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List Length, List Content, and Gratitude List Intervention Outcomes

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Abstract

Gratitude lists, well-being interventions in which participants list things that they are grateful for, have recently grown in popularity. However, being tasked with generating longer gratitude lists might backfire and be associated with *less* felt gratitude. Furthermore, the content of these gratitude lists is rarely examined. In three studies of 3,936 participants, people assigned to shorter length conditions (three items) were relatively comparable in gratitude and life satisfaction to those assigned to longer list conditions (six and 12 items), although an exploratory analysis revealed that failure to list enough gratitude items for a given condition was associated with lower well-being. These results provided evidence that ease-of-retrieval effects may not play a strong role in the efficacy of gratitude lists. Those who listed particular content items (e.g., close relationships and health) were higher in post-intervention gratitude and well-being than those who did not.

Keywords

gratitude, gratitude list, ease of retrieval, find-remind-and-bind

Gratitude lists—an activity in which people list things they are grateful for—are a popular intervention for enhancing life satisfaction. The effectiveness of this simple intervention has been examined by researchers and covered in the popular press (Emmons, 2007; Sacks, 2015). However, variants of this procedure are rarely tested. Does listing more things translate to feeling *more* grateful and subsequently happier? Or does being unable to list enough things when asked paradoxically translate to feeling *less* grateful and less happy (Winkielman et al., 1998)? And does it matter what people list as things they are grateful for? We examined whether the length of gratitude lists and the content that participants generate when forming lists were associated with feelings of gratitude.

The Study of Gratitude and Gratitude Lists

Gratitude reflects a reciprocal social transaction—individuals demonstrate gratitude toward those who provide them with resources or do them favors to encourage them to continue these behaviors (Bonnie & de Waal, 2004; Nowak & Roch, 2007). Algoe's *find-remind-and-bind* theory offers helpful insights into the functions that gratitude serves for individual and relational well-being (Algoe, 2012; Algoe et al., 2008). Gratitude allows individuals to *find* relational partners who are especially responsive to their needs, *reminds* them of what they value in the relationship (Algoe & Haidt, 2009), and ultimately *binds* them closer to the partners they are grateful for. Gratitude also offers more general benefits related to well-being, life satisfaction, and positive affect (Chopik et al., 2019; Nezlek et al., 2017, 2019; Sansone & Sansone, 2010; Watkins et al., 2003; Wood et al., 2008). Wood and colleagues (2010) found that gratitude, however it is measured (e.g., as a behavior or a trait), is consistently related to well-being (Wood et al., 2010).

Gratitude lists are a popular form of gratitude intervention that rely on participant contemplation about gratitude in their lives. In this simple intervention, participants are asked to list three things in their life that they are grateful for. Previous research using gratitude lists has found that they can help boost well-being and self-esteem, especially in those who may be struggling with depressive symptoms or lower in trait gratitude (Cunha et al., 2019; Harbaugh & Vasey, 2014; Rash et al., 2011). While the premise of the intervention seems simple enough (e.g., thinking of positive things people are grateful for should increase positive emotion), many potential variables can impact its efficacy. For example, for some individuals, it may be difficult to generate things to put on their lists. Do gratitude lists backfire and make them feel distressed or upset—and ultimately less grateful? Does someone whose list is full of close loved

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ones have similar outcomes as someone whose list is full of ostensibly superficial things (e.g., designer sneakers)? The ease of recalling grateful things—and the particular things being recalled—likely has some impact on the gratitude elicited from these methods.

Do the Length and Content of Gratitude Lists Matter?

One factor that might influence the effectiveness of gratitude lists is how easy it is to come up with things for which people feel grateful. Prior research has shown that participants who were asked to come up with a long list of examples that demonstrated their assertiveness ultimately reported lower levels of assertiveness than participants who were asked to generate a short list (Schwarz et al., 1991). This effect was partially explained by them perceiving the 12-item task as more difficult. This effect, referred to as the *ease-of-retrieval effect*, has been examined across many areas of human cognition, including social judgments, judgments of one's general knowledge, and even childhood memories (Aarts & Dijksterhuis, 1999; Kelley & Lindsay, 1993; Tormala et al., 2007).

Gratitude list manipulations mirror the procedures used in Schwarz et al.'s (1991) study—participants list information about themselves (i.e., what they are grateful for) before providing ratings of some outcome, like subjective well-being or gratitude. In the current studies, we asked people to recall three (the typical intervention), six, or 12 things they were grateful for. On one hand, when those who are assigned to make long, difficult lists cannot complete the task, the task may backfire—leaving participants feeling less grateful than before. However, on the other hand, listing many things that one is grateful for may have a positive effect on gratitude. Ultimately, it is not clear whether the number of items required to list in a typical intervention is indeed a large or challenging number, or whether needing to list six or 12 items would constitute an even more difficult task. Due to the procedural similarity between gratitude list manipulations and ease-of-retrieval manipulations (which do often demonstrate significant effects; Weingarten & Hutchinson, 2018), we ultimately hypothesized that the ease-of-retrieval effect would, indeed, influence participants' experience of gratitude and life satisfaction after completing a gratitude list. Specifically, we predicted that participants assigned to longer list conditions (i.e., six- and 12-item lists) would report lower levels of gratitude and life satisfaction than those in shorter list conditions (i.e., three-item lists). We chose to focus on these two outcomes specifically because they are most often the subject of gratitude intervention studies (Davis et al., 2016).

When considering gratitude list content, an interpretation of Algoe's (2012)*find-remind-and-bind* theory would suggest that listing relationship-related items may be associated with higher gratitude. Indeed, this may be one of the major reasons why gratitude manipulations "work" and boost well-being: people who experience higher gratitude in relationships are especially satisfied in them, which might increase well-being (Algoe et al., 2008, 2010). Likewise, many of the other things people are traditionally grateful for are also associated with greater well-being. For example, people report higher life satisfaction to the degree to which they report having their basic needs met (e.g., having a roof over my head, Tay & Diener, 2011), being healthy (Hudson et al., 2019), being religious (e.g., higher power or religious communities, Garssen et al., 2020), or reporting positive features of themselves or the environment (e.g., feeling positive, beauty in the world, the humor found in life, Park et al., 2004). Because there has not been much work examining gratitude list content (Rash et al., 2011), it is somewhat unclear how listing materialistic things (e.g., money, possessions) affects gratitude and well-being (Guevarra & Howell, 2015; Tsang et al., 2014; Walker et al., 2016).

The Current Studies

In two studies (and a third supplementary study), participants completed gratitude lists under one of three conditions: they were asked to list three, six, or 12 things that they were grateful for. These responses were then content coded into thematic categories. Gratitude and life satisfaction were then examined with respect to how many items participants were asked to generate (i.e., list condition) and the content they produced (i.e., what they said they were grateful for).

Study 1

Method

Participants. Participants were 1,222 undergraduate students (M_{age} = 19.36, SD = 2.0; 32.8% male; 64.5% White, 14.9% Asian, 8.3% Black/African American, and 12.3% other races/ethnicities). A G*Power analysis indicated that 995 participants were needed to detect a small effect (f^2 = .02) with over 95% power.

Participants were randomly assigned to one of three conditions. The first condition resembled a typical gratitude list manipulation in which participants were asked to list three things that they were grateful for (the typical manipulation); the second and third conditions asked participants to list six and 12 things they were grateful for, respectively.

Following this manipulation, people completed a measure of gratitude and life satisfaction.

If participants were unable to think of enough items, they were instructed to advance to the next page. In this study, the number of items listed was different by all list conditions: those in the three-item condition (M = 2.95, SD = 0.28) listed fewer items than those in the six-item condition (M = 5.69, SD = 0.79; $p < .001$). Those in the

Table 1. *Study 1: Regression Predicting Post-Intervention Gratitude Controlling for Age and Gender*

Predictor	*b*	β	*SE*	*t*	*p*	LB	UB
Intercept	4.026		0.230	17.485	<.001	3.574	4.478
Six-item lists	.098	0.057	0.058	1.698	.090	−.015	.211
Twelve-item lists	.071	0.041	0.058	1.228	.220	−.042	.184
Age	.008	0.020	0.012	.696	.486	−.015	.031
Gender	.043	0.050	0.025	1.721	.085	−.006	.092

Note. Three-item lists served as the reference group. Gender: 1 = men, 2 = women. *SE* = standard error; LB = lower bound of 95% confidence interval; UB = upper bound of 95% confidence interval.

Table 2. *Study 1: Regression Predicting Post-Intervention Life Satisfaction Controlling for Age and Gender*

Predictor	*b*	β	*SE*	*t*	*p*	LB	UB
Intercept	4.289		0.350	12.246	<.001	3.602	4.976
Six-item lists	.119	0.046	0.088	1.362	.174	−.053	.291
Twelve-item lists	.111	0.042	0.088	1.261	.207	−.062	.284
Age	.016	0.026	0.018	.894	.371	−.019	.051
Gender	−.025	−0.019	0.038	−.665	.506	−.100	.049

Note. Three-item lists served as the reference group. Gender: 1 = men, 2 = women. *SE* = standard error; LB = lower bound of 95% confidence interval; UB = upper bound of 95% confidence interval.

12-item condition listed more items ($M = 10.07$, $SD = 2.66$) than those in the three- or six-item conditions (*ps* $< .001$). Participants were also asked how difficult they found the list generation task on a 7-scale ranging from 1 (not very difficult) to 7 (very difficult). Pairwise comparisons revealed that, while the three- ($M = 2.38$, $SD = 1.67$) and six-item ($M = 2.51$, $SD = 1.60$) conditions did not differ in difficulty ($p = .47$), each of these conditions were rated as easier than the 12-item condition ($M = 3.02$, $SD = 1.68$, *ps* $< .001$; *d*s of .38 and .31, respectively).

Gratitude. Gratitude was measured with a single item: "How grateful do you feel right now?" Participants were prompted to respond on a 5-point scale ranging from 1 (*not grateful at all*) to 5 (*very grateful*). The use of abbreviated measures is consistent with previous work on gratitude interventions (see Table 4 in Davis et al., 2006).

Life Satisfaction. Life satisfaction was measured with the Satisfaction with Life Scale (Diener et al., 1985). Participants responded to five items (e.g., "In most ways my life is close to ideal.") on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Responses from the five items were averaged to yield a composite of subjective well-being ($\alpha = .88$).

Results

Is Being Asked to Generate More Grateful Content Associated With More or Less Gratitude and Life Satisfaction? Dummy codes were created for the six- and 12-item list conditions, so the three-item list served as the reference group. These dummy codes were used as predictor variables in two separate regression analyses (one with gratitude as the outcome and another with life satisfaction as the outcome); each analysis controlled for age and gender (although this control did not change the pattern of results; see Supplementary Tables 3 and 4 for Study 1 and 5 and 6 for Study 2).

As seen in Table 1, those who were asked to list six and 12 items did not differ in gratitude from those asked to list three items (*ps* $> .08$). A similar pattern of results can be seen for life satisfaction; those who were asked to list six and 12 items did not differ in life satisfaction from those asked to list three items (*ps* $> .16$; Table 2; see Figure 1A and B for distributional properties).

Controlling for Number of Items Actually Listed. It is possible that how many items participants were able to list influenced their post-intervention gratitude and life satisfaction (e.g., those in the 12-item condition who listed four items may feel less grateful or satisfied than those who listed 12).

Originally, we had also planned to include the number of items listed as an additional predictor (see preregistration for Study 2). However, when considering the high collinearity between list condition and number of items listed and how conditioning on this control variable changes the interpretation of the condition variable, we opted not to include this as an additional predictor variable. Instead, we operationalized the items listed as a "failure" to list a requisite number of items in each condition (rather than the absolute number of items listed). Below,

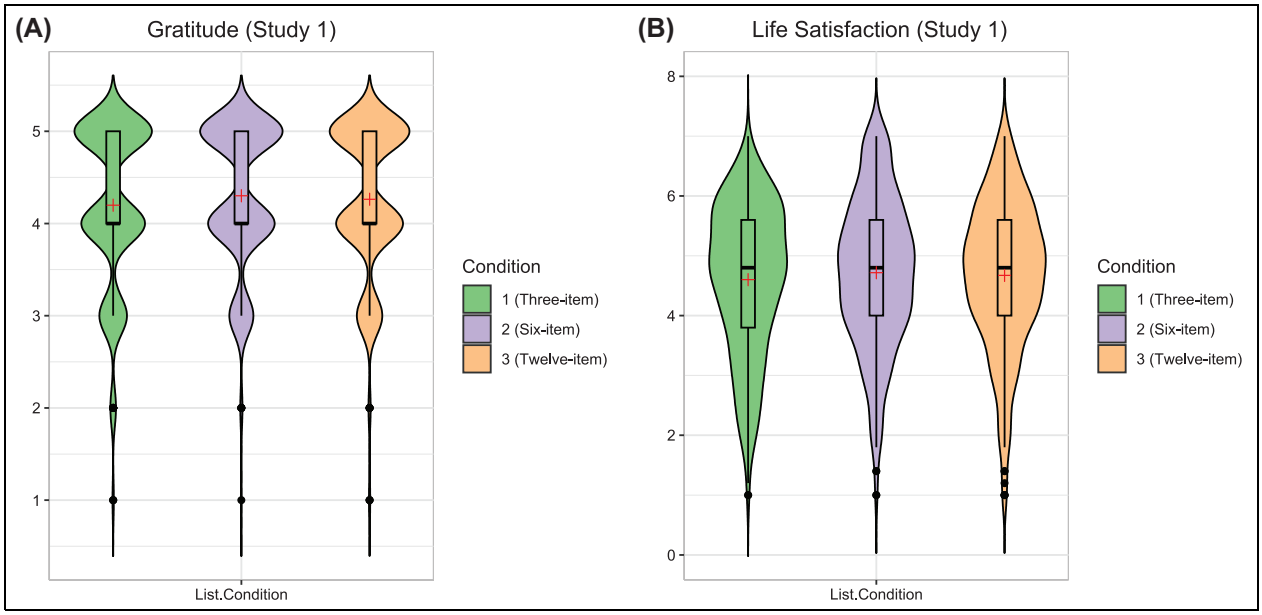

Figure 1. *Violin Boxplots Depicting Ease-of-Retrieval Effects (i.e., Reported Difficulty) From Study 1 for Gratitude (A) and Life Satisfaction (B)*

Table 3. *Study 1: Exploratory Regression Predicting Post-Intervention Gratitude From Age, Gender, and Number of Missing Items*

Predictor	*B*	β	*SE*	*t*	*p*	LB	UB
Intercept	4.038		0.228	17.685	<.001	3.590	4.486
Six-item lists	0.118	0.068	0.057	2.061	.040	0.006	0.230
Twelve-item lists	0.199	0.115	0.064	3.127	.002	0.074	0.325
Age	0.008	0.019	0.012	0.675	.500	−0.015	0.031
Gender	0.029	0.034	0.025	1.156	.248	−0.020	0.078
Number missing	−0.068	−0.149	0.015	−4.600	<.001	−0.097	−0.039

Note. Three-item lists served as the reference group. Gender: 1 = men, 2 = women. *SE* = standard error; LB = lower bound of 95% confidence interval; UB = upper bound of 95% confidence interval.

we discuss this decision in more depth (see Supplement for the results from our original pre-registered analyses).

This exploratory analysis, which involved using the number of items participants *failed* to list as a predictor (i.e., [12—NumberOfItems] in the 12-item condition, [6—NumberOfItems] in the six-item condition, and [3—NumberOfItems] in the three-item condition), is especially helpful, as it allows us to simultaneously model two, potentially opposing effects: listing many things may be good for gratitude or life satisfaction, but not having enough things to list may be bad for these outcomes (i.e., the ease-of-retrieval effect at work). As seen in Tables 3 and 4, in this analysis, when controlling for the number of items participants failed to list, those in the 12-item lists reported slightly higher gratitude and life satisfaction than those in the three-item list condition ($\beta = .12$, $p = .002$; $\beta = .14$, $p < .001$, respectively). Those in the six-item group also reported higher gratitude, although this effect was small and marginally significant ($\beta = .07$, $p = .040$). However, missing more items was related to slightly lower gratitude and life satisfaction ($\beta = -.15$, $p < .001$; $\beta = -.19$, $p < .001$, respectively).

Is the Content of Gratitude Lists Associated With Gratitude and Life Satisfaction? Participant responses were content-coded using 10 categories (distributions and exemplars in Table 5)[1]; a total of 7,632 items were listed. Responses were coded by 21 research assistants. Specifically, these 21 research assistants coded an initial practice set of 123 items and had a high level of inter-rater agreement (i.e., a sufficiently high Cohen's Kappa; $\kappa > .80$[2]). Then, each research assistant coded a portion of the remaining entries until they were all coded. Nearly all of the participants (97%) mentioned close relationships in their gratitude list responses, with the next most common response being related to basic needs (included in around 51% of responses). Other popular categories included values and virtues (around 42% of responses) and health/physical capabilities (around 42% of responses). Participants most rarely mentioned nature

Table 4. *Study 1: Exploratory Regression Predicting Post-Intervention Life Satisfaction From Age, Gender, and Number of Missing Items*

Predictor	*b*	β	*SE*	*t*	*p*	LB	UB
Intercept	4.313		0.345	12.486	<.001	3.635	4.990
Six-item lists	0.159	0.061	0.087	1.830	.067	−0.011	0.328
Twelve-item lists	0.360	0.137	0.096	3.732	<.001	0.171	0.549
Age	0.015	0.025	0.018	0.872	.383	−0.019	0.050
Gender	−0.053	−0.040	0.038	−1.396	.163	−0.127	0.021
Number missing	−0.131	−0.191	0.022	−5.899	<.001	−0.175	−0.088

Note. Three-item lists served as the reference group. Gender: 1 = men, 2 = women. *SE* = standard error; LB = lower bound of 95% confidence interval; UB = upper bound of 95% confidence interval.

Table 5. *Content and Frequency of Items on Gratitude Lists Across Studies*

Type of content	Examples	Frequency: Study 1 (%)	Frequency: Study 2 (%)
Relationships	"My mom," "my boyfriend"	97.0	98.4
Value/virtue	"Freedom," "kindness," "learning"	42.4	45.7
Health/physical capabilities	"My mental health," "I can use all of my limbs"	41.9	36.9
Basic needs	"A roof over my head," "clean water"	50.8	43.8
Hobbies/activities	"Figure skating" "my acapella group"	18.0	18.9
Financial	"Having enough money," "financial stability"	25.9	23.7
Material goods/resources	"My phone," "Starbucks"	30.0	25.4
Religion/faith	"God," "church"	8.1	8.7
Other	"J.D. Salinger," "Being a military brat"	29.3	41.8
Nature	"The ocean," "sunshine"	8.5	10.0

Note. Frequencies are not cumulative.

items and religious items (each included in around 8% of responses). Of note, around 30% of participants in this sample mentioned items that fell into the category of "Other" (such as highly specific facets of their upbringing or the name of a celebrity).

Each gratitude content category was entered as a dummy code (0 = absent, 1 = present) in a regression predicting gratitude. Several content categories served as significant predictors of gratitude (Table 6): those who listed items about close relationships (β = .08), religion or faith (β = .09), basic needs (β = .11), and health (β = .09) reported slightly higher gratitude than those who did not (all *p*s < .006). Lists that included items related to close relationships (β = .07), religion (β = .08), basic needs (β = .09), health (β = .08), and values or virtues (β = .08) were also related to higher life satisfaction (*p*s < .04; Table 7).

Supplementary Study: The Relationship Between Content and List Length. These results may be interpreted as list content affecting gratitude and well-being. However, another possibility exists; perhaps the content listed was a function of list length (i.e., if listing three things, is it easy to list three relational sources or people in their lives?). Those asked to list 12 things they are grateful for might feel the need to "stretch" to list 12 things—often surpassing the relationships they feel grateful for. We tested this possibility in two ways.

First, as seen in Supplementary Table 1, those in the longer list conditions in Study 1 tended to list more nonrelational themes in their list, suggesting that the content might be a function of the list length. Second, we completed a supplementary study (N = 1,599)[3] to more directly test whether the content mattered by manipulating two opposing codes from our qualitative analysis. In this online study, undergraduate participants were assigned to 3- or 12-item list conditions and asked to list either only people/relationships or material goods. Participants were asked to rate the difficulty of the task on a 1 to 7 scale from "very easy" to "very difficult." Those asked to list three people (M = 2.28, SD = 1.52) or three things (M = 2.63, SD = 1.60) found the task easier than those who asked to list 12 people (M = 2.80, SD = 1.69) or 12 things (M = 3.41, SD = 1.77, *p*s < .001, *d*s of .32 and .46, respectively). Those asked to list people found the task easier than those asked to list things (*p*s < .014; d = .22 in three-item lists and d = .35 in 12-item lists).

When comparing the reported gratitude and life satisfaction of those in the three-item condition against those in the 12-item condition (controlling for age and gender), we found that neither list length nor list content (or their interaction) had a significant effect on gratitude (here, measured with the GQ-6; McCullough et al., 2001) or life satisfaction

Table 6. *Study 1: Regression Predicting Post-Intervention Gratitude by Content Type*

Predictor	*b*	β	*SE*	*t*	*p*	LB	UB
Intercept	3.507		0.300	11.702	<.001	2.919	4.094
Six-item lists	−0.033	−0.019	0.066	−0.497	.619	−0.162	0.097
Twelve-item lists	−0.163	−0.094	0.090	−1.820	.069	−0.339	0.013
Age	0.003	0.009	0.012	0.293	.770	−0.020	0.027
Gender	0.021	0.025	0.025	0.850	.396	−0.028	0.071
Relationships	0.524	0.080	0.188	2.785	.005	0.155	0.893
Religion/faith	0.276	0.093	0.086	3.215	.001	0.108	0.445
Basic needs	0.180	0.111	0.054	3.309	<.001	0.073	0.287
Health/physical capabilities	0.143	0.087	0.050	2.880	.004	0.046	0.240
Value/virtue	0.067	0.041	0.051	1.325	.186	−0.032	0.166
Material goods/resources	−0.033	−0.018	0.059	−0.551	.582	−0.149	0.083
Nature	0.092	0.032	0.086	1.070	.285	−0.077	0.261
Hobbies/activities	0.011	0.005	0.064	0.173	.862	−0.115	0.137
Financial	0.043	0.023	0.057	0.758	.449	−0.069	0.156
Other	0.023	0.013	0.056	0.420	.674	−0.086	0.133

Note. Three-item lists served as the reference group. Gender: 1 = men, 2 = women. *SE* = standard error; LB = lower bound of 95% confidence interval; UB = upper bound of 95% confidence interval.

Table 7. *Study 1: Regression Predicting Post-Intervention Life Satisfaction by Content Type*

Predictor	*b*	β	*SE*	*t*	*p*	LB	UB
Intercept	3.595		0.456	7.882	<.001	2.700	4.489
Six-item lists	−0.067	−0.026	0.101	−0.668	.504	−0.264	0.130
Twelve-item lists	−0.242	−0.092	0.136	−1.774	.076	−0.509	0.026
Age	0.009	0.015	0.018	0.521	.602	−0.026	0.045
Gender	−0.057	−0.043	0.038	−1.485	.138	−0.132	0.018
Relationships	0.679	0.069	0.286	2.370	.018	0.117	1.241
Religion/faith	0.359	0.080	0.131	2.750	.006	0.103	0.616
Basic needs	0.217	0.088	0.083	2.617	.009	0.054	0.379
Health/physical capabilities	0.255	0.102	0.076	3.367	<.001	0.106	0.403
Value/virtue	0.164	0.065	0.077	2.127	.034	0.013	0.315
Material goods/resources	0.016	0.006	0.090	0.174	.862	−0.161	0.192
Nature	0.237	0.054	0.131	1.808	.071	−0.020	0.494
Hobbies/activities	0.007	0.002	0.098	0.067	.946	−0.186	0.199
Financial	−0.036	−0.013	0.087	−0.407	.684	−0.207	0.136
Other	0.023	0.008	0.085	0.270	.787	−0.144	0.190

Note. Three-item lists served as the reference group. Gender: 1 = men, 2 = women. *SE* = standard error; LB = lower bound of 95% confidence interval; UB = upper bound of 95% confidence interval.

(measured with the same Satisfaction with Life Scale; all βs $< .041$, all ps $> .110$). Ultimately, the results of this supplementary study suggest that list length and list content (at least as it was operationalized here) likely do not have strong causal effects on gratitude and well-being.

Interestingly, when controlling for the number of items participants failed to list, the pattern of results was somewhat similar to those of Study 1. Among participants listing people, those in the 12-item condition reported higher gratitude than those in the three-item condition ($\beta = .09$, $p = .02$), while those who failed to list more items reported lower gratitude ($\beta = -.18$, $p < .001$) and life satisfaction ($\beta = -.14$, $p < .001$). However, among participants listing things, list condition was not a significant predictor of either outcome (ps $> .21$), and failing to list enough things was only marginally associated with lower gratitude ($\beta = -.07$, $p = .08$), although those who failed to list more items reported lower life satisfaction ($\beta = -.12$, $p = .002$).

Study 2

Study 2 was a pre-registered replication of Study 1 (https://aspredicted.org/26xt9.pdf).

Method

Participants. Participants were 1,115 undergraduate students ($M_{age} = 19.39$, $SD = 1.9$; 27.3% male; 70.0% White, 11.3% Asian, 7.5% Black/African American, and 11.2% other races/ethnicities). A G*Power analysis indicated that

Table 8. *Study 2: Regression Predicting Post-Intervention Gratitude Controlling for Age and Gender*

Predictor	*b*	β	*SE*	*t*	*p*	LB	UB
Intercept	5.692		0.293	19.419	<.001	5.117	6.267
Six-item lists	0.097	0.053	0.063	1.535	.125	−0.027	0.221
Twelve-item lists	0.064	0.035	0.063	1.015	.310	−0.059	0.187
Age	−0.016	−0.035	0.014	−1.153	.249	−0.043	0.011
Gender	0.148	0.081	0.055	2.684	.007	0.04	0.255

Note. Three-item lists served as the reference group. Gender: 1 = men, 2 = women. *SE* = standard error; LB = lower bound of 95% confidence interval; UB = upper bound of 95% confidence interval.

Table 9. *Study 2: Regression Predicting Post-Intervention Life Satisfaction Controlling for Age and Gender*

Predictor	*b*	β	*SE*	*t*	*p*	LB	UB
Intercept	4.256		0.425	10.025	<.001	3.423	5.089
Six-item lists	0.099	0.038	0.091	1.089	.276	−0.08	0.278
Twelve-item lists	0.153	0.058	0.091	1.678	.094	−0.026	0.331
Age	0.010	0.015	0.020	0.503	.615	−0.029	0.049
Gender	0.072	0.027	0.079	0.909	.364	−0.084	0.228

Note. Three-item lists served as the reference group. Gender: 1 = men, 2 = women. *SE* = standard error; LB = lower bound of 95% confidence interval; UB = upper bound of 95% confidence interval.

995 participants were needed to detect a small effect (f^2 = .02) with over 95% power.

Procedure

Study 2 followed the design and used mostly the same measures as Study 1. The lone exception is that we used an expanded measure of gratitude, the Gratitude Questionnaire-6 (McCullough et al., 2002), measured on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*; sample item: "I am grateful to a wide variety of people"α = .79). We also made a slight anchor change from "not at all difficult—difficult" to "very easy—very hard" to be more in line with manipulation checks found in previous research, although we did not anticipate that this would change the results substantively (i.e., Winkielman et al., 1998). In this study, the number of items listed was different by all list conditions: those in the three-item condition (M = 2.98, SD = 0.16) listed fewer items than those in the six-item condition (M = 5.73, SD = 0.74; p <.001). Those in the 12-item condition listed more items (M = 10.03, SD = 2.67) than those in the three- or six-item conditions (ps <.001). Pairwise comparisons revealed that, while the three- (M = 2.18, SD = 1.47) and six-item (M = 2.39, SD = 1.51) conditions did not differ in difficulty (p = .15), each of these conditions was rated as easier than the 12-item condition (M = 2.93, SD = 1.64, ps < .001, ds = .48 and .34, respectively).

Results

Is Being Asked to Generate More Grateful Content Associated With More or Less Gratitude and Life Satisfaction? As seen in Table 8, those who were asked to list six and 12 items did not differ in gratitude from those asked to list three items (ps > .12). A similar pattern of results can be seen for life satisfaction; those who were asked to list six and 12 items did not differ in life satisfaction from those asked to list three items (ps > .09); Table 9, see Figure 2A and B for distributional properties.

Controlling for Number of Items Actually Listed. As in Study 1, we wanted to test the possibility that the number of items participants were able to list influenced their post-intervention gratitude and life satisfaction. As pre-registered, we had originally intended to include the number of items listed as an additional predictor (i.e., along with age and gender). However, as was the case for Study 1, we retrospectively realized that this was not the ideal way to include this item and opted not to include this as a predictor variable. Further discussion about these pre-registered analyses can be found in the Supplement.

We repeated the same exploratory analysis as Study 1, which included the number of items participants *failed* to list as a predictors (as seen in Tables 10 and 11). These results were similar to those of Study 1; those in the 12-item condition reported slightly higher gratitude and life satisfaction than those in the three-item condition (β = .12, p = .002; β = .13, p < .001, respectively). However, those who left more items blank reported slightly lower gratitude and life satisfaction (β = −.17, p < .001; β = −.14, p < .001, respectively).

Is the Content of Gratitude Lists Associated With Gratitude and Life Satisfaction?. Participant responses were content-coded using

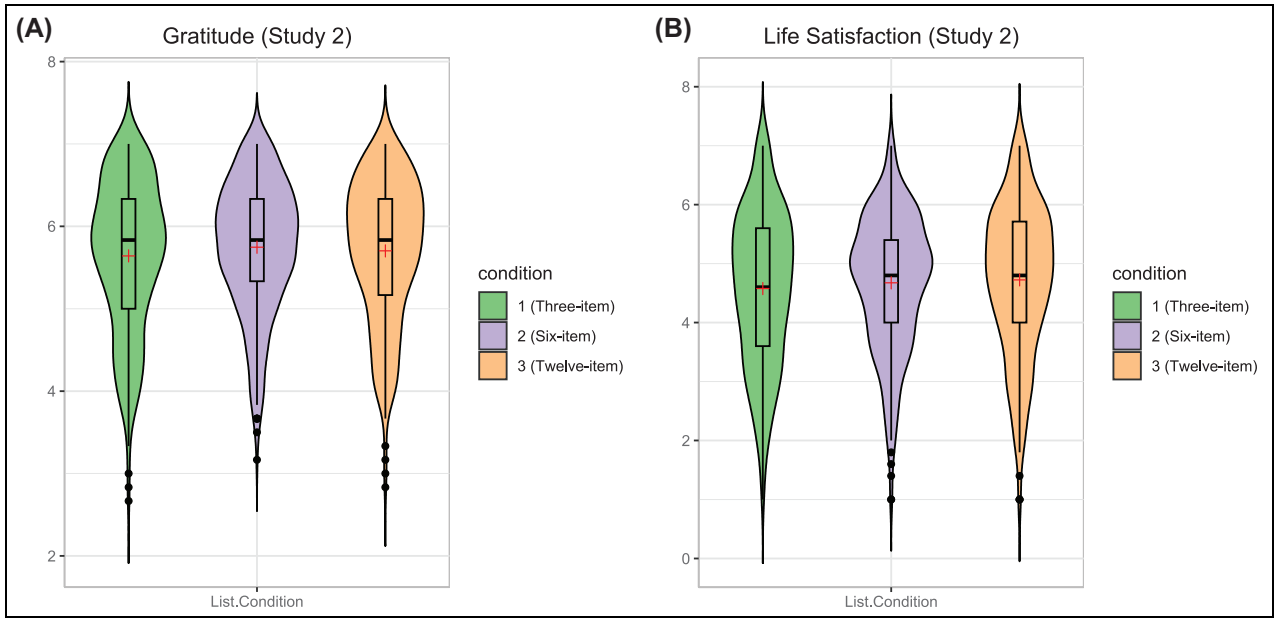

Figure 2. *Violin Boxplots Depicting Ease-of-Retrieval Effects (i.e., Reported Difficulty) From Study 2 for Gratitude (A) and Life Satisfaction (B)*

Table 10. *Study 2: Exploratory Regression Predicting Post-Intervention Gratitude From Age, Gender, and Number of Missing Items*

Predictor	*b*	β	*SE*	*t*	*p*	LB	UB
Intercept	5.763		0.291	19.837	<.001	5.193	6.333
Six-item lists	0.115	0.063	0.063	1.846	.065	−0.007	0.238
Twelve-item lists	0.215	0.118	0.070	3.089	.002	0.078	0.351
Age	−0.017	−0.037	0.014	−1.242	.214	−0.043	0.010
Gender	0.119	0.065	0.055	2.181	.029	0.012	0.227
Number missing	−0.078	−0.165	0.016	−4.859	<.001	−0.110	−0.047

Note. Three-item lists served as the reference group. Gender: 1 = men, 2 = women. *SE* = standard error; LB = lower bound of 95% confidence interval; UB = upper bound of 95% confidence interval.

the same 10 categories (Table 5); a total of 6,941 items were listed. Responses were coded by 16 research assistants, who coded 117 practice items to become reliable (all $\kappa > .80$). Nearly all of the participants (98%) mentioned close relationships in their gratitude list responses, with the next most common response being related to values or virtues (around 46% of responses). Other popular categories included basic needs (around 44% of responses) and health/physical capabilities (around 37% of responses). Participants most rarely mentioned nature items and religious items. Of note, around 42% of participants in this sample mentioned items that fell into the category of "Other."

As seen in Table 12, several content categories served as significant predictors of gratitude: those who listed items about close relationships ($\beta = .12$), basic needs ($\beta = .07$), health ($\beta = .10$), values/virtues ($\beta = .13$), or participant-specific items (which fell under the "other" category; $\beta = .12$), reported slightly higher gratitude than those who did not (all $ps < .04$). Of these, close relationships and health content replicated their positive effects from Study 1. Lists including items related to basic needs ($\beta = .10$), values and virtues ($\beta = .14$), and health ($\beta = .12$; $ps \leqslant .004$) were related to higher life satisfaction (Table 13).

Discussion

In each study, those in the shortest list condition (three items) did not report higher gratitude (when measured as either a momentary state [Study 1] or an enduring trait [Study 2]) and life satisfaction than those in longer list conditions (six and 12 items). We found that there were some things that nearly everyone was grateful for (e.g., close relationships, mentioned in over 90% of lists in both studies) and some things that were rarely mentioned (e.g., nature, mentioned in less than 11% of lists in both studies). Mentions of basic needs, relationships, and health/physical capabilities were the most consistent predictors of gratitude and life satisfaction.

Table 11. *Study 2: Exploratory Regression Predicting Post-Intervention Life Satisfaction From Age, Gender, and Number of Missing Items*

Predictor	*b*	β	*SE*	*t*	*p*	LB	UB
Intercept	4.342		0.422	10.285	<.001	3.513	5.170
Six-item lists	0.122	0.046	0.091	1.341	.180	−0.056	0.300
Twelve-item lists	0.335	0.127	0.101	3.319	<.001	0.137	0.533
Age	0.009	0.013	0.020	0.442	.658	−0.030	0.047
Gender	0.038	0.015	0.079	0.484	.628	−0.117	0.194
Number missing	−0.095	−0.138	0.023	−4.040	<.001	−0.140	−0.049

Note. Three-item lists served as the reference group. Gender: 1 = men, 2 = women. *SE* = standard error; LB = lower bound of 95% confidence interval; UB = upper bound of 95% confidence interval.

Table 12. *Study 2: Regression Predicting Post-Intervention Gratitude by Content Type*

Predictor	*b*	β	*SE*	*t*	*p*	LB	UB
Intercept	4.821		0.349	13.821	<.001	4.137	5.505
Six-item lists	−0.121	−0.066	0.071	−1.693	.091	−0.260	0.019
Twelve-item lists	−0.350	−0.192	0.094	−3.702	<.001	−0.535	−0.164
Age	−0.019	−0.042	0.013	−1.405	.160	−0.045	0.008
Gender	0.113	0.062	0.055	2.069	.039	0.006	0.220
Relationships	0.831	0.122	0.202	4.123	<.001	0.436	1.227
Religion/faith	0.161	0.053	0.090	1.779	.075	−0.017	0.338
Basic needs	0.120	0.070	0.056	2.156	.031	0.011	0.230
Health/physical capabilities	0.184	0.103	0.054	3.397	<.001	0.078	0.290
Value/virtue	0.226	0.131	0.055	4.123	<.001	0.118	0.333
Material goods/resources	0.084	0.042	0.066	1.268	.205	−0.046	0.213
Nature	0.089	0.031	0.088	1.018	.309	−0.083	0.261
Hobbies/activities	0.020	0.009	0.068	0.291	.771	−0.114	0.154
Financial	0.108	0.054	0.063	1.711	.087	−0.016	0.233
Other	0.205	0.118	0.057	3.573	<.001	0.093	0.318

Note. Three-item lists served as the reference group. Gender: 1 = men, 2 = women. *SE* = standard error; LB = lower bound of 95% confidence interval; UB = upper bound of 95% confidence interval.

Table 13. *Study 2: Regression Predicting Post-Intervention Life Satisfaction by Content Type*

Predictor	*b*	β	*SE*	*t*	*p*	LB	UB
Intercept	3.610		0.508	7.100	<.001	2.612	4.607
Six-item lists	−0.134	−0.051	0.104	−1.295	.196	−0.338	0.069
Twelve-item lists	−0.263	−0.100	0.138	−1.906	.057	−0.533	0.008
Age	0.010	0.015	0.020	0.510	.610	−0.029	0.049
Gender	0.030	0.011	0.079	0.377	.706	−0.126	0.186
Relationships	0.497	0.050	0.294	1.689	.091	−0.080	1.073
Religion/faith	0.100	0.023	0.132	0.759	.448	−0.159	0.359
Basic needs	0.245	0.098	0.081	3.007	.003	0.085	0.404
Health/physical capabilities	0.314	0.122	0.079	3.989	<.001	0.160	0.469
Value/virtue	0.338	0.135	0.080	4.230	<.001	0.181	0.494
Material goods/resources	−0.023	−0.008	0.096	−0.234	.815	−0.211	0.166
Nature	0.169	0.041	0.128	1.325	.185	−0.081	0.420
Hobbies/activities	0.064	0.020	0.100	0.647	.518	−0.131	0.260
Financial	−0.051	−0.017	0.092	−0.551	.582	−0.232	0.130
Other	0.112	0.045	0.084	1.342	.180	−0.052	0.277

Note. Three-item lists served as the reference group. Gender: 1 = men, 2 = women. *SE* = standard error; LB = lower bound of 95% confidence interval; UB = upper bound of 95% confidence interval.

None of our studies found strong support for the ease-of-retrieval effect moderating the effects of gratitude lists. Specifically, being assigned to list three, six, or 12 grateful items, on the surface, does not seem to harm people's gratitude and life satisfaction. However, when these effects are separated out (i.e., when *list condition* and *number of items a participant failed to list* are modeled separately), those who listed more items reported higher gratitude and life satisfaction. From this perspective, there is some support for the ease-of-retrieval effect (i.e., it is the inability to list things one is grateful for that ultimately leads to the "backfiring" of a gratitude intervention[4]). However, list length was an inconsistent predictor. Depending on how the number of items was calculated and integrated into the analysis (e.g., as an absolute number, or a measure of how much they fell short of their conditions assignment, or not included at all), the ease-of-retrieval conditions showed null or, in some cases, *opposing* effects (where larger list conditions were associated with more gratitude). When effects were significant, these effects were all very small. Given this pattern, in combination with our supplementary analysis showing that the type of content listed depends on how long a list of grateful things is required, we cannot confidently suggest that the ease-of-retrieval effect played a robust role in the success of the intervention.

It is also important to consider the perceived difficulty of these tasks when evaluating the effects of list length. After all, the ease-of-retrieval effect relies on the perceived difficulty of the task. And while, in both studies, those in the 12-item list condition found the task more difficult than those in the three-item list condition (a moderate effect, ds $> .37$), they did not report that the task was very difficult at all; on a 7-point scale, mean difficulty was consistently below the midpoint (Study 1: 3.02; Study 2: 2.93). Our manipulation, then, was unable to test the effects of an easy task vs. a difficult one, and, instead, tested the effects of a very easy task vs. an easy one. It is possible that ease of the task contributed to the relatively small effect size; perhaps, with a truly difficult task, the effect would be stronger.[5]

List content tended to demonstrate more consistent effects on gratitude and life satisfaction than list length. These findings extend portions of Algoe's (2012) *find-remind-and-bind* theory. The theory, which situates gratitude at the center of close relationships, suggests that healthy and happy relationships are the ones people are the most grateful for, and vice versa: relationships people are grateful for are ones with which they are happiest. However, one important contribution our studies made is that we explicitly examined the content of gratitude lists. Although relationships were commonly mentioned, other positive predictors of gratitude, like religion, basic needs, health/physical capabilities, and values/virtues, have also been linked to higher well-being in previous research and were also implicated in gratitude lists that enhanced well-being (Hudson et al., 2019; Park et al., 2004; VanderWeele, 2017). Finally, while some theories explicitly suggest that material resources should directly influence well-being (often for the better, although materialism is occasionally linked to poorer well-being outcomes; Guevarra & Howell, 2015; Tsang et al., 2014; Walker et al., 2016), the results found here suggest that money, on its own, is not related to life satisfaction or gratitude in this specific sample and context (i.e., mentions of material possessions were unrelated to gratitude and life satisfaction; Diener et al., 1993; Hanson, 2021; Padilla-Walker et al., 2012).

Limitations and Future Directions

There are important limitations to these studies that need to be addressed. For example, both samples were made completely up of young adult college students from the United States. As people age, they tend to prioritize social relationships and growth experiences to fill belonging, emotional, and self-actualization needs (Carstensen et al., 1999; Chopik et al., 2022; Gouveia et al., 2015). Thus, it is possible that an older sample, or samples from other countries, would provide very different list content—either in terms of relative frequencies or entirely different categories—that may have different predictions for post-intervention gratitude. Future research should recruit more diverse populations to broaden our understanding of the things people are most grateful for.

Future work should also examine gratitude interventions with a longitudinal lens—following participants over a longer period of time, such as weeks or months, and have follow-up periods long after the actual intervention takes place (Dickens, 2017). Some of this work finds that the benefits of gratitude interventions last over delayed periods (Dickens, 2017), while other work suggests that these benefits tend to wane with time, dropping after about 2 weeks (Cunha et al., 2019). As the current studies examined only post-manipulation outcomes immediately after the intervention (and lacked a true pre-test to examine baseline levels of gratitude), longitudinal examinations of gratitude interventions are needed to further clarify the role of intervention duration and determine how long the benefits of these interventions last.

Conclusion

Participants reported similar levels of gratitude and life satisfaction in short list conditions and long list conditions, although this varied depending on whether participants failed to list the number of items they were asked to. Together, these results suggest that the ease-of-retrieval effect may not be playing a particularly large role in the efficacy of this intervention. Future experimental research can continue to examine the contexts under which gratitude interventions are more or less successful.

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Data Availability

All data and syntax for this manuscript can be found at https://osf.io/2c6kz/.

Supplemental Material

Supplemental material for this article is available online.

Notes

1. In a pilot study with a student sample from the same university, the first author performed an inductive content analysis of participant responses, which was used to create the list of 10 categories.
2. Kappa statistics range from 1 to −1, with 1 being perfect agreement, 0 being what one might expect by chance, and −1 meaning the observed level of agreement is less than what you would expect by chance.
3. Demographics for this sample can be found in Supplementary Table 2.
4. Importantly, as our hypothesis was unsupported, these explanations of results are entirely post hoc.
5. Because most gratitude interventions do not require participants to list more than 12 items, the small effect size here serves as another indicator that, in practice, the length of a gratitude list may not be a very important component of the effectiveness of the intervention.

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