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Abstractness leads people to base their behavioral intentions on desired attitudes

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### Abstract

People sometimes want attitudes that differ from the ones they currently possess. These desired attitudes appear to be psychologically meaningful, but little is known about the properties of these evaluations. Because desired attitudes are hypothetical constructs (i.e., attitudes that one does not yet possess) and are distant in time (i.e., attitudes one could have in the future), we argued, based on construal level theory, that they should be represented in a relatively abstract manner, and consequently, we examined the implications of this abstractness for the characteristics and impact of desired attitudes. Consistent with this, we demonstrate that people perceive desired attitudes as more invariant across time and context, that desired attitudes are less impacted by changes in low-level features related to the attitude object (Study 1a and 1b) and that desired attitudes have a greater impact on behavioral intentions when people are in an abstract rather than concrete mindset (Studies 2-3). Although we did not make specific predictions regarding actual attitudes, they better predicted behavioral intentions in the concrete mindset (Studies 2-3). This last result should be taken with caution, considering that the level of abstraction shown by actual attitudes in Study 1a was at or slightly above the midpoint of our abstraction index.

*Key words:* desired attitudes; construal level theory; motivation; abstraction; behavioral intentions

**Abstractness leads people to base their behavioral intentions on desired attitudes**

Maio and Thomas (2007) argued that people sometimes want attitudes that differ from the attitudes they actually have and will attempt to obtain these desired attitudes (see also Lu, Lord, & Yoke, 2015; Resch & Lord, 2011). It is surprisingly common for people's desired attitudes to differ from their actual attitudes, and initial studies support the idea that desired attitudes have motivational properties (see DeMarree & Rios, 2014; DeMarree, Wheeler, Briñol, & Petty, 2014; DeMarree, Clark, Wheeler, Briñol, & Petty, 2016).

However, little is known about the nature of people's desired attitudes. The existing work on the origins, structure, and representation of desired attitudes has largely been speculative (e.g., see discussions in DeMarree et al., 2016; DeMarree et al., 2014; Lu et al., 2015; Maio & Thomas, 2007). In the present paper, we argue that desired attitudes are relatively more abstract than actual attitudes, and we examine the implications of this idea for the stability and impact of desired attitudes.

**Construal Level Theory**

In brief, construal level theory (CLT) argues that the representation of any given object, event, or concept varies as a function of its psychological distance (which is considered in relative, not absolute terms; Trope & Liberman, 2003, 2010). Psychologically distant objects and events are those that are perceived to be relatively far in time or space, socially far away, or far away in reality (e.g., hypothetically). Psychological distance promotes abstract mindsets or "high-level" construals. Consequently, with greater distance, objects and events are more likely to be represented in an abstract manner, with the central, core features highlighting the representation. In contrast, close psychological distance is more likely to create concrete construals, which are associated with greater emphasis on transient, non-central, contextualized features (i.e., "low-level" construals) of the object or event under consideration. Because the effects of psychological distance operate through the

differences in abstraction that they are thought to produce, manipulations of abstraction are often used to test CLT predictions (Freitas, Gollwitzer, & Trope, 2004).

CLT (e.g., Liberman, Trope, & Stephan, 2007; Trope, Liberman, & Wakslak, 2007) and related perspectives such as the Linguistic Category Model (LCM; Semin & Fiedler, 1991) hold that these features of an object that *transcend time and situations* are most likely to be the core or central aspects of people's evaluation of the object (Ledgerwood & Trope, 2011; Ledgerwood, Trope, & Chaiken, 2010).

CLT also argues that objects, features, and information that are congruent with a given mindset will have greater impact than those that are incongruent with the mindset. For example, for people in an abstract (versus concrete) mindset, abstract concepts such as their values (Eyal, Sagristano, Trope, Liberman, & Chaiken, 2009; Torelli & Kaikati, 2009), ideology (Ledgerwood, Trope, & Chaiken, 2010), general attitudes (Carrera, Muñoz, Caballero, Fernández, & Albarracín, 2012) and affective attitudes (see also Carrera, Caballero, Muñoz, González-Iraizoz, & Fernández, 2014) are more likely to predict subsequent behavioral intentions.

### **Abstractness of Desired Attitudes**

As Semin and Fiedler (1988) noted, abstractness is a matter of degree rather than an absolute concept, and Trope and Liberman (2010), setting out their basic assumptions of CLT, stressed that there are multiple levels of abstractness. Taking into account this point, we argue that people's desired attitudes are more abstract than their actual attitudes. People's desired attitudes are more psychologically distant due to distance in time, hypothetically compared to their more "real" current actual attitude, and consequently should be more likely to be determined by core, central features related to the evaluation of the object (i.e., those that transcend time and the situations). Furthermore, desired attitudes direct greater attention to desirability issues (i.e., *why one is doing the behavior*), while actual attitudes focus more

on feasibility concerns (i.e., *how one is doing the behavior*). Construal level theory (see Liberman & Trope, 1998) has extensively studied desirability versus feasibility considerations and has shown that desirability reflects a high-level feature of events, while feasibility reflects a low-level feature of events. Thus, Ledgerwood, Trope and Chaiken (2010) showed that when individuals construe an evaluation about a distant object or with an abstract mindset, these attitudes are less context-dependent and reflect their ideological values. In the same vein, we propose that desired attitudes are more abstract than actual attitudes because they focus on context-independent information such as ideals and desires instead of being based on feasibility concerns such as means and situations. Based on these differences, in the present paper, we derive and test two predictions.

First, because their representation is more likely to be composed of core, central, context-independent features, people's desired attitudes should be more stable than their actual attitudes across time and context. In Study 1a, we examined whether people *believe* that their desired attitudes are more likely to be stable across time and context than their actual attitudes. In Study 1b, we tested whether people's desired attitudes would resist the influence of a context-specific feature related to the attitude object – the ease or difficulty of a specific attitude-congruent behavior considered -.

Our second prediction concerns the conditions under which desired attitudes predict behavioral intentions. Previous research has shown how participant's mindset (abstract versus concrete) moderated the influence of different types of predictors. Eyal and colleagues (2009) found that participants' values (assessed in a separate session) better predicted behavioral intentions in distant compared to the temporally near future. Torelli and Kaikati's (2009) results supported that values (evaluated in the same session) were more likely to be expressed through value-congruent judgments and behaviors when individuals think abstractly about their actions. These findings demonstrated that coherence in

abstractness between a participant's mindset and a specific predictor (e.g., values) increased the strength of predictions. Ledgerwood, Wakslak and Wang (2010) tested this effect by presenting information differing in level of abstraction (i.e., aggregate versus individualized) to participants. They found that the construal level, manipulated by temporal distance, increased the relative weight placed on aggregate (abstract) versus individualized (concrete) information. Following this comparative paradigm, Carrera and collaborators (2012, 2014) found that when people reported two predictors with different levels of abstraction (e.g., general attitudes versus past behavior), individuals are more likely to use the most abstract construct reported in forming behavioral intentions when they are in an abstract mindset compared to the case of a concrete mindset. The novelty of the present proposal is to extend the effect of the construal level when two predictors are reported by participants, being that these predictors are conceptually similar (i.e., both are general attitudes) but different in abstraction, such as the case of desired and actual attitudes. Reporting both types of attitudes reveals the differences in their abstractness and leads people to choose the attitudes that are consistent with the level of abstractness of their mindset to form their behavioral intentions.

Thus, in Studies 2 and 3, we predicted that desired attitudes would more strongly predict behavioral intentions when participants are in an abstract rather than a concrete mindset. Regarding actual attitudes, we must be cautious. Under an abstract construal level (the mindset is abstract by default; see Huntsinger, Isbell, & Clore, 2014), the previous extensive research on general attitudes (i.e., actual attitudes in terms suggested by DeMarree et al., 2014) has shown their importance in predicting behavioral intentions (see Ajzen & Fishbein, 2005), and this influence (vs. past behavior) has been seen when abstractness is induced (see Carrera et al., 2012). For these reasons, we did not make specific predictions regarding actual attitudes when they are reported alone or along with other predictors. In the

studies described below, we report all measures, manipulations, and exclusions (see footnote 2 for information on the additional measures collected).

### **Abstractness of Desired Attitudes**

#### **Study 1a**

Study 1a tested the hypothesis that desired attitudes are relatively abstract by exploring whether they are perceived to be relatively more stable across time and context than actual attitudes. As noted above, in CLT, abstract construals are typically seen to be gist-based mental representations focused on the central properties of an object – representations containing *lasting, stable, decontextualized* features (Liberman et al., 2007; Trope et al., 2007; Ledgerwood, Trope, & Chaiken, 2010; see also Semin & Fiedler, 1991). In contrast, concrete construals are more detailed, including incidental, context-dependent properties. If desired attitudes are represented abstractly, they should be less likely than actual attitudes to be constrained by temporal or situational influences. Thus, we expected higher perceived stability in desired attitudes (versus actual attitudes).

#### **Method.**

**Participants.** Participants were twenty-five undergraduate volunteers at the Autonomous University of Madrid (17 females;  $M_{\text{age}}=20.08$ ,  $SD=1.15$ ). In these studies, we sought to collect at least 20 participants per between-participant condition (Simmons, Nelson, & Simonsohn, 2011). The sample size in this study was appropriate given the entirely within-subject design.

**Procedure.** Participants completed self-report measures of their actual and desired attitudes towards a specific topic. On the same page, participants reported their perception of the situational and temporal stability of each type of attitude on that topic. This procedure



was repeated for each of four topics. Topics were presented in a fixed order (*eating vegetables daily, voting, impulse purchasing, myself*).

Prior to the actual and desired attitude measures, participants read a translation of the following introduction to the concepts (from DeMarree et al., 2014):

Sometimes the attitudes we have are different from attitudes we would like to have, and sometimes these attitudes are the same. For your opinion of the following topics, please indicate the attitude you ACTUALLY have and the attitude you IDEALLY would like to have using the separate scales provided.<sup>1</sup>

The items assessing actual attitudes were always presented before the items assessing desired attitudes. The participants always reported their actual and desired attitudes on single 7-point semantic differential scales ranging from 1 (*extremely negative*) to 7 (*extremely positive*).

Participants reported the perceived stability of their actual and desired attitudes on a series of 7 point-scales anchored at *unstable-stable across different circumstances; changing-permanent in time; different-similar from now until 15 days later, different-similar from now until 5 years later*. These four stability items were averaged to create an abstraction index for each type of attitude for each topic, with higher scores indicating higher perceived stability

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<sup>1</sup>Note that the present research assessed only one type of desired attitudes (ideal or ought) in each study. Past work using ideal and ought attitudes in the same study has found them to be largely equivalent, and equivalent to a more generic “desired” attitude (DeMarree et al., 2014; DeMarree & Rios, 2014; but see DeMarree et al., 2016). Thus, in an additional study (N=107), DeMarree and colleagues (2014) separately evaluated actual, ought and ideal attitudes towards capital punishment with the addition of a generic “desired” attitude; results showed that both ought and ideal attitudes contributes similarly to desired attitudes. Focusing on the present research, we believe that ideals and obligations agree in the behaviors tested in Studies 2-3: *eating vegetables daily* and *helping* have positive consequences for people who perform them (desired-ideal goals: health and self-esteem, respectively) and for others (social norms-obligations: reduces medical costs and others’ suffering, respectively). These similarities increase the equivalence between ideal and ought attitudes in our studies.

( $\alpha_{\text{Sactual}} = .88, .85, .90, .90$ ;  $\alpha_{\text{Sdesired}} = .93, .81, .92, .87$  for vegetables, voting, impulse purchasing, and myself, respectively).<sup>2</sup>

**Results.** We conducted a 2×4 within-subject ANOVA on the abstraction index, with type of attitude (actual versus desired attitudes) and attitude object (vegetables, vote, buy, and myself) as the factors. We found a significant main effect of topic ( $F(3, 72)=3.22, p<.05, \eta_p^2=.12$ ), with people's attitudes (actual and desired) towards “*myself*” ( $M=5.86; SD=0.72$ ) associated with the greatest perceived stability, and people's attitudes towards “*vote*” being associated with the lowest perceived stability ( $M=5.15; SD=1.15$ ; see Table 1). More critically, the predicted main effect of type of attitude also emerged ( $F(1, 24)=13.48, p<.001, \eta_p^2=.36$ ), and the interaction of attitude object with attitude type was not significant ( $F(3, 72)=1.55, p=.21$ ). As predicted, desired attitudes ( $M=5.79; SD=0.64$ ) were perceived as more stable across time and context than actual attitudes ( $M=5.08; SD=0.73$ ).

### Study 1b

In Study 1b, our manipulation was parallel to work manipulating the feasibility of the means by which a person might pursue a particular goal, and past work has shown that feasibility concerns are low-level aspects of people's representation – ones that tend to have greatest impact when people are in a low level of construal (Liberman & Trope, 1998; Maglio & Trope, 2012). To the extent that desired attitudes are more abstract than actual attitudes, they should be less influenced by the specific attitude-congruent behavior considered. Actual and desired attitudes were measured within subjects, whereas difficulty was manipulated between subjects. We predicted that the contextual manipulation (i.e., the difficulty of

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<sup>2</sup> In addition to the measures described here, additional materials were included in some studies. Study 1a: none. Study 1b: subjective ambivalence, past experience with, and intention to engage in the targeted behavior. Study 2: perceived self-control, subjective ambivalence. Information on analyses involving these measures is available from the first author.

enacting the specific behavior considered) would have less impact on people's desired attitudes than on their actual attitudes.

### **Method.**

**Participants.** One hundred sixty-two undergraduate and postgraduate ( $M_{\text{age}}=24.64$  years,  $SD=6.88$ ) students at the Autonomous University of Madrid volunteered for this study. They were randomly assigned to each topic and difficulty condition: 16 females and 2 males (bad timetable for an Emotional Intelligence course) versus 13 females and 5 males (good timetable for an Emotional Intelligence course); 14 females and 11 males (eliminating added salt in diet) versus 13 females and 12 males (reducing added salt in diet); 15 females and 2 males (exercising daily) versus 14 females and 5 males (exercising twice a week); and 12 females and 8 males (studying English grammar daily) versus 13 females and 7 males (watching English-language movies).

**Procedure.** Participants first read the introduction of actual and desired attitudes described in Study 1a and reported their actual and desired attitudes on two 7-point semantic differential scales ranging from 1 (*extremely negative, unfavorable*) to 7 (*extremely positive, favorable*). Cronbach's alphas were acceptable across all topics in actual attitudes ( $\alpha s > .77$ ) and desired attitudes ( $\alpha s > .83$ ). The manipulation occurred in the description of the topic in each prompt, with the descriptions mapped to the conditions described above.

We also included a manipulation check on the difficulty manipulation, asking participants to report, on a single semantic scale ranging from 1 (*extremely difficult*) to 7 (*extremely easy*), how easy it would be to enact the behavior.

**Results.** First, we conducted a mixed ANOVA with type of attitude (actual versus desired attitudes) as a within-subject factor and topic (emotional intelligence, salt consumption, exercising, and English learning) and difficulty (easy versus difficult) as between-subjects factors. Significant main effects of type of attitude ( $F(1, 154)=112.81$ ,

$p < .001$ ,  $\eta_p^2 = .42$ ), topic ( $F(3, 154) = 3.53$ ,  $p = .016$ ,  $\eta_p^2 = .06$ ) and difficulty ( $F(1, 154) = 10.48$ ,  $p < .001$ ,  $\eta_p^2 = .06$ ) emerged (see Table 2). More critically, the predicted interaction between type of attitude and difficulty was significant ( $F(1, 154) = 6.36$ ,  $p = .013$ ,  $\eta_p^2 = .04$ ; all other  $F$ s  $< .72$ ,  $p$ s  $> .54$ ). Decomposing the interaction, we found larger effects of difficulty on people's actual attitudes ( $F(1, 160) = 17.02$ ,  $p < .001$ ,  $\eta_p^2 = .09$ ) than on people's desired attitudes ( $F(1, 160) = 3.05$ ,  $p = .08$ ). People's actual attitudes were more positive in the easy ( $M = 5.26$ ,  $SD = 1.02$ ) than in the difficult ( $M = 4.55$ ,  $SD = 1.18$ ) condition.

To check our perceived difficulty manipulation, we submitted participants' ease ratings to a Topic  $\times$  Difficulty between-subjects ANOVA. The predicted main effect of the difficulty condition emerged,  $F(1, 154) = 46.49$ ,  $p < .001$ ,  $\eta_p^2 = .23$ . In addition, significant effects of topic,  $F(3, 154) = 3.21$ ,  $p < .05$ ,  $\eta_p^2 = .06$ , and the Difficulty  $\times$  Topic interaction,  $F(3, 154) = 3.10$ ,  $p < .05$ ,  $\eta_p^2 = .06$ , emerged. The manipulation produced the largest effects of ease on exercising ( $F(1, 34) = 46.6$ ,  $p < .001$ ,  $\eta_p^2 = .58$ ), although the effect was significant for all topics (see Table 2 for comparisons by topic).

**Discussion.** Studies 1a and 1b together indicate that desired attitudes are relatively more abstract than actual attitudes. Congruent with the idea that features that are invariant across time and context characterize abstract concepts, people's desired attitudes were perceived to be more stable, and were actually more stable, than their actual attitudes. These findings support our first hypothesis. Our remaining studies examined our second hypothesis: That desired attitudes are relatively more predictive of behavioral intentions in an abstract, compared with a concrete mindset.

### **Predicting Behavioral Intentions in an Abstract Versus Concrete Mindset**

#### **Study 2: Eating Vegetables Daily**

People likely vary in both their actual and desired attitudes towards eating vegetables, so we expected that desired attitudes would predict behavioral intentions to a greater extent in an abstract mindset, compared with a concrete mindset.

### **Method.**

**Participants.** Seventy undergraduates at the Autonomous University of Madrid participated voluntarily in this study ( $M_{\text{age}}=21.58$ ,  $SD=1.57$ ). Thirty-three students (30 females) were randomly assigned to the abstract mindset condition, and the other thirty-seven (33 females) were assigned to the concrete mindset condition.

**Procedure.** Because people vary widely in how much they typically eat vegetables, we included a measure of their habitual vegetable consumption (from Verplanken & Orbell, 2003) by asking participants to indicate their agreement with the following: Eating vegetables is my routine; I eat vegetables automatically, I don't think much about it; I have been eating vegetables for a long time. Participants used scales ranging from 1 *totally disagree* to 7 *totally agree* ( $\alpha=.87$ ,  $M=4.24$ ,  $SD=1.56$ ).

To measure actual and desired attitudes, we used instructions similar to those in Study 1: "...please indicate the attitude you ACTUALLY have and the attitude you feel you SHOULD/ OUGHT TO have using the separates scales provided towards eating vegetables daily (chard, spinach, broccoli, carrots, zucchini, green beans, etc.)." Actual and desired attitudes were each measured using four semantic differential scales ranging from 1 (*extremely negative, unfavorable, unpleasant, unhealthy*) to 7 (*extremely positive, favorable, pleasant, healthy*;  $\alpha=.73$  and  $.86$  for actual and desired attitudes, respectively;  $M_{\text{actual}}=5.31$ ,  $SD=.93$ ;  $M_{\text{desired}}=6.32$ ,  $SD=.59$ ).

After reporting their attitudes participants completed the "why-how task" to prime the construal level (Freitas, et al., 2004), tailored to the goal of maintaining good personal relationships (i.e., irrelevant to eat vegetables). In the abstract condition participants were

first asked *why* they want to maintain good personal relationships. They were then asked why they want the outcome they listed in response to the first question, and so forth. The concrete condition was similar, but instead of asking why, participants were asked *how* they maintain good personal relationships. This task kept the content domain constant across conditions but varied the construal level. Finally, participants were asked to report the extent to which they intended, planned, and expected to eat vegetables daily based on three scales ranging from 1 (*not at all*) to 7 (*very much*) ( $\alpha=.91$ ,  $M=4.75$ ,  $SD=1.40$ ).

**Results.** We verified random assignment to mindset conditions by submitting habit-strength, actual attitudes, and desired attitudes to a one-way ANOVA, finding no significant effects ( $F_s < .72$ , *ns.*). Consistent with past research documenting past experience as the strongest predictor of health-related behaviors (Albarracín & Wyer, 2000), in both conditions, correlations between habit-strength and behavioral intentions were very strong ( $r_{\text{abstract}}=.77$ ,  $r_{\text{concrete}}=.85$ ,  $p_s < .001$ , and not significantly different [ $z < 1$ ]), so we included habit strength as a covariate in the primary analysis. Correlations between habit-strength and actual attitudes were significant ( $r_{\text{abstract}}=.68$ ,  $r_{\text{concrete}}=.70$ ,  $p_s < .001$ ), although they were not relevant between habit-strength and desired attitudes ( $r_{\text{abstract}}=.12$ ,  $r_{\text{concrete}}=.25$ ,  $p_s > .05$ ).

All variables were standardized prior to analysis except the construal level, which was dummy coded (concrete=0, abstract=1). The average of *intention/plan/expectation* was regressed onto desired attitudes, actual attitudes, construal level and their interactions, with habit strength as a covariate. Habit-strength was entered as a predictor in the first step and was a significant covariate ( $\beta=.75$ ,  $t(68)=9.37$ ,  $p < .001$ ). Then construal level, actual attitude, desired attitude, and two-way interactions were entered in the second step. The three-way interaction was not significant, so it was removed from consideration.

This analysis (see Table 3) revealed significant interactions between construal level and desired attitudes ( $\beta=.33$ ,  $t(62)=2.67$ ,  $p < .01$ ) and construal level and actual attitudes ( $\beta=-$

.35,  $t(62) = -3.07$ ,  $p < .01$ ). Simple slopes analyses (see Table 5) revealed a significant influence of desired attitudes on behavioral intention to eat vegetables daily in the abstract mindset ( $\beta = .38$ ,  $t(62) = 2.66$ ,  $p < .01$ ) but not in the concrete mindset ( $\beta = -.08$ ,  $t(62) = -0.73$ ,  $ns.$ ). The opposite was true of actual attitudes because they predicted behavioral intentions among participants in the concrete mindset ( $\beta = .40$ ,  $t(62) = 3.16$ ,  $p < .01$ ) but not in abstract mindset ( $\beta = -.16$ ,  $t(62) = -.85$ ,  $ns.$ ).

Given the large amount of variance accounted for by people's habit strength, it is not surprising that the results changed when it was dropped from the model. Specifically, the interactions were no longer significant (CL  $\times$  desired attitudes  $\beta = .15$ ,  $t(63) = 1.00$ ,  $ns.$  and CL  $\times$  actual attitudes  $\beta = .04$ ,  $t(63) = 0.44$ ,  $ns.$ ), and the only significant predictor was actual attitudes ( $\beta = .84$ ,  $t(63) = 6.69$ ,  $p < .001$ ).

**Discussion.** Consistent with their relatively abstract nature, desired attitudes predicted behavioral intentions to a greater extent in an abstract than in a concrete mindset<sup>3</sup>.

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<sup>3</sup> An additional study with 66 student volunteers (22 females) from Autonomous University of Madrid supported this result. Participants had to report their past experience, actual and desired (as assessed in Studies 1 and 3) attitudes on *eating foods without added salt*. Then, they completed the "why-how task" to prime construal level and reported the extent to which they would seriously consider or intend to eat products without adding salt. Reliability for these two items (*consideration* and *intention*) was unacceptable ( $\alpha = .15$ ). The average of *intention/consideration* was regressed onto desired attitudes, actual attitudes, construal level and their two-way interactions. The interaction between desired attitudes and construal level was not significant, but was in the predicted direction ( $\beta = .35$ ,  $t(59) = 1.60$ ,  $p = .11$ ). We repeated this analysis separately for each item. When intention was used as the dependent variable, there were no significant effects ( $ps \geq .42$ ). When the consideration item was predicted from desired attitudes, actual attitudes, construal level and their double interactions; desired attitudes significantly predicted consideration among participants in the abstract mindset ( $\beta = .59$ ,  $t(59) = 3.19$ ,  $p < .001$ ) but not among participants in the concrete mindset ( $\beta = .05$ ,  $t(59) = .21$ ,  $ns.$ ). When the regression on consideration was re-run including past personal experience as a covariate, this interaction was virtually unchanged ( $\beta = .41$ ,  $t(58) = 1.94$ ,  $p = .058$ ), and prior experience was not a significant predictor ( $\beta = .01$ ,  $t(58) = .14$ ,  $p = .89$ ). Additional variables were included in this study: perceptions of control over this specific behavior and behavior in general, open-ended thought listing (and ratings) about focal topic, current mood and confidence, self-reported attention, relevance of topic. A full description of the methods and results can be obtained by contacting the author ([pilar.carrera@uam.es](mailto:pilar.carrera@uam.es)).

In addition, in this study, the opposite was found for actual attitudes. This finding is consistent with actual attitudes having a relatively concrete construal.

### **Study 3: Helping Behavior**

In Study 2, we explored a health behavior, eating vegetables, where people's behavioral plans are mainly influenced by past experience and habit (see Albarracín & Wyer, 2000). For this reason, unsurprisingly, we found that habit strength played an important role in the moderation test in Study 2. Verplanken and Aarts (1999) noted some basic features of habits, such as functionality and dependence in the situation, which are features, associated with actual attitudes rather than desired attitudes. This relationship between habit and actual attitudes could be biasing the results found in Study 2. To differentiate the influence of desired and actual attitudes when only the construal level varies, we explore the role of construal level on helping behavior, which is a more deliberate action where habit and past experience exert less influence.

Results supporting the second hypothesis on both behaviors will extend practical implications to a broader range of issues. Actual and desired attitudes were asked about with regard to making free phone calls to people interested in helping children at risk in Madrid (city where the participants were living).

#### **Method**

**Participants.** One hundred undergraduates at the Autonomous University of Madrid participated voluntarily in this study. They were 89 females and 11 males (average age 19.03 years,  $SD = 1.34$ ). Fifty students were randomly assigned to each condition.

**Procedure.** As in previous studies, we asked about actual and desired attitudes. We followed the same instructions for the actual and desired attitudes used in Studies 1a and 1b. Attitudes were measured using three 7-point semantic differential scales ranging from 1 (extremely *unfavorable*, *unpleasant*, *boring*) to 7 (extremely *favorable*, *pleasant*, *enjoyable*).



Actual attitudes and desired attitudes were calculated by averaging the relevant items (alphas = .73 and .67, respectively). As in the previous study, after reporting actual and desired attitudes, participants completed the construal level induction. Participants then reported, on 7-point scales, their *intention* and *willingness* to collaborate ( $\alpha=.83$ ,  $M=4.79$ ,  $SD=1.16$ ) and had the option to provide their e-mail or phone numbers for the researchers to make contact.

For control checks, we used 7-point scales from *not at all* (1) to *very much* (7), and we asked about *personal experiences in collaborating with NGOs* and *how demanding the task proposed was*.

## Results

Control checks showed that personal experience ( $M_{total} = 2.57$ ,  $SD_{total} = 1.64$ ;  $F(1, 98) = 2.73$ , *ns.*) and task difficulty ( $M_{total} = 2.95$ ,  $SD_{total} = 1.50$ ;  $F(1, 98) = 0.11$ , *ns.*) was low and similar in both conditions. Correlations between past experience and behavioral intentions were not significant ( $r_{abstract}=.04$ ;  $r_{concrete}=.03$ ,  $ps>.05$ ). Furthermore, correlations between past experience and attitudes were not relevant (past behavior-actual attitudes:  $r_{abstract}=-.02$ ;  $r_{concrete}=.10$ ,  $ps>.05$ ; past behavior-desired attitudes:  $r_{abstract}=.07$ ;  $r_{concrete}=.16$ ,  $ps>.05$ ). For this reason, past behavior was not included in the following analysis as a covariate.

The average *intention/willingness* was regressed onto desired attitudes, actual attitudes, and construal level and their interactions using standardized variables, except construal level (dummy coded: concrete as 0 and abstract as 1). The three-way interaction was not significant, so it was removed from regression. We found a significant influence of actual attitudes ( $\beta=.86$ ,  $t(93)=8.48$ ,  $p<.001$ ); more importantly, the double interactions between construal level and attitudes were also significant (CL  $\times$  desired attitudes  $\beta=.44$ ,  $t(93)=4.41$ ,  $p<.001$  and CL  $\times$  actual attitudes  $\beta=-.50$ ,  $t(93)=-5.03$ ,  $p<.001$ ; see Table 4).

Simple slopes analyses (see Table 5) showed a significant influence of desired attitudes on helping in the abstract mindset ( $\beta = .63$ ,  $t(96)=6.04$ ,  $p < .001$ ) but not in the concrete mindset ( $\beta = .005$ ,  $t(96) = 0.04$ , *ns.*). However, actual attitudes influenced helping in the concrete mindset ( $\beta = .86$ ,  $t(96) = 8.60$ ,  $p < .001$ ) but not in the abstract mindset ( $\beta = .14$ ,  $t(96)=1.33$ , *ns.*).

Because participants were able to provide their e-mail or cell phone numbers, we coded this behavioral outcome with a 0 if neither was provided and a 1 if either was provided. We found similar commitment in both conditions (31 out of 50 participants in abstract condition and 30 out of 50 participants in concrete condition reported their phone or e-mail information).

**Discussion.** Supporting the findings of Study 2, Study 3 demonstrates that desired attitudes predicted behavioral intentions towards helping in the abstract mindset but not in the concrete mindset. Actual attitudes better predict intentions under a concrete mindset. Helping is a deliberate behavior where past experience and habit were not crucial and where the construal level moderated the influence of desired and actual attitudes on behavioral intentions.

### General Discussion

Across four studies, we examined the hypothesis that desired attitudes are relatively abstract concepts (more so than actual attitudes) and examined the implications of this for their impact. Consistent with the idea that abstract representations are based on those features of an object that are central and essential to the object, and as such, should be relatively invariant across time and context, we first demonstrated that desired attitudes are perceived to be more stable across time and context (Study 1a). Furthermore, we demonstrated that desired attitudes are more stable in response to a shift in a non-central feature of the attitude object under consideration (the difficulty of the specific attitude

congruent behavior provided; Study 1b) compared to actual attitudes. Next, congruent with the idea that abstract concepts have greater impact when in a high level than in a low level of construal, we demonstrated that the predictive utility of desired attitudes is greatest when people are in an abstract mindset (Studies 2 and 3). Data also showed actual attitudes better predict behavioral intentions under a concrete mindset, although we are cautious with this last finding because the results of Study 1a showed actual attitudes were at or slightly above the midpoint of our abstraction index and an additional study (see footnote 3) showed that actual attitudes did not predict future plans among participants in the concrete mindset. Supporting this caution, previous extensive research on general-actual attitudes (see Ajzen & Fishbein, 2005) has shown their influence when the construal level is not manipulated (and it is abstract by default). We highlight that the abstractness of predictors is a matter of degree. The level of abstraction of each predictor depends on its features and on the interaction with the features of other predictors; for instance, actual attitudes are less abstract than desired attitudes (Studies 1a and 1b), but they are more abstract than past behavior (see Carrera et al., 2012). When reporting both types of attitudes, people choose those attitudes that are consistent with the level of abstractness in their mindset to form their behavioral intentions.

Although the present work directly manipulated abstraction, we expect that desired attitudes should have greater impact when selecting “distant” behaviors than when selecting more proximal behaviors. Furthermore, variables that influence abstraction other than psychological distance, such as a person’s mood (Gardner, Wansink, Kim, & Park, 2014), feelings of power (Magee & Smith, 2013), and background noise (Mehta, Zhu, & Cheema, 2012) could also produce similar effects.

It is also worth considering the current work through the lens of self-regulation. People’s goal pursuits are most likely to be successful if their attitudes towards goal-relevant objects and behaviors foster goal-congruent behavior. Although some research finds that

people shift their attitudes in a manner that supports their current goal pursuit efforts (Ferguson & Bargh, 2004; Trope & Fishbach, 2000), such shifts are not always possible, and people may still desire attitudes that differ from their current ones. The current research suggests that these desired attitudes may still exert goal-congruent impact on people's behavior under the right circumstances – when a person is in an abstract mindset. Given that abstract mindsets also foster goal pursuit more generally (Fujita, 2008; Fujita & Han, 2009; Fujita, Trope, Liberman, & Levin-Sagi, 2006) and promote consistency (Ledgerwood, Trope, & Chaiken, 2010), the present findings suggest new avenues to explore how more abstract attitudes such as desired attitudes could influence self-control.

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Table 1. *Means (SD) of the abstraction index in actual and desired attitudes in Study 1a*

	Actual Attitudes	Desired Attitudes
Eating Vegetables	5.16 (1.41)	6.02 (1.07)
Voting	4.96 (1.40)	5.35 (1.26)
Impulse Purchasing	4.96 (1.40)	5.37 (1.58)
My self	5.31 (1.24)	6.42 (0.60)

Table 2. Means (SD) and *F* tests of actual and desired attitudes (easy versus difficult conditions) in Study 1b

	N	Actual Attitudes			Desired Attitudes		
		Difficult <i>M</i> ( <i>SD</i> )	Easy <i>M</i> ( <i>SD</i> )	<i>F</i>	Difficult <i>M</i> ( <i>SD</i> )	Easy <i>M</i> ( <i>SD</i> )	<i>F</i>
Emot. Int.	36	4.47 (0.89)	5.08 (0.86)	4.33*	5.50 (0.98)	5.86 (0.68)	1.63
Salt	50	4.24 (1.30)	4.98 (1.10)	4.70*	5.34 (1.29)	5.50 (0.94)	0.24
Exercise	36	4.88 (1.08)	5.55 (0.83)	4.39*	6.00 (1.07)	6.00 (0.95)	0.00
English	40	4.72 (1.31)	5.52 (1.16)	4.15*	5.65 (1.64)	6.35 (0.93)	2.73

*Note.* *F* tests compared low versus high feasibility by calculating separate ANOVAs for each behavior.

\*  $p < .05$ .

Table 3. *Regression model (second step) in Study 2*

Predictor	$\beta_{\text{standard}}$	$\beta_{\text{raw}}$	$SE$	$t$	$p$
Habit Strength	.62	.62	.10	5.79	<.001
Actual Att.	.40	.40	.12	3.17	.002
Desired Att.	-.08	-.08	.11	-0.73	.46
CL.	-.01	-.02	.14	-0.17	.86
Act. Att. $\times$ CL.	-.35	-.56	.18	-3.07	.003
Des. Att. $\times$ CL.	.33	.47	.17	2.67	.01
Act. Att. $\times$ Des. Att.	.01	.01	.07	0.19	.84

Table 4. *Regression model in Study 3*

Predictor	$\beta_{\text{standard}}$	$\beta_{\text{raw}}$	<i>SE</i>	<i>t</i>	<i>p</i>
Actual Att.	.86	.86	.10	8.48	<.001
Desired Att.	.004	.004	.10	0.04	.96
CL.	.12	.23	.12	1.87	.06
Act. Att. $\times$ CL.	-.50	-.72	.14	-4.74	<.001
Des. Att. $\times$ CL.	.44	.63	.14	4.55	<.001
Act. Att. $\times$ Des. Att.	.008	.007	.06	0.13	.90

Table 5. *Regressions and simple slopes analyses*

Study	Behavior	Simple Slopes Desired att.		Simple Slopes Actual att.	
		Abst.	Conc.	Abst.	Conc.
2	Eat Veggies	.38**	-.08	-.16	.40**
3	Helping	.63***	.005	.14	.86***

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