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Abstractness and challenges

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Using abstractness to confront challenges: How the abstract construal level increases  
people's willingness to perform desirable but demanding actions

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research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

*Informed consent:* Informed consent was obtained from all individual participants included in the studies.

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### **Abstract**

Previous research has shown that while considering future behavioral intentions, desirability is more salient in making decisions in an abstract mindset than in a concrete one. Based on this premise, we test whether behavioral intentions to engage in desirable but difficult actions are more likely in an abstract mindset than a concrete mindset. We experimentally manipulated (Studies 1-4 using cognitive primes) and measured as a personal disposition (Study 5 using the BIF) the construal level to evaluate its influence on the willingness to perform challenges. The behaviors tested focused on self-benefits (Studies 4 and 5) and benefits to others (Studies 1-3 and 5). Studies 1 and 2 included only demanding behaviors, whereas Studies 3-5 included both difficult and easy conditions. In Studies 1-2, the participants were more motivated to attempt a difficult task when they were in an abstract mindset. In Studies 3-5, the participants in the abstract (compared to concrete) mindset reported a greater willingness and commitment to attempt desirable but demanding behaviors. Finally, in Study 5, the influence of the construal level on the global behavioral plan index (three behaviors) was moderated by feasibility.

**Public Significance Statement.** The present studies suggest that an abstract style of thinking enhances people's intentions to perform desirable but demanding actions. An abstract construal level is a personal trait that can be modified by different procedures. Interventions aiming to change the construal level could be useful in clinical and educational settings and social communication campaigns to persuade the broader population to overcome difficulties associated with the recommended behavior.

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**Keywords:** abstractness; construal level; behavioral intentions; challenges; desirable-demanding behavior

Using abstractness to confront challenges: How the abstract construal level increases people's willingness to perform desirable but demanding actions

A challenge arises when a person believes that an action is important to his/her wellbeing or growth but also perceives difficulties in performing the relevant behavior (Blascovich & Mendes, 2000). A challenge implies that the behavior is worthwhile, although the person must make an effort and incur certain costs. Challenges do not necessarily require heroic actions; our daily life involves many challenges. For example, an everyday other-oriented challenge is helping others; prosocial behaviors are desirable but include personal costs. Other challenges are self-oriented and imply negative and positive consequences, such as most healthy behaviors in which the short-term outcomes of the action conflict with the long-term consequences (Trope & Fishbach, 2000). In the present research, we test whether behavioral intentions to engage in desirable but difficult actions (e.g., helping others or choosing healthy food) are more likely in an abstract mindset (vs. a concrete mindset).

Potential future positive consequences do not ensure that a behavior will be performed because the action may involve difficulty, discomfort and even personal damage. Mixed consequences pose a clear challenge to self-control because individuals must decide whether to perform an action that will result in both benefits and costs. Such positive and negative outcomes usually occur at different psychological distances. For example, helping could mean that an unknown victim who needs help (distant person) receives benefits while the donor (close person) suffers certain costs; or choosing a healthy behavior produces personal benefits in the long term but occasionally implies personal costs in the short term. These differences in

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psychological distance (social and temporal) directly lead us to the main propositions of the construal level theory (CLT) (Liberman & Trope, 1998, 2003).

CLT states that psychologically distant events are construed at a higher level because individuals focus on the most abstract features as the ultimate goals, whereas psychologically near events are defined based on the means to achieve those goals (Trope, Liberman, & Wakslak, 2007). Thus, when an action or an object becomes more psychologically distant, it is represented in terms of its abstract and essential (i.e., high-level) properties, whereas incidental details become less available (Liberman, Trope, & Stephan, 2007; Lutchyn & Yzer, 2011; Trope & Liberman, 2003). The psychological distance can be temporal (Trope & Liberman, 2003), spatial (Henderson, Fujita, Trope, & Liberman, 2006), social (Liviatan, Trope, & Liberman, 2008; Stephan, Liberman, & Trope, 2011) or hypothetical (Todorov, Goren, & Trope, 2007). The difference in distance implies that decisions regarding distant future events are based on their central abstract characteristics, making the event's value more positive over time when the value associated with the high-level mental representation of the event is more positive than the value associated with the low-level construal of the event (Liberman & Trope, 1998). For example, an interesting lecture (a high-level feature) in the distant future (abstract construal level) in the context of a very busy schedule (a low-level feature) could be desirable, and the willingness to attend could be strong; however, the likelihood of attending could decrease in the context of a very busy schedule if the interesting lecture was to be given the very next day (concrete construal level).

Before CLT, the action identification theory (AIT, Vallacher & Wegner, 1987, 1989) had proposed that individuals could mentally represent a given event at different levels of abstraction. Whereas CLT focuses on the relationship between the psychological distance and abstraction, AIT suggests that the action's difficulty is the



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main determinant of the identification level. When actions are difficult, people represent them concretely, whereas when actions are easy, people use more abstract representations. Both theories highlight abstractness as an important factor to consider when predicting behavioral decisions and actual behavior (Fujita, 2008).

### **Abstractness and behavioral decisions**

In the CLT framework, the abstract construal level leads individuals to assign a greater weight to distant consequences than to immediate consequences when making decisions. Numerous experiments have shown that an abstract mindset reduces the preference for immediate over delayed outcomes (Carrera, Muñoz, Fernández, & Caballero, 2018; Chiou, Wu, & Chang, 2013; Fujita, 2008; Fujita & Carnevale, 2012; Fujita & Han, 2009; Fujita, Trope, Liberman, & Levin-Sagi, 2006; Trope & Liberman, 2000). Abstractness reduces the emphasis on the rewards and difficulties associated with an action's progress (i.e., on low-level features) while increasing interest in the ultimate objective (i.e., in high-level features), thereby facilitating greater self-control.

In the AIT, Vallacher and Wegner (1987) noted that representing an action with a high level of abstraction allows individuals to persist in the face of changing conditions (e.g., the appearance of obstacles). Representing an action mentally at a high level helps one persevere in pursuit of an objective in a variety of circumstances and difficulties. For example, if a person identifies his/her action of "cycling" at a high level as "exercising" and encounters an obstacle during the activity (e.g., a mechanical problem with the bike), he/she can change the action to "jogging", whereas phenomenologically, the person would be engaged in the same action, that is, "exercising".

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Both theoretical approaches converge in suggesting abstractness as the optimal strategy for motivating individuals to persevere in their plans and remain oriented towards the ultimate objective. In cases of particularly demanding behaviors, obstacles pressure individuals to abandon their final goals. Under such demanding circumstances, identifying the action at a high level would help to understate the action's feasibility and focusing on its desirability instead.

Liberman and Trope (1998) defined desirability as the valence of an action's end state and feasibility as the ease or difficulty of reaching the end state. Desirability reflects the "why" aspects of an action, and the reasons are more abstract than the "how" aspects; hence, desirability constitutes a high-level construal, whereas feasibility is low level (Vallacher & Wegner, 1987). Vallacher and Wegner (1987) documented that individuals defined difficult actions based on low-level features because of the need to think about the means of accomplishing such actions (e.g., when a tire goes flat while one is driving to work, the action's definition would change from "going to earn money" to "changing a tire"). The more difficult an action is, the greater the likelihood that it will be represented at a lower-level identification.

In their seminal research, Liberman and Trope (1998) showed that participants used more desirability considerations than feasibility considerations when they made decisions in a distant future condition (vs. a near future condition). The authors manipulated the construal level by changing temporal distance (near vs. distant) and evaluated the likelihood of choosing the action proposed (Study 2), the importance of either desirability considerations or feasibility considerations when facing a decision (Study 3), preferences for the activity proposed in a realistic choice situation (Study 4) and the time participants would like to spend doing several future activities (Study 5).

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Following these findings, Fujita and colleagues (2006; Experiment 3b) used a construal level prime and manipulated costs (costs vs. no-costs situations) in a within-subjects design to evaluate behavioral intentions to participate in four psychological studies that offered self-benefits (such as receiving personal information about cardiovascular health, cognitive abilities, relationships and creativity). They found that an abstract construal level helped to overcome the influence of costs (low feasibility) when the high-level benefits were valued (high desirability). Results on actual behavior, although scarcer, dovetailed with findings on intentions: participants in an abstract mindset displayed greater physical endurance to obtain diagnostic personality information (Fujita et al., 2006; Experiment 2), and they chose apples more than candy bars (Fujita & Han, 2009, Experiment 3).

Desirability considerations are high-level construals because they are stronger determinants than the feasibility of performing a behavior (assuming that individuals do not consider the feasibility of undesirable actions). Desires remain important even when the feasibility is low (Eyal, Liberman, Trope, & Walther, 2004). A similar asymmetry is observed between pro and con arguments: cons are subordinated to pros because the former are considered only if the latter exist. When thinking of the distant future, participants generated more considerations in favor of an action (*pros*) than against it (*cons*), thus making a desirable behavior more likely in the long term (Eyal et al., 2004). In the same vein, Rim, Hansen and Trope (2013) found that distance (vs. proximity) leads to a greater focus on causes of events (high-level aspect); conversely, thinking about causes leads to greater psychological distance (abstract mindset).

In the CLT framework, extensive research indicates that individuals are more likely to follow their values (i.e., the principles they wish to follow) to form behavioral intentions when these individuals are in an abstract mindset (Eyal, Sagristano, Trope,

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Liberman, & Chaiken, 2009). Research investigating attitudes has shown that desired attitudes (i.e., the attitudes that people want to have) more strongly predict the behavioral intentions of participants in an abstract rather than a concrete mindset (Carrera, Caballero, Fernández, & Muñoz, 2017; Carrera, P., Fernández, I., Muñoz, D., & Caballero, 2019). In support of this matching effect, recent research has shown that under an abstract construal level, people who read a mixed outcome message describing long- and short-term outcomes tended to base their behavioral plans on distant consequences or high-level information (Carrera, Muñoz, Fernández, & Caballero, 2018).

When an action's mental representation is based on its high-level features, such as in an abstract mindset, individuals focus on the ultimate desirable goals when forming behavioral plans, and they totally or partially ignore the obstacles and difficulties that may be associated with the action's performance.

### **Present research**

Previous research has shown that when considering behavioral preferences, desirability is more salient when making decisions in an abstract mindset. These studies, manipulating construal level with psychological distance or cognitive primes, were focused on self-benefit activities, that is, behaviors offering personal rewards, such as attending an interesting lecture (e.g., Liberman & Trope, 1998), and on behaviors related to self-control, such as preferring an apple over a candy bar (e.g., Fujita & Han, 2009). The consistent role of abstractness on self-oriented behaviors leads us to expect a similar influence when the actions and the benefits are focused on other people. We expect to replicate and extend these previous results to other-oriented behaviors (e.g., helping) in which the demanding behaviors generate mainly benefits to others.

Economic crisis in Europe offers a proper context to test the influence of abstractness as

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a mechanism to promote prosocial demanding behaviors. We also test the beneficial effects of abstractness when the construal level is not only manipulated but measured as a personal disposition.

We propose that difficult but desirable actions that imply self-benefit and benefit to others (all of them challenges) are more likely to occur in an abstract mindset (compared to a concrete mindset). An abstract construal level promotes people to attend to the desired final goal, rendering the action's difficulties less salient. When actions are easy and desirable, people will attempt to do them regardless of their construal level (behavioral intentions would only depend on how much the goal is desired). Thus, the construal level is more relevant for difficult and desirable behaviors than for easy and desirable ones.

We selected desirable actions and manipulated their difficulty to amplify the differences in the *cons* for each experimental condition (i.e., difficult vs. easy), whereas the *pros* (the ultimate goals) did not differ. We note that participants had nearly sufficient resources to meet situational demands; thus, the demands were presented as a challenge rather than a threat (see Blascovich, 2008; Frings, Rycroft, Allen, & Fenn, 2014).

In the present research, we used as dependent variables behavioral intentions (i.e., intention and expectation), the main proximal antecedent of the behavior (see Ajzen, 1991) and personal behavioral commitment (Studies 2 and 3) by obtaining personal information to perform the action (i.e., phone number, e-mail, or personal address). We experimentally manipulated (Studies 1-4, using Sweeney and Freitas's (2014) cognitive prime) and measured as a personal disposition (Study 5, using the Behavior Identification Form, BIF) the construal level to evaluate its influence on the willingness and commitment to perform difficult but desirable actions. Studies 1 and 2

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included only demanding behaviors, whereas Studies 3-5 included both difficult and easy conditions. The behaviors tested had a focus on both self-benefits (Study 4, i.e., asking for a healthy behavior related to sugar intake, and Study 5, i.e., asking about attending a career guidance course) and benefits to others (Studies 1-3 and 5, i.e., asking about helping others in need).

In all experiments, as a rule of thumb, we followed the suggestion of collecting at least 20-30 participants per between-participant condition (see Simmons, Nelson, & Simonsohn, 2011; Wilson Van Voorhis & Morgan, 2007). Furthermore, the sample size was consistent with previous similar studies in the CL program of research that have consistently obtained significant effects with approximately 35 participants per condition (e.g., Carrera et al., 2017; Eyal, et al., 2004; Lutchyn & Yzer, 2011; Rim, Hansen, & Trope, 2013). Across all studies, we disclose all measures, manipulations, and exclusions as well as the sensitivity power analysis (*alpha* of .05, *two-tailed* and a *criterion power value* of 80%) to calculate the minimum effect size that the experiment is able to detect (by using G\*Power v.3.1). Data collection was not continued after data analysis in any of the studies.

### **Study 1: Helping others in social dining rooms**

Study 1 tested the hypothesis that abstractness (vs. concreteness) promotes the performance of difficult behaviors, such as helping others in social dining rooms (e.g., serving meals, cleaning tables and floor during one Saturday morning from 8 AM to 3 PM) in a demanding schedule (i.e., beginning early in the morning and working many hours). When individuals face challenges, thinking about the underlying reasons (vs. the means to perform the actions) helps them focus on the ultimate objective and

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motivates them to attain it. Thus, we expected higher behavioral intentions in an abstract mindset than a concrete mindset.

## **Method**

**Ethical approval.** All procedures performed in the Studies 1-5 were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the studies. In the Studies 1-5 the participants were volunteers and participated for course credit and after their participation, they were properly debriefed.

**Participants.** Participants were 70 undergraduate volunteers (88.6% females;  $M_{\text{age}}=19.37$ ,  $SD=1.61$ ) who were randomly assigned to each construal level condition as follows: 30 females and 5 males were assigned to the concrete mindset condition, and 32 females and 3 males were assigned to the abstract mindset condition. The analyses (one-way ANOVA) had 80% power to detect an effect size of  $f=.34$ .

**Procedure.** Participants were asked to complete a two-part prime task in the first questionnaire. This double prime technique was recommended by Sweeney and Freitas (2014) to manipulate the construal level more effectively. In the first prime part, to induce an abstract mindset, participants were asked to consider “why” they would maintain good personal relationships, whereas in the concrete mindset condition, they were required to consider “how” they would do so. All questions (why and how) were illustrated by diagrams of vertically aligned boxes connected by arrows. This first prime task was designed by Freitas, Gollwitzer and Trope (2004). In the second prime part, participants viewed a series of eight behaviors selected from Vallacher and Wegner’s (1989) BIF scale and were asked to reframe the presented behaviors in terms

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of why (the abstract condition) or how (the concrete condition) the behaviors were performed.

Following the double prime, all participants answered questions regarding the extent to which they intended and expected *to help others in dining rooms (serving meals, cleaning tables and floor and so on) during one Saturday morning from 8 AM to 3 PM*. We averaged the two items to obtain the behavioral plan index ( $\alpha=.87$ ). We also asked *how excited-motivated they were* to engage in this behavior in the following weeks. As a control, the participants evaluated the difficulty of the proposed helping action. Finally, the participants reported their personal past experiences with similar actions. Answers to all questions were provided on a scale from 1 (*not at all*) to 7 (*very much*).

## Results

As a control, we verified the random assignment to mindset conditions by examining the data on actions' demands and past experiences via a one-way ANOVA, which resulted in no significant effects ( $F_s < 1.18$ , *ns.*). The participants evaluated the action as moderately demanding ( $M_{abst}=3.51$ ,  $SD=1.73$  and  $M_{conc}=3.68$ ,  $SD=1.58$ ) and reported a moderate amount of experience with similar tasks ( $M_{abst}=3.85$ ,  $SD=1.76$  and  $M_{conc}=3.37$ ,  $SD=1.95$ ).

An ANOVA test revealed the predicted primary effect of the construal level condition on behavioral plans,  $F(1, 68)=9.94$ ,  $p=.002$ ,  $\eta_p^2=.13$ . This result was supported by the analysis that was repeated using the exciting-motivating item,  $F(1, 68)=4.65$ ,  $p=.035$ ,  $\eta_p^2=.06$ . Participants in an abstract mindset showed higher behavioral plans ( $M_{abst}=4.42$ ,  $SD=1.21$  vs.  $M_{conc}=3.42$ ,  $SD=1.42$ ) and considered the proposed action more exciting-motivating ( $M_{abst}=5.02$ ,  $SD=1.15$  vs.  $M_{conc}=4.31$ ,  $SD=1.58$ ). In summary, individuals are more prone to participate in the other-oriented



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demanding task in an abstract mindset (vs. a concrete one), and they report being more motivated to perform the task.

### **Study 2: Cold calls for fundraising**

Study 2 replicated Study 1 except that it asked participants about a different demanding behavior: making cold calls for a nongovernmental organization (NGO) focused on feeding poor children in Spain during the financial crisis.

#### **Method**

**Participants.** In Study 2, 76 undergraduate volunteers (11 males and 65 females,  $M_{\text{age}}=19.04$ ,  $SD=1.51$ ) participated in answering a double prime task followed by questions about their plans to make fundraising cold calls. The participants were randomly assigned to each construal level condition as follows: 31 females and 7 males were assigned to the concrete mindset condition, and 34 females and 4 males were assigned to the abstract mindset condition. The analyses (one-way ANOVA) had 80% power to detect an effect size of  $f=.32$ .

Before conducting Study 2, 91 undergraduates (12 males and 79 females,  $M_{\text{age}}=18.96$ ,  $SD=1.55$ ) participated in a pilot test designed to explore whether cold calls were considered more difficult than phone calls from a preselected list of donors.

**Procedure.** In Study 1, the behavior's difficulty was measured by a question asked after participants reported their behavioral plans. This postintention answer could be biased. In this study, we performed a pilot test to better evaluate the perceived difficulty of making cold calls.

*Pilot test.* In a between-participants design, the participants were randomly assigned to one of the feasibility conditions. Volunteers had to rate the difficulty of the

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following behaviors: a difficult behavior (making cold calls,  $N=45$ ) versus an easy behavior (phone calls from a preselected list of donors,  $N=46$ ). The answers were provided on a scale from 1 (*not at all*) to 7 (*very difficult*). The results confirmed that making cold calls was considered a more difficult task ( $M=5.37$ ,  $SD=1.00$ ) than making phone calls from a list of potential donors ( $M=2.19$ ,  $SD=1.31$ ),  $F(1, 89)=168.28$ ,  $p<.001$ ,  $\eta_p^2=.65$ . This control test was included in the framework of an omnibus research study on actual and desired attitudes towards different behaviors.

*Main experiment.* The pilot test showed that making cold calls was a demanding behavior. Hence, in the main experiment, we tested whether the abstract construal level (vs. the concrete construal level) motivated individuals to perform this action. As in Study 1, the participants completed the double prime task to induce abstract and concrete mindsets. In the next step, the participants had to report their intentions and expectations to participate in cold-call fundraising on a 7-point scale ( $\alpha=.90$ ). They were also asked to provide their personal contact information (a phone number, personal address or e-mail address) to increase the effectiveness of the collaboration. The aim of this question was to measure their personal commitment to the task. As a control, the participants reported their past experiences with similar NGO collaborations on a 7-point scale.

## Results

Participants in an abstract mindset reported a higher behavioral intention-expectation to make cold calls ( $M_{abst}=4.02$ ,  $SD=1.27$  versus  $M_{conc}=3.35$ ,  $SD=1.57$ ),  $F(1, 74)=4.16$ ,  $p=.045$ ,  $\eta_p^2=.05$ .

With regard to commitment reports, we found that in the abstract condition, 23 of 38 participants reported their phone number, personal address or an e-mail address,

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whereas only 13 of 38 participants did so in the concrete condition,  $\chi^2(1, N=76)=5.27$ ,  $p=.022$  (two-tailed test).

All participants reported similar personal experience with helping others in comparable circumstances,  $F(1, 74)=0.25$ ,  $p=.62$ , which was low in both conditions ( $M_{abst}=2.18$ ,  $SD=1.64$  and  $M_{conc}=2.36$ ,  $SD=1.53$ ). We note that both difficulty and low action experience are determinants of the concrete identification level, i.e., representations focused on the means instead of the ultimate goal (see Vallacher & Wegner, 1987). Nevertheless, individuals in an abstract mindset are willing to attempt the prosocial difficult task when faced with one, even without previous experience.

### **Study 3: Helping disabled adults**

In Studies 1 and 2, we tested the influence of abstraction on other-oriented difficult behaviors (i.e., helping others in a social dining room and making cold calls for fundraising). In this section, Study 3 added an easy condition to better show the interaction between feasibility and construal level. We tested the willingness of individuals to help disabled adults according to an easy versus a difficult timetable when they are in an abstract versus a concrete mindset. A  $2 \times 2$  (feasibility: easy/difficult behavior vs. construal level: abstract/concrete thinking) between-participants design was implemented to demonstrate that abstraction facilitates demanding behaviors but has no relevant influence on easy behaviors.

### **Method**

**Participants.** A total of 135 undergraduates volunteered to participate in the study (13 males and 122 females,  $M_{age}=19.76$ ,  $SD=3.94$ ) and were randomly assigned to the conditions of a  $2 \times 2$  (feasibility: easy/difficult timetable vs. construal level: abstract/concrete) between-participants factorial design. At least 30 participants were

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assigned to each condition as follows: 33 females and 3 males were assigned to the difficult-concrete condition; 32 females and 2 males were assigned to the easy-concrete condition; 30 females and 5 males were assigned to the difficult-abstract condition; and 27 females and 3 males were assigned to the easy-abstract condition. The analyses (ANOVA, main effects and interaction) had 80% power to detect an effect size of  $f=.24$ .

**Procedure.** In Study 1, we observed that a helping task scheduled from 8 AM to 3 PM on a Saturday morning was considered moderately demanding. Thus, to increase the difficulty of the condition (i.e., low feasibility), we repeated this timetable but asked participants to provide assistance for a longer period of time, namely, over five consecutive Saturdays. In the easy condition (i.e., high feasibility), we asked the participants to help on only a single Saturday morning with a more convenient timetable (from 10 AM to 3 PM). The construal level was manipulated in the same manner as the previous studies using the double prime technique recommended by Sweeney and Freitas (2014). The target population being helped consisted of disabled adults needing assistance with multiple activities (e.g., personal hygiene, feeding and mobility).

After completing the prime, the participants had to report their intention and expectation to collaborate on the proposed task ( $\alpha=.93$  and  $\alpha=.87$  in the easy and difficult condition respectively) and were invited to provide an e-mail address, personal address or phone number to measure their actual commitment. As the last step, the participants were asked about their personal experiences with similar helping behaviors and how easy it was to perform the action proposed. All questions were answered on a 7-point scale ranging from 1 (*not at all*) to 7 (*very much*).

## Results

First, we confirmed that participants had similarly low experience levels ( $M=2.72$ ,  $SD=1.81$ ) in all conditions,  $F(3, 131)=0.04$ ,  $p=.98$ . Subsequently, an ANOVA

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test revealed that engaging in the behavior was considered easier in the high feasibility condition ( $M=3.77$ ,  $SD=1.03$ ) than the low feasibility condition ( $M=2.90$ ,  $SD=0.95$ ),  $F(1, 133)=25.37$ ,  $p<.001$ ,  $\eta_p^2=.16$ .

More interestingly, the predicted interaction between feasibility and the construal level was not significant but was in the predicted direction when considering the future intention-expectation,  $F(1, 131)=3.68$ ,  $p=.057$ ,  $\eta_p^2=.027$ . The simple main effect of feasibility showed that participants had greater intention-expectation levels in the easy condition ( $M=4.34$ ,  $SD=1.61$ ) than in the difficult condition ( $M=3.43$ ,  $SD=1.38$ ),  $F(1, 131)=12.25$ ,  $p<.001$ ,  $\eta_p^2=.086$ . The main effect of construal level was not significant.

To examine these results in more detail, we performed an ANOVA of each construal level condition using feasibility as the factor. The results showed significant differences in the concrete condition,  $F(1, 68)=17.79$ ,  $p<.001$ ,  $\eta_p^2=.20$  ( $M=4.44$ ,  $SD=1.49$  and  $M=3.05$ ,  $SD=1.24$  in the easy and difficult conditions, respectively), but this difference was not found in the abstract condition,  $F(1, 63)=1.04$ ,  $p=.31$ . The abstract mindset (compared to the concrete mindset) diminishes the effect of differences in feasibility. We also performed an ANOVA of each feasibility condition using the construal level as the factor. The results confirmed that for the difficult (low feasibility) behavior, the participants in an abstract mindset reported a higher intention-expectation ( $M=3.82$ ,  $SD=1.42$ ) than the participants in a concrete mindset ( $M=3.05$ ,  $SD=1.24$ ),  $F(1, 69)=5.90$ ,  $p=.018$ ,  $\eta_p^2=.079$ . However, in the case of an easy behavior, the construal level had no influence ( $M=4.23$ ,  $SD=1.76$  and  $M=4.44$ ,  $SD=1.49$  in the abstract and concrete mindsets, respectively),  $F(1, 62)=0.26$ ,  $p=.61$ . In summary, the construal level is crucial when individuals face difficult behaviors.

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Because the criterion (yes-no commitment) was a dichotomous variable, we conducted one binary regression analysis with the construal level, feasibility and their interaction as predictors. This analysis showed that both the interaction ( $\beta = 2.19$ ,  $ET = .75$ ,  $p = .003$ ) and the construal level ( $\beta = -1.59$ ,  $ET = .54$ ,  $p = .003$ ) were significant. All predictors explained 13.1% of the commitment to engage in the helping behavior. The commitment reports indicated that in the difficult condition, participants at an abstract construal level provided an e-mail address, personal address or phone number more frequently (19 of 35) than those in a concrete mindset (7 of 36),  $\chi^2(1, N=71) = 9.28$ ,  $p = .002$  (two-tailed test). This difference was not significant in the easy condition, with 23 of 34 participants providing this information in the concrete mindset group and 16 of 30 providing this information in the abstract mindset group,  $\chi^2(1, N=64) = 1.37$ ,  $p = .24$ .

### **Study 4: Reducing versus entirely eliminating sugar intake**

Study 4 tested the interaction between the construal level and feasibility in an action that affected the self instead of the wellbeing of others. The behavior selected was sugar consumption, which is associated with the global prevalence of obesity and hypertension (see Siervo, Montagnese, Mathers, Soroka, Stephan, & Wells, 2014). Although excessive sugar consumption is risky, sugar is included in everyday products such as soft drinks, sauces, and pastries, which increases the difficulty of limiting sugar intake. We reasoned that requesting a reduction of sugar intake would be less demanding than requesting its complete elimination.

### **Method**

**Participants.** A total of 166 undergraduates collaborated in this experiment (32 males and 134 females,  $M_{age} = 20.54$ ,  $SD = 3.70$ ). The students were randomly assigned to the conditions with at least 41 participants assigned to each condition as follows: 29

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females and 12 males were assigned to the difficult-concrete condition; 39 females and 3 males were assigned to the easy-concrete condition; 30 females and 11 males were assigned to the difficult-abstract condition; and 36 females and 6 males were assigned to the easy-abstract condition. A  $2 \times 2$  between-participants design was implemented, with feasibility: reduce (easy) or eliminate (difficult) sugar intake  $\times$  construal level: abstract or concrete. The analyses (ANOVA, main effects and interaction) had 80% power to detect an effect size of  $f=.22$ .

**Procedure.** We followed the same procedure as in Study 3. Subsequent to the double prime of the construal level, participants were asked to report their intentions-expectations regarding reducing or eliminating sugar during the following weeks in the form of pastries or snacks and soft drinks, with both items averaged for subsequent analysis ( $\alpha=.57$  and  $\alpha=.78$  in the easy and difficult conditions, respectively). The participants evaluated the ease of the proposed action and reported their height and weight. This enabled us to calculate their body mass index to avoid cases of serious nutritional problems. All questions were answered on a 7-point scale ranging from 1 (*not at all*) to 7 (*very much*).

## Results

First, we examined whether the participants evaluated reducing sugar intake to be less demanding than eliminating sugar from their diet. The result was significant, ( $M_{reduce}=3.37, SD=1.37$  vs.  $M_{eliminate}=2.50, SD=1.45$ ),  $F(1, 164)=15.66, p<.001, \eta_p^2=.087$ . All volunteers were assessed as having acceptable body mass index values ( $M=22.36, SD=2.87$ ).

An ANOVA test showed a significant interaction between the construal level and feasibility for future sugar intake,  $F(1, 162)=8.73, p=.004, \eta_p^2=.051$ . The main effect of construal level was significant,  $F(1, 162)=10.55, p=.001, \eta_p^2=.061$ , and the

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main effect of feasibility was not significant,  $F(1, 162)=1.43, p=.23$ . The intentions to control sugar intake in both feasibility conditions were similar, but the construal level generated a more powerful effect in the difficult condition, where participants reported the highest,  $t(162)=-2.87, p=.005$  and the lowest,  $t(162)=4.25, p<.001$ , behavioral intentions in the abstract and concrete mindset, respectively (as shown in the 1-versus-3 planned comparison tests).

An ANOVA of each construal level condition was performed to evaluate the effect of feasibility, revealing significant differences in the concrete condition,  $F(1, 81)=8.56, p=.004, \eta_p^2=.18$  ( $M=4.03, SD=1.31$  and  $M=3.19, SD=1.30$  in the easy and difficult conditions, respectively); however, this difference was not found in the abstract condition,  $F(1, 81)=1.55, p=.21$ . The abstract mindset (compared to the concrete mindset) could prompt the participants to focus on the final goals, hiding the differences in the behavior's feasibility. Most central to our purpose, we performed an ANOVA test for each feasibility condition to measure the effect of construal level. When the behavior was demanding (namely, seeking to eliminate sugar from the diet, i.e., neither eating pastries and snacks nor consuming soft drinks), participants at an abstract construal level were more likely to eliminate such sugar-rich products ( $M=4.45, SD=1.42$ ) than those in a concrete mindset ( $M=3.19, SD=1.30$ ),  $F(1, 80)=17.38, p<.001, \eta_p^2=.18$ . Such a difference was not observed in the easy condition (aiming to reduce sugar;  $M=4.09, SD=1.17$  and  $M=4.03, SD=1.31$  in the abstract and concrete mindsets, respectively),  $F(1, 82)=0.04, p=.84$ .

### **Study 5: Construal level as a personal disposition and feasibility**

In contrast to previous studies that manipulated the construal level by using a well-known cognitive prime, in this study, we tested the influence of abstraction



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measured as a personal disposition. In AIT, Vallacher and Wegner (1987, 1989) noted that individuals can represent an action mentally by focusing on the final outcome to enable abstract thinking or by focusing on the means applied to attain the goal to enable the concrete construal level. The two types of mental representation differ in motivational consequences. Vallacher and Wegner (1987) pointed out that the different styles of representing an action help to predict whether a person will act consistently with his or her values and personal identity (in the abstract construal level) or will focus more on context when deciding on the behavior (in the concrete construal level). The researchers developed a scale, the BIF, to evaluate the personal disposition to represent actions through the preference for defining behaviors based on final goals (the abstract level) or the means and contexts of actions (the concrete level). This scale has been used to validate primes of the construal level (see Freitas et al., 2004; Liberman & Trope, 1998).

In Study 5, instead of evaluating the relationship between abstraction and one specific behavior, we asked participants about three actions in each feasibility condition: helping disabled adults (in a low-demand vs. high-demand timetable), making fundraising phone calls (using a list of potential donors vs. cold calls) and attending training for career guidance (in a good vs. bad timetable).

## Method

**Participants.** A total of 169 students participated in the study to obtain course credits. The participants were randomly assigned to each feasibility condition (i.e., easy vs. difficult behavior, between-participants design), and their ages ranged from 19 to 61 ( $M=39.26$ ,  $SD=11.26$ ,  $N=89$  and  $M=37.68$ ,  $SD=11.09$ ,  $N=80$  in the easy and difficult condition, respectively). Most participants were women (78.1%) with at least 39 participants assigned to each condition as follows: 30 females and 11 males were

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assigned to the difficult-concrete condition; 38 females and 6 males were assigned to the easy-concrete condition; 33 females and 6 males were assigned to the difficult-abstract condition; and 31 females and 14 males were assigned to the easy-abstract condition. The analyses (ANOVA, main effects and interaction) had 80% power to detect an effect size of  $f=.22$ .

**Procedure.** First, the participants completed a scalar version of the BIF (Vallacher & Wegner, 1989). The form's 25-item questionnaire includes actions (e.g., making a list), and participants are asked to define these actions by choosing between a description focused on the concrete means (e.g., writing things down) and a description focused on the abstract ends (e.g., getting organized). In the scalar version, participants indicated their preferences on a 6-point scale, in which higher numbers represented an increasing preference for the more abstract description (see Belding, Naufel, & Fujita, 2015). The BIF scale had an acceptable alpha ( $\alpha=.82$ ). Next, the participants were asked about their intention and expectation for the following behaviors: helping disabled adults, making fundraising phone calls and attending a career guidance course. To manipulate feasibility, we varied the timetable and facilities. For the three behaviors, we averaged the intention and expectation items (7-point scales) to obtain the intention-expectation index. The easy conditions included providing assistance on a single Saturday morning from 10 AM to 3 PM ( $\alpha=.88$ ), making phone calls from a list of potential donors ( $\alpha=.92$ ) and attending a course on two Mondays from 1 PM to 2 PM ( $\alpha=.85$ ). The difficult conditions included providing assistance on five consecutive Saturdays from 8 AM to 3 PM ( $\alpha=.95$ ), making cold calls ( $\alpha=.95$ ) and attending a course on five consecutive Mondays from 8 AM to 3 PM ( $\alpha=.94$ ).

## Results

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We examined whether feasibility influenced the intention-expectation index differently depending on the construal level. First, we assigned the participants to two groups based on the median ( $Md=4.48$ ) split of the BIF scores as an abstraction measure ( $N_{conc}=44$ ,  $N_{abst}=45$  in the easy condition and  $N_{conc}=41$ ,  $N_{abst}=39$  in the difficult condition). An ANOVA test for each behavior showed that the construal level was not relevant in the easy condition ( $F_s < 1.34$ ). At high feasibility, the participants' intention-expectation index towards the proposed action was similar (see Table 1). However, at a low feasibility, the construal level was significant for performing cold calls,  $F(1, 78)=11.83$ ,  $p < .001$ ,  $\eta_p^2=.13$ , while the construal level was not significant for helping disabled adults,  $F(1, 78)=2.78$ ,  $p=.10$ ,  $\eta_p^2=.034$ , or taking the career guidance course,  $F(1, 78)=3.84$ ,  $p=.054$ ,  $\eta_p^2=.047$ . For all difficult actions, the participants reported higher behavioral plans when thinking on a more abstract construal level, and the results were in the predicted direction (see Table 1).

To analyze all data as a whole, we averaged all behaviors into a global behavioral plan index ( $\alpha=.69$  and  $\alpha=.74$  in the easy and difficult condition, respectively). A Feasibility (difficult vs. easy)  $\times$  Construal level (abstract vs. concrete groups based on the median split of abstraction) ANOVA was performed to analyze this global behavioral plan index (average of the three behaviors measured in this Study). The results showed a main effect of feasibility,  $F(1, 165)=6.88$ ,  $p=.009$ ,  $\eta_p^2=.04$ , and a significant interaction,  $F(1, 165)=6.31$ ,  $p=.013$ ,  $\eta_p^2=.037$ . The construal level was not significant,  $F(1, 165)=3.37$ ,  $p=.07$ .

The ANOVAs of the effects of each construal level condition on the global behavioral plan index showed an effect of feasibility in the concrete condition,  $F(1, 83)=12.25$ ,  $p=.001$ ,  $\eta_p^2=.13$  ( $M=5.01$ ,  $SD=1.31$  and  $M=3.97$ ,  $SD=1.43$  in the easy and difficult conditions, respectively), but not in the abstract condition,  $F(1, 82)=0.007$ ,

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$p=.93$ . The abstract mindset (compared to the concrete mindset) seems to reduce the effect of the differences in a behavior's feasibility. The same analysis of each feasibility condition confirmed that the construal level did not change future plans in the case of easy behaviors,  $F(1, 87)=0.24, p=.62$ . However, individuals facing very demanding actions were more likely to engage in the behavior when thinking more abstractly ( $M_{abst}=4.85, SD=1.20$  vs.  $M_{conc}=3.97, SD=1.43$ ),  $F(1, 78)=8.81, p=.004, \eta_p^2=.10$ .

To better evaluate the interaction between the construal level and feasibility, we collapsed the data from Studies 3 to 5 ( $N=470$ ). Notably, in Studies 3 and 4, the construal level was manipulated, and in Study 5, the mindset was measured as a personal disposition. A Study (type of behavior: helping disabled adults vs. sugar intake vs. global behavioral plan index)  $\times$  Feasibility (difficult vs. easy)  $\times$  Construal level (abstract vs. concrete) ANOVA was performed. The results showed main effects of the type of behavior considered in each study,  $F(2, 458)=17.03, p<.001, \eta_p^2=.069$ , feasibility,  $F(1, 458)=19.37, p<.001, \eta_p^2=.041$ , and construal level,  $F(1, 458)=11.97, p=.001, \eta_p^2=.025$ . Most important, the interaction between the construal level and feasibility was significant,  $F(1, 458)=17.75, p<.001, \eta_p^2=.037$ . No other interactions were significant.

The ANOVAs of each construal level condition (without considering the Study as a factor) supported the effect of feasibility in the concrete condition,  $F(1, 236)=35.78, p<.001, \eta_p^2=.13$ , but not in the abstract condition,  $F(1, 230)=0.03, p=.86$ . People under an abstract mindset seem to be less aware of the difficulties of performing the suggested behavior.

The ANOVAs of each feasibility condition (without including the Study as a factor) supported that the construal level did not change intentions in the case of easy behaviors,  $F(1, 235)=0.18, p=.67$ . However, when the actions were difficult, the

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participants under an abstract mindset were more likely to engage in the behavior,  $F(1, 231)=28.5, p<.001, \eta_p^2=.11$ .

### **General Discussion**

The present research was developed following the framework of CLT (Liberman & Trope, 1998, 2003) and AIT (Vallacher & Wegner, 1987, 1989). Both theories note that when an action is represented at a high construal level, its essential features, such as the end result and the reasons for performing the action, are more salient. For a desirable but demanding behavior, individuals encounter a conflict of self-control and must decide between pursuing the desired objective or abandoning the activity.

Vallacher and Wegner (1987) showed that individuals with high-level identification persisted with an action when conditions changed in ways that made reaching the objective more difficult. Extensive research on self-control confirms that individuals at an abstract construal level act in accordance with higher-level considerations, such as values and ultimate objectives (Liberman & Trope, 1998; Fujita & Carnevale, 2012; Fujita et al., 2006; Fujita & Han, 2009). With regard to dispositional traits, recent research has also supported the links between abstraction and self-control and between abstraction and cross-situational consistency in self-concept (Fernández, Caballero, Muñoz, Aguilar, & Carrera, 2018).

The above mentioned studies indicate that a behavior's desirability is a high-level construal; therefore, this desirability has a higher influence on behavioral decisions when individuals are in an abstract mindset. Feasibility, however, is a low-level construal and is less relevant to such decisions. Liberman and Trope (1998) manipulated temporal distance and found that the effect of difficulties in a self-oriented action was greater in the near future than in the distant future. Fujita and colleagues (2006, 2009) supported these findings on self-control behaviors when the construal

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level was manipulated by a cognitive prime. Because the previous research was focused on self-oriented behaviors, the novelty of our studies is mainly related to the characteristics of the behaviors tested: actions oriented to others (i.e., helping).

Prosocial actions are especially relevant in a European context affected by the social and economic crisis. In addition to the importance of the analyzed behaviors, we added as a novelty the consideration of the construal level as a personal disposition (see Study 5). The results supported the link between abstraction (manipulated and measured) and desirability when people face not only self-oriented difficult actions but also other-oriented demanding prosocial actions.

Across five studies manipulating and measuring the construal level, we observed that people who focused on reasons and the action's ultimate goals (i.e., in an abstract mindset) were more likely to attempt a difficult-desirable task. Study 1 supported this hypothesis with only a single behavior (helping others in social dining rooms) proposed in the context of a demanding schedule (one Saturday morning from 8 AM to 3 PM). The results obtained using a cognitive prime showed that participants were more motivated to attempt a difficult task when they were at a high level of construal. Study 2 replicated the findings of Study 1 while exploring a different other-oriented behavior: making cold calls to raise funds to feed poor children. The results confirmed that individuals facing a prosocial but demanding action in an abstract mindset, even without personal experience with the task, reported a greater intention to overcome it. Study 3 improved upon its predecessors by adding an easy condition. The interaction between feasibility and the construal level was relevant. Participants with an abstract mindset (vs. a concrete mindset) reported a greater willingness and commitment to help disabled adults according to a strenuous schedule, whereas such differences were not observed in the easy condition (an easy schedule). Previous research (Lieberman & Trope, 1998;

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Fujita et al., 2006) showed that an abstract construal level promoted desirable but demanding self-benefit behaviors; Studies 1-3 support this result when the main benefits are for other people. When people face a demanding action to help others, they are more prone to accept the challenge under an abstract mindset (versus a concrete mindset).

Study 4 replicated this influence in a self-oriented behavior: the healthy action of controlling sugar intake. Individuals who planned to eliminate sugar from their diet reported greater intentions when thinking abstractly. Once again, such a difference was not observed in the easy condition (i.e., planning to merely reduce sugar intake)<sup>1</sup>. The interaction between construal level and feasibility showed that when a very difficult action was associated with self-benefits (health) for participants, those in a concrete mindset (versus an abstract mindset) were less motivated to engage in such a healthy behavior.

Study 5 replicated the previous results by measuring the personal construal level as a personal disposition. We used the BIF scale (Vallacher & Wegner, 1989) to determine whether feasibility moderated the influence of abstractness on decisions to attempt three different behaviors: helping disabled adults, making fundraising phone calls (both other-oriented actions) and attending a career guidance course (self-oriented action). In all difficult actions, the participants reported greater behavioral intentions when presented a higher abstract construal level (personal disposition). It is important to highlight that this result was supported when considering all behaviors tested in Study 5 as a whole.

Finally, by collapsing the data from Studies 3-5, we showed the expected interaction between the construal level and feasibility. These findings revealed that

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when individuals face challenges regardless of whether they are other- or self-oriented actions, the higher their abstractness, the greater their behavioral intention to persevere despite such difficulties. The construal level was not influential for easy behaviors where intentions depended on how much the participants desired the goals. Moreover, the results of Studies 3-5 showed that feasibility was not significant in the abstract condition (feasibility was only significant in the concrete condition). Thus, when deciding to undertake a desirable action, difficulties could become less important when the person thinks more abstractly.

Unfortunately, we did not directly measure mediating processes to determine exactly how abstraction influenced decisions. However, indirectly, our data suggest that under an abstract mindset, people likely focus their attention on desirable final goals (high-level construal), rendering the difficulties associated with an action's implementation (low-level construal) less relevant. This explanation is supported by recent research showing that an abstract construal level leads individuals to attend to the long-term (high-level construal) rather than short-term (low-level construal) consequences described in a previous written message (Carrera et al., 2018). That research found this effect regardless of whether the final outcomes were positive (e.g., health improving) or negative (e.g., health worsening). Abstraction focuses people's attention on high-level construals as final goals (positive or negative) more than on means or subgoals.

Other different explanations of our results would be possible. Abstraction increases self-control by prompting individuals to base their decisions on their global concerns (see Fujita, 2008; Fujita & Carnevale, 2012; Fujita & Han, 2009; Fujita et al., 2006). Creativity in solving complex situations has been associated with abstraction induced by a positive mood (see Fredrickson, 2001; Isen, 2001). Motivation can also be



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changed by abstraction raising action readiness to face personal challenges (Destin, Manzo, & Townsend, 2018). Research investigating mood has shown that a positive mood invokes abstract construal, leading people to focus on long-term goals (Gardner, Wansink, Kim, Park, 2014). Abstraction also promotes self-esteem stability by buffering the influence of daily negative emotions (Updegraff, Emanuel, Suh, & Gallagher, 2010). All of these nonexclusive factors associated with the abstract construal level could explain why abstraction promotes desirable but demanding actions (challenges), but these links need to be tested in future research.

## Practical Implications

Because the construal level can be changed by cognitive primes (Freitas et al., 2004; Fujita et al., 2006), mood (Fredrickson & Branigan, 2005), clinical protocols (Watkins, Moberly, & Moulds, 2008), noise (Mehta, Zhu, & Cheema, 2012) and even colors (Bülbül & Menon, 2010), our findings could be useful when people must confront personal and social challenges.

Previous research applying the induction of abstraction to promote self-control present positive and hopeful results (see Carrera et al., 2018; Fujita, 2008; Fujita & Carnevale, 2012; Fujita & Han, 2009; Fujita et al., 2006). These results could apply to self-benefit behaviors, such as a brief construal-level intervention leading current smokers to reduce cigarette consumption (Chiou et al., 2013). Regarding manipulation of the construal level in a natural setting, White, MacDonnell and Dahl (2011) showed that it is possible induce an abstract construal level using a message printed on one side of a door hanger describing why people should perform an action. These authors demonstrated that a match between loss- (gain-) framed messages that induce more

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concrete (abstract) mindsets, respectively, promotes actual consumer recycling behaviors.

Following these previous applications, we recommend extending these applications to a broader variety of desirable but difficult behaviors. For instance, recent research investigating adherence to adjuvant endocrine therapy (AET) in breast cancer survivors has shown that women who associate positive emotions, such as calm and hopeful, with treatment (both positive emotions are associated with an abstract mindset) reported higher intentions of adherence (Hurtado-de-Mendoza, Carrera, Parrott, Gómez-Trillos, Perera, & Sheppard, 2018). These results highlight the necessity of tailoring health promotion campaigns to focus on positive emotions, and considering that women may have to endure the side effects of AET in the short term for greater chances of survival in the long term (a large personal challenge). We propose combining positive emotions with messages that promote an abstract style of thinking (e.g., in medical leaflets or therapy containers) to increase the adherence to beneficial but difficult therapies.

Thus, campaigns to promote desirable but demanding behaviors should consider the positive influence of abstractness to more effectively encourage individuals to persist towards their objectives. We emphasize that these results were found both when the behaviors implied personal benefits (i.e., improving one's health; training in career guidance course) and when they implied benefits for other people in need (i.e., helping behaviors). When economic problems are severely affecting our societies, promoting prosocial behaviors is an urgent need. We believe that policy makers should consider current knowledge of the influence of abstraction on personal and social challenges.

## Limitations

Finally, certain caveats should be considered. We follow the suggestions of Vallacher and Wegner (1987) and note that although viewing abstractness as the preferred construal level is tempting, there are many situations in which details are important and reasoning at a higher level may be counterproductive (e.g., when the action is highly scripted). The sample selection of participants and the research procedure contain some limitations. Because all participants were undergraduate students and mainly females, the findings should be replicated using larger samples from the general population involving a similar number of female and male participants. Furthermore, feasibility was manipulated primarily by offering demanding versus easy schedules but other types of difficulties should be tested in future studies. Finally, future research should measure mediating processes and actual behavior.

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**Table 1.** Means (SD) of Behavioral Intention-Expectation Index (Study 5).

	<b>Easy condition</b>		<b>Difficult condition</b>	
	Concrete	Abstract	Concrete	Abstract
<b>Help Adults</b>	5.18(1.67)	4.77(1.61)	4.17(1.73)	4.76(1.45)
<b>Phone Calls</b>	5.09(1.80)	4.54(1.77)	3.69(1.89)	5.01(1.49)
<b>Course</b>	4.78(1.81)	5.32(1.21)	4.06(1.75)	4.79(1.58)

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### Footnote

<sup>1</sup> We note that we found the main effect of construal level in addition to the significant effect of interaction (i.e., construal level  $\times$  feasibility) only in Study 4. This main effect had not been found in previous literature manipulating feasibility and construal level (e.g., Liberman & Trope, 1998; Fujita et al., 2006) or in Studies 3 and 5. Instead, in these studies, the effects of the feasibility and its interaction with construal level were the only significant results. In Study 4, the construal level increased its influence on behavioral intentions when the action proposed was difficult, meaning that participants reported the highest and the lowest behavioral intentions in the abstract and concrete mindset, respectively. However, in the easy condition, participants reported intentions of medium level, making the main effect of feasibility was not significant. These results could be explained according to how the feasibility was manipulated in this study: the difficulty was intrinsic to the behavior (i.e., reduce versus eliminate sugar), while in other studies, the feasibility was manipulated with external conditions (e.g., easy versus demanding schedule). This difference could have affected to the value attributed to both sugar-related behaviors. For example, the participants could have thought that they were just reducing sugar in their current diet, considering the action proposed as trivial (easy condition); they then would have reported a medium level of intention, diminishing the difference with the difficult condition (eliminate sugar). However, eliminating sugar could have been considered a new effective and challenging behavior, increasing the effect of the construal level and generating the highest and the lowest behavioral intentions in the abstract and the concrete mindset, respectively (as shown in the 1-versus-3 planned comparison tests). This possible explanation needs to be tested in future studies. More important, the interaction between construal level and feasibility replicated previous research showing that when a very difficult action was

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associated with self-benefits (health), those in an abstract mindset (versus a concrete mindset) were more motivated to engage in such a healthy behavior.