

Dear Abby: Should I Give Advice or Receive It?



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Abstract

Typically, individuals struggling with goal achievement seek advice. However, in the present investigation ($N = 2,274$), struggling individuals were more motivated by giving advice than receiving it. In a randomized, controlled, double-blind field experiment, middle-school students who gave motivational advice to younger students spent more time on homework over the following month than students who received motivational advice from expert teachers (Experiment 1). This phenomenon was replicated across self-regulatory domains: Strugglers who gave advice, compared with those who received expert advice, were more motivated to save money, control their tempers, lose weight, and seek employment (Experiments 2 and 3). Nevertheless, across domains, people erroneously predicted the opposite, expecting themselves and others to be less motivated by giving advice than receiving it (Experiments 2 and 3). Why are people blind to the motivational power of giving? Giving advice motivated givers by raising their confidence—a reality that predictors fail to anticipate (Experiment 4).

Keywords

giving, advice, motivation, goal achievement, misprediction, open data, open materials, preregistered

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When we are stuck or unsure of what to do, we seek advice. The reason for this is almost too obvious to be stated: We want more information. In one study, college students rank-ordered the reasons they had requested advice in their own lives (Heath & Gonzalez, 1995). The two highest-ranking reasons were “[advice] gives me information to make a better decision” and “[advice] causes me to think about things I have not yet considered.” Other options that did not mention informational value—for example, “[advice] builds confidence in my decision”—ranked significantly lower on the list. Indeed, advice is beneficial under conditions of informational asymmetry. When people who lack knowledge receive advice from more knowledgeable sources, it improves decision making (Larrick & Soll, 2006; Sniezek, Van Swol, Schrah, & Dalal, 2004; Yaniv, 2004).

Nevertheless, beyond knowledge, successful goal achievement requires the motivation to transform knowledge into action (Fishbach & Converse, 2010; Kotabe & Hofmann, 2015; Soman, 2015). When people

lack motivation, receiving advice may actually be harmful. Receiving help can feel stigmatizing (Fisher, Nadler, & Whitcher-Alagna, 1982) because it undermines feelings of competence (Ryan & Deci, 2000). When individuals truly lack information, this psychological cost is outweighed by the value of the information received. But if there is no clear informational deficit, this cost comes at the benefit of nothing.

In the present investigation, we tested the counterintuitive hypothesis that people struggling with motivational deficits benefit more from giving advice than receiving it. Repeatedly failing to achieve goals can sap people of confidence in themselves. For a number of reasons, giving advice may restore it. First, simply being asked to provide advice may raise confidence: The

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implication of being asked to give advice, versus receive it, is that the advice giver possesses, as opposed to lacks, the ability in question. Second, to give advice, the advisor conducts a biased search of memory. Advisors attend to past productive, successful behavior in order to make a recommendation to others. This biased memory scan is likely to raise the advisor's confidence in him- or herself. Third, in the process of giving advice, advisors may form specific intentions and lay out concrete plans of action—both of which increase motivation and achievement (Gollwitzer & Sheeran, 2006; Locke & Latham, 2002; Oettingen, 2012). Finally, giving advice makes people feel influential and powerful (Schaerer, Tost, Huang, Gino, & Larrick, 2018). More confident individuals set higher goals for themselves and remain more committed to their goals over time (Bandura, 1991; Locke & Latham, 1990). Confidence in one's ability can be an even better predictor of goal pursuit than actual ability (Collins, 1982).

Though we expect giving advice to raise confidence and motivation, we expect lay people to mispredict this phenomenon. We assume that people misattribute motivational problems to informational deficits. As a result, they expect individuals struggling with motivational issues—saving money, controlling their emotions, dieting—to benefit more from receiving advice than giving it. Indeed, if one assumes that individuals struggling to lose weight lack key knowledge, the idea of them giving advice is nonsensical. Our hypothesis was that to the extent that predictors attribute failed goal pursuit to informational (rather than motivational) deficits, predictors will overlook the motivational power of giving.

Importantly, we did not assume that this misprediction results from a self–other discrepancy (Marks & Miller, 1987; Rozman, Cassidy, & Baron, 2003). We assumed that people lack basic insight into the role that confidence plays in overcoming motivational deficits. As a result, predictors underpredict the motivational power of giving for both themselves and others.

In what follows, we present empirical evidence for three interrelated but distinct hypotheses. First, we expected people struggling with motivational deficits to be more motivated by giving advice than receiving it (Experiments 1–4). Second, we expected lay people to mispredict this phenomenon (Experiments 2 and 3). Third, we explored why this misprediction occurs. Our hypothesis was that predictors underestimate the motivational power of giving because they overlook the fact that giving advice raises confidence (Experiment 4). Data for Experiments 2 through 4 are publically archived at the Open Science Framework (osf.io/yqbs4). Data for Experiment 1 could not be made publically available out of concern for revealing participating students' identities.

Experiment 1: A Middle-School Field Study

In Experiment 1, we randomly assigned middle-school students to give versus receive advice on motivated behavior in the academic context, specifically, completing one's schoolwork. Advice givers each gave motivational advice to a younger student. Advice receivers read motivational tips from a teacher. Advice sessions occurred once a week over 3 weeks, for a total of three sessions. Over the following month, we expected givers to be more motivated to study than receivers.

Method

Participants. All middle-school students (sixth, seventh, and eighth grades) in a public school district in the United States were invited to participate. Using a conservative intent-to-treat analysis, we randomly assigned all students who began the first session (95%) to condition and included them in analyses. The 15 students who did not begin this first session were absent or did not consent. There were no statistically significant differences between these 15 students and the included students on preintervention grade point average (GPA) or any other demographic characteristics. The final sample ($N = 318$; control: $n = 164$, treatment: $n = 154$) was 92.8% White, 2.8% other, 1.9% Hispanic, 1.9% Asian, and 0.6% Black; 48.4% were female. Students were close to evenly distributed across sixth (31.8%), seventh (34.6%), and eighth (33.6%) grades. The intervention included three sessions: 72.0% of students participated in all three sessions, 23.9% participated in two sessions, and 4.1% participated in one session. There were no between-conditions differences in the number of sessions completed, $\chi^2(1) = 1.08, p = .582$.¹

Procedure. We used a two-condition (giving vs. receiving) between-participants design. All teachers and administrators were blind to condition. Students were invited to participate in three sessions—one per week over 3 weeks.

In each session of the giving condition, students read and replied to a letter written by a younger fourth grader. Each of these three letters—one per session—was authored by a fourth grader who participated in a focus group and expressed a desire to spend more time on the school's online vocabulary-training program. Letters were edited by the research team for general clarity. The letter that was sent to all middle-school students in the giving condition during the first session read as follows:

Hi, Thanks for reading my note and giving advice. So far I think I'm sometimes not working hard enough to do BETTER. Like the first time I do an

assignment I do ok, but then when someone asks me to revise it I'm not so motivated since I already did it once. When the school day is over I sort of check out but I need to be online to learn vocabulary. How do you motivate yourself to do stuff like this?

After reading this letter, students were asked to write a note back, offering the fourth grader their best advice. For full materials, see the Supplemental Material available online.

In each session of the receiving condition, students read and replied to one letter in which an "expert teacher" provided tips on how to stay motivated in school and, more specifically, how to motivate oneself to learn vocabulary. These advice notes were authored by researchers in collaboration with school teachers during focus groups. The notes were not authored by the students' own teachers, who were blind to study materials and condition assignment. The goal was to have the teacher letters address the same topics as the letters authored by fourth graders, but for these letters to contain teachers' actual advice. Here is the teacher advice that was sent to all middle-school students in the receiving condition during the first session:

Hi, Here is some advice. Trying your hardest is always the way to go. You should always try and do BETTER. Don't settle. Always try to make things better and better. You need to put in your full effort, not just coast by! Sometimes that means putting in a lot of time after the school day ends, like studying vocabulary online. It's very important to apply yourself to your work, even once the school day is over.

After reading this letter, receivers wrote a brief reaction. We included this writing activity in the receiving condition in order to ensure that participation across the two conditions was equally interactive.

The primary outcome measure was the average number of minutes that students spent studying vocabulary online during the 4 weeks following the intervention. Before, during, and after the intervention, students at the participating school could sign into the vocabulary program at will. An invisible timer tracked the number of minutes each student spent in the program during the 2 weeks prior to the intervention and the 4 weeks after the intervention ended. The primary outcome was the average number of minutes spent weekly in online vocabulary training during the month following the end of the intervention. The school also shared the following information from official school records: gender, ethnicity, grade level, and GPAs from the academic quarter prior to the start of the intervention.

Results

Random assignment to condition was effective. There were no statistically significant between-conditions differences in demographics or average vocabulary study time during the 2 weeks prior to the intervention. Here is an example of the sort of advice written in by one seventh-grade advice giver:

As you become older, you start to realize what is really important. I realized that school and academics are the most important thing. It is still fun to do things outside of school, but you have to realize what is important to you.

Supporting our hypothesis, over the 4 weeks following the intervention, middle-school students who gave advice spent more time per week studying vocabulary ($M = 26.58$ min; $SD = 12.33$)² than students who received advice ($M = 23.27$ min; $SD = 8.30$), $t(316) = 2.83$, $p = .005$, $d = 0.32$, 95% confidence interval (CI) = [0.10, 0.54].

As an additional analysis, we conducted an analysis of variance (ANOVA) on the interactive effect of condition (advice giving vs. advice receiving) and time (before intervention vs. after intervention) on time spent studying vocabulary. The ANOVA revealed an overall R^2 of .070 with a mean square error (MSE) of 107.77, with no main effect of condition, $F(1, 632) = 2.20$, $p = .138$, $MSE = 107.77$, $\eta_p^2 = .003$. There was a main effect of time, $F(1, 632) = 39.75$, $p < .001$, $\eta_p^2 = .06$, which shows that students across conditions spent more time studying vocabulary after the intervention. It may be that both interventions were beneficial to some extent. Alternatively, the simple fact of being in an intervention may have motivated students to study (McCambridge, Witton, & Elbourne, 2014).

Supporting our hypotheses, this main effect was qualified by a Condition \times Time interaction, $F(1, 632) = 6.44$, $p = .011$, $\eta_p^2 = .01$. Whereas advice givers spent more time studying vocabulary than advice receivers after the intervention, prior to the intervention, advice givers spent no more time studying vocabulary than advice receivers, $t(316) = 0.75$, $p = .453$ (see Table 1).

It is possible that givers outperformed receivers because receivers received low-quality advice. To examine this alternative, we had parents (a third party in the student-teacher relationship) rate the advice used in the study. We recruited 154 parents (66.9% female; age: $M = 38.60$ years, $SD = 9.37$) on Prolific, an online research platform. (Prolific collects demographic information on registered workers, including family status.) Each parent was yoked to an advice giver; this parent rated the advice authored by a single advice giver in the first session and the teacher advice received

Table 1. Weekly Time That Advice Givers and Advice Receivers Spent Studying Vocabulary (in Minutes) Both Before and After the Intervention (Experiment 1)

Time	Advice givers		Advice receivers	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Before intervention	19.30 _a	9.90	20.17 _a	10.69
After intervention	26.58 _b	12.33	23.27 _c	8.30

Note: Means with different subscripts are significantly different ($p < .01$).

by all receivers during the first session (1 = *not very good quality advice*, 7 = *excellent quality advice*). A paired-samples *t* test revealed that parents found the expert teacher advice ($M = 5.09$, $SD = 1.48$) higher in quality than the advice authored by students ($M = 4.33$, $SD = 1.91$), $t(153) = 3.80$, $p < .001$. Because the teacher advice was not worse (and was actually better), we can rule out the possibility that giving advice was more motivating because receivers were provided with poor-quality advice.

Experiment 2: Advice Giving Across Four Domains

In Experiment 1, middle-school students spent more time doing their homework after giving advice versus receiving it. In Experiment 2, we tested whether this effect generalized across four domains: financial, interpersonal, health, and work. We examined whether people struggling to save money (financial domain), control their tempers (interpersonal domain), lose weight (health domain), and find employment (work domain) would be more motivated by giving advice than receiving it. We also tested our second hypothesis: that people mispredict this phenomenon. Across domains, we manipulated advice (giving vs. receiving) within participants and perspective (pursuers vs. predictors) between participants. Pursuers gave and received advice, after which they reported which act was more motivating. Each predictor read the advice authored and received by a yoked pursuer. Following this, the predictor forecast which activity the pursuer would find more motivating. This study was preregistered on AsPredicted (<https://aspredicted.org/9vk44.pdf>).

Method

Participants. We recruited participants via Amazon Mechanical Turk (MTurk), opening the survey to 704 participants (88 per condition). MTurk returned 690 respondents (54.3% female; age: $M = 35.41$ years, $SD = 11.46$). On the basis of studies in an earlier draft of this article (reported in the Supplemental Material), we expected to find medium to large

effect sizes. A G*Power analysis revealed that we would have 80% power to detect a medium-sized effect ($d = 0.50$) with alpha set to .05 if we recruited 88 participants per condition, which is what we did in this and subsequent experiments.

Because each predictor read the advice authored by a yoked pursuer, pursuers were recruited first. After recruiting pursuers, we recruited predictors and left recruitment open until there was a yoked predictor for each pursuer. Thus, in this and all subsequent experiments, the final sample size was evenly divided between pursuers and predictors. Participants of any nationality were allowed to participate provided their MTurk approval rating—the percentage of their work that had been approved by prior researchers—was at or above 50%. Participants were compensated \$0.50 for participating.

Procedure. In this experiment, we used a 2 (condition: pursuer, predictor) \times 4 (domain: financial, interpersonal, health, work) between-participants design. To ensure that no one participated twice, we recruited pursuers and predictors across the four domains in sequence. For each recruitment, we excluded participants who had already participated in a prior version.

In each domain, participants first responded to three yes/no screening questions. Two of these questions were irrelevant to the given domain (e.g., “Are you an intellectual?”). We included them to make it difficult for participants to guess our screening criterion (see Chandler & Paolacci, 2017). Only participants who responded affirmatively to the third question (financial domain: “Do you struggle to save money?” interpersonal domain: “Do you struggle to control your temper?” health domain: “Are you currently struggling to lose weight?” work domain: “Are you currently unemployed and seeking employment?”) qualified to participate. Following these screening questions, participants reported basic demographics (age, gender) and were informed that the session would involve writing. Participants who completed this initial writing assignment and continued were assigned to condition.

Participants assigned to the pursuer condition completed two activities corresponding to the experimental conditions. In the giving condition (first activity), pursuers were asked to write their advice (e.g., “Write in your best job market advice” in the work domain). They then learned that their advice would be shared with others struggling with the same issue (e.g., employment). See Table 2 for examples of the sort of advice that pursuers authored across the four self-regulatory domains.³ In the receiving condition (second activity), pursuers read one of three randomly assigned paragraphs of advice from an expert (for examples of advice received in each domain, see Table 2). To make the receiving exercise equally active, we then asked pursuers to

Table 2. Examples of Advice Given and Received Across the Four Self-Regulatory Domains (Experiment 2)

Domain	Advice given (authored by pursuer)	Advice received (authored by expert)
Financial	“Do not pay with credit card if you do not have to. Try to save up money for items you’d like to purchase. Learn to be content with the stuff you have. The non-necessities are not needed.”	“Treat yourself, but use it as an opportunity to save. Match the cost of your nonessential indulgences in savings. So, for example, if you splurge on a smoothie while out running errands, put the same amount into your savings account.”
Interpersonal	“Some tips to control your anger is to first take a slow deep breath in and out. Then think before you speak, so you do not say anything in the heat of the moment that you do not mean and might regret. Go for a walk outside to get fresh air.”	“‘Silly humor’ can help defuse rage in a number of ways. For one thing, it can help you get a more balanced perspective. When you get angry and call someone a name or refer to them in some imaginative phrase, stop and picture what that word would literally look like.”
Health	“My best weight loss advice is to purchase a FitBit. I believe in order to lose weight that you must exercise, and the FitBit can give you that extra motivation to get out there and walk. Walking is great exercise, and the FitBit can track how many steps you take.”	“When most people start a weight-loss program, they set ‘outcome goals’: those that focus on an end result like ‘I want to weigh 125 pounds’ or ‘I want to lose 30 pounds.’ While these kinds of goals can be helpful, they’re not as effective as ‘performance goals,’ or those that focus on a process or action such as ‘I will walk 30 minutes each day’ or ‘I will eat four servings of vegetables each day.’”
Work	“Always keep your resume up to date and have copies in case you come across an opportunity and need to provide one. Prepare for interviews and look up tips for answering common questions and presenting yourself well. Use internet resources, online applications, and social media like LinkedIn to search for jobs.”	“You want that job search to last and last? Well, then continue to rely solely on submitting online applications. You want to accelerate this bad boy? Don’t stop once you apply online for that position. Start finding and then endearing yourself to people working at that company of interest. Schedule informational interviews with would-be peers. Approach an internal recruiter and ask a few questions. Get on the radar of the very people who might influence you getting an interview.”

briefly summarize this advice. Next, as our main measure, pursuers indicated which of the two activities made them feel more motivated to pursue their goal (0 = *receiving advice*, 1 = *giving advice*).

Those assigned to the predictor condition first completed two buffer activities in order to equate survey length across pursuers and predictors and to ensure that both groups spent equivalent amounts of time reflecting on the relevant goal. In these activities, predictors engaged in active reflections on domain-relevant questions (e.g., “What do you think are the sort of jobs that people will work in 100 years?” in the work domain), following which they read about domain-relevant history (e.g., the history of work in the work domain). Next, predictors engaged in the focal activity. They were shown the advice that one yoked pursuer received (out of three possibilities), as well as the advice that this same yoked pursuer authored. Predictors then forecast which of the two activities would make this person more motivated to pursue his or her goal (0 = *receiving advice*, 1 = *giving advice*). For full materials, see the Supplemental Material. See Table A1 in the Appendix for a summary of attrition rates for Experiments 2 through 4 (Zhou & Fishbach, 2016).

Results

In support of the first hypothesis, 72.46% of pursuers found giving advice more motivating, which is statistically greater than the 27.54% who found receiving advice more motivating, $\chi^2(1, N = 345) = 69.64, p < .001, d = 0.91, 95\% \text{ CI} = [0.71, 1.14]$. As shown in Table 3, we observed a similar pattern in each of the four domains; this effect was not moderated by domain, $\chi^2(1, N = 345) = 1.96, p = .581$. In support of the second hypothesis, participants mispredicted this phenomenon. Whereas 72.46% of pursuers chose giving, only 34.49% of predictors forecast that people would do so, $\chi^2(1, N = 690) = 99.97, p < .001, d = 0.82, 95\% \text{ CI} = [0.66, 0.98]$. As can be seen in Table 3, we observed a similar pattern in each of the four self-regulatory domains; this effect was not moderated by domain, $\chi^2(3, N = 690) = 4.56, p = .207$.

Notably, in Experiment 2, pursuers reported motivation levels for themselves, whereas predictors predicted motivation levels of others. Could a self–other discrepancy (Marks & Miller, 1987; Rozman et al., 2003) produce the observed difference between predictors and pursuers? We conducted a follow-up study to test this

Table 3. Results for Experiments 2 Through 4

Experiment and domain	N	Pursuers who chose giving	Predictors who chose giving	Hypothesis 1			Hypothesis 2		
				$\chi^2(1)$	Cohen's <i>d</i>	95% CI	$\chi^2(1)$	Cohen's <i>d</i>	95% CI
Experiment 2									
Financial	174	72.41%	40.23%	17.48**	1.00	[0.53, 1.47]	18.32**	0.69	[0.37, 1.00]
Interpersonal	168	77.38%	44.05%	25.19**	1.31	[0.80, 1.82]	19.57**	0.73	[0.40, 1.05]
Health	174	72.41%	36.78%	17.48**	1.00	[0.53, 1.47]	22.28**	0.77	[0.45, 1.08]
Work	174	67.82%	17.24%	11.05**	0.77	[0.31, 1.21]	45.52**	1.19	[0.84, 1.54]
Experiment 2 follow-up: work	88	68.75%	25.00%	6.75*	0.81	[0.20, 1.42]	16.71**	0.97	[0.50, 1.43]
Experiment 3: financial	174	75.86%	47.13%	23.28**	1.21	[0.72, 1.70]	15.17**	0.62	[0.31, .93]
Experiment 4: health	174	65.52%	43.68%	8.38**	0.65	[0.21, 1.10]	8.37*	0.45	[0.15, .75]

Note: Hypothesis 1 was “Do pursuers find giving more motivating than receiving? (i.e., does the choice distribution deviate from a 50-50 distribution?” Hypothesis 2 was “Do predictors miscalculate this phenomenon? (i.e., do pursuers find giving more motivating than predictors expect it to be?” CI = confidence interval.

* $p < .01$. ** $p < .001$.

possibility with another sample of MTurk adults in the work domain ($N = 88$; 55.7% female; age: $M = 33.17$ years, $SD = 11.17$). In this follow-up study, unemployed predictors forecasted which activity (giving vs. receiving) they themselves would find more motivating. We compared these predictions with what unemployed pursuers, who engaged in both activities, actually found more motivating. In this follow-up study, 68.75% of pursuers found giving advice more motivating, which is statistically greater than the 31.25% who found receiving advice more motivating, $\chi^2(1, N = 44) = 6.75, p = .009, d = 0.81, 95\% \text{ CI} = [0.20, 1.42]$. Moreover, whereas 68.75% of pursuers felt more motivated to search for jobs after giving advice, only 25.00% predicted that this would be the case, $\chi^2(1, N = 88) = 16.71, p < .001, d = 0.97, 95\% \text{ CI} = [0.50, 1.43]$. In sum, people miscalculated their own motivation after giving advice, just as they miscalculated the motivational power of advice giving for others.

Experiment 3: Ruling Out Ordering Effects

In Experiment 2, participants gave advice before they received it. This ordering ensured that advice givers did not redact the information they had received from experts; they had to draw on personal experience. However, to address ordering effects—the possibility that whatever people do first they find more motivating—in Experiment 3, we counterbalanced the order in which pursuers and predictors gave and received advice.

Method

We recruited pursuers, followed by yoked predictors, who were struggling to save money (financial domain).

We opened recruitment to 176 participants (88 per condition). MTurk returned 174 respondents (54.0% female; age: $M = 37.13$ years, $SD = 11.89$). Participants of any nationality were allowed to participate provided their MTurk approval rating was at or above 50%. Participants were compensated \$0.50 for participating. Besides the counterbalanced ordering of activities, in Experiment 3, we followed the same procedures as in Experiment 2.

Results

In support of the first hypothesis, analyses showed that 75.90% of pursuers found giving advice more motivating, which is statistically greater than the 24.10% who found receiving advice more motivating, $\chi^2(1, N = 87) = 23.28, p < .001, d = 1.21, 95\% \text{ CI} = [0.72, 1.70]$. The effect of order was nonsignificant, $\chi^2(1, N = 87) = 0.66, p = .417$. Indeed, we found a similar effect among participants who gave advice first (72.09% found giving advice more motivating) and those who received advice first (79.55% found giving advice more motivating).

In support of the second hypothesis, participants miscalculated this phenomenon. Whereas 75.86% of pursuers felt more motivated to save money by giving advice, only 47.13% of predictors predicted that people would find giving advice more motivating, $\chi^2(1, N = 174) = 15.17, p < .001, d = 0.62, 95\% \text{ CI} = [0.31, 0.93]$. We found no evidence of a Condition (pursuer vs. predictor) \times Ordering (giving first vs. giving second) interaction, $\chi^2(1, N = 174) = 0.088, p = .766$. Indeed, we found a similar effect when people give advice first (72.09% of pursuers vs. 39.53% of predictors chose giving) and when people give advice second (79.55% of pursuers vs. 54.55% of predictors chose giving). It is thus unlikely that Experiment 2 reflects an ordering effect.

We note that, unlike in Experiment 1, pursuers in Experiments 2 and 3 both gave and received advice (within-participants design). To test whether giving advice is also more motivating than receiving advice in a situation in which participants either give or receive advice, we conducted a follow-up study using a two-condition between-participants design: Participants were randomly assigned to either give or receive advice. For this follow-up, a G*Power analysis revealed that we would have 90% power to detect a small effect ($d = 0.25$) with a sample of 676. We preregistered this study on AsPredicted (<https://aspredicted.org/ua3tw.pdf>).

We kept the study open on MTurk until 676 participants (48.1% female; age: $M = 33.46$ years, $SD = 9.89$) completed the study. Participants were randomly assigned to either give or receive advice using the exact materials completed by the anger-management subsample of pursuers in Experiment 2. After participants gave or received advice on how to control their temper, they rated themselves on a single-item measure (“The activity I just completed did NOT make me feel more motivated to control my temper”) using a Likert-type scale from 1, *strongly disagree*, to 5, *strongly agree*. We asked participants about their lack of motivation to minimize experimental demands. This measure was then reverse-coded for analysis so that higher values indicated greater levels of motivation.

Supporting our hypothesis, results showed that participants who received advice reported lower levels of motivation ($M = 3.03$, $SD = 1.09$) than participants who gave advice ($M = 3.44$, $SD = 1.19$), $t(674) = -4.70$, $p < .001$, $d = 0.36$, 95% CI = [0.21, 0.51]. Thus, in a situation in which participants either gave or received advice, the effect was replicated.

Experiment 4: Giving Advice Instills Confidence

Across self-regulatory domains, people were more motivated by giving advice than receiving it (Experiments 1–3), a reality that predictors failed to anticipate (Experiments 2 and 3). In Experiment 4, we asked why predictors overlook the motivating power of giving. We hypothesized that advice giving motivated behavior by instilling confidence. That is, we expected pursuers to report that giving advice, more than receiving advice, raised both their confidence and their motivation. In contrast, we expected predictors to underestimate the degree to which advice giving raised confidence, and we expected this underestimate to explain why they overlooked the motivational power of giving. As in Experiment 2, we once again recruited overweight participants. We preregistered this study on AsPredicted (<https://aspredicted.org/ni5z3.pdf>).

Method

Participants. We recruited pursuers, followed by yoked predictors, who were struggling to lose weight (health domain). We opened recruitment to 176 participants (88 per condition). MTurk returned 174 respondents (60.3% female; age: $M = 34.34$ years, $SD = 11.07$). Participants of any nationality were allowed to participate provided their MTurk approval rating was at or above 50%. Participants were compensated \$0.50 for participating.

Procedure. Participants went through the procedure described in Experiment 2, with one exception: Before pursuers and predictors reported on motivation, they reported on confidence. Pursuers indicated which of the two activities (giving advice vs. receiving advice) made them feel more confident in their ability to lose weight (0 = *receiving advice*, 1 = *giving advice*). Yoked predictors forecasted which of the two activities would make someone else feel more confident in their ability to lose weight (0 = *receiving advice*, 1 = *giving advice*). Next, everyone reported on motivation using the measure from Experiment 2.

Results

In support of the first hypothesis (from Experiments 1–3), analyses showed that 65.52% of pursuers found giving advice more motivating, which is statistically greater than the 34.48% who found receiving advice more motivating, $\chi^2(1, N = 87) = 8.38$, $p < .001$, $d = 0.65$, 95% CI = [0.21, 1.10]. We found a similar pattern on confidence: 73.56% of pursuers felt more confident after giving advice, which is statistically greater than the 26.44% of pursuers who felt more confident after receiving advice, $\chi^2(1, N = 87) = 10.23$, $p = .001$, $d = 0.73$, 95% CI = [0.28, 1.18]. Among pursuers, confidence positively predicted motivation ($r = .33$, $p = .002$), which suggests that, indeed, one of the reasons that giving advice motivates is because it instills confidence.

In support of the second hypothesis (from Experiments 2 and 3), participants mispredicted this phenomenon. Whereas 65.52% of pursuers felt more motivated to lose weight after giving advice, only 43.68% of predictors predicted that people would find giving advice more motivating, $\chi^2(1, N = 174) = 8.37$, $p = .004$, $d = 0.45$, 95% CI = [0.15, 0.75]. We found a similar pattern on confidence: Whereas 73.56% of pursuers felt that giving advice made them more confident than receiving advice, only 52.87% of predictors predicted this, $\chi^2(1, N = 174) = 8.01$, $p < .001$, $d = 0.44$, 95% CI = [0.14, 0.74].

Next, we tested whether confidence mediated the effect of condition (pursuer vs. predictor) on motivation. Pursuers found giving advice more motivating than

predictors expected them to, odds ratio (OR) = 2.45, $p = .004$. Pursuers also reported that giving advice increased confidence more than predictors expected it to, $OR = 2.48$, $p = .005$. Controlling for confidence, we found that the effect of condition on motivation was significantly smaller, $OR = 1.93$, $p = .052$. Confidence mediated the effect of condition on motivation, Sobel test $z = 2.45$, $SE = 0.62$, $p = .014$, supporting our hypothesis.

Mini Meta-Analysis

We conducted a meta-analysis on all within-participants tests of Hypothesis 1 (Experiments 1–4; Studies S1 and S2 in the Supplemental Material) and all tests of Hypothesis 2 (Experiments 2–4; Studies S1 and S2) in this article (including main and follow-up studies) and in the associated Supplemental Material. Mean effect sizes were calculated by weighting each study effect size by its inverse variance and averaging across the weighted estimates (Lipsey & Wilson, 2001). Given the small number of studies in the meta-analysis, we combined means using fixed-effects models. We found a significant large-sized effect of Hypothesis 1, $d = 0.95$, 95% CI = [0.77, 1.14], $z = 10.22$, $p < .001$, demonstrating that across studies, participants were more likely to choose giving than receiving; there was no evidence of heterogeneity across studies, $Q = 0.81$, $p = .463$ (Higgins & Thompson, 2002). We also found a significant medium-sized effect of Hypothesis 2, $d = 0.74$, 95% CI = [0.61, 0.86], $z = 11.69$, $p < .001$, demonstrating that across studies, predictors underestimated the motivational power of giving; once again, we found no evidence of heterogeneity across studies, $Q = 0.01$, $p = 0.462$.

General Discussion

In the current investigation, we found support for the hypothesis that giving advice is more motivating than receiving it. Compared with receiving advice, giving advice motivated middle-school students to study up to 4 weeks later (Experiment 1). This phenomenon replicated across financial, interpersonal, health, and work domains. Yet to the extent that this first hypothesis is right, most people are wrong—which was our second hypothesis. People consistently predicted the opposite, expecting struggling individuals to benefit more from receiving advice than giving it (Experiments 2–4). Whereas advice givers experienced a boost in confidence, predictors failed to anticipate this effect, which mediated the misprediction (Experiment 4). Our results suggest that advice giving serves a motivational function of which most people are unaware.

In the learning literature, confidence can be problematic: People tend to believe they know more than

they actually do (Dunning, Heath, & Suls, 2004; Ehrlinger, Johnson, Banner, Dunning, & Kruger, 2008). Given this, one might worry about a dark side of advice giving: Perhaps giving advice causes confidence to outstrip actual ability, leading to overconfidence. Although this is a legitimate concern found in the learning literature, it is unlikely to be a concern with regard to motivated behavior. When it comes to motivation, confidence increases actual, not illusory, motivation. People do not have a true capability to stick to their diets the way they have a true capability to estimate the area of a parallelogram. Confidence and action increase in lockstep when it comes to motivated behavior.

We identified confidence as both the reason that advice giving increased motivation as well as the cause of the misprediction. However, both effects are probably multidetermined. For example, in addition to raising confidence, giving advice may increase the attractiveness of the goal, clarify how to achieve the goal, or change one's identity (March, 1994)—for example, from victim to victor. Simply attributing an identity to an individual facilitates identity-congruent behavior (Miller, Brickman, & Bolen, 1975). Though we believe that other processes are almost certainly in play, we expect that many of them are interdependent with confidence. For example, changing one's identity raises confidence by leading one to believe that one's "new" self has new capabilities.

The effect of advice giving may have key boundary conditions. First, we expect advice giving to combat motivational deficits but not informational ones. If individuals are failing to achieve their goals because they lack key knowledge, giving advice ought to be less effective than receiving needed information. Second, because advice giving motivates behavior by increasing confidence, giving advice may motivate only individuals who lack confidence. Across Experiments 2 to 4, we recruited advice givers who were struggling with the goal in question; individuals who were not struggling did not qualify to participate.

The present research suggests several exciting directions for future research. What are the active ingredients of the present intervention? In future work, researchers ought to consider whether advice giving requires "giving" to motivate behavior. Advice givers may have experienced a boost in confidence solely because they conducted a biased memory search for past productive behaviors. If so, a reflection prompt could have had the same effect. Although theoretically possible, we still believe giving is the most natural way of soliciting reflection on one's knowledge in a way that boosts confidence.

Alternatively, giving may motivate absent "advice." Help giving more broadly may have increased motivation. Perhaps middle-school students who donate money to younger students would experience the same benefits

as the advice givers in Experiment 1. Although possible, this seems unlikely. The prosocial ingredient in our intervention was minor: Participants did not receive feedback on the effectiveness of their advice, nor did they interact with the presumed recipient in any way.

Conclusion

Across Experiments 2 to 4, predictors made a choice: Is receiving advice more motivating than giving advice, or vice versa? Across studies, one third to one half of participants predicted that giving would be more motivating, numbers which likely underestimate the degree to which an actual misprediction occurs. This is because we presented giving advice as a viable option to participants. Had we not, we doubt anyone would have considered that giving advice motivates behavior. Indeed, programs

that aim to improve goal achievement among struggling individuals almost unilaterally position struggling students, dieters, and workers as recipients (MENTOR, 2006). Such programs appear much less aware than our predictors of the motivational benefits of flipping strugglers from receivers to givers.

This makes our predictors' predictions cause for optimism. Merely presenting advice giving as a motivational strategy led a sizable portion of participants to endorse it. Perhaps presenting advice giving as a motivational option to administrators and program directors would have a similar effect. We hope our findings, which illuminate the motivational power of giving, do just that: goad scientists and practitioners to consider the ways in which struggling individuals benefit from giving. Indeed, our research provides empirical support for an age-old aphorism: It is in giving that we receive.

Appendix

Table A1. Attrition Rates for Experiments 2 Through 4

Group	Experiment 2				Experiment 3	Experiment 4
	Financial sample (11% attrition)	Interpersonal sample (14% attrition)	Overweight sample (11% attrition)	Unemployed sample (17% attrition)		
Consented to participate	249	502	307	851	229	314
Met selection criteria	195	198	196	209	181	204
Began manipulation	183	182	178	188	174	180
Finished manipulation (final sample)	174	168	174	174	1,744	174

Action Editor

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Author Contributions

All authors developed the study concept. L. Eskreis-Winkler and A. Fishbach designed the experiments. L. Eskreis-Winkler collected and analyzed the data and drafted the manuscript; A. L. Duckworth and A. Fishbach provided critical revisions. All authors approved the final version of the manuscript for submission.

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Declaration of Conflicting Interests

The author(s) declared that there were no conflicts of interest with respect to the authorship or the publication of this article.

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Supplemental Material

Additional supporting information can be found at <http://journals.sagepub.com/doi/suppl/10.1177/0956797618795472>

Open Practices



All data and materials have been made publicly available via the Open Science Framework and can be accessed at osf.io/dp2aq. Design and analysis plans for three of the experiments were preregistered at AsPredicted (Experiment 2: <https://aspredicted.org/9vk44.pdf>; Experiment 3: <https://aspredicted.org/ua3tw.pdf>; Experiment 4: <https://aspredicted.org/ni5z3.pdf>). The complete Open Practices Disclosure for this article can be found at <http://>

journals.sagepub.com/doi/suppl/10.1177/0956797618795472. This article has received badges for Open Data, Open Materials, and Preregistration. More information about the Open Practices badges can be found at <http://www.psychologicalscience.org/publications/badges>.

Notes

1. Because the school used block scheduling, the class in which students took the intervention (information not provided to the researchers) was not a meaningful grouping variable.
2. Variance among advice givers is noticeably larger because of an outlier. Removing the outlier did not change the statistical significance of the reported results.
3. Of the 345 pursuers, 12 responses were nonsensical (e.g., “so good,” “jkwerew”). Excluding these did not change the significance of the reported results.

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