goal progress was scored on a 9-point Likert-type scale. All other scales were scored on 7-point Likert-type scales.
*$p < .10$. **$p < .05$. ***$p < .01$.

involving autonomy support was more than double the size of the correlation involving directive support. Autonomy support was significantly positively associated with goal progress and well-being, whereas directive support was positively associated with goal progress but only marginally related to well-being.

The types of relationship between participants and their goal provider were coded into three categories depending on whether the goal provider was (a) a parent/grandparent ($n = 110$), (b) the romantic partner ($n = 78$), or (c) a friend/sibling ($n = 28$). Four participants chose a close other who did not fit any category. To examine whether participants reported receiving different levels of autonomy and directive support as a function of the type of relationship with their goal provider, ANOVAs were performed. No differences were found between the three groups as regards both autonomy support, $F(2, 215) = 2.30$, *ns*, and directive support, $F(2, 215) = 0.58$, *ns*.

Three multiple regression analyses were conducted to examine the relations of autonomy support and directive support to goal progress, relationship quality, and well-being. For relationship quality and well-being, the multiple regression analyses were hierarchical: The baseline level of the predicted variable was entered first into the regression equation, followed by the main effects (i.e., autonomy support, directive support).

A multiple regression analysis was conducted to examine the relations of autonomy support and directive support to goal progress. The regression yielded a significant R^2 of .06, $p < .01$. Autonomy support was significantly related to goal progress, $\beta = .19$, $SE = .10$, $t(219) = 2.58$, $p < .05$, whereas directive support was not, $\beta = .09$, $SE = .10$, $t(219) = 1.14$, *ns*.

A hierarchical multiple regression analysis was conducted to examine the relations of autonomy support and directive support to relationship quality with the goal and support provider. At Step 1, the regression yielded a significant R^2 of .63, $p < .001$. Baseline relationship quality was highly related to relationship quality at the follow-up, $\beta = .80$, $SE = .05$, $t(219) = 19.32$, $p < .001$. At Step 2, a significant change in R^2 ($\Delta R^2 = .06$, $p < .001$) was observed. Autonomy support was significantly positively related to relationship quality at the follow-up, $\beta = .25$, $SE = .04$, $t(219) = 5.33$, $p < .001$, whereas directive support was not, $\beta = .05$, $SE = .04$, $t(219) = 1.07$, *ns*.

Another hierarchical multiple regression analysis was conducted to examine the relations of autonomy support and directive support to subjective well-being. At Step 1, the regression yielded a significant R^2 of .59, $p < .001$. Baseline well-being was highly related to well-being at the follow-up, $\beta = .77$, $SE = .04$, $t(219) = 17.72$, $p < .001$. At Step 2, a significant change in R^2 ($\Delta R^2 = .04$, $p < .001$) was observed. Autonomy support was significantly positively related to well-being at the follow-up, $\beta = .18$, $SE = .03$, $t(219) = 3.81$, $p < .001$, whereas directive support was not, $\beta = .02$, $SE = .03$, $t(219) = 0.45$, *ns*.

Brief Discussion

Study 3 explored the impact of support from important others in relation to vicarious goals. The source of the majority of vicarious goals was found to be romantic partners or parents, and an examination of the goals suggested that they are not very different from self-generated ones. Autonomy support was significantly positively associated with greater goal progress, relationship quality, and personal well-being. Directive support was unrelated to all these outcomes in our regression analyses.

General Discussion

The present investigation included three short-term prospective studies that examined the relations of autonomy support and directive support to goal progress. Participants were asked to report the kind of support they received for various types of goals in various types of relationships, and they reported their progress on these goals over time periods of up to 3 months. They also reported on their relationship and well-being at both baseline and at the final follow-up.

The factor analyses of the goal support items demonstrated that two distinct forms of support can be isolated, and the results of all three studies show that these different forms of support appear to exert independent and somewhat different effects. The results confirmed our hypothesis that

autonomy support would be significantly related to goal progress. This appears to be the case regardless of the nature of the support relationship—romantic versus friendship. Importantly, the positive association between autonomy support and goal progress was demonstrated not only with self-reports of progress but also by the reports of friends. In addition, autonomy support was associated with the secondary benefits of better relationship quality and greater personal well-being (except in Study 1). Finally, we also identified a mediator of the relation of autonomy support to goal progress. The experience of autonomy in relation to one's personal goals was associated with the receipt of autonomy support, and, in turn, with greater goal progress. Autonomous motivation has previously been associated with goal progress (Koestner et al., 2006). Together, our findings confirm the motivational and adaptive benefits of receiving autonomy support and thus reinforce a central proposition of SDT (Deci & Ryan, 2008; Ryan & Deci, 2000).

The results for directive support are more difficult to sort out. There was suggestive evidence across all three studies that directive support is positively related to goal progress, although the strength of this relationship failed to reach conventional levels of statistical significance in each study. However, if the results for directive support on goal progress are combined meta-analytically across our three studies, a significantly positive (and homogeneous) effect emerges.[3] Therefore, our studies appear to suggest that both autonomy support and directive support from friends and partners can contribute independently and additively to attaining progress on personal goals. Indeed, it is important to note that our studies did not establish that autonomy support is *significantly* more strongly associated to goal progress than directive support. In all three studies, a test of the difference between the effects of autonomy and directive support on goal progress was not significant. By contrast to the findings for goal progress, directive support failed to show any positive association to relationship quality or well-being, whereas autonomy support showed strong and consistent positive relations to these important outcomes. Because of these secondary benefits, it would seem that autonomy support will generally be more helpful for our friends and partners than directive support.

The consistency of the current findings is impressive when one considers the diverse types of samples and goals included in the three studies. Studies 1 and 2 found similar results despite the use of romantic partners and friendship dyads in the two studies. Similarly, Study 3 obtained essentially the same results as the first two despite the fact that it focused on vicarious goals rather than self-initiated goals. The third study also showed that the positive effects of autonomy support on vicarious goal progress held true regardless of whether the goals were adopted from parents, romantic partners, or friends. Deci and Ryan (2000) recognized that many goals do not start out as autonomously motivated, but over time will vary in the degree to which they are integrated into the self. One of the key variables in this process of integration, along with the degree of connectedness or relationship quality, is the perception of autonomy support. Therefore, autonomy support may be crucial for enhancing the pursuit of goals that are not initially self-generated by facilitating this integration process.

An impetus for our research was the fact that autonomy support has almost always been assessed in the context of hierarchical relationships, such as between a teacher–student, doctor–patient, parent–child, or manager–employee. We suggest that the support of autonomy may look different in the context of a coequal relationship, but may be as important if not more important. Specifically, certain behaviors that an authority figure may display in a hierarchical relationship, such as providing meaningful rationales, encouraging questions, and promoting self-initiation may be helpful and even necessary, but these same behaviors may not be equally appropriate or facilitative in a peer relationship. Our assessment of autonomy support focused on perspective-taking and empathic responding rather than some of the other commonly assessed aspects of autonomy support. Future research needs to examine the potentially different nature of autonomy support from peers as distinct from authority figures, and to assess the impact of these differences on various outcomes.

The current studies were limited in at least four important ways. First, it must be noted that the measure of autonomy support was an assessment of perceived support not actual behavior. Although SDT highlights the primacy of the perception of support (as opposed to the objective reality), the dyadic design that we used in Studies 1 and 2 would have yielded far richer data if we had assessed not only participants' perceptions of the autonomy support they received but also of the autonomy support that they offered. Including measures of both the receipt and provision of support in dyadic relationships would have allowed us to answer important questions about actor and partner effects on these processes. Second, although we used a prospective design, the core analyses of the present research were correlational, and therefore, causal inferences cannot be supported. More complex longitudinal and experimental designs are required. Third, although we used peer reports of goal progress in Study 2, one might question the objectivity and accuracy of such reports. Peers' judgments are likely to be influenced by the comments of their friends and partners, thus clouding the independence of peer and self-ratings of progress. Moreover, because Study 2 highlighted the role of friends in goal pursuits, it is possible that friends may have had a vested interest in reporting high levels of progress so that it would reflect well on their supportive efforts. Fourth, although we identified a mediator for the effects of autonomy support on goal pursuits, we did not examine the processes by which autonomy support enhances well-being and

relationship satisfaction. We also failed to explore how directive support might be promoting goal progress.

Future research should also distinguish autonomous and directive support of goals from other constructs that have been explored in the social support literature. For example, Bolger and Amarel (2007) focused attention on the visibility of social support. They noted that visible social support can entail emotional costs and that supportive acts are most effective when accomplished either (a) outside of recipients' awareness or (b) within their awareness but with sufficient subtlety that they do not interpret it as support. It would be interesting to see whether autonomous and directive support can be aligned, respectively, with the invisible and visible forms of support in Bolger and Amarel's conceptualization.

Conclusion

The results of the current studies point to the benefits of receiving autonomy support from our friends, romantic partners, and family members as we pursue our personal goals. The benefits appear to include not only goal progress but also enhanced relationships and better subjective well-being. Directive support also appears to be associated with a tendency to make greater goal progress, but it was unrelated to relationship and well-being outcomes. This research suggests that exploring autonomy-support processes in the context of coequal rather than hierarchical relationships may represent a fruitful new direction for SDT.

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Notes

1. The same analysis was conducted separately for goal progress at Time 4, Time 3, and Time 2. The regression coefficients for autonomy support (AS) and directive support (DS) were as follows: Time 4 goal progress—AS β = .18, DS β = .15; Time 3 goal progress—AS β = .22, DS β = .16; and Time 2 goal progress—AS β = .18, DS β = .11.
2. The same analysis was conducted separately for goal progress at Time 4, Time 3, and Time 2. The regression coefficients for AS and DS were as follows: Time 4 goal progress—AS β = .22, DS β = .18; Time 3 goal progress—AS β = .22, DS β = .13; and Time 2 goal progress—AS β = .31, DS β = .07.
3. The effect sizes of DS and AS on goal progress were calculated across the three studies and combined meta-analytically. AS was shown to have a highly significant effect of goal progress: $k = 3$, $d = 0.38$ (CI = [0.26, 0.50]), $p < .0001$. The effects for AS were also homogeneous, Q (2) = 0.32, *ns*. DS was also shown to have a significant effect on goal progress: $k = 3$, $d = 0.23$ (CI = [0.11, 0.35]), $p < .0001$. The effects for DS were also homogeneous, Q (2) = 1.31.

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