Uncovering the Motivational Core of Traits: The Case of Conscientiousness

Giulio Costantini[1], Daniele Saraulli[2], Marco Perugini[1]

[1]Department of Psychology, University of Milan-Bicocca, Piazza dell'Ateneo Nuovo 1 (U6), 20126 Milan, Italy

[2]Department of Law, Economics, Politics and Modern languages, LUMSA University, Via della Traspontina 21, 00193 Rome, Italy

Correspondence concerning this article should be addressed to Giulio Costantini,

giulio.costantini@unimib.it

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Abstract

Knowledge of the motivational bases of conscientiousness would be crucial for disentangling competing explanations about the processes underlying this trait. Thereby, building on the results of a previous investigation identifying 21 goal classes connected to conscientiousness (Costantini & Perugini, 2018), we performed three studies aimed at clarifying the full spectrum of goals and motives underlying this trait. In Study 1 (N = 299), we conceptually replicated the original associations between goal classes and conscientiousness poles, and we identified nine goal classes that individuals ascribe to conscientious profiles more than to other profiles. In Study 2 (N = 329), we examined the associations between the subjective importance of conscientious and unconscientious goal classes and personality traits, as well as the role of goals for the desire to change one's conscientiousness. In Study 3 (N = 432), we developed a 72-item assessment of nine goal classes and explored their connections with the most important facets of conscientiousness, self-control, future orientation and the consideration of future consequences, using network analysis. We discuss the relevance of our results for research on conscientiousness and its underlying processes.

Keywords: conscientiousness, goals, personality change, network, emergence

Uncovering the Motivational Core of Traits: The Case of Conscientiousness

The ontological status of personality traits and the implications regarding mechanisms underlying their structure, processes, and development are currently debated (e.g., Baumert et al., 2017; Borsboom, Mellenbergh, & van Heerden, 2003; Costantini & Perugini, 2018; McCrae & Sutin, 2018; Mõttus & Allerhand, 2018). According to a *correspondence* perspective, the structure of phenotypic personality reflects the existence of a unitary causal generator underlying each major trait (McCrae & Costa, 2008; McCrae & Sutin, 2018). In this view, factors identified through lexical and questionnaire studies, such as the Big Five, are seen as reflecting the effect that underlying causal generators have on the observable manifestations of a trait (Borsboom et al., 2003). These generators have been mainly conceived of as biological in nature. This view is often supported by studies demonstrating that neural structures predict at least some trait variance (Hou et al., 2017; Rueter, Abram, MacDonald, Rustichini, & DeYoung, 2018) and by evidence regarding the heritability of personality traits (Sanchez-Roige, Gray, MacKillop, Chen, & Palmer, 2018; Vukasović & Bratko, 2015), albeit recent research suggests for instance that the genetic influence on personality might be aspecific and not necessarily in correspondence of broad phenotypic traits (Mõttus et al., 2019).

An alternative view has been recently put forward that sees traits as *emerging* from direct interactions among elements of the personality system. In this view, a personality trait would not reflect the presence of a specific underlying causal generator, but it would instead emerge from direct relationships among behaviors, thoughts, feelings, motives, and situations (Baumert, Schmitt, & Perugini, 2019; Baumert et al., 2017; Costantini & Perugini, 2016, 2017; Cramer et al., 2012). Networks have been proposed as models of personality traits that do not rely on underlying latent entities and are thus more suitable for representing the patterns of direct interactions characterizing emergent processes (Costantini, Epskamp, et al., 2015; Cramer et al., 2012; Schmittmann et al., 2013). It has also been pointed out that a correspondence view and an emergence view are not

necessarily incompatible and that traits might also result from a combination of both types of process (Mõttus & Allerhand, 2018).

Experimental research has been proposed as a way of probing emergent processes (Costantini & Perugini, 2018; see also McCrae & Sutin, 2018). If relying on the knowledge of a trait's network we could develop a procedure capable of changing the levels of that trait in individuals compared to control participants who do not receive the manipulation, and if we were able to produce long-lasting change without targeting biological substrates, we would be confident that a trait does not simply reflect the effects of an unobservable causal generator that is purely biological in nature. In favor of this possibility, a body of studies has shown that traits can change (Roberts, Walton, & Viechtbauer, 2006) and that they are sensitive to environmental conditions that do not directly involve biological processes, such as psychotherapy and different career paths (e.g., Golle et al., 2019; Roberts, Luo, et al., 2017). Furthermore, assigning participants goals that are congruent with the pole of a certain trait has been shown to affect corresponding state-levels (McCabe & Fleeson, 2016) and participants who desired to change their personality have been shown to benefit from an implementation intention manipulation (Hudson & Fraley, 2015). However, research on the impact of life-events on personality change resulted in mixed findings: Albeit effects of life-events on traits have been identified, they were not frequent, with some effects being actually explained by selection effects or by personality changes in anticipation of an event (e.g., employment; Denissen, Luhmann, Chung, & Bleidorn, 2019; see also Specht, Egloff, & Schmukle, 2011).

We decided to focus on developing procedures to foster a specific trait, conscientiousness. Conscientiousness is consensually identified as a central trait by the most prominent personality taxonomies (Ashton et al., 2004; Costa & McCrae, 1992) and higher levels of conscientiousness have been connected to positive outcomes in many life domains, such as health (Bogg & Roberts, 2004), longevity (H. S. Friedman, Kern, Hampson, &

Duckworth, 2012) and success at school and at work (Barrick & Mount, 1991; Ozer & Benet-Martínez, 2006; Poropat, 2009). Furthermore, the emerging field of volitional personality change shows that the majority of individuals desires to increase conscientiousness (Hudson & Fraley, 2015; Hudson & Roberts, 2014). Therefore, developing procedures to foster conscientiousness in individuals who desire to change it would be of particular interest (Roberts, Hill, & Davis, 2017).

Albeit networks cannot prove causality, network analysis in the form of the Gaussian Graphical Model (GGM) can be used to identify connections among phenomena that are potentially causally relevant for a trait (Epskamp, Waldorp, Mõttus, & Borsboom, 2018), and can thus provide useful indications for experimental studies. Since different aspects of trait conscientiousness can show specific developmental trajectories (Jackson et al., 2009), it is important to identify potential mechanisms that are shared by the different aspects of the trait and not specific, for instance, to a facet. Previous studies identified three features that were shared by the three most prominent conscientiousness facets, industriousness, impulse-control, and orderliness (Costantini & Perugini, 2016; Costantini, Richetin, et al., 2015). These features were self-control, the tendency to advance abstract and distal goals over concrete and proximal motives (Fujita, 2011; Tangney, Baumeister, & Boone, 2004), a temporal orientation towards the future (Zimbardo & Boyd, 1999), and the tendency to consider future consequences of one's actions (Strathman, Gleicher, Boninger, & Edwards, 1994). Statistically partialling these features out of conscientiousness facets resulted in a drastic reduction of the correlation among facets, with industriousness and impulse-control becoming negatively correlated (Costantini & Perugini, 2016; see also Costantini, Richetin, et al., 2015). We reasoned that these three features share goal pursuit as a common core, of which they are fundamental ingredients (Costantini & Perugini, 2018; see also Fujita, 2011; Milyavskaya, Inzlicht, Hope, & Koestner, 2015). Full knowledge of the motivational bases of conscientiousness might thus be crucial for thoroughly understanding the processes underlying conscientiousness (Roberts, Lejuez, Krueger, Richards, & Hill, 2014) and for disentangling correspondence and emergence explanations of this trait (Costantini & Perugini, 2018). This idea is supported by studies linking

conscientiousness change and goals (Hudson & Fraley, 2015; McCabe & Fleeson, 2016; Roberts, O'Donnell, & Robins, 2004). Furthermore, it has been shown that conscientiousness is associated with the resting-state functional connectivity of brain areas that are also involved in goal prioritization (Rueter et al., 2018). The idea that knowledge of goals related to conscientiousness is crucial for producing conscientiousness change is in line with theories positing that personality change is not only driven by biological maturation, but also by changes in social roles, societal demands, personal goals, and motives (Bleidorn, 2012; Bleidorn et al., 2013; Hennecke, Bleidorn, Denissen, & Wood, 2014; Lodi-Smith & Roberts, 2007; Roberts, Hill, et al., 2017; Roberts, Wood, & Smith, 2005; Specht et al., 2014). Knowledge of trait-related goals is also important according to theories that see traits as parameters of a cybernetic system, which is strictly connected to goal pursuit (Allen & DeYoung, 2016; DeYoung, 2015).

Albeit goals play a crucial role for personality in general, and even more so for conscientiousness (e.g., Roberts et al., 2014), few studies have investigated the full spectrum of goals and motives underlying conscientiousness and its most important facets. Most studies linking personality traits and goals focused either on very specific goals (e.g., McCabe & Fleeson, 2016) or on relatively broad motives (e.g., Bleidorn et al., 2010; Lüdtke, Trautwein, & Husemann, 2009; Roberts et al., 2004; Roberts & Robins, 2000; Specht et al., 2014; see Reisz, Boudreaux, & Ozer, 2013 for an exception). Costantini and Perugini (2018) took a bottom-up approach for identifying the most important goals connected to all main aspects of conscientiousness. They used the following steps to identify goal classes relevant to the positive or the negative poles of conscientiousness: (1) Markers of conscientiousness were used to elicit conscientious and unconscientious goals from 40 participants. (2) Goals were classified in 26 classes, each including responses that were elicited both by adjectives belonging to the positive and to the negative poles of the trait, but in different proportions (e.g., goals in class "be trustworthy" were elicited mostly by

conscientious adjectives, whereas goals in class “rebel, transgress the rules” were mostly elicited by unconscientious adjectives). (3) A chi-square test on the contingency table between the 26 goal classes and the two conscientiousness poles rejected the hypothesis of independence between goal classes and conscientiousness poles. (4) Goal classes belonging to the positive vs. the negative pole of conscientiousness were identified using the Relative Conscientiousness Score (RCS), the standardized residual from the chi-square analysis: Positive vs. negative values indicated goals connected to high vs. low conscientiousness, respectively. The RCS indicated 11 goal classes as connected to high conscientiousness and 10 to low conscientiousness.

The study by Costantini and Perugini (2018) had some limitations, such as the small sample size and the focus only on the broad trait conscientiousness rather than also on its facets. Most importantly, the study did not consider the strength of the relationships between goal classes and traits beyond conscientiousness. Knowledge of relationships between goals and other traits is particularly relevant for developing experimental manipulations of personality through goals. Research shows that individuals can sometimes use their personality as a *tool* for pursuing goals (McCabe & Fleeson, 2012): When assigned a conscientious goal, individuals have been shown to increase their state conscientiousness in the attempt to pursue it (McCabe & Fleeson, 2016). However, having available several means to pursue the same goal, a configuration called *equifinality* in motivational research (Kruglanski et al., 2002), reduces the commitment to each specific means (Bélanger, Schori-Eyal, Pica, Kruglanski, & Lafrenière, 2015; Kruglanski, Pierro, & Sheveland, 2011). An increase in conscientiousness will be thus less likely to follow a goal assignment, if one can pursue the same goal more effectively by being agreeable or extraverted rather than conscientious. One of the aims of this work is thus to deepen the relationships between goals and all major personality traits.

Overview of the studies

In this contribution, we present three studies aimed at fully uncovering the motivational bases of conscientiousness, expanding therefore upon the original study by Costantini and Perugini (2018). The main aim of Study 1 was to validate and extend the associations between conscientiousness and goal classes identified in the original study, employing a different methodology and a larger sample. Instead of asking participants to freely generate goals for conscientiousness markers as in the original study, we asked them to indicate the extent to which an individual who matched a certain personality profile could or would pursue goals belonging to the conscientious and unconscientious classes previously identified. Crucially, the profiles did not include only the positive and negative poles of conscientiousness, but also the positive and negative poles of other major personality traits, thus allowing us to examine equifinality relationships and to identify goals more connected to conscientiousness than to other traits.

The main aim of Study 2 was to examine the connections between the levels of major personality traits and the subjective importance of conscientious and unconscientious goal classes, to establish whether conscientious individuals, controlling for differences in other personality characteristics, actually consider conscientious goal classes as more important. This allowed identifying goals whose subjective importance is connected to trait conscientiousness. Furthermore, we investigated the connections between the subjective importance of goal classes and the desire to change one's conscientiousness (Hudson & Roberts, 2014; Robinson, Noftle, Guo, Asadi, & Zhang, 2015).

Studies 1 and 2 assessed broad goal classes and focused on conscientiousness as a broad personality trait. With Study 3, we aimed at developing a more specific and nuanced assessment of goal classes related to conscientiousness. We did so by articulating specific examples of goals for each goal classes and by examining their connections with

conscientiousness at the facet level. Furthermore, with Study 3 we examined the network of relationships among goals, conscientiousness facets, and their most important shared features as emerged in previous network studies of conscientiousness (Costantini & Perugini, 2016; Costantini, Richetin, et al., 2015).

All studies received IRB approval by the appropriate ethical committee and were administered using the online software *Qualtrics* (Qualtrics, Provo, UT; www.qualtrics.com).

Study 1

Costantini and Perugini (2018) identified 11 conscientious goal classes and 10 unconscientious ones in an initial study relying on a small sample of participants. The first aim of Study 1 was therefore to inspect the validity of their results in a study with a larger sample size and employing a different methodology. We hypothesized that the results of this study would replicate the results of the original study, indicating for each goal a significantly larger connection with the expected conscientiousness pole than to the opposite conscientiousness pole (Hypothesis 1.1). Furthermore, the procedure employed by Costantini and Perugini (2018) did not allow investigating equifinality, that is the possibility that some goal classes could be connected to personality traits other than conscientiousness (Kruglanski et al., 2002). The second aim of this study was therefore to examine the relationships among goal classes and personality traits in the HEXACO model of personality (Lee & Ashton, 2008). In particular, for each goal, we tested the hypothesis that it was significantly more related to the positive or the negative pole of conscientiousness (depending on the goal) than to the remaining positive and negative poles of the other five HEXACO traits (Hypothesis 1.2), with the aim of identifying a subset of goals that were more related to conscientiousness than to any other major trait.

Method

Participants

Three-hundred-five individuals took part in the data collection. To ensure a full understanding of the descriptions of profiles and goal classes, we included in the analyses participants who indicated sufficient proficiency in the Italian language. Six participants were excluded from the analyses for this reason. The final sample therefore included 299 participants (255 females and 44 males, Mean age = 18.52, *SD* = .76).

Procedure and materials

Each participant was presented with a subset of 12 descriptions of the positive and of the negative poles of each of the HEXACO personality traits developed by Lee and Ashton (2008). Each description consisted of four sentences, each one describing a facet of the trait (e.g., "Seeks order, prefers tidy surroundings and a structured approach to tasks", facet Orderliness, Conscientiousness)[1]. Participants were given the following instructions: "Read carefully the following sentences, which describe a type of person. Focus on the description, try to form a mental image of a person like this". Participants then indicated to what extent they thought that people who matched each description pursued or might pursue each of 21 types of goals (reported in Table S1), on a scale ranging between 1 (*not at all*) and 7 (*very much*).

If we had asked each participant to rate how much each goal applied to each of 12 profiles, each participant would have been required to express 252 ratings. To prevent the task from being too long and repetitive, we used a planned missing data design (Graham, Taylor, Olchowski, & Cumsille, 2006; Little & Rhemtulla, 2013). Each participant indicated

[1] In the conscientious and unconscientious profiles, we replaced the description of facet perfectionism with that of facet responsibility, which was part of the set of conscientiousness markers that were used in the original study (Costantini & Perugini, 2018). The description was inspired by the definition by Roberts and colleagues (2014). Responsibility was described respectively by the following sentences: "In situation in which achievement is relevant, behaves in a responsible way and tends to follow through with promises" (conscientious profile) and "In situation in which achievement is relevant, behaves in an irresponsible way and tends not to follow through with promises" (unconscientious profile).

how much each goal applied to the conscientious and to the unconscientious profiles, which were the most central for our study, plus the positive and the negative poles of another of the HEXACO traits, resulting in 84 judgments by participant. After completing these ratings, participants filled in additional measures that were not part of this study and that therefore will not be discussed here. Demographic information was collected at the end of the questionnaire.

Analysis plan and power

The first aim of the study was to replicate the results obtained by Costantini and Perugini (2018) in terms of connections between goal classes and the two conscientiousness poles. For each of the 21 goal classes, we performed a one-tailed paired-samples t-test, with p-values corrected for multiple comparisons using the conservative Bonferroni criterion, testing the hypothesis that the goal class was more ascribed to the conscientiousness pole identified in the original study than to the opposite pole of conscientiousness (Hypothesis 1.1). Furthermore, we inspected whether the RCS scores computed by Costantini and Perugini (2018) would predict the extent to which each goal would be ascribed to the conscientious vs. unconscientious profiles, by correlating the RCS of each goal class with the corresponding difference between ratings of goals as conscientious and unconscientious in the current study.

The second aim of this study was to inspect whether participants would ascribe each goal to the hypothesized conscientiousness pole (e.g., high conscientiousness) more than to each of the ten poles of the remaining HEXACO traits (e.g., low extraversion; Hypothesis 1.2). Because of the planned missing data design, the sample that rated goals with respect to conscientious and unconscientious profiles was only partially overlapped to the smaller samples that rated goals with respect to the remaining profiles, which were about one-fifth of the total sample. Performing paired-samples t-tests would have resulted in discarding information collected on unpaired participants, whereas performing independent-samples t-tests would have discarded information on dependencies among ratings by the same participants. We thus employed the partially-overlapping samples t-test, a statistical technique that has been recently proposed to compare samples that

include both paired an unpaired observations (Derrick, 2018; Derrick, Russ, Toher, & White, 2017; Derrick, Toher, & White, 2017). In particular, for each goal, we performed ten one-tailed partially overlapping t-tests comparing participants' ratings of a goal as related to the hypothesized pole of conscientiousness versus all other poles of the remaining five HEXACO traits. Since we aimed at identifying goals that were more related to conscientiousness than to all other traits, the multiple tests performed for each goal inflated the probability of Type II errors instead of Type I errors. For this reason, we decided not to correct the alpha level for multiple comparisons.

Since the set of goals examined showed a clear connection to conscientiousness in a previous study, we powered the study to detect a medium effect size of $d = .50$ with very high power. We planned to collect about N = 300 participants, which guaranteed a power > .999 to detect a standardized mean difference of $d = .50$ in a one-tailed paired samples t-test, assuming a correlation among repeated measures as low as $r = .20$ (and thus an effect size $dz = .40$) (Cohen, 1988), considering a Bonferroni-corrected alpha level of .0024. Under the same conditions, a sample of size N = 300 allowed detecting an effect size as small as $dz = .21$ with 80% power. Since analytic power equations for the partially overlapping samples t-test have not been worked out yet, we performed a simulation study mirroring our planned missing data design (Perugini, Gallucci, & Costantini, 2018; Schoemann, Boulton, & Short, 2017), which indicated that a sample of size N = 300 yielded a power = .98 in the same conditions of effect size and correlation among repeated measures, at the conventional alpha level of .05. Details of the simulation are available in the Supplementary Material.

Results

Hypothesis 1.1: Connections between goals and conscientiousness poles

The first aim of this study was to examine the relationships between goal classes and conscientiousness poles. The results of the paired samples t-test comparing the extent to

which each goal class was ascribed to the hypothesized pole of conscientiousness versus the opposite pole are reported in Table 1. All goal classes were significantly more associated with the expected conscientiousness pole than to the opposite pole, with the only exception of the class "feel good". The correlation between the RCS computed in Costantini and Perugini (2018) and the difference between conscientious and unconscientious scores was extremely high, $r = .91$, $p < .001$. These results supported the validity of the methods used in Costantini and Perugini (2018) for identifying goals that characterized the positive and the negative poles of conscientiousness.

Hypothesis 1.2: Equifinality

The second aim of this study was to examine equifinality relationships, by comparing the connections of goals to conscientiousness and those with other HEXACO traits. Table 2 reports the p-values of the 210 partially-overlapping paired samples t-tests, whereas full details of each test are reported in the Supplementary Table S2. Of the eleven conscientious goal classes, seven were significantly more associated with the expected conscientiousness pole than to any other pole of the remaining traits. Of the ten unconscientious goal classes, only one class, "do not think", was significantly more associated with the negative conscientiousness profile than to all other profiles. However, class "avoid or manage things you do not care about" was significantly more ascribed to the hypothesized unconscientious profile than to all other HEXACO profiles ($ps < .001$), with the only exception of low Openness to experience, for which the difference was marginally significant ($p = .061$). Therefore, also this class can be considered overall as uniquely associated with the negative conscientiousness profile.

Discussion

We tested whether 21 goal classes were significantly more ascribed to the hypothesized conscientiousness pole than to the opposite pole. Results showed that, of the 21 goal classes originally identified, all but one ("feel good") fulfilled this condition. These results thus supported Hypothesis 1.1 in the large majority of cases and corroborated the validity of the RCS criterion

employed by Costantini and Perugini (2018) for identifying goals univocally connected to a specific conscientiousness pole. These results also suggested that a similar method could be employed more generally, for identifying a set of candidate goals related to traits or behaviors that have a positive and a negative pole, using a relatively limited sample of participants.

Hypothesis 1.2 was only partially supported. Nine goals were also significantly more ascribed to the hypothesized conscientiousness pole than to the positive and the negative pole of all other HEXACO traits. These goals were "*comply with rules*", "*have control*", "*personal realization*", "*do something well, avoid mistakes*", "*accomplish something, observe a commitment*", "*be safe*", and "*think, reflect*" for the positive conscientiousness pole and "*do not think*" and "*avoid or manage things you do not care about*" for the negative pole, although in this latter case one of the comparisons was only marginally significant. For the remaining goals, we did not have sufficient evidence that they were more connected to conscientiousness than to other traits. These results suggest that several goals that were identified as being mainly related to high or low conscientiousness were also substantially related to other traits, thus configuring a large number of equifinality relationships (Kruglanski et al., 2002). Relationships between goals and traits other than conscientiousness were much more accentuated for goals belonging to the negative conscientiousness pole. This suggests that positive conscientiousness could be more clearly related to pursuing conscientious goals than unconscientiousness is related to pursuing unconscientious goals, which is in line with results showing that goal-related motivational constructs are positively connected to trait conscientiousness (e.g., Costantini & Perugini, 2016).

It is also noteworthy that some goals were judged as nearly perfectly related or unrelated to some of the profiles, as suggested by the mean values reported in Tables 1 and S2, which were in some cases close to the minimum value (one) or the maximum values of

the scale (seven). These results reflect the genuine opinion of participants that some goals are maximally or minimally related to some traits. They also suggest the presence of ceiling and floor effects (McBee, 2010; Sackett & Yang, 2000). In Study 2, we will examine the connections between goals and traits using different methods, including also solutions to rule out ceiling and floor effects.

Study 2

Whereas Study 1 identified a set of goal classes that are generally more ascribed to conscientious personality profiles than to other profiles, it did not elucidate whether and how the subjective importance of goals is related to one's own personality. The main aim of Study 2 was therefore to inspect the connections between trait conscientiousness and the subjective importance of conscientious and unconscientious goal classes. Furthermore, Study 1 suggested that several goal classes, albeit being more connected to the hypothesized pole of conscientiousness than to the opposite pole, were also related to personality traits other than conscientiousness. Albeit personality traits in the HEXACO and Big Five models are conceptualized as theoretically independent, measures of these traits often show non-negligible correlations (Ashton & Lee, 2009; Ashton, Lee, Goldberg, & de Vries, 2009; Lee & Ashton, 2004; Soto & John, 2017). Therefore, when examining the connections between goals and conscientiousness, we controlled for other traits using a multiple-regression approach[2] (see also Reisz et al., 2013). We hypothesized that conscientiousness would predict the subjective importance of conscientious and unconscientious goal classes above and beyond the variance explained by other traits (Hypothesis 2.1).

Research about volitional personality change shows that most individuals seem to desire to change some of their personality traits and that the desire to change a trait is inversely related to that

[2] The use of multiple regressions should not be seen as suggesting a unidirectional causal relationship between traits and goals (see also Costantini & Perugini, 2018). This approach was adopted to rule out the possibility that the covariation between conscientiousness and some of the goals could be simply explained by the shared variance between conscientiousness and other major traits, which is connected for instance to halo effects or to the presence of blended indicators (Anusic, Schimmack, Pinkus, & Lockwood, 2009; Ashton et al., 2009).

trait's current level for conscientiousness, extraversion, agreeableness, and stability, but not for openness (Hudson & Fraley, 2016; Hudson & Roberts, 2014; Miller, Baranski, Dunlop, & Ozer, 2019; Robinson et al., 2015). Besides the current trait's levels, the desire to change one's personality is related to other personal characteristics, including for instance low life satisfaction, self-esteem, and optimism (Hudson & Fraley, 2016; Hudson & Roberts, 2014; Quintus, Egloff, & Wrzus, 2017). Several studies suggest that individuals might be capable to change their personality states and traits in order to achieve their goals (e.g., McCabe & Fleeson, 2012, 2016; Roberts et al., 2004). However, to our knowledge, no study examined whether the subjective importance of goals related to a trait would predict the desire to change that trait. We hypothesized (Hypothesis 2.2) that subjective importance of conscientious goals would predict the desire to increase conscientiousness, above and beyond variance explained by the current personality and by positive orientation, a construct that encompasses life satisfaction, self-esteem, and optimism (Alessandri, Caprara, & Tisak, 2012; Caprara et al., 2012; Costantini et al., 2016).

Method

Participants

Three-hundred-sixty-eight participants took part in the study. Twenty-eight of them were excluded from the analyses because their responses to the Directed Questions Scale (Maniaci & Rogge, 2014) revealed careless responding, ten additional participants were excluded because they self-reported careless responding to a Self-Report Single-Item indicator (Meade & Craig, 2012), and one additional participant because of insufficient proficiency in the Italian language. The final sample thus included 329 participants (87 males and 242 females, M age = 32.2, SD = 13.5).

Procedure

All measures were administered online, in the order in which they are presented in the Materials section. Since the study was administered online, we accounted for potential careless responding in two ways. First, we introduced three items adapted from the Directed Questions Scale (DQS; Maniaci & Rogge, 2014) in different points of the questionnaire. A sample item is "This is a control question. Select Fully Agree and proceed with the questionnaire". At the end of the questionnaire, we included the self-report single item indicator (SRSI) (Meade & Craig, 2012), that explicitly asked participants to indicate whether they honestly thought that we should use their data. We retained only participants who responded "yes" to the SRSI and who responded correctly to at least two DQS items.

Materials

Big Five Trait-Change Goal Inventory (BF-TGI; Robinson et al., 2015). Participants were presented with a description of each of the Big Five traits (e.g., "Extraversion. Characterized by being active, assertive, energetic, enthusiastic, outgoing, talkative") and were asked to indicate their goals to change each trait on a three-point scale: *1 = I have a goal to become less like this, 2 = I have no goal to change this trait, 3 = I have a goal to become more like this*. An extra item was developed for assessing the desire to change Honesty-humility ("Honesty/Humility: trait characterized by being sincere, fair, honest, trustworthy, humble, and modest"; see the Supplementary Material for details).

Change Goals Big Five Inventory (C-BFI; Hudson & Roberts, 2014). Participants indicated their desire to change several aspects of themselves (e.g., "I want to be talkative"), on a scale from 1 (*Much less than I currently am*) to 5 (*Much more than I currently am*), with the midpoint of the scale being 3 (*I don't want to change this trait*). Desire to change was computed for each of the Big

Five factors: Openness (10 items, α = .83, ω = .88)[3], Conscientiousness (9 items, α = .82, ω = .84), Extraversion (8 items, α = .61, ω = .66), Agreeableness (9 items, α = .68, ω = .72), and Emotional Stability (8 items, α = .74, ω = .78). Additional eight items (e.g., "I want to be humble, modest") assessed the desire to change Honesty-humility (α = .79, ω = .83; see the Supplementary Material for details).

HEXACO-60 (Ashton & Lee, 2009). The short version of the HEXACO-PI (Lee & Ashton, 2004), the HEXACO-60, assesses six major personality traits with 10 items each: Honesty-humility (α = .81, ω = .87), Emotionality (α = .73, ω = .78), eXtraversion (α = .78, ω = .84), Agreeableness vs. anger (α = .74; ω = .79), Conscientiousness (α = .74; ω = .81), and Openness to experience (α = .72; ω = .75). A sample item is "I plan ahead and organize things, to avoid scrambling at the last minute" (Conscientiousness). Participants rated each item on a 5-point scale, from 1 (*Completely disagree*) to 5 (*Completely agree*).

Big Five Inventory-2 (BFI-2; Soto & John, 2017). The BFI-2 assesses the Big Five personality traits with 12 items each, Openness (α = .85; ω = .96), Conscientiousness (α = .82; ω = .93), Extraversion (α = .79; ω = .86), Agreeableness (α = .79; ω = .88), and Neuroticism (α = .89; ω = .93). A sample item is "[I am a person who] is outgoing, sociable" (Extroversion). Participants rated each item on a 5-point scale, from 1 (*Completely disagree*) to 5 (*Completely agree*).

Positivity scale (Caprara et al., 2012; α = .75, ω = .79): The positivity scale is an eight-item scale that assesses positive orientation, a construct defined by the variance shared by life satisfaction, self-esteem, and optimism. A sample item is "I am satisfied with my life". Participants rated each item on a 5-point scale, from 1 (*Completely disagree*) to 5 (*Completely agree*).

[3] For each scale, we reported both Cronbach's alpha reliability computed with the R package *psych* (Revelle, 2018) and omega reliability computed with the R package *MBESS*, using the categorical version of omega for ordinal data (Kelley & Pornprasertmanit, 2016).

Subjective importance of goals. We assessed the subjective importance of each of 11 conscientious and 10 unconscientious goals classes (Costantini & Perugini, 2018), using the following item: "Please, rate how much you think that the aforementioned goal is important to you" (1 = *not at all*, 9 = *very much*). We computed overall importance scores separately for conscientious goals (α = .77; ω = .84) and unconscientious goals ($\alpha_{unconscientious}$ =.62; $\omega_{unconscientious}$ =.64)[4].

Analysis plan and power

Hypotheses 1 concerned the effects of conscientiousness on the importance of goals, controlling for other traits. Hypothesis 2.2 concerned the effects of the subjective importance of conscientious goals on the desire to change conscientiousness, controlling for HEXACO personality traits, and positive orientation. These hypotheses could be tested using multiple linear regressions in which the main effect of interest was that of conscientiousness for Hypotheses 1 and the subjective importance of conscientious and unconscientious goals for Hypothesis 2.2. We planned to collect at least 300 participants, which allowed detecting a medium effect size f^2 = .15 with a power > .999 at the conventional alpha level of .05 for any of the hypotheses. The same sample size allowed detecting with 80% power an effect size as small as f^2 = .027 for testing Hypotheses 1 and an effect size as small as f^2 = .033 for testing Hypothesis 2.2.

In testing Hypothesis 2.1, we also performed follow-up analyses at the level of specific goal classes, using multiple regression for each class. The subjective importance of goal classes was rated through single items from one to nine: We handled potential ceiling and floor effects by means of Tobit regression models for censored data, as implemented in the R package *censReg* (Henningsen, 2010; McBee, 2010). The results of such models can be interpreted as those of corresponding ordinary least squares regressions performed on uncensored data. For each regression, we also reported the McKelvey-Zavoina pseudo-R^2 measure, as suggested by McBee

[4] In addition, participants also completed a measure of goal self-concordance (Sheldon & Elliot, 1998). Results regarding self-concordance are not presented here, as they go beyond the scope of this manuscript.

(McBee, 2010) and by Veall and Zimmermann (1994). We controlled for multiple comparisons using the conservative Bonferroni method, considering 21 multiple comparisons ($\alpha = 0.0024$). A sample of 300 participants allowed detecting a medium effect size $f^2 = .15$ with a power > .999 and it allowed detecting an effect size as small as $f^2 = .052$ with 80% power.

Results

Hypothesis 2.1: Conscientiousness as a predictor of goal importance

The main aim of Study 2 was examining the relationships between conscientiousness and the self-rated importance of goal classes. As predicted, conscientiousness showed a significant correlation with the overall importance of conscientious goals ($r = .32$, $p < .001$) and of unconscientious goals ($r = -.17$, $p = .002$). After the other HEXACO traits were included as predictors of goal importance, conscientiousness was the strongest predictor of the subjective importance of conscientious goals ($\beta = .34$, $p < .001$), followed by emotionality ($\beta = .17$, $p = .002$) and agreeableness ($\beta = .12$, $p = .030$), with nonsignificant contributions from the remaining factors (ps > .22; $R^2 = .15$, $p < .001$). However, albeit conscientiousness significantly predicted the importance of unconscientious goals ($\beta = -.12$, $p = .016$), other personality traits contributed even more to the prediction of unconscientious goals. In particular, the importance of unconscientious goals was also predicted by Honesty-humility ($\beta = -.35$, $p < .001$), openness to experience ($\beta = .18$, $p < .001$) and agreeableness ($\beta = -.12$, $p = .020$), whereas other traits did not contribute significantly to the prediction of the importance of unconscientious goals (other ps > .56, $R^2 = .20$, $p < .001$).

Table S3 reports descriptive statistics for all variables. The distribution of some of the goal classes showed important deviations from normality in terms of skewness and kurtosis: This was because many participants used the extreme points of the scale (e.g., one or nine), hence reflecting their converging opinion that some goals are maximally or

minimally important for them. The results suggest also the presence of ceiling and floor effects, which could be due to a combination of a limited range of the response scale and extreme response styles (McBee, 2010). Table 3 reports multiple Tobit regressions predicting the subjective importance of each of 21 goal classes with HEXACO personality traits. Of the 11 conscientious goal classes, seven were uniquely predicted by conscientiousness, whereas conscientiousness significantly predicted only one of the ten unconscientious goal classes. Some classes, albeit being significantly predicted by conscientiousness, were even more strongly predicted by other traits. An example is the class "be safe", for which emotionality was a stronger predictor than conscientiousness.[5]

Hypothesis 2.2: Desire to change conscientiousness

According to both the BF-TGI and the C-BFI, most individuals desired to become more conscientious, whereas only a few wanted to become less conscientious. In particular, the BF-TGI indicated that one-hundred seventy-eight individuals (54.1%) wanted to increase their conscientiousness, 13 (4%) wanted to become less conscientious, and 138 (42%) were not interested in changing their conscientiousness. The average BF-TGI conscientiousness score was 2.50 (sd = .57) and was significantly above the midpoint of the scale (2 - "I have no goal to change on this trait"), $t(328) = 15.83$, $p < .001$. Similarly, the C-BFI score was 3.65 (sd = .47) and was also above the midpoint of the scale (3 - "I don't want to change this trait"), $t(328) = 25.13$, $p < .001$ (see Table S8 for the desire to change other traits).

The desire to increase conscientiousness assessed through the C-BFI correlated negatively with conscientiousness, both assessed with the HEXACO-60 (r = -.30, $p < .001$) and the BFI-2 (r = -.41, $p < .001$), as well as with positive orientation (r = -.18, p = .001), reflecting the fact that unconscientious individuals were more likely to desire to become more conscientious. The desire to

[5] Simple associations between traits and goals examined by means of simple Tobit regressions are reported in Table S4. The results of similar analyses considering the Big Five factors assessed via the BFI2 are reported in the Supplementary Material.

change conscientiousness also correlated positively with the subjective importance of unconscientious goals (r = .18, p = .001), but not with the subjective importance of conscientious goals (r = .05, p = .364).

Because the BF-TGI score for conscientiousness had only three categories and because only a very small number of individuals desired to decrease conscientiousness, we predicted the desire to increase conscientiousness versus the desire not to change or to decrease the trait, using logistic regressions (predictors were standardized before entering the regressions). The desire to increase conscientiousness assessed via the BF-TGI was predicted, in separate logistic regressions, by conscientiousness assessed with the HEXACO-60 (b = -.61, p < .001) and with the BFI-2 (b = -.69, p < .001), but not by positive orientation (b = .05, p = .660). However, the desire to increase conscientiousness according to the BF-TGI was neither predicted by the subjective importance of conscientious goals (b = .06, p = .598) nor by that of unconscientious goals (b = .00, p = .984). As in previous studies (e.g., Hudson & Roberts, 2014), the desire to change conscientiousness according to both the C-BFI and the BF-TGI also correlated with other personality traits, such as openness, extraversion, and neuroticism (see Table S9 for the full correlation matrix).

The positive relationship between unconscientious goals and the desire to become more conscientious according to C-BFI, albeit appearing counterintuitive, could be explained as a spurious one, given that the subjective importance of unconscientious goals and the desire to change conscientiousness correlated with the current level of conscientiousness. Similarly, a positive relationship between conscientious goals and desire to change conscientiousness could be suppressed by conscientiousness, with which goals and the desire to change correlate with opposite signs (Thompson & Levine, 1997). To disentangle the relative contributions of current personality levels and conscientious/unconscientious goals in the prediction of the desire to change conscientiousness, we performed a set of hierarchical multiple regressions. We fitted a linear

model in the prediction of desire to change according to C-BFI and a logistic model for the BF-TGI. We also considered HEXACO and Big Five traits in separate models. Predictors were entered in four steps: (1) Personality traits other than conscientiousness were entered in the first step, (2) conscientiousness was entered at the second step, (3) positive orientation was entered in the third step, and (4) the subjective importance of conscientious and unconscientious goals was entered at the fourth step.

The results considering HEXACO traits are reported in Table 4 (similar analyses considering Big Five traits are reported in Table S10). Conscientiousness was always a significant negative predictor of the desire to change conscientiousness after controlling for other traits. Positive orientation never explained the variance of the desire to change conscientiousness above and beyond personality traits. Interestingly, after controlling for the current levels of personality, the subjective importance of conscientious goals significantly predicted the desire to become more conscientious. The role of unconscientious goals was instead less clear. The subjective importance of unconscientious goals did not significantly predict the desire to change conscientiousness according to the C-BFI, whereas it was a marginally significant predictor of the desire to change conscientiousness according to the BF-TGI both when HEXACO traits were controlled for (β = -.27, p = .052) and when Big Five traits were controlled for (β = -.27, p = .050).

Discussion

Conscientiousness significantly predicted the subjective importance of both conscientious and unconscientious goals, thus supporting Hypothesis 2.1. This link was also established at the level of several specific conscientious goal classes, whereas it was less clear in the case of unconscientious goals. Interestingly, conscientiousness was a significant predictor of the subjective importance of nearly all goal classes that in Study 1 resulted more associated to conscientiousness than to other HEXACO traits, with the only exception of one class, “do not think”.

It is worth noticing that, whereas conscientiousness was the strongest predictor of the subjective importance of conscientious goals, low Honesty-humility was an even stronger predictor in the case of unconscientious goals. This is likely because several goal classes that originally emerged as related to low conscientiousness (see Table 1; Costantini & Perugini, 2018) involve antisocial tendencies (e.g., manipulate and hurt others, hide something from others). Albeit antisocial behaviors can also characterize individuals with low conscientiousness (e.g., Slagt, Dubas, Deković, Haselager, & van Aken, 2015), they are closer to the defining features of low Honesty-humility (e.g., Allgaier, Zettler, Wagner, Püttmann, & Trautwein, 2015; Lee & Ashton, 2014). The relatively small relationships between conscientiousness and the subjective importance of unconscientious goal classes support the idea that unconscientiousness is not much related to pursuing specific unconscientious goals, but to a low interest towards conscientious goals or to the lack of resources to pursue them (Denissen, van Aken, Penke, & Wood, 2013). Interestingly, the only unconscientious goal class that was uniquely predicted by conscientiousness, "avoid or manage things you do not care about" (which includes specific goals such as "avoid a strenuous task or a commitment", "let someone know that s/he cannot count on us"), seems in fact more related to avoiding the pursuit of conscientious goals than to achieving specific unconscientious results.

Our results also supported Hypothesis 2.2, that the subjective importance of conscientious goals would predict the desire to increase conscientiousness, after controlling for current personality and for positive orientation. Interestingly, this relationship was masked by conscientiousness, which acted as a suppressor. The fact that the subjective importance of conscientious goals predicts the desire to change conscientiousness is in line with studies showing that personality can be used as a tool to pursue trait-relevant goals (McCabe & Fleeson, 2016). The connections between goals related to a trait and the desire to change that trait suggest that goals might also play an important role in explaining

anticipatory changes that take place before important life-events. For example, Denissen and colleagues found an increase in conscientiousness before employment (Denissen et al., 2019). Future research is needed to investigate whether this type of effects might be a consequence of personality changes driven by the pursuit of trait-consistent goals.

Study 3

Studies 1 and 2 allowed identifying a set of nine goal classes connected to trait conscientiousness above and beyond other traits. In particular, Study 1 suggested that seven goal classes were significantly more ascribed to the positive pole of conscientiousness and two goal classes were significantly or marginally significantly more ascribed to the negative pole of the trait, than to the remaining poles of other HEXACO personality traits. Study 2 showed that the subjective importance of most of these goal classes was also predicted by the current level of conscientiousness, controlling for other personality traits. However, both studies involved broad goal classes, and did not focus on specific goals belonging to these classes. With Study 3, we thus aimed at validating a set of specific goals for each goal class. Albeit the results regarding the two unconscientious goal classes, “avoid or manage things you do not care about” and “do not think” were less clear across studies, we decided to include also both of these unconscientious goal classes, for which we had at least partial support for their connection with conscientiousness. We developed a list of eight specific goals for each of the nine classes, resulting thus in 72 goals, mainly relying on the original responses that were provided in the original study by Costantini and Perugini (2018). We hypothesized that the structure of the 72 goals would be explained by nine correlated factors, mirroring the nine goal classes in Confirmatory Factor Analysis (CFA; Hypothesis 3.1). As in Study 2, we also examined whether conscientiousness was a significant predictor of the subjective importance of goal classes, controlling for other major personality traits (Hypothesis 3.2). Finally, in Study 3 we explored the complex pattern of relationships among conscientiousness facets, goals, and three constructs that resulted among the most important features shared by all conscientiousness

facets in the network of conscientiousness, namely self-control, consideration of future consequences and orientation towards the future (Costantini & Perugini, 2016), using network analysis (Costantini, Epskamp, et al., 2015; Epskamp, Waldorp, et al., 2018).

Method

Participants

Four-hundred-fifty-one participants completed the questionnaire. Of them, 226 completed the questionnaire in the lab and 225 completed the questionnaire online. Fourteen participants were excluded from the analyses because of careless responding indicated either by the DQS or by the SRSI, whereas five participants were excluded from the analyses because they reported insufficient proficiency in the Italian language. The final sample included therefore 432 participants (94 males and 338 females, M age = 21.7, SD = 6.24).

Procedure

All measures were administered in a fixed order, using the Qualtrics software. As in Study 2, we prevented careless responding from participants who completed the questionnaire online, by also administering the DQS (Maniaci & Rogge, 2014) and the SRSI (Meade & Craig, 2012).

Materials

Goals. Participants were presented with a list of 72 goals (see Table 5), eight for each of the nine goal classes, in a random order: Comply with rules (α = .85, ω = .87), Have control (α = .81, ω = .93), Personal realization (α = .83, ω = .85), Do something well, avoid mistakes (α = .83, ω = .90), Accomplish something, observe a commitment (α = .88, ω = .91), Be safe (α = .87, ω = .90), Think, reflect (α = .76, ω = .78), Avoid or manage things you do not care about (α = .71, ω = .74), Do not think (α = .78, ω = .83). For each goal, participants indicated how important it was to them, on a scale from 1 (*not at all important to me*) to 5 (*very important to me*).

HEXACO-60 (Ashton & Lee, 2009; Lee & Ashton, 2004). We administered the short version of the HEXACO-PI, the HEXACO-60 (Ashton & Lee, 2009) to assess five major personality factors, with 10 items each: Honesty-humility (α = .74, ω = .80), Emotionality (α = .73, ω = .76), eXtraversion (α = .76, ω = .83), Agreeableness (α = .70, ω = .75), and Openness to experience (α = .75, ω = .78). Conscientiousness (α = .87, ω = .96) was assessed in greater depth using the 32 conscientiousness items of the complete version of the HEXACO-PI (see also below; Lee & Ashton, 2004).

Conscientiousness facets. We assessed conscientiousness facets using three questionnaires, mirroring Costantini and Perugini (2016). The first one was the 32-item HEXACO-PI (Lee & Ashton, 2004), which included four facets assessed with eight items each: prudence (α = .75, ω = .82), diligence (α = .78, ω = .81), organization (α = .85, ω = .88), and perfectionism (α = .71, ω = .75). Participants responded on a 5-point scale, from 1 (*strongly disagree*) to 5 (*strongly agree*); a sample item is "I plan ahead and organize things, to avoid scrambling at the last minute".

The second questionnaire was the 60-item *International Personality Item Pool* (IPIP; Goldberg, 1999; Goldberg et al., 2006), which assessed six facets of conscientiousness corresponding to those included in the NEO-PI-R model (Costa, McCrae, & Dye, 1991), with 10 items per facet: cautiousness (α = .78, ω = .77), achievement striving (α = .81, ω = .85), orderliness (α = .86, ω = .93), dutifulness (α = .76, ω = .83), self-efficacy (α = .77, ω = .80), and self-discipline (α = .86, ω = .90). Participants indicated the extent to which each statement was an accurate description of themselves on a 5-point scale from 1 (*very inaccurate*) to 5 (*very accurate*). A sample item is "Love order and regularity".

The third questionnaire was the 44-item *Adjective Checklist of Conscientiousness* (ACC; Costantini, Richetin, et al., 2015), which assessed four facets by 10 items each: impulse-control (e.g., "cautious"; α = .85, ω = .93), industriousness (e.g., "tenacious", α = .79, ω = .83), orderliness (e.g., "organized"; α = .87, ω = .94), and responsibility (e.g., "dependable"; α = .81, ω = .88). Four additional adjectives were included to assess aspects of general conscientiousness that were not

clearly part of any specific facets: “conscientious”, “unconscientious”, “attentive”, and “distracted”. Participants indicated the extent to which each of 44 adjectives described them on a scale from 1 (*it does not describe me at all*) to 5 (*it describes me completely*).

Albeit different conscientiousness scales tend to include very different sets of facets, these scales often assess the same constructs under different names (Roberts et al., 2014; Ziegler, Booth, & Bensch, 2013). For this reason, we chose to simplify the structure of the conscientiousness facets by performing a principal component analysis of all conscientiousness facet scales assessed by the HEXACO-PI, IPIP and ACC. The results suggested a three-component solution[6], which resulted very close to the one observed by Costantini and Perugini (2016) and included the three facets most consensually identified in previous studies (Roberts et al., 2014). We thus focused on these three facets: Facet impulse-control (IMC; $\alpha = .88$, $\omega = .88$) was computed as the average of the standardized IPIP cautiousness, ACC impulse-control and of HEXACO-PI prudence; facet industriousness (IND; $\alpha = .88$, $\omega = .89$) was computed by averaging the standardized IPIP achievement-striving, ACC industriousness, and HEXACO diligence scales; and facet orderliness (ORD; $\alpha = .92$, $\omega = .92$) was computed as the average of the standardized orderliness scales of IPIP and ACC, and of the HEXACO-PI organization scale.

Self-control scale (SCS; Tangney et al., 2004). Participants rated how much each of 13 statements described them on a scale from 1 ([it does not describe me] *at all*) to 5 ([it

[6] The mineigen, scree-plot, and parallel analysis criteria converged in indicating a three-factor solution. The first four eigenvalues were 6.70, 1.71, 1.52, 0.90, whereas the 95th percentile of the first eigenvalues extracted from corresponding random data were 1.39, 1.29, 1.22, and 1.17. Three factors explained 71% of the total variance, with component correlations after oblimin rotation ranging between .33 and .46. The three components could be interpreted as Impulse-control, with highest loadings from scales IPIP cautiousness ($\lambda = .84$), ACC impulse-control ($\lambda = .93$), and HEXACO-PI prudence ($\lambda = .88$); Industriousness, with highest loadings from scales IPIP achievement-striving ($\lambda = .92$), ACC industriousness ($\lambda = .80$), and HEXACO-PI diligence ($\lambda = .89$); and Orderliness, with highest loadings from the orderliness scales of IPIP ($\lambda = .95$) and ACC ($\lambda = .77$), and from the HEXACO-PI organization scale ($\lambda = .98$). The factor solution was extremely similar to the one in Costantini & Perugini (2016), with values of the Tucker’s Phi coefficient ranging from .97 to 1.00. Full details of this analysis are available upon request from the first author.

describes me] *completely*). A sample item is "I am good at resisting temptation" (α = .82, ω = .85).

Consideration of Future Consequences (CFC; Strathman et al., 1994)**.** Participants rated how each of 12 statements characterized them, on a scale from 1 (*extremely uncharacteristic*) to 5 (*extremely characteristic*). A sample item is "My behavior is only influenced by the immediate (i.e., a matter of days or weeks) outcomes of my actions" (reverse scored; α = .82, ω = .84).

Future orientation (Laghi, Baiocco, Liga, Guarino, & Baumgartner, 2013; Zimbardo & Boyd, 1999). Participants completed the Future orientation scale of the short Italian version of the Zimbardo Time Perspective Inventory (Laghi et al., 2013) and indicated the extent to which five statements were true to them, on a scale from 1 (*absolutely false for me*) to 5 (*absolutely true for me*). A sample item is "I'm able to resist temptations when I know that there is a work to be done" (α = .77, ω = .83).

Analysis plan and power

We tested Hypothesis 3.1 using CFA, as implemented in the R package *lavaan* (Rosseel, 2012). Hypothesis 3.2 was tested through nine multiple regressions, in which HEAXCO traits were entered as predictors of each of the nine goal classes considered in this study. The connections between goals and traits was examined through network analysis (Costantini, Epskamp, et al., 2015; Epskamp, Borsboom, & Fried, 2018; Epskamp & Fried, 2018). Network analysis was computed through the Gaussian Graphical Model (Epskamp, Waldorp, et al., 2018). Within the GGM, edges encode conditional dependence/independence relations among nodes in the form of partial correlations: A missing edge indicates that two nodes are conditionally independent given the others, whereas an edge is drawn between two nodes if the corresponding variables correlate after controlling for all others (Costantini, Epskamp, et al., 2015). We estimated the GGM network using the *lasso* regularization via the *graphical lasso* algorithm, which limits overfitting and yields a more parsimonious and replicable model (Epskamp & Fried, 2018; J. Friedman, Hastie, & Tibshirani, 2008). The regularization parameter was selected through the Extended Bayesian Information

Criterion (Chen & Chen, 2008; Foygel & Drton, 2010), as implemented in the R packages *bootnet* (Epskamp, Borsboom, et al., 2018) and *qgraph*, using the default value of .50 for the EBIC hyperparameter (Epskamp, Costantini, et al., 2018; Epskamp, Cramer, Waldorp, Schmittmann, & Borsboom, 2012). To assuage potential deviations from normality, a nonparanormal transformation was applied before network estimation (Liu, Lafferty, & Wasserman, 2009). For each node, we examined its predictability, the proportion of variance of each node that is explained within the network model, which is considered a more interpretable summary of the role of a node within the network (Haslbeck & Waldorp, 2017), compared for example to centrality metrics (Bringmann et al., 2019). The stability of the network results was inspected through nonparametric bootstrap and the stability of the predictability index was calculated using the *correlation stability coefficient* (*CS*-coefficient), which is defined as the maximum proportion of cases that can be dropped such that the resulting estimate correlates more than .7 with the original centrality estimate with 95% probability in case-dropping bootstrap resamples. Cutoff values of .25 and .50 have been suggested to indicate sufficient stability and good stability, respectively (Epskamp, Borsboom, et al., 2018).

Power analysis for network analysis is still an open issue (Epskamp, Borsboom, et al., 2018; Epskamp & Fried, 2018) and sample size determination analysis for CFA depends on a large number of factors, most of which are not easily guessed before data collection (Mundfrom, Shaw, & Lu Ke, 2005; Wolf, Harrington, Clark, & Miller, 2013). One hundred participants are often considered the minimum sample size for CFA, with N = 200 being the 'typical' sample size (Kline, 2011), albeit samples of at least 300 participants are desirable (Comrey & Lee, 1992). Given the difficulty to accurately power CFA and network studies, we set up to collect the largest possible sample given available resources and logistical constraints, to increase the precision of estimates both in CFA and Network analysis in Study 3. As to Hypothesis 3.2, our final sample of 432 participants allowed testing a

medium effect size f^2 = .15 with a power > .999 and it allowed detecting with 80% power an effect size as small as f^2 = .030, considering a Bonferroni-corrected alpha level of .006.

Results

Hypothesis 3.1. Confirmatory Factor Analysis

We first tested whether the structure of the 72 goals conformed to the hypothesized nine factors, using CFA. We specified a model in which each goal was allowed to load on the hypothesized factor and in which factors could correlate with each other. Fit indices are reported in Table 6 (Model 1). The chi-square test was significant $\chi^2(2248) = 5161$, $p < .001$, which is expected even for models that fit the data reasonably well when the sample size is larger than 400 participants (Kenny, 2015). The RMSEA = .051 and SRMR = .058 indicated that the model fit the data well (Hu & Bentler, 1999)[7]. We also considered alternative models, which differed in how the correlations among factors were modeled. Model 2 included two higher-order factors, one for conscientious goal classes and one for the two unconscientious goal classes. Model 3 included a single higher-order factor including all first-order factors. Model 4 constrained covariances among factors to zero. All fit indices converged in indicating that Model 1 was the best-fitting and the most parsimonious model (see Table 6). These results suggest that albeit goal classes correlate with each other, their pattern of connections cannot be summarized better with a simpler factor structure.

Factor loadings are reported in Table 5, whereas correlations among latent variables are reported in Table 7. All factor loadings were positive and significant. Latent correlations among conscientious goal classes were positive and significant, and so was the latent correlation between the two unconscientious goal classes. Correlations between conscientious and unconscientious goal classes were generally negative in sign. However, unexpectedly both unconscientious goal classes showed small positive correlations with the class “be safe”.

[7] As suggested by Kenny (2015), we did not consider incremental fit indices such as the CFI and the TLI, because the RMSEA of the null model was less than .158 (in our case, it was .110).

Hypothesis 3.2. Relationships between goals, conscientiousness and its facets

Descriptive statistics as well as the full correlation matrix of all variables is reported in the Supplementary Table S11. We performed a set of nine multiple regressions predicting the subjective importance of each goal class from the HEXACO personality traits. The results (Table 8) indicated that, as hypothesized, conscientiousness was a significant positive predictor of all seven conscientious goal classes and a significant negative predictor of both unconscientious goal classes, after controlling for other HEXACO personality traits. The goal classes that were better predicted by conscientiousness were "Do something well, avoid mistakes" and "Accomplish something, observe a commitment", conversely the weakest prediction was obtained for goal class "Be safe", for which emotionality was a stronger predictor than conscientiousness, consistent with what was observed in Study 2. It should also be noticed that all goal classes correlated significantly in the expected direction with all three facets, with the exception of "personal realization" with facet impulse-control (see Table S11).

Some HEXACO-PI items conflate, at least in part, the assessment of conscientiousness with that of goals related to the trait (Wilt & Revelle, 2015). For example, ratings of the item "I always try to be accurate in my work, even at the expense of time" is also affected by the subjective importance of the goal "be accurate in my work"[8]. To limit the possibility that the associations between conscientiousness and goals could be simply driven by semantic redundancies at the item level (Mõttus, 2016; Nicholls, Licht, & Pearl, 1982; Wood & Harms, 2016), we calculated an overall conscientiousness score by averaging the 44 items of the ACC ($\alpha = .92$, $\omega = 1.00$). Since this scale was based on simple adjectives, the amount of content overlap with goal items was limited. We thus regressed each goal on this new conscientiousness score and on the remaining HEXACO traits. The results of the analysis are presented in Table S12 and closely replicated those presented in Table 8, thus

[8] We wish to thank Dustin Wood for suggesting this possibility.

suggesting that the association between conscientiousness and goals cannot be simply explained by semantic similarities at the item level[9].

Network analysis

We estimated a Gaussian Graphical Model (GGM) network to inspect the relationships among goals, conscientiousness facets, self-control, future orientation, and consideration of future consequences. This network thus included the most crucial nodes examined by Costantini and Perugini (2016), plus nine nodes representing conscientious and unconscientious goals. The resulting network and the predictability of each node are shown in Figure 1, whereas the exact values of the edges, as well as the bootstrap confidence intervals are reported in Table S13. Predictability showed excellent stability (*CS* = .819). The network included 57 out of 105 possible edges (54%), thus being relatively dense.

As in previous investigations of the conscientiousness network (Costantini & Perugini, 2016; Costantini, Richetin, et al., 2015), facets industriousness and impulse-control were not directly connected after controlling for other nodes, but they both showed a positive connection to orderliness. Furthermore, all conscientiousness facets were connected to self-control and future orientation, with a weaker connection in the case of orderliness. Impulse-control and industriousness, but not orderliness, were also connected to the consideration of future consequences. This pattern of results supports the idea that self-control, consideration of future consequences, and future orientation are important features shared by the most important aspects of conscientiousness, and particularly by facets industriousness and impulse-control (Costantini & Perugini, 2016).

Conscientious goals showed generally strong and positive connections with each other. Similarly, the two unconscientious goals classes were positively connected. Goal class "avoid or

[9] In the supplementary material, we also report the results of additional analyses including only subsets of ACC adjectives that did not include goal content in their definitions, as rated by experts. The results were in line with those obtained with the full ACC, with conscientiousness significantly predicting all conscientious and unconscientious goals.

manage things you do not care about" (G16) was negatively connected to class "accomplish something, observe a commitment" (G13). However, unexpected positive connections among conscientious and unconscientious emerged between "do not think" (G26) and goal classes "be safe" (G17), and those between "avoid or manage things you do not care about" (G16) and classes "have control" (G10) and "be safe" (G17).

All conscientiousness facets showed direct connections to some of the goals. Industriousness was strongly connected to goal classes "personal realization" (G11) and "accomplish something, observe a commitment" (G13), whereas it did not show direct connections with a third goal class that was very strongly connected with the first two, "do something well, avoid mistakes" (G12). This suggests that the connection between industriousness and goals related to handling tasks well might be mediated by the subjective importance of goals that are more directly related to success. The conscientious goal class "personal realization" (G11) showed also small negative connections to impulse-control, orderliness, and self-control. This result suggests that a focus on personal success might characterize industriousness more clearly, but it might not characterize (or even characterize negatively) other facets, after controlling for industriousness and other relevant goals. Impulse-control was particularly characterized by goals that do not necessarily involve success, such as "comply with rules" (G08) and "think, reflect" (G25). The unconscientious goal class "avoid or manage things you do not care about" (G16) was strongly connected to industriousness and the unconscientious goal class "do not think" (G26) was strongly connected to facet impulse-control. Orderliness was strongly characterized by goal "have control" (G10), but it also showed connections with goals "do something well, avoid mistakes" (G12), and "accomplish something, observe a commitment" (G13).

Discussion

The main aim of Study 3 was to develop an assessment of conscientious and unconscientious goals. The 72 goals that we developed conformed to the hypothesized nine-factor structure (Hypothesis 3.1) and resulted all connected to conscientiousness, controlling for other personality traits (Hypothesis 3.2). Interestingly, unlike Study 2, conscientiousness predicted also the subjective importance of goal class "do not think". This different result could be simply because in Study 2 the subjective importance of goal classes was assessed through single items, which thus could have resulted in correlations between traits and classes being attenuated by low reliability.

The results of network analysis also showed that goal classes were not connected only to a specific aspect of conscientiousness, but to all of the three main facets of the trait. Through network analysis, we examined the different goal structure surrounding the three most important conscientiousness facets. Industriousness was connected to goals involving personal success and achievement and negatively connected to the unconscientious goal class "avoid or manage things you do not care about". These connections suggest that industrious individuals might pursue activities that they do not consider important per se or that they even dislike (e.g., "a strenuous task", "something I don't want to do", see goal class 16 in Table 5), as long as these are perceived as means to achieve personal success. Impulse-control was related to goals involving reflectivity and conformity with rules and negatively connected to the unconscientious goal class "do not think". Individuals with high impulse-control seem characterized by a focus on reflectivity and conformity, which might be important per se, rather than in terms of personal realization. Consistent with previous studies investigating the network of conscientiousness (Costantini & Perugini, 2016; Costantini, Richetin, et al., 2015), orderliness was directly connected to both industriousness and impulse-control, thus sharing some aspects of both the other facets. The motivational core of orderliness was related to goals involving control over tasks and to goals that involved task performance, which were also relevant for facet industriousness. These results thus further deepen

the motivational core of conscientiousness and its most important aspects (Roberts et al., 2014). It is noteworthy that unconscientious goal classes and conscientious goal classes were sometimes positively connected. In particular, goal class “be safe” was positively connected to both unconscientious goal classes. These positive connections suggest that people might pursue unconscientious goals as a means to safeguard themselves, for example from tasks and intellectual activities that might be perceived as exhausting for the individual.

Conclusions

Throughout three well-powered studies, we explored the relationships characterizing goals related to both high and low conscientiousness. Our results suggested that, of an initial set of 21 goal classes that had emerged as related to conscientiousness in a previous study (Costantini & Perugini, 2018), nine were related to conscientiousness after controlling for other personality traits, seven conscientious goal classes and two unconscientious goal classes. For all nine classes, we developed a list of 72 specific goals. Having available a comprehensive list of goals is particularly important for personality research. First, including goals as a part of personality assessment may prove to be a fruitful avenue that aligns well with functional perspectives of personality(Perugini, Costantini, Hughes, & De Houwer, 2016; Wood, Gardner, & Harms, 2015) as well as with emergence perspectives (Baumert et al., 2017). Second, full knowledge of the motivational bases of a trait is needed for implementing experimental procedures involving goals (e.g., Costantini & Perugini, 2018) that could be replicated a sufficient number of times (e.g., in ecological momentary intervention studies; Heron & Smyth, 2010), without getting too repetitive for participants.

This is one of the first attempts to systematically uncover in full the motivational bases of trait conscientiousness taking a bottom-up approach. A study that followed a bottom-up approach that has some resemblance to our research program is the one by Reisz and colleagues (2013). Interestingly, they found evidence for two types of goal-trait

relationships: Complementary and compensatory. For instance, higher conscientiousness was linked to a higher probability of having goals belonging to classes "Achieve meaningful career goals" and "Graduate/complete education", which were in line with the trait, thus qualifying a complementary relationship. However, conscientiousness was also a negative predictor of goal classes such as "clean-up / get organized" and "use time more effectively". These were interpreted as compensatory relationships: Individuals who lacked conscientiousness were more likely to express goals that, if attained, would compensate for their low levels of the trait. Throughout our studies, we did not find evidence for compensatory effects, with conscientiousness being positively connected with goals classes that were in line with conscientiousness' positive pole and negatively with goals that were in line with the trait's negative pole. This different result is most likely because of the different methods employed, such as the fact that participants in our studies were asked to rate the subjective importance of goals instead of freely generating goals, as in the study by Reisz and colleagues. Further research is needed to examine in which conditions compensatory trait-goal effects emerge and to elucidate their role for the processes of conscientiousness.

It is noteworthy that, throughout our studies, most goal classes showed connections not only with conscientiousness but also with other personality traits, even though the goals that we considered had been elicited starting from markers of conscientiousness (Costantini & Perugini, 2018). This result seems to indicate equifinality relationships between personality traits and goals (Kruglanski et al., 2002), indicating that if traits can sometimes be used as tools for pursuing goals (McCabe & Fleeson, 2016), most goals can however be pursued using different traits. The fact that, to the best of our efforts, we could not isolate a motivational core solely characterizing conscientiousness and none of the other major traits is also in line with the emergence theory, which sees personality as a system of elements interconnected by a complex web of relationships, instead of as a set of sufficiently isolated processes (Baumert et al., 2017)[10].

[10] We wish to thank Anna Baumert for suggesting this explanation, when part of these results was first presented during a joint expert meeting of the European Association of Personality Psychology (EAPP) and the European Association of Psychological Assessment (EAPA), on September 6th-8th 2018, Edinburgh (UK).

The results obtained in Study 2 allowed also elucidating the connections between the subjective importance of conscientious goals and the desire to change one's conscientiousness assessed with two methods (Hudson & Roberts, 2014; Robinson et al., 2015), with conscientious goals predicting the desire to become more conscientious above and beyond current personality characteristics and positive orientation. Recent research found that the influence of major life events on personality is relatively small (Denissen et al., 2019; Milojev, Osborne, & Sibley, 2014). Our results suggest that these effects, at least on conscientiousness, might be moderated by goals, with life events being able to produce conscientiousness change only when they involve a shift of a person's conscientious goal settings.

One of the limits of our study was focusing exclusively on between-subject processes using cross-sectional designs, which do not allow examining contemporaneous or cross-lagged within-subject relationships (Costantini et al., 2019). Longitudinal studies could be employed to deepen further the complex pathways characterizing conscientious and unconscientious goals, personality traits, and personality change. Furthermore, experimental studies should be able to yield more conclusive results regarding the potential causal links between goals and traits (Costantini & Perugini, 2018). Another limit that characterized Studies 2 and 3 was the assessment of personality traits through questionnaire items, embedding heterogeneous content, including affects, behaviors, cognitions, and desires, sometimes showing semantic overlap to goals (Angleitner, John, & Löhr, 1986; Pytlik Zillig, Hemenover, & Dienstbier, 2002; Wilt & Revelle, 2015). In Study 3, we employed an assessment of conscientiousness based on adjectives to limit the possibility that the trait-goal relationships could be simply explained by semantic overlap at the item level (see also the supplementary material): The results suggested that the relationship between conscientiousness and goals could not be simply explained by content overlap at the item level. Another possibility that we did not explore here is to examine trait-goal relationships

using items that assess specific components of the personality system, such as behaviors, abilities, expectancies, and values (Jackson et al., 2010; Wood et al., 2015).

Our studies allowed identifying nine broad goal classes related to conscientiousness, as well as a set of specific goals for each class, thus reaching an equilibrium between generality and specificity. Future studies could further improve the set goals identified here, both in terms of specificity and in terms of their relationships with broader motivational tendencies. Goals that are generally deemed important by individuals do not always translate into actual goal-related behaviors (Milyavskaya et al., 2015; Perugini & Bagozzi, 2001; Perugini & Conner, 2000): Future studies are needed to investigate specific contextual aspects that might be relevant in the pursuit of conscientious and unconscientious goals in everyday life, for example by employing intensive longitudinal methods (Sened, Lazarus, Gleason, Rafaeli, & Fleeson, 2018). In terms of general motivational tendencies, an important task for future research is to investigate how conscientious and unconscientious goals relate to broader classes of motives, such as approach and avoidance goals, which have shown differential relationships with personality traits in previous studies (McCabe, Van Yperen, Elliot, & Verbraak, 2013). Furthermore, whereas clear results were obtained for the positive pole of conscientiousness, fewer goals emerged as related to the negative pole of the trait. Further research is needed to examine whether goals that emerged as related to low conscientiousness in previous studies (e.g., McCabe & Fleeson, 2016; Reisz et al., 2013) might complement the set of unconscientious goals emerged here.

In conclusion, our work allowed shedding more light on the complex web of relationships between goals and conscientiousness. From a theoretical perspective, this constitutes a crucial step towards fully understanding whether the dynamics of this trait conform to correspondence or to emergence explanations (Costantini & Perugini, 2018). From a measurement perspective, our studies filled a gap in the literature by developing a comprehensive assessment of goals and motives specifically related to conscientiousness. Finally, from a methodological standpoint, our work allowed developing a set of procedures for uncovering the motivational core of a trait, which

produced very consistent results across studies and which could be easily applied to investigate the motivational bases of other personality characteristics. In this work, we mainly focused on conscientiousness, however an important task for future studies is to further examine the complex network of the relationships characterizing goals related to all the most important aspects of personality.

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Tables

Table 1. Study 1 - One-tailed paired-samples t-tests comparing ratings of each conscientious and unconscientious goal class on the hypothesized conscientiousness pole versus the opposite pole.

#	Goal class	*M* C+	*SD* C+	*M* C-	*SD* C-	*t*	*df*	*p*	*RCS*
	Conscientious Goals								
1	Demonstrate something to others	5.44	1.43	2.35	1.39	24.97	298	<.001	4.35
2	Be trustworthy	6.05	1.04	1.93	1.43	37.35	298	<.001	7.66
5	Do good to someone, avoid hurting	5.39	1.30	2.90	1.48	21.55	298	<.001	4.82
8	Comply with rules	6.11	1.08	2.14	1.35	36.52	298	<.001	4.56
10	Have control	6.23	1.09	1.89	1.30	39.88	298	<.001	5.94
11	Personal realization	6.30	1.06	2.25	1.52	36.06	298	<.001	11.94
12	Do something well, avoid mistakes	6.21	0.96	1.98	1.29	43.99	298	<.001	9.62
13	Accomplish something, observe a commitment	6.57	0.83	2.06	1.46	43.69	298	<.001	3.70
17	Be safe	5.61	1.19	2.68	1.59	24.94	298	<.001	7.24
20	Be satisfied with yourself	5.75	1.34	2.82	1.69	23.49	298	<.001	6.02
25	Think, reflect	6.27	1.06	1.93	1.29	40.23	298	<.001	4.79
	Unconscientious Goals								
4	Manipulate other people's behavior	3.27	1.6	3.85	1.76	4.21	298	<.001	-5.99
6	Hurt someone	1.78	1.11	3.78	1.64	18.89	298	<.001	-6.47
7	Hide something from someone	2.57	1.30	4.58	1.69	16.50	298	<.001	-6.58
9	Rebel, transgress the rules	1.69	1.01	5.11	1.85	26.28	298	<.001	-5.67
15	Save time	3.47	1.96	4.08	2.06	3.12	298	.021	-4.22
16	Avoid or manage things you do not care about	2.18	1.41	5.32	1.79	21.54	298	<.001	-13.46
21	Feel good	4.38	1.59	4.61	1.86	1.54	298	1.00	-8.86
22	Try new sensations	3.56	1.70	4.37	1.88	4.98	298	<.001	-11.47
23	Manifest or vent a negative emotion	2.82	1.26	4.35	1.66	12.28	298	<.001	-7.49
26	Do not think	2.46	1.56	5.01	1.88	16.52	298	<.001	-7.25

Note. The sample size is N = 299 for all tests. *M* C+ and *M* C-+ indicate the means of participants' ratings of a goal with respect to the conscientious and unconscientious profiles respectively, *SD* C+ and *SD* C- indicate the corresponding standard deviations. RCS = relative conscientiousness score of the goal class in Costantini & Perugini (2018). Goal classes numbers (#) mirror those in Costantini & Perugini (2018). P-values were corrected considering 21 multiple comparisons using the Bonferroni criterion.

Table 2. Study 1 - Overview of the p-values from the partially-overlapping one-tailed t-tests (see Table S2 for details of each of the 210 t-tests)

#	Goal class	H+	E+	X+	A+	O+	H-	E-	X-	A-	O-
	Conscientious Goals										
1	Demonstrate something to others			**.179**			**.308**				
2	Be trustworthy	**.364**		.016							
5	Do good to someone, avoid hurting		.009	**.368**	**.174**	.002					
8	Comply with rules	.035									
10	Have control										
11	Personal realization					.013					
12	Do something well, avoid mistakes										
13	Accomplish something, observe a commitment										
17	Be safe	.001	.016		.005				.009		
20	Be satisfied with yourself	.036		**.131**		.044		**.500**			
25	Think, reflect										
	Unconscientious Goals										
4	Manipulate other people's behavior					**.213**		**.242**		.003	
6	Hurt someone							**.213**			
7	Hide something from someone							**.165**	**.405**	.034	.003
9	Rebel, transgress the rules						**.214**				
15	Save time	.013		**.112**			**.273**	**.375**	.007	**.140**	**.364**
16	Avoid or manage things you do not care about										**.061**
21	Feel good				**.307**		**.231**	**.077**		.003	
22	Try new sensations	**.061**					.011	**.385**		**.083**	
23	Manifest or vent a negative emotion		**.199**								.021
26	Do not think										.001

Note. H, E, X, A, and O indicate respectively Honesty-humility, Emotionality, eXtraversion, Agreeableness vs. Anger, and Openness to experience profiles, the "+" and "–" symbols indicate respectively positive and the negative poles of the trait. To improve readability, nonsignificant results ($p > .05$) are reported in bold and cells corresponding to p values < .001 are left blank. Goal classes numbers (#) mirror those in Costantini & Perugini (2018).

Table 3. Study 2 –Multiple Tobit regressions, subjective importance of goal classes predicted by HEXACO personality traits.

#	Goal class	Intercept	H	E	X	A	C	O	R^2_{MZ}
Conscientious Goals									
1	Demonstrate something to others	6.38***	-0.46	0.31	-0.13	0.31	0.26	0.11	0.07
2	Be trustworthy	9.09***	-0.14	0.15	0.30	-0.02	0.30	0.27	0.15
5	Do good to someone, avoid hurting	9.61***	0.64***	0.61***	0.36	0.47	0.03	0.49*	0.60
8	Comply with rules	7.14***	0.18	0.25	-0.19	0.50**	0.65***	-0.19	0.23
10	Have control	6.85***	-0.37	0.15	-0.25	0.03	0.77***	-0.14	0.17
11	Personal realization	9.24***	-0.65**	0.08	0.01	-0.18	0.49*	0.36	0.30
12	Do something well, avoid mistakes	8.65***	-0.20	0.03	0.02	0.06	0.80***	0.15	0.36
13	Accomplish something, observe a commitment	9.34***	-0.03	0.27	0.08	-0.03	0.55***	0.24	0.28
17	Be safe	7.47***	-0.12	0.77***	-0.05	0.44*	0.47*	-0.16	0.25
20	Be satisfied with yourself	9.73***	-0.37	0.04	0.50	-0.06	0.16	0.43	0.30
25	Think, reflect	8.04***	0.00	-0.09	-0.16	0.06	0.50**	0.13	0.10
Unconscientious Goals									
4	Manipulate other people's behavior	3.11***	-1.19***	0.08	0.11	-0.51	-0.12	0.38	0.29
6	Hurt someone	-2.98***	-1.29**	0.00	0.26	-1.22*	-0.64	0.21	0.77
.7	Hide something from someone	3.19***	-1.00***	-0.34	-0.59*	-0.15	-0.03	0.25	0.27
9	Rebel, transgress the rules	2.86***	-0.25	-0.38	0.14	-0.61*	-0.52	1.03***	0.28
15	Save time	5.98***	-0.68**	0.01	0.09	0.29	0.12	0.14	0.07
16	Avoid or manage things you do not care about	2.64***	-0.45	-0.12	-0.15	-0.10	-0.67*	0.23	0.13
21	Feel good	9.95***	-0.58*	0.53*	0.51	0.23	-0.14	0.05	0.37
22	Try new sensations	6.34***	-0.70*	-0.30	0.34	-0.26	-0.28	0.54	0.17
23	Manifest or vent a negative emotion	4.57***	-0.05	0.49	0.34	-0.33	-0.22	0.22	0.07
26	Do not think	4.34***	-0.35	0.66*	-0.47	-0.35	-0.08	0.12	0.14

Note. Each line represents a multiple Tobit regression in which the HEXACO personality traits are entered as predictors of a goal class. The values refer to Tobit regression coefficients, the intercept (b0) and the slope (b1), expressed in units of the uncensored dependent variable (i.e., goal class). The independent variables (i.e., traits) were standardized for facilitating interpretation. H, E, X, A, C, and O indicate respectively Honesty-humility, Emotionality, eXtraversion, Agreeableness vs. Anger, Conscientiousness, and Openness to experience. R^2_{MZ} = McKelvey-Zavoina R-squared. Goal classes numbers (#) mirror those in Costantini & Perugini (2018). P-values were corrected for multiple comparisons using the Bonferroni method, considering that we performed 21 multiple regressions.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 4. Study 2 - Hierarchical multiple regressions. The desire to become more conscientious according to C-BFI and BF-TGI was regressed on HEXACO traits, Positive orientation, and the subjective importance of conscientious and unconscientious goals.

	C-BFI		*BF-TGI*	
Predictor	*ΔR²*	*β*	*ΔNagelkerke R²*	*b*
Step 1	.06***		.05***	
Intercept		.00		.17
Honesty-humility		-.06		-.17
Emotionality		.04		-.06
eXtraversion		-.19***		.15
Agreeableness vs. anger		-.06		.21
Openness to Experience		.16**		.28*
Step 2	.07***		.10***	
Conscientiousness		-.28***		-.65***
Step 3	.00		.00	
Positive orientation		-.04		.01
Step 4	.03**		.04**	
Importance of conscientious goals		.14*		.39**
Importance of unconscientious goals		.08		-.27
Total R^2	.16**		.19**	

Note. A linear regression model was used in the prediction of the desire to change conscientiousness according to the C-BFI, whereas a logistic regression model was used in the prediction of the desire to become more conscientious (vs. to become less conscientious or not to change) according to the BF-TGI. Model comparison for logistic regression models was performed through likelihood-ratio tests. All predictors were standardized before entering the logistic regression model.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 5. Study 3 - List of 72 goals together with CFA factor loadings.

#	Goal class	Italian	English	λ
1	8	Agire secondo le regole	Behave according to the rules	.84***
2	8	Rispettare le regole	Observe the rules	.87***
3	8	Evitare di infrangere le regole	Avoid breaking the rules	.79***
4	8	Seguire le leggi	Follow the law	.81***
5	8	Rispettare il contesto in cui mi trovo	Respect the context I am in	.52***
6	8	Rispettare un'autorità	Respect an authority	.71***
7	8	Non uscire dagli schemi	Do not violate norms	.41***
8	8	Agire secondo i miei valori	Act according to my values	.22***
9	10	Avere il pieno controllo	Have full control	.79***
10	10	Avere tutto sotto controllo	Be in control	.83***
11	10	Avere la situazione sotto controllo	Keep the situation under control	.70***
12	10	Evitare il caos	Avoid chaos	.41***
13	10	Non fare confusione	Avoid confusion	.47***
14	10	Tenere tutto sotto controllo	Keep everything under control	.82***
15	10	Ritrovare le cose quando ne ho bisogno	Find things when I need them	.31***
16	10	Trovare le mie cose	Find my stuff	.37***
17	11	Ottenere buoni risultati	Achieve good results	.78***
18	11	Superare me stesso	Surpass myself	.57***
19	11	Avere successo	Be successful	.57***
20	11	Raggiungere risultati scolastici, accademici, o lavorativi	Achieve results at school, in academia or at work	.75***
21	11	Realizzarmi	Be fulfilled	.62***
22	11	Avere un futuro	Have a future	.52***
23	11	Avere sicurezza economica	Obtain financial security	.45***
24	11	Ottenere il massimo	Make the most of myself	.68***
25	12	Fare le cose per bene	Do things well	.68***
26	12	Fare al meglio ciò che faccio	Do everything I do in the best possible way	.67***
27	12	Fare un ottimo lavoro	Do an excellent job	.72***
28	12	Fare le cose nel migliore dei modi	Do things in the best way	.70***
29	12	Evitare di fare errori	Avoid mistakes	.56***
30	12	Non sbagliare	Do not make mistakes	.56***
31	12	Non tralasciare alcun dettaglio	Do not miss any detail	.56***
32	12	Non commettere sviste	Do not commit oversights	.60***
33	13	Portare a termine qualcosa	Accomplish something	.79***
34	13	Portare a termine un progetto	Complete a project	.73***
35	13	Terminare un lavoro in tempo	Finish a job in time	.72***
36	13	Fare tutto nei tempi prestabiliti	Do everything in time	.65***
37	13	Mantenere gli impegni presi	Fulfil obligations	.60***
38	13	Non lasciare le cose a metà	Do not leave things halfway	.69***
39	13	Non lasciare un lavoro a metà	Do not leave a job halfway	.72***
40	13	Rispettare un impegno preso	Observe a commitment	.62***
41	17	Non correre rischi	Do not take risks	.57***
42	17	Non mettermi nei guai	Do not get in trouble	.72***

43	17	Non mettermi in pericolo	Do not get in danger	.75***
44	17	Non farmi del male	Do not hurt myself	.67***
45	17	Proteggermi	Protect myself	.76***
46	17	Stare al sicuro	Stay safe	.73***
47	17	Stare in salute	Stay healthy	.59***
48	17	Salvaguardarmi	Safeguard myself	.70***
49	25	Analizzare bene le situazioni	Analyze situations well	.52***
50	25	Riordinare le idee	Sort things out	.55***
51	25	Prevedere le conseguenze delle mie azioni	Foresee the consequences of my actions	.50***
52	25	Valutare tutte le opzioni prima di prendere una decisione	Evaluate all options before making a decision	.58***
53	25	Prendere buone decisioni	Make good decisions	.63***
54	25	Prendere decisioni giuste	Make correct decisions	.62***
55	25	Trovare la soluzione migliore quando ho un problema	Find the best solution to a problem	.58***
56	25	Non lasciare nulla al caso	Leave nothing to chance	.39***
57	16	Evitare di fare qualcosa	Avoid doing something	.55***
58	16	Evitare un compito faticoso	Avoid a strenuous task	.67***
59	16	Evitare un impegno	Avoid a commitment	.59***
60	16	Far vedere che qualcosa non mi interessa	Show that I am not interested in something	.37***
61	16	Far capire a qualcuno che non può contare su di me	Let someone know that he/she cannot count on me	.41***
62	16	Non assumermi responsabilità	Do not take responsibilities	.56***
63	16	Non fare cose che non ho voglia di fare	Avoid doing something I do not want to do	.38***
64	16	Dedicare il mio tempo solo a ciò che mi piace fare	Devote time only to what I like to do	.36***
65	26	Allontanare pensieri problematici	Turn off problematic thoughts	.45***
66	26	Non pensare	Do not think	.68***
67	26	Non ragionare troppo	Avoid reasoning too much	.69***
68	26	Distrarmi dai problemi	Get my mind off problems	.47***
69	26	Essere meno razionale	Be less rational	.47***
70	26	Evitare di pensare troppo	Avoid overthinking	.71***
71	26	Non pensare alle conseguenze di ciò che faccio	Do not think about the consequences of what I do	.50***
72	26	Non preoccuparmi di ciò che faccio	Do not worry about what I do	.43***

Note. Factor numbers mirror those of goal classes in Costantini & Perugini (2018).
λ = standardized factor loadings in CFA model.
* $p < .05$, ** $p < .01$, *** $p < .001$

Table 6. Study 3 - Fit indices of four CFA models.

Model	χ^2	df	*p*	$\Delta\chi^2$	Δdf	*p*	RMSEA (95% CI)	SRMR	AIC	BIC
1	5160.94	2448	<.001	-	-	-	.051 [.049, .053]	.078	70551.94	71284.25
2	5455.19	2474	<.001	295.25	26	< .001	.053 [.051, .055]	.088	70794.19	71420.73
3	5538.92	2475	<.001	83.76	1	< .001	.054 [.052, .055]	.091	70875.92	71498.39
4	6817.05	2484	<.001	1278.13	9	< .001	.064 [.062, .065]	.194	72136.05	72721.90

Note. The details of each model are described in the text.

Table 7. Study 3 - Correlations among latent factors

Goal	8	10	11	12	13	17	25	16	26
8. Comply with rules	1								
10. Have control	.38***	1							
11. Personal realization	.27***	.39***	1						
12. Do something well, avoid mistakes	.50***	.65***	.76***	1					
13. Accomplish something, observe a commitment	.56***	.44***	.63***	.79***	1				
17. Be safe	.63***	.45***	.40***	.53***	.45***	1			
25. Think, reflect	.45***	.72***	.67***	.88***	.69***	.57***	1		
16. Avoid or manage things you do not care about	-.10	.12	-.25***	-.14*	-.37***	.15*	-.10	1	
26. Do not think	.02	.03	-.08	-.04	-.06	.22***	-.14*	.55***	1

Note. Factor numbers mirror those of goal classes in Costantini & Perugini (2018).
* $p < .05$, ** $p < .01$, *** $p < .001$

Table 8. Multiple regressions, goal classes predicted by HEXACO personality traits.

#	Goal class	H	E	X	A	C	O	R^2
				Conscientious Goals				
8	Comply with rules	.19***	.28***	.13*	.12	.24***	-.19***	.29***
10	Have control	-.10	.17**	-.02	-.03	.35***	-.05	.15***
11	Personal realization	-.14*	.15*	.17**	-.08	.26***	.07	.15***
12	Do something well, avoid mistakes	-.07	.19***	.00	.06	.46***	.04	.27***
13	Accomplish something, observe a commitment	.16**	.20***	.17***	.05	.42***	-.12*	.36***
17	Be safe	.06	.31***	.07	.05	.19***	-.17***	.18***
25	Think, reflect	-.01	.18***	.07	-.01	.36***	.07	.19***
				Unconscientious Goals				
16	Avoid or manage things you do not care about	-.24***	-.02	-.05	.01	-.25***	-.02	.16***
26	Do not think	-.14*	.10	.09	.11	-.28***	-.14*	.14***

Note. Each line represents a multiple regression in which the HEXACO personality traits are entered as predictors of a goal class. The values refer to betas and the last column reports the explained variance. H, E, X, A, C, and O indicate respectively Honesty-humility, Emotionality, eXtraversion, Agreeableness vs. Anger, Conscientiousness, and Openness to experience. Goal classes numbers (#) mirror those in Costantini & Perugini (2018). P-values were corrected for multiple comparisons using the Bonferroni method, considering that we performed nine multiple regressions.

* $p < .05$, ** $p < .01$, *** $p < .001$

Figures

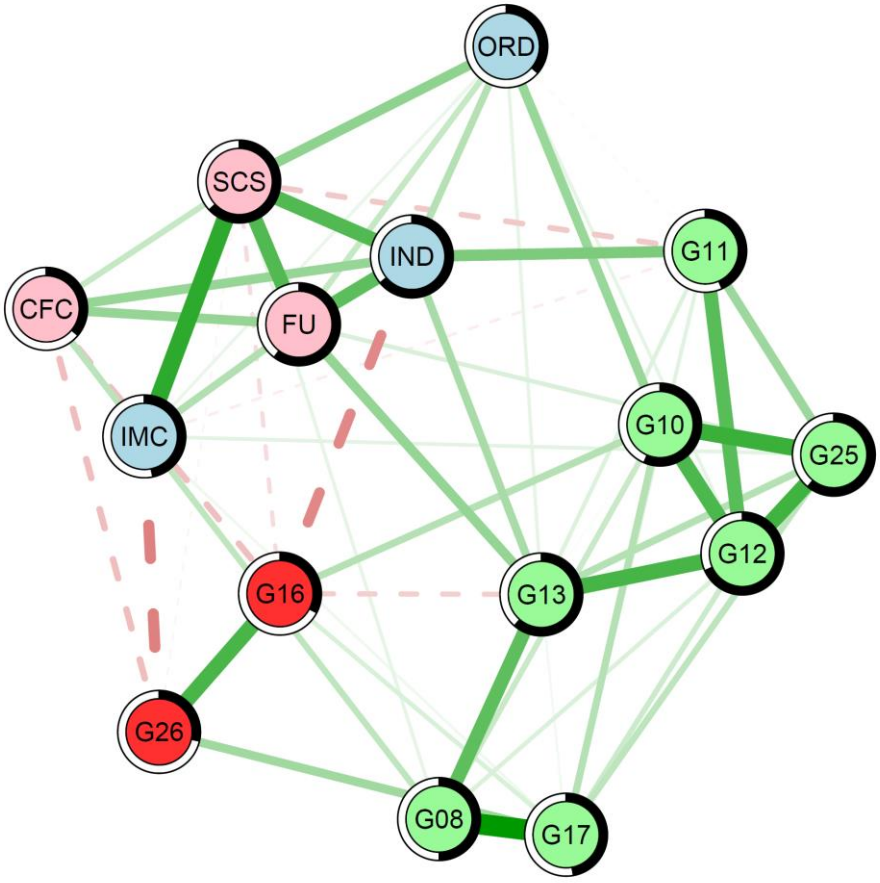

Figure 1. Network analysis. IMC = impulse-control, IND = industriousness, ORD = orderliness, SCS = self-control scale, CFC = consideration of future consequences, FU = future orientation. Goal class numbers follow Costantini and Perugini (2018): G08 = Comply with rules; G10 = Have control; G11 = Personal realization; G12 = Do something well, avoid mistakes; G13 = Accomplish something, observe a commitment; G17 = Be safe; G25 = Think, reflect; G16 = Avoid or manage things you do not care about; G26 = Do not think. Full (green) edges represent positive connections and dashed (red) edges represent negative connections. The dark part of the pie-chart surrounding each node represents node predictability. For facilitating the interpretation of the figure, we represented conscientious goals in green, unconscientious goals in red, conscientiousness facets in light blue, and other constructs in pink.

Supplementary Material

Supplementary Tables

Table S1. Study 1 - Description of goal classes used, both in Italian (the language in which the study was administered) and English.

#	Italian	English
	Conscientious goals	
1	Dimostrare qualcosa a qualcuno (es. dimostrare le proprie capacità, fare bella figura, fare buona impressione, non deludere le aspettative degli altri, piacere agli altri, essere ben visto, rispettato e stimato).	Demonstrate something to others (e.g., demonstrate abilities, make a good impression, do not disappoint expectations, be liked by others, be well seen, respected and esteemed)
2	Essere degno di fiducia (es. essere credibile, un punto di riferimento, una persona su cui contare, ispirare fiducia, infondere sicurezza, far capire agli altri che possono fidarsi, far sentire gli altri al sicuro).	Be trustworthy (e.g., be credible, a reference point for others, someone you can count on, inspire trust, let others know that they can trust you, make others feel safe).
5	Fare del bene, evitare di fare del male (es. aiutare qualcuno, proteggere qualcuno, fare del bene, far star bene gli altri, non fare del male, non far soffrire gli altri, non ferire qualcuno, non offendere gli altri).	Do good to someone, avoid hurting (e.g., help someone, protect someone, do good, make others feel good, do not hurt others, do not harm someone, do not offend others)
8	Agire secondo le regole (es. osservare e seguire le regole, non infrangere le regole, seguire le leggi, rispettare il contesto in cui ci si trova, rispettare un'autorità, non uscire dagli schemi, agire secondo i propri valori).	Comply with rules (e.g., observe and follow the rules, avoid breaking the rules, follow the law, respect the context one is in, respect an authority, do not violate norms, act according to one's values)
10	Avere il controllo (es. tenere tutto sotto controllo, avere la situazione sotto controllo, evitare il caos, non fare confusione, trovare ciò di cui si ha bisogno, trovare le proprie cose).	Have control (e.g., keep everything under control, keep the situation under control, avoid chaos, avoid confusion, find everything you need, find one's personal belongings)
11	Realizzazione personale (es. ottenere buoni risultati, superare se stessi, avere successo, raggiungere obiettivi scolastici, accademici o lavorativi, realizzarsi, avere un futuro, avere sicurezza economica, ottenere il massimo).	Personal realization (e.g., achieve good results, surpass oneself, be successful, achieve results at school, in academia or at work, be fulfilled, have a future, obtain financial security, make the most of oneself)
12	Fare le cose per bene, evitare errori (es. fare un ottimo lavoro, fare le cose nel migliore dei modi, evitare di fare errori, non sbagliare, non commettere sviste, non tralasciare alcun dettaglio).	Do something well, avoid mistakes (e.g., do an excellent job, do things in the best way, avoid errors, do not make mistakes, do not commit oversights, do not miss any details).
13	Portare a termine le cose, rispettare gli impegni (es. portare a termine qualcosa, come un progetto, terminare un lavoro in tempo, fare tutto nei tempi prestabiliti mantenere gli impegni presi, non lasciare le cose a metà, rispettare un impegno preso).	Accomplish something, observe a commitment (e.g., completing something, such as a project, finishing a job on time, doing everything in time, fulfil obligations, do not leave things halfway, observe a commitment)
17	Essere al sicuro (es. non correre rischi, non mettersi nei guai o in pericolo, non farsi del male, proteggersi	Be safe (e.g., do not take risks, do not get in trouble or in danger, do not hurt oneself, protect oneself and

	e stare al sicuro e in salute, salvaguardarsi).	stay safe and healthy, safeguard oneself).
20	Essere soddisfatto di se stesso (apprezzare se stesso, essere contento e soddisfatto di se stesso, avere rispetto di se stesso, avere una buona autostima e una buona immagine di sé, dimostrare a se stesso il proprio valore, essere contento di se stesso, essere gratificato da quello che si fa).	Be satisfied with yourself (appreciate oneself, be happy and satisfied with oneself, have respect for oneself, have good self-esteem and a good self-image, show oneself one's value, be happy with oneself, be gratified by what one does)
25	Pensare, riflettere (es. analizzare bene le situazioni, riordinare le idee, prevedere le conseguenze delle proprie azioni, valutare tutte le opzioni prima di prendere una decisione, prendere buone decisioni, trovare la soluzione migliore ad un problema, non lasciare nulla al caso).	Think, reflect (e.g., analyzing situations well, sort things out, foresee the consequences of one's actions, evaluate all options before making a decision, make good decisions, finding the best solution to a problem, leave nothing to chance)
	Unconscientious goals	
04	Influenzare il comportamento degli altri (es. attirare l'attenzione altrui, essere aiutato, essere al centro dell'attenzione, essere ricompensato, modificare il comportamento degli altri).	Manipulate other people's behavior (e.g., attract attention, get help, be the center of attention, be rewarded, change other people's behavior)
06	Fare del male a qualcuno (es. dare fastidio a qualcuno, intimorire qualcuno, fare un dispetto, ferire qualcuno, nuocere, far preoccupare qualcuno, vendicarsi).	Hurt someone (e.g., bother someone, intimidate someone, spite, hurt someone, harm, worry someone, take revenge)
07	Nascondere qualcosa agli altri (es. confondere gli altri, evitare di dare delle informazioni, non essere prevedibile, non far capire ciò che si pensa, non far capire i propri obiettivi, non far capire le proprie intenzioni, non mostrare le proprie debolezze).	Hide something from someone (e.g., confuse others, avoid giving information, not being predictable, do not make people understand what one thinks, do not make one's goals clear, do not make one's intentions understood, do not show one's weaknesses).
09	Ribellarsi, trasgredire le regole (es. infrangere e trasgredire le regole, ribellarsi al sistema, ribellarsi alle regole morali, rompere i limiti imposti, uscire dagli schemi, fare a modo proprio).	Rebel, transgress the rules (e.g., break and transgress the rules, rebel against the system, rebel against moral rules, break imposed limits, break out of schemes, doing things one's own way)
15	Risparmiare tempo (es. fare qualcosa in fretta e rapidamente, fare più cose per volta, finire ciò che si deve fare il più in fretta possibile, terminare in fretta, ottimizzare i tempi, non perdere tempo).	Save time (e.g., do something quickly and quickly, do more things at a time, finish what needs to be done as quickly as possible, finish quickly, push the timeline, do not waste time)
16	Evitare o gestire cose di cui non importa (es. evitare di fare qualcosa, evitare un compito faticoso o un impegno, far vedere che qualcosa non interessa, far capire a qualcuno che non può contare su di noi, non assumersi delle responsabilità, non fare cose che non si ha voglia di fare, dedicare il proprio tempo solo a ciò che piace fare).	Avoid or manage things you do not care about (e.g., avoid doing something, avoid a strenuous task or a commitment, show that one is not interested to something, let someone know that s/he cannot count on us, do not take on responsibilities, do not do things that one does not want to do, devote time only to what one likes to do)
21	Stare bene (es. divertirsi, riposarsi, rilassarsi, sentirsi libero e tranquillo, evitare stress e fatiche).	Feel good (e.g., have fun, relax, feel free and calm, avoid stress and fatigue).
22	Provare nuove sensazioni (es. provare emozioni forti, sperimentare nuove sensazioni, provare sensazioni adrenaliniche, perdere il controllo, rompere la monotonia, rompere la routine, sfidare i pericoli, vivere momenti di euforia).	Try new sensations (e.g., feel thrills, experience new sensations, get the adrenaline going, loose control, break the monotony, break the routine, take risks, experience euphoria)

23	Dimostrare o esternare un'emozione negativa (es. esternare un malessere, manifestare un disagio, mostrare di essere stanco, mostrare disinteresse, non tenersi tutto dentro, scaricare la rabbia, sfogarsi).	Manifest or vent a negative emotion (e.g., express discomfort, show discomfort, show that one is tired, show disinterest, do not keep everything inside, release anger, let off steam)
26	Evitare di pensare (es. allontanare pensieri problematici, distrarsi dai problemi, essere meno razionale, evitare di pensare o ragionare troppo, non pensare alle conseguenze di ciò che si fa, non preoccuparsi di ciò che si fa).	Do not think (e.g., turn off problematic thoughts, get one's mind off problems, be less rational, avoid thinking or reflecting too much, do not think about the consequences of what one does, do not worry about what one does)

Note. Goal class numbers (#) mirror those in Costantini & Perugini (2018)

Table S2. Study 1 - Partially-overlapping t-tests. For each of 21 goals, we report the mean and SD of participants' ratings on the hypothesized pole of conscientiousness, the positive pole (C+) or the negative pole (C-), and on each of the positive (+) and negative (-) poles of the remaining HEXACO traits.

Trait	*N* paired	*N* unpaired	*M*	*SD*	*t*	*df*	*p*
1. Demonstrate something to others (C+ *M* = 5.44, *SD* = 1.43)							
H+	56	243	3.82	1.78	6.48	64.50	< .001
E+	63	236	4.37	1.68	4.70	75.02	< .001
X+	61	238	5.62	1.45	0.93	76.79	.179
A+	59	240	4.25	1.46	5.62	73.75	< .001
O+	60	239	4.75	1.47	3.49	74.93	< .001
H-	56	243	5.57	1.78	0.50	64.53	.308
E-	63	236	4.48	1.92	3.88	71.87	< .001
X-	61	238	2.11	1.08	20.54	91.43	< .001
A-	59	240	4.44	1.85	4.03	67.55	< .001
O-	60	239	3.13	1.69	9.78	70.83	< .001
2. Be trustworthy (C+ *M* = 6.05, *SD* = 1.04)							
H+	56	243	6.00	1.06	0.35	69.57	.364
E+	63	236	4.44	1.84	6.68	67.64	< .001
X+	61	238	5.67	1.31	2.19	70.74	.016
A+	59	240	5.37	1.39	3.71	67.05	< .001
O+	60	239	5.28	1.26	4.43	70.33	< .001
H-	56	243	2.70	2.01	12.28	58.89	< .001
E-	63	236	3.95	1.65	9.96	69.04	< .001
X-	61	238	3.15	1.62	13.03	66.94	< .001
A-	59	240	3.78	1.94	8.88	62.55	< .001
O-	60	239	3.33	1.51	12.91	66.77	< .001
5. Do good to someone, avoid hurting (C+ *M* = 5.39, *SD* = 1.30)							
H+	56	243	6.02	1.05	3.93	78.82	< .001
E+	63	236	5.83	1.31	2.41	80.01	.009
X+	61	238	5.33	1.41	0.34	74.71	.368
A+	59	240	5.58	1.42	0.95	71.82	.174
O+	60	239	5.80	0.97	3.03	90.78	.002
H-	56	243	2.18	1.29	16.84	70.32	< .001
E-	63	236	3.24	1.38	11.19	78.33	< .001
X-	61	238	4.26	1.64	5.09	70.70	< .001
A-	59	240	2.98	1.47	11.80	70.82	< .001
O-	60	239	3.87	1.24	8.74	77.77	< .001
8. Comply with rules (C+ *M* = 6.11, *SD* = 1.08)							
H+	56	243	5.79	1.26	1.84	65.79	.035
E+	63	236	5.48	1.31	3.65	74.15	< .001
X+	61	238	4.38	1.38	9.33	70.28	< .001
A+	59	240	5.58	1.16	3.26	71.94	.001
O+	60	239	4.22	1.50	8.98	67.46	< .001

Trait	*N* paired	*N* unpaired	*M*	*SD*	*t*	*df*	*p*
H-	56	243	2.27	1.45	18.60	63.11	< .001
E-	63	236	3.86	1.49	11.21	71.23	< .001
X-	61	238	4.97	1.41	5.90	69.78	< .001
A-	59	240	3.61	1.52	11.76	65.97	< .001
O-	60	239	4.62	1.78	6.40	64.94	< .001
10. Have control (C+ *M* = 6.23, *SD* = 1.09)							
H+	56	243	4.27	1.55	9.25	62.23	< .001
E+	63	236	3.49	1.87	11.20	67.96	< .001
X+	61	238	4.49	1.52	8.38	68.68	< .001
A+	59	240	4.76	1.58	6.82	65.63	< .001
O+	60	239	4.35	1.42	9.42	68.71	< .001
H-	56	243	4.75	1.85	5.72	60.05	< .001
E-	63	236	5.10	1.57	5.62	70.55	< .001
X-	61	238	3.31	1.98	10.84	65.06	< .001
A-	59	240	3.68	2.05	9.34	62.48	< .001
O-	60	239	3.95	1.86	9.39	64.58	< .001
11. Personal realization (C+ *M* = 6.30, *SD* = 1.06)							
H+	56	243	4.84	1.47	7.21	62.51	< .001
E+	63	236	4.30	1.35	11.08	72.90	< .001
X+	61	238	5.46	1.47	4.44	68.72	< .001
A+	59	240	4.73	1.42	8.32	66.79	< .001
O+	60	239	5.98	0.97	2.28	79.46	.013
H-	56	243	4.79	2.11	5.23	58.59	< .001
E-	63	236	5.13	1.66	5.57	69.11	< .001
X-	61	238	3.36	1.44	15.44	69.10	< .001
A-	59	240	4.20	1.65	9.54	64.50	< .001
O-	60	239	3.12	1.57	14.78	66.34	< .001
12. Do something well. avoid mistakes (C+ *M* = 6.21, *SD* = 0.96)							
H+	56	243	5.07	1.50	5.55	60.98	< .001
E+	63	236	4.79	1.47	7.26	69.52	< .001
X+	61	238	4.64	1.38	8.78	68.17	< .001
A+	59	240	5.03	1.36	6.39	65.92	< .001
O+	60	239	4.87	1.11	8.66	71.45	< .001
H-	56	243	3.39	1.87	11.06	58.82	< .001
E-	63	236	4.35	1.48	10.01	69.41	< .001
X-	61	238	3.98	1.55	10.56	66.38	< .001
A-	59	240	3.58	1.57	12.45	63.95	< .001
O-	60	239	3.40	1.49	13.82	65.81	< .001
13. Accomplish something. observe a commitment (C+ *M* = 6.57, *SD* = 0.83)							
H+	56	243	5.36	1.39	6.48	60.19	< .001
E+	63	236	4.97	1.44	8.70	67.90	< .001
X+	61	238	4.70	1.27	11.00	67.23	< .001
A+	59	240	5.24	1.22	8.23	65.40	< .001

Trait	*N* paired	*N* unpaired	*M*	*SD*	*t*	*df*	*p*
O+	60	239	5.15	1.18	9.13	67.24	< .001
H-	56	243	3.25	1.50	15.79	59.44	< .001
E-	63	236	4.59	1.57	9.69	66.91	< .001
X-	61	238	4.33	1.54	11.43	64.89	< .001
A-	59	240	3.97	1.29	15.34	64.67	< .001
O-	60	239	3.38	1.50	15.85	64.02	< .001
17. Be safe (C+ *M* = 5.61, *SD* = 1.19)							
H+	56	243	4.89	1.58	3.20	63.27	.001
E+	63	236	5.05	1.93	2.20	68.63	.016
X+	61	238	4.05	1.55	7.46	69.86	< .001
A+	59	240	5.07	1.54	2.66	67.50	.005
O+	60	239	3.87	1.73	7.66	66.66	< .001
H-	56	243	3.86	1.99	6.29	60.12	< .001
E-	63	236	3.70	1.79	8.00	69.72	< .001
X-	61	238	5.03	1.82	2.44	67.13	.009
A-	59	240	3.37	1.72	9.51	65.55	< .001
O-	60	239	4.70	1.82	3.69	65.95	< .001
20. Be satisfied with yourself (C+ *M* = 5.75, *SD* = 1.34)							
H+	56	243	5.41	1.29	1.82	71.39	.036
E+	63	236	3.48	1.58	10.72	74.88	< .001
X+	61	238	5.92	1.16	1.13	83.71	.131
A+	59	240	4.71	1.50	5.16	71.04	< .001
O+	60	239	5.98	0.98	1.73	91.89	.044
H-	56	243	4.61	2.16	3.86	60.58	< .001
E-	63	236	5.75	1.19	0.00	85.57	.500
X-	61	238	2.79	1.57	13.95	72.44	< .001
A-	59	240	4.36	1.57	6.41	69.77	< .001
O-	60	239	3.45	1.48	11.41	72.79	< .001
25. Think, reflect (C+ *M* = 6.27, *SD* = 1.06)							
H+	56	243	5.09	1.35	6.25	64.00	< .001
E+	63	236	4.98	1.52	6.40	70.57	< .001
X+	61	238	4.44	1.50	8.98	68.34	< .001
A+	59	240	5.37	1.43	4.74	66.79	< .001
O+	60	239	5.15	1.67	5.02	65.55	< .001
H-	56	243	3.75	1.90	9.60	59.47	< .001
E-	63	236	4.10	1.59	10.38	69.76	< .001
X-	61	238	4.54	1.70	7.71	66.46	< .001
A-	59	240	3.37	1.73	12.39	63.89	< .001
O-	60	239	3.30	1.66	13.29	65.59	< .001
4. Manupulate other people's behavior (C- *M* = 3.85, *SD* = 1.76)							
H+	56	243	2.39	1.47	6.63	77.01	< .001
E+	63	236	3.00	1.74	3.57	80.68	< .001
X+	61	238	5.23	1.80	5.53	76.50	< .001
A+	59	240	2.47	1.47	6.29	82.23	< .001

Trait	*N* paired	*N* unpaired	*M*	*SD*	*t*	*df*	*p*
O+	60	239	3.65	1.78	0.80	75.42	.213
H-	56	243	5.79	1.49	8.76	76.61	< .001
E-	63	236	4.03	1.86	0.70	78.30	.242
X-	61	238	1.67	1.19	12.16	99.82	< .001
A-	59	240	4.51	1.69	2.86	76.00	.003
O-	60	239	3.15	1.45	3.21	84.60	.001
6. Hurt someone (C- *M* = 3.78, *SD* = 1.64)							
H+	56	243	1.61	1.26	11.74	81.62	< .001
E+	63	236	1.57	0.96	14.39	119.30	< .001
X+	61	238	2.16	1.39	7.96	84.72	< .001
A+	59	240	1.58	1.09	12.78	97.98	< .001
O+	60	239	1.58	0.74	17.05	149.29	< .001
H-	56	243	4.80	1.75	4.12	68.18	< .001
E-	63	236	3.60	1.69	0.80	79.25	.213
X-	61	238	1.97	1.35	9.43	86.27	< .001
A-	59	240	4.81	1.72	4.51	73.00	< .001
O-	60	239	2.30	1.27	7.78	88.51	< .001
7. Hide something from someone (C- *M* = 4.58, *SD* = 1.69)							
H+	56	243	2.00	1.36	12.66	78.78	< .001
E+	63	236	2.62	1.46	9.09	86.69	< .001
X+	61	238	2.84	1.54	8.25	81.03	< .001
A+	59	240	3.19	1.79	5.42	72.56	< .001
O+	60	239	2.80	1.57	7.83	78.63	< .001
H-	56	243	5.88	1.18	7.24	87.61	< .001
E-	63	236	4.33	1.87	0.98	76.75	.165
X-	61	238	4.51	2.10	0.24	70.91	.405
A-	59	240	4.08	1.88	1.86	71.09	.034
O-	60	239	3.85	1.78	2.89	74.01	.003
9. Rebel. transgress the rules (C- *M* = 5.11, *SD* = 1.85)							
H+	56	243	1.89	1.26	15.68	89.51	< .001
E+	63	236	1.86	1.09	19.00	118.73	< .001
X+	61	238	3.08	1.54	9.31	85.71	< .001
A+	59	240	1.81	1.11	18.56	107.76	< .001
O+	60	239	3.62	1.80	6.11	76.89	< .001
H-	56	243	4.93	1.67	0.80	73.79	.214
E-	63	236	4.03	1.63	4.95	86.16	< .001
X-	61	238	1.89	1.25	16.92	100.14	< .001
A-	59	240	4.24	1.79	3.45	75.62	.001
O-	60	239	2.45	1.62	11.52	81.51	< .001
15. Save time (C- *M* = 4.08, *SD* = 2.06)							
H+	56	243	3.48	1.63	2.28	79.90	.013
E+	63	236	3.29	1.35	3.65	107.19	< .001
X+	61	238	3.79	1.56	1.22	91.40	.112

Trait	*N* paired	*N* unpaired	*M*	*SD*	*t*	*df*	*p*
A+	59	240	2.86	1.34	5.47	99.02	< .001
O+	60	239	2.88	1.63	4.74	86.97	< .001
H-	56	243	4.23	1.77	0.61	75.88	.273
E-	63	236	4.14	1.37	0.32	106.00	.375
X-	61	238	3.49	1.63	2.52	88.65	.007
A-	59	240	3.85	1.44	1.09	93.61	.140
O-	60	239	4.17	1.85	0.35	80.20	.364
16. Avoid or manage things you do not care about (C- *M* = 5.32, *SD* = 1.79)							
H+	56	243	2.66	1.46	12.14	78.40	< .001
E+	63	236	3.16	1.42	10.90	92.07	< .001
X+	61	238	2.89	1.52	11.28	84.63	< .001
A+	59	240	2.76	1.32	12.18	89.62	< .001
O+	60	239	3.03	1.39	11.39	87.97	< .001
H-	56	243	4.45	1.61	3.78	73.97	< .001
E-	63	236	4.00	1.82	5.24	79.57	< .001
X-	61	238	3.69	1.58	7.44	82.71	< .001
A-	59	240	4.07	1.50	5.97	82.07	< .001
O-	60	239	4.92	1.88	1.56	74.21	.061
21. Feel good (C- *M* = 4.61, *SD* = 1.86)							
H+	56	243	5.32	1.29	3.59	87.65	< .001
E+	63	236	3.56	1.72	4.36	83.49	< .001
X+	61	238	6.15	1.21	8.17	103.49	< .001
A+	59	240	4.49	1.56	0.51	81.89	.307
O+	60	239	5.95	1.27	7.24	97.23	< .001
H-	56	243	4.43	1.79	0.74	71.35	.231
E-	63	236	4.92	1.50	1.44	91.01	.077
X-	61	238	3.33	1.70	5.48	80.93	< .001
A-	59	240	3.92	1.74	2.89	76.76	.003
O-	60	239	3.53	1.58	4.65	82.88	< .001
22. Try new sensations (C- *M* = 4.37, *SD* = 1.88)							
H+	56	243	4.02	1.46	1.56	80.85	.061
E+	63	236	3.27	1.77	4.21	82.68	< .001
X+	61	238	5.90	1.41	7.56	91.93	< .001
A+	59	240	3.49	1.39	3.98	89.03	< .001
O+	60	239	6.30	1.20	10.44	103.24	< .001
H-	56	243	3.77	1.73	2.34	73.00	.011
E-	63	236	4.29	2.17	0.29	75.42	.385
X-	61	238	2.25	1.51	10.18	87.49	< .001
A-	59	240	4.07	1.50	1.40	84.68	.083
O-	60	239	2.37	1.46	8.99	87.84	< .001
23. Manifest or vent a negative emotion (C- *M* = 4.35, *SD* = 1.66)							
H+	56	243	3.38	1.67	3.95	69.93	< .001
E+	63	236	4.56	1.88	0.85	76.05	.199

Trait	*N* paired	*N* unpaired	*M*	*SD*	*t*	*df*	*p*
X+	61	238	3.33	1.84	4.19	73.96	< .001
A+	59	240	2.05	1.22	12.29	89.59	< .001
O+	60	239	3.22	1.64	4.78	76.41	< .001
H-	56	243	2.80	1.67	6.50	69.96	< .001
E-	63	236	2.38	1.43	9.64	87.12	< .001
X-	61	238	2.97	1.90	5.24	73.11	< .001
A-	59	240	5.25	1.76	3.86	72.58	< .001
O-	60	239	3.88	1.61	2.07	77.14	.021
			26. Do not think (C- *M* = 5.01, *SD* = 1.88)				
H+	56	243	2.96	1.46	9.31	80.71	< .001
E+	63	236	2.32	1.58	11.65	88.31	< .001
X+	61	238	3.87	1.72	4.62	81.03	< .001
A+	59	240	2.83	1.50	9.40	84.65	< .001
O+	60	239	3.12	1.91	7.14	75.42	< .001
H-	56	243	3.62	1.65	5.72	74.99	< .001
E-	63	236	4.19	1.62	3.43	87.25	.001
X-	61	238	2.87	1.58	9.32	85.28	< .001
A-	59	240	3.46	1.67	6.38	79.02	< .001
O-	60	239	4.20	1.87	3.12	76.15	.001

Note. The overall sample is N = 299 for all analyses, *N* paired and *N* unpaired are the sample of paired and unpaired participants, respectively. H, E, X, A, and O indicate respectively Honesty-humility, Emotionality, eXtraversion, Agreeableness vs. Anger and Openness to experience profiles, the "+" and "–" symbols indicate respectively positive and the negative poles of the trait.

Table S3. Study 2 – Descriptive statistics. For goals, the proportion of participants using the extreme points of the scale, the minimum value one (%min) and the maximum value nine (%max), are also reported to detect potential ceiling and floor effects.

	Mean	*SD*	Skewness	Kurtosis	% max	% min
BF-TGI						
Openness	2.68	0.47	-0.86	-1.04		
Conscientiousness	2.50	0.57	-0.63	-0.61		
Extraversion	2.56	0.52	-0.51	-1.17		
Agreeableness	2.40	0.56	-0.22	-0.87		
Neuroticism	1.26	0.45	1.20	-0.26		
Honesty-humility	2.27	0.52	0.23	-0.46		
C-BFI						
Openness	3.64	0.43	0.49	0.54		
Conscientiousness	3.65	0.47	0.12	-0.26		
Extraversion	3.43	0.35	0.08	0.22		
Agreeableness	3.33	0.41	0.33	0.76		
Stability	3.77	0.49	0.35	-0.33		
Honesty-humility	3.18	0.43	0.71	3.14		
HEXACO-PI						
Honesty-humility	3.68	0.78	-0.69	-0.03		
Emotionality	3.41	0.64	-0.29	0.08		
Extraversion	3.29	0.71	-0.25	0.04		
Agreeableness vs. Anger	3.03	0.68	-0.18	-0.26		
Conscientiousness	3.70	0.63	-0.36	-0.19		
Openness to Experience	3.35	0.70	-0.39	-0.32		
BFI-2						
Openness	3.67	0.74	-0.59	0.14		
Conscientiousness	3.82	0.65	-0.45	-0.31		
Extraversion	3.21	0.66	-0.25	-0.28		
Agreeableness	3.74	0.61	-0.24	-0.37		
Neuroticism	3.10	0.82	-0.05	-0.50		
Positive orientation						
Positive orientation	3.66	0.82	-0.67	0.33		
Goal classes						
1. Demonstrate something to others	6.26	2.15	-0.93	0.25	0.13	.06
2. Be trustworthy	8.10	1.30	-2.13	5.81	0.52	.00
5. Do good to someone. avoid hurting	8.25	1.25	-2.32	6.66	0.61	.00
8. Comply with rules	6.85	1.91	-0.98	0.70	0.22	.02
10. Have control	6.62	1.99	-0.91	0.46	0.19	.03
11. Personal realization	8.08	1.34	-1.83	3.57	0.55	.00
12. Do something well. avoid mistakes	8.05	1.13	-1.32	1.74	0.45	.00
13. Accomplish something. observe a commitment	8.29	1.09	-2.33	8.34	0.57	.00
17. Be safe	7.07	1.88	-1.08	0.85	0.28	.02
20. Be satisfied with yourself	8.27	1.19	-2.17	6.30	0.62	.00
25. Think. reflect	7.51	1.61	-1.47	2.88	0.35	.02
4. Manipulate other people's behavior	3.70	2.40	0.38	-1.04	0.03	.31
6. Hurt someone	1.45	1.28	4.03	17.97	0.01	.81
7. Hide something from someone	3.62	2.26	0.46	-0.81	0.03	.26
9. Rebel. transgress the rules	3.48	2.39	0.58	-0.91	0.03	.31
15. Save time	5.82	2.43	-0.51	-0.65	0.17	.09
16. Avoid or manage things you do not care about	3.44	2.46	0.65	-0.77	0.05	.35
21. Feel good	8.38	1.05	-1.83	2.91	0.67	.00
22. Try new sensations	5.96	2.61	-0.47	-0.99	0.24	.09
23. Manifest or vent a negative emotion	4.77	2.55	-0.10	-1.14	0.08	.19
26. Do not think	4.60	2.64	0.03	-1.25	0.09	.21
Goal sum-scores						
Overall importance of conscientious goals	7.58	0.87	-1.08	2.14		
Overall importance of unconscientious goals	4.52	1.08	0.16	-0.41		

Table S4. Study 2 – Simple Tobit regression models, goal classes predicted by HEXACO personality traits.

#	Goal class	H			E			X			A			C			O		
		b_0	b_1	R^2_{MZ}	b_0	b_1	R^2_{MZ}	b_0	b_1	R^2_{MZ}	b_0	b_1	R^2_{MZ}	b_0	b_1	R^2_{MZ}	b_0	b_1	R^2_{MZ}
	Conscientious Goals																		
1	Demonstrate something to others	6.38***	-0.28	0.02	6.38***	0.28	0.02	6.38***	-0.19	0.01	6.38***	0.18	0.01	6.38***	0.17	0.01	6.38***	0.06	0.00
2	Be trustworthy	9.08***	-0.03	0.00	9.08***	0.05	0.00	9.08***	0.33	0.06	9.08***	-0.04	0.00	9.07***	0.31	0.05	9.08***	0.29	0.05
5	Do good to someone, avoid hurting	9.64***	0.97***	0.40	9.67***	0.61**	0.20	9.71***	0.34	0.07	9.68***	0.74***	0.27	9.69***	0.21	0.03	9.71***	0.69***	0.23
8	Comply with rules	7.14***	0.44**	0.05	7.14***	0.34	0.03	7.14***	-0.21	0.01	7.14***	0.53**	0.07	7.14***	0.65***	0.11	7.14***	-0.16	0.01
10	Have control	6.86***	-0.27	0.02	6.86***	0.16	0.01	6.86***	-0.25	0.02	6.85***	-0.12	0.00	6.85***	0.68***	0.11	6.85***	-0.23	0.01
11	Personal realization	9.23***	-0.58**	0.16	9.22***	-0.05	0.00	9.22***	0.07	0.00	9.21***	-0.35	0.07	9.22***	0.41	0.08	9.23***	0.24	0.03
12	Do something well, avoid mistakes	8.66***	-0.04	0.00	8.66***	0.01	0.00	8.66***	0.13	0.01	8.66***	-0.01	0.00	8.66***	0.77***	0.34	8.66***	0.14	0.02
13	Accomplish something, observe a commitment	9.34***	0.12	0.01	9.35***	0.24	0.05	9.34***	0.11	0.01	9.35***	-0.02	0.00	9.34***	0.56***	0.22	9.34***	0.21	0.04
17	Be safe	7.49***	0.17	0.01	7.48***	0.78***	0.16	7.49***	-0.22	0.01	7.49***	0.39	0.04	7.49***	0.45**	0.05	7.49***	-0.15	0.01
20	Be satisfied with yourself	9.72***	-0.29	0.05	9.71***	-0.13	0.01	9.71***	0.56**	0.18	9.72***	-0.14	0.01	9.71***	0.17	0.02	9.72***	0.46	0.13
25	Think, reflect	8.04***	0.09	0.00	8.04***	-0.05	0.00	8.04***	-0.07	0.00	8.04***	0.07	0.00	8.04***	0.48**	0.08	8.04***	0.10	0.00
	Unconscientious Goals																		
4	Manipulate other people's behavior	3.11***	-1.31***	0.25	3.09***	-0.14	0.00	3.09***	0.08	0.00	3.09***	-0.86***	0.12	3.09***	-0.28	0.01	3.09***	0.21	0.01
6	Hurt someone	-2.91***	-1.76***	0.66	-2.95***	-0.25	0.04	-2.95***	0.08	0.00	-2.97***	-1.66***	0.63	-3.06***	-0.91	0.33	-2.95***	-0.03	0.00
7	Hide something from someone	3.19***	-1.11***	0.21	3.19***	-0.36	0.02	3.19***	-0.54**	0.06	3.18***	-0.41	0.03	3.19***	-0.28	0.01	3.19***	0.05	0.00
9	Rebel, transgress the rules	2.86***	-0.45	0.04	2.86***	-0.51	0.04	2.86***	0.34	0.02	2.86***	-0.57	0.05	2.85***	-0.53	0.05	2.85***	0.98***	0.15
15	Save time	5.98***	-0.55**	0.05	5.97***	-0.10	0.00	5.97***	0.06	0.00	5.97***	0.09	0.00	5.97***	0.01	0.00	5.97***	0.10	0.00
16	Avoid or manage things you do not care about	2.65***	-0.59	0.05	2.64***	-0.17	0.00	2.64***	-0.18	0.01	2.64***	-0.19	0.01	2.64***	-0.76**	0.09	2.65***	0.16	0.00
21	Feel good	9.97***	-0.40	0.13	9.97***	0.35	0.10	9.96***	0.33	0.09	9.97***	0.06	0.00	9.97***	-0.15	0.02	9.97***	0.08	0.01
22	Try new sensations	6.35***	-0.77**	0.08	6.34***	-0.51	0.04	6.34***	0.41	0.02	6.34***	-0.43	0.03	6.35***	-0.35	0.02	6.35***	0.50	0.04
23	Manifest or vent a negative emotion	4.57***	-0.07	0.00	4.57***	0.39	0.02	4.57***	0.25	0.01	4.57***	-0.32	0.02	4.57***	-0.18	0.00	4.57***	0.22	0.01
26	Do not think	4.34***	-0.40	0.02	4.35***	0.71**	0.07	4.34***	-0.62**	0.05	4.34***	-0.43	0.03	4.34***	-0.17	0.00	4.34***	-0.07	0.00

Note. Each line represents a series of simple Tobit regressions in which an HEXACO personality trait predicts a goal class. The values refer to Tobit regression coefficients, the intercept (b_0) and the slope (b_1), expressed in units of the uncensored dependent variable (i.e., goal class). The independent variables (i.e., traits) were standardized for facilitating interpretation. H, E, X, A, C, and O indicate respectively Honesty-humility, Emotionality, eXtraversion, Agreeableness vs. Anger, Conscientiousness, and Openness to experience. R^2_{MZ}= McKelvey-Zavoina R-squared. Goal classes numbers (#) mirror those in Costantini & Perugini (2018). P-values were corrected for multiple comparisons using the Bonferroni method, considering that we analyzed 21 goal classes.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table S5. Study 2 –Multiple Tobit regressions, subjective importance of goal classes predicted by Big Five personality traits.

#	Goal class	Intercept	O	C	E	A	N	R^2_{MZ}
				Unconscientious Goals				
1	Demonstrate something to others	6.38***	-0.08	0.08	0.13	0.39	0.35	0.05
2	Be trustworthy	9.09***	0.31	0.10	0.36	0.23	0.16	0.17
5	Do good to someone, avoid hurting	9.61***	0.30	0.00	0.28	1.24***	0.39	0.61
8	Comply with rules	7.14***	-0.29	0.54**	-0.18	0.64***	0.11	0.24
10	Have control	6.85***	-0.04	0.95***	-0.10	-0.19	0.24	0.19
11	Personal realization	9.23***	0.42	0.33	0.41	-0.17	0.35	0.23
12	Do something well, avoid mistakes	8.66***	0.18	0.68***	0.31	0.06	0.33	0.34
13	Accomplish something, observe a commitment	9.34***	0.20	0.64***	0.22	0.17	0.37	0.34
17	Be safe	7.48***	-0.06	0.66***	-0.16	0.34	0.38	0.18
20	Be satisfied with yourself	9.73***	0.36	0.04	0.51	0.10	-0.13	0.30
25	Think, reflect	8.05***	0.25	0.40	0.01	-0.07	0.17	0.07
				Conscientious Goals				
4	Manipulate other people's behavior	3.10***	0.20	-0.51	0.38	-0.91***	0.05	0.23
6	Hurt someone	-3.17***	0.24	-0.66	0.82	-1.75***	0.45	0.78
7	Hide something from someone	3.19***	0.16	-0.20	-0.28	-0.85***	0.01	0.16
9	Rebel, transgress the rules	2.85***	1.02***	-0.66*	0.27	-0.54	-0.06	0.30
15	Save time	5.97***	-0.03	-0.24	0.16	-0.15	0.13	0.02
16	Avoid or manage things you do not care about	2.63***	0.12	-0.89**	-0.18	-0.67	-0.08	0.22
21	Feel good	9.97***	0.09	0.05	0.28	0.14	0.07	0.10
22	Try new sensations	6.34***	0.55	-0.41	0.71*	-0.33	0.07	0.17
23	Manifest or vent a negative emotion	4.57***	-0.02	-0.16	0.49	-0.02	0.30	0.04
26	Do not think	4.34***	-0.07	-0.10	-0.25	-0.41	0.71*	0.14

Note. Each line represents a multiple Tobit regression in which the Big Five personality traits are entered as predictors of a goal class. The values refer to Tobit regression coefficients, the intercept (b_0) and the slope (b_1), expressed in units of the uncensored dependent variable (i.e., goal class). The independent variables (i.e., traits) were standardized for facilitating interpretation. O, C, E, A, and N indicate respectively Openness, Consicentiousness, Extraversion, Agreeableness and Neuroticism. R^2_{MZ}= McKelvey-Zavoina R-squared. Goal classes numbers (#) mirror those in Costantini & Perugini (2018). P-values were corrected for multiple comparisons using the Bonferroni method, considering that we performed 21 multiple regressions.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table S6. Study 2 – Simple Tobit regression models, goal classes predicted by Big Five personality traits.

#	Goal class	O			C			E			A			N		
		b_0	b_1	R^2_{MZ}	b_0	b_1	R^2_{MZ}	b_0	b_1	R^2_{MZ}	b_0	b_1	R^2_{MZ}	b_0	b_1	R^2_{MZ}
								Conscientious Goals								
1	Demonstrate something to others	6.38***	0.00	0.00	6.38***	0.13	0.00	6.38***	-0.01	0.00	6.38***	0.34	0.02	6.38***	0.23	0.01
2	Be trustworthy	9.09***	0.44	0.10	9.08***	0.15	0.01	9.09***	0.41	0.09	9.07***	0.27	0.04	9.08***	-0.04	0.00
5	Do good to someone, avoid hurting	9.71***	0.62**	0.19	9.69***	0.28	0.05	9.70***	0.24	0.03	9.61***	1.23***	0.57	9.69***	0.10	0.01
8	Comply with rules	7.14***	-0.30	0.03	7.14***	0.70***	0.13	7.14***	-0.25	0.02	7.14***	0.73***	0.14	7.14***	-0.06	0.00
10	Have control	6.85***	-0.21	0.01	6.85***	0.83***	0.16	6.86***	-0.04	0.00	6.85***	0.03	0.00	6.85***	0.07	0.00
11	Personal realization	9.23***	0.46	0.10	9.22***	0.22	0.03	9.23***	0.49**	0.12	9.22***	-0.08	0.00	9.22***	0.12	0.01
12	Do something well, avoid mistakes	8.66***	0.21	0.03	8.67***	0.66***	0.26	8.67***	0.36**	0.09	8.66***	0.22	0.04	8.66***	0.05	0.00
13	Accomplish something, observe a commitment	9.34***	0.20	0.03	9.34***	0.61***	0.25	9.35***	0.24	0.05	9.34***	0.32	0.08	9.35***	0.11	0.01
17	Be safe	7.49***	-0.14	0.01	7.49***	0.64***	0.11	7.49***	-0.22	0.01	7.49***	0.46**	0.06	7.49***	0.23	0.01
20	Be satisfied with yourself	9.72***	0.53**	0.17	9.71***	0.15	0.02	9.73***	0.66**	0.24	9.71***	0.18	0.02	9.71***	-0.33	0.07
25	Think, reflect	8.04***	0.19	0.01	8.04***	0.31	0.04	8.04***	0.09	0.00	8.04***	0.05	0.00	8.04***	0.07	0.00
								Unconscientious Goals								
4	Manipulate other people's behavior	3.09***	0.21	0.01	3.09***	-0.74**	0.09	3.09***	0.38	0.02	3.09***	-1.05***	0.17	3.09***	0.19	0.01
6	Hurt someone	-2.95***	0.23	0.03	-3.07***	-1.15**	0.45	-2.93***	0.71	0.23	-3.08***	-1.95***	0.71	-2.99***	0.65	0.20
7	Hide something from someone	3.19***	-0.04	0.00	3.19***	-0.51	0.05	3.19***	-0.24	0.01	3.19***	-0.88***	0.14	3.19***	0.29	0.02
9	Rebel, transgress the rules	2.85***	1.08***	0.18	2.84***	-0.85***	0.12	2.86***	0.52	0.05	2.86***	-0.54	0.05	2.85***	0.06	0.00
15	Save time	5.97***	0.01	0.00	5.97***	-0.29	0.01	5.97***	0.08	0.00	5.97***	-0.25	0.01	5.97***	0.16	0.00
16	Avoid or manage things you do not care about	2.65***	0.04	0.00	2.64***	-1.09***	0.17	2.64***	-0.21	0.01	2.63***	-0.87**	0.11	2.64***	0.29	0.01
21	Feel good	9.97***	0.20	0.03	9.98***	0.11	0.01	9.97***	0.29	0.07	9.97***	0.15	0.02	9.97***	-0.06	0.00
22	Try new sensations	6.34***	0.74**	0.08	6.34***	-0.47	0.03	6.34***	0.80**	0.09	6.34***	-0.40	0.02	6.34***	-0.03	0.00
23	Manifest or vent a negative emotion	4.57***	0.13	0.00	4.57***	-0.16	0.00	4.57***	0.37	0.02	4.57***	-0.13	0.00	4.57***	0.18	0.01
26	Do not think	4.34***	-0.25	0.01	4.34***	-0.42	0.02	4.34***	-0.50	0.03	4.34***	-0.55	0.04	4.35***	0.89***	0.11

Note. Each line represents a series of simple Tobit regressions in which a Big Five personality trait predicts a goal class. The values refer to Tobit regression coefficients, the intercept (b_0) and the slope (b_1), expressed in units of the uncensored dependent variable (i.e., goal class). The independent variables (i.e., traits) were standardized for facilitating interpretation. O, C, E, A, and N indicate respectively Openness, Consicentiousness, Extraversion, Agreeableness and Neuroticism. R^2_{MZ}= McKelvey-Zavoina R-squared. Goal classes numbers (#) mirror those in Costantini & Perugini (2018). P-values were corrected for multiple comparisons using the Bonferroni method, considering that we analyzed 21 goal classes.
* $p < .05$, ** $p < .01$, *** $p < .001$

Table S7. Study 2 - Principal Component Analyses of the Honesty-humility C-BFI scale

#	Items (English)	Items (Italian)	2 Comp.		1 Comp.	Final
1	I want to be a fair person	Voglio essere una persona corretta con gli altri	.67	.14	.70	.72
2	I want to follow rules even when it is against my own interest to do so	Voglio seguire le regole anche quando vanno contro i miei interessi	.27	.17	.36	
3	I want to be cunning, sly (r)	Voglio essere astuto/a, furbo/a (r)	-.34	.47	-.02	
4	I want to be able to take advantage of other people (r)	Voglio essere in grado di approfittare degli altri (r)	.21	.66	.61	.63
5	I want to be generous	Voglio essere generoso/a	.60	.21	.68	.68
6	I want to devote myself more to interpersonal relationships than to material goods.	Voglio dedicarmi più ai rapporti con le persone che ai beni materiali	.60	.10	.61	
7	I want to focus on my own profit (r)	Voglio pensare al mio guadagno (r)	-.11	.62	.30	
8	I want to be someone who focuses on his/her own interests (r)	Voglio essere una persona che pensa principalmente alla propria convenienza (r)	.23	.61	.60	.60
9	I want to be humble, modest	Voglio essere umile, modesto/a	.71	.02	.66	.70
10	I want to be an ordinary person	Voglio essere una persona semplice	.64	-.04	.56	.62
11	I want to be more important than others (r)	Voglio essere più importante degli altri (r)	-.25	.59	.14	
12	I want to be an inspiration for others (r)	Voglio essere di ispirazione per gli altri (r)	-.57	.30	-.34	
13	I want to be a sincere person	Voglio essere una persona sincera	.68	.00	.63	.64
14	I want to be transparent with other, always saying what I think	Voglio essere trasparente con gli altri, dire sempre ciò che penso	.58	-.01	.52	
15	I want to pretend to agree with others, if this suits me (r)	Voglio fingere di essere d'accordo con gli altri se mi conviene (r)	.13	.50	.44	
16	I want to use flattery with people to get what I want (r)	Voglio compiacere le persone per ottenere ciò che voglio (r)	.18	.56	.52	.54

Note. "2 Comp." includes loadings from the two-component oblimin-rotated solution (r = .27 between factors) on 16 items, "1 Comp." includes loadings from the one-component solution including 16 items, and "Final" is the one-component solution including the eight items included in the final scale. Items marked with (r) have been reverse-scored.

Table S8. Study 2 - Descriptive statistics, t-test against the midpoint, and multi-trait multi-method matrix for the BF-TGI and C-BFI scales.

	t-test against scale midpoint					BF-TGI						C-BFI				
	M	*SD*	*t*	*df*	*p*	1	2	3	4	5	6	7	8	9	10	11
BF-TGI																
1. Openness	2.68	0.47	26.09	328.00	<.001											
2. Conscientiousness	2.50	0.57	15.83	328.00	<.001	0.03										
3. Extraversion	2.56	0.52	19.58	328.00	<.001	0.05	0.02									
4. Agreeableness	2.40	0.56	12.90	328.00	<.001	0.00	0.07	-0.06								
5. Neuroticism	1.26	0.45	-30.21	328.00	<.001	-0.03	-0.03	0.00	-0.08							
6. Honesty-humility	2.27	0.52	9.34	328.00	<.001	0.05	0.31***	-0.03	0.31***	-0.10						
C-BFI																
7. Openness	3.64	0.43	26.96	328.00	<.001	**0.37***	0.08	0.08	0.07	-0.07	0.13*					
8. Conscientiousness	3.65	0.47	25.13	328.00	<.001	0.12*	**0.40***	0.08	0.07	-0.11*	0.20***	0.40***				
9. Extraversion	3.43	0.35	22.04	328.00	<.001	0.18***	0.06	**0.39***	-0.02	-0.20***	-0.02	0.33***	0.30***			
10. Agreeableness	3.33	0.41	14.38	328.00	<.001	0.09	0.13*	-0.02	**0.40***	-0.18***	0.34***	0.32***	0.38***	0.14*		
11. Stability	3.77	0.49	28.31	328.00	<.001	0.05	0.01	0.11*	0.11*	**-0.35***	0.06	0.25***	0.45***	0.22***	0.32***	
12. Honesty-humility	3.18	0.43	7.66	328.00	<.001	0.16**	0.13*	0.03	0.21***	-0.14*	**0.34***	0.42***	0.41***	0.08	0.59***	0.30***

Note. The midpoint of the BF-TGI was 2 ("I have no goal to change on this trait") and the midpoint of the C-BFI was 3 ("I don't want to change this trait"). Correlations on the validity diagonal are reported in boldface.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table S9. Study 2 - Correlations between personality traits assessed via BFI2 and HEXACO-60 and the willingness to change traits, assessed via the BF-TGI and the C-BFI

	BF-TGI						C-BFI					
	O	C	E	A	N	H	O	C	E	A	S	H
HEXACO-60												
Openness	.03	.15**	-.04	.05	-.03	.15**	.13*	.12*	-.09	-.02	.00	.05
Conscientiousness	.10	-.27***	-.01	.04	.01	.00	.04	-.30***	-.05	.08	.03	.07
eXtraversion	.01	.08	-.35***	.12*	.11*	.19***	-.08	-.17**	-.50***	.03	-.25***	.00
Agreeableness	.08	.07	.10	-.20***	.13*	-.02	.06	-.06	.12*	-.14**	-.22***	.01
Emotionality	.12*	-.06	.11	-.02	-.28***	-.04	.11*	.07	.13*	.06	.34***	.14**
Honesty-humility	.15**	-.06	.00	-.07	-.03	.02	.01	-.07	-.06	.05	-.05	.14**
BFI2												
Openness	.01	.09	-.04	.05	-.05	.16**	.08	.06	-.12*	.00	-.03	.08
Conscientiousness	.11	-.30***	-.05	.06	.05	.01	.08	-.41***	-.09	.08	-.14**	.07
Extraversion	.02	.01	-.37***	.21***	.01	.19***	-.05	-.08	-.46***	.13*	-.06	.03
Ageeableness	.15**	.04	.04	-.12*	.06	.07	.10	-.10	.02	-.09	-.18**	.06
Neuroticism	.04	-.04	.18**	-.04	-.36***	-.10	.06	.14**	.22***	-.02	.51***	.06

Note. O, C, E, A, N, S, and H indicate respectively Openness, Consicentiousness, Extraversion, Agreeableness, Neuroticism, Stability, and Honesty-humility.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table S10. Study 2 - Hierarchical multiple regressions. The willingness to become more conscientious according to C-BFI and BF-TGI was regressed on Big Five traits, Positive orientation, and the subjective importance of conscientious and unconscientious goals.

	C-BFI		*BF-TGI*	
Predictor	*ΔR²*	*β*	*ΔNagelkerke R²*	*b*
Step 1	.04*		.02***	
Intercept		.00		.17
Openness		.11		.24
Extraversion		-.08		-.06
Agreeableness		-.10		.04
Neuroticism		.11		-.10
Step 2	.14***		.16***	
Conscientiousness		-.40***		-.89***
Step 3	.00		.00	
Positive orientation		-.09		.08
Step 4	.03**		.03**	
Importance of conscientious goals		.19***		.39**
Importance of unconscientious goals		.02		-.27
Total R^2	.21***		.22**	

Note. A linear regression model was used in the prediction of the willingness to change conscientiousness according to the C-BFI, whereas a logistic regression model was used in the prediction of the willingness to become more conscientious (vs. to become less conscientious or not to change) according to the BF-TGI. Model comparison for logistic regression models was performed through likelihood-ratio tests. All predictors were standardized before entering the logistic regression model.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table S11. Study 3 – Descriptive statistics and correlation matrix.

	M	SD	Skew.	Kurt.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Goals																								
1. Comply with rules (#08)	3.73	0.66	-0.44	-0.01																				
2. Have control (#10)	3.89	0.60	-0.31	-0.02	0.45***																			
3. Personal realization (#11)	4.31	0.53	-0.97	0.87	0.23***	0.34***																		
4. Do something well, avoid mistakes (#12)	3.99	0.59	-0.32	-0.56	0.49***	0.67***	0.57***																	
5. Accomplish something, observe a commitment (#13)	4.15	0.59	-0.52	0.00	0.55***	0.47***	0.48***	0.65***																
6. Be safe (#17)	4.05	0.66	-0.66	0.15	0.59***	0.47***	0.34***	0.47***	0.41***															
7. Think, reflect (#25)	4.07	0.49	-0.31	-0.14	0.43***	0.66***	0.50***	0.71***	0.56***	0.46***														
8. Avoid or manage things you do not care about (#16)	2.61	0.60	0.12	0.06	-0.08	0.12*	-0.11*	-0.03	-0.26***	0.13**	-0.02													
9. Do not think (#26)	2.78	0.67	0.09	-0.23	0.04	0.08	-0.02	0.01	-0.05	0.20***	-0.09	0.42***												
Conscientiousness facets																								
10. Impulse-control	0.00	0.90	-0.25	0.08	0.34***	0.20***	0.07	0.30***	0.27***	0.22***	0.31***	-0.29***	-0.36***											
11. Industriousness	0.00	0.90	-0.41	-0.27	0.24***	0.19***	0.45***	0.42***	0.54***	0.12*	0.33***	-0.41***	-0.24***	0.39***										
12. Orderliness	0.00	0.93	-0.09	-0.54	0.26***	0.39***	0.13**	0.39***	0.40***	0.19***	0.28***	-0.14**	-0.13**	0.37***	0.48***									
Other constructs																								
13. Self-control scale	3.26	0.63	-0.01	-0.18	0.33***	0.16**	0.11*	0.25***	0.42***	0.16**	0.24***	-0.35***	-0.29***	0.61***	0.65***	0.50***								
14. Consideration of future consequences	3.46	0.57	-0.05	-0.39	0.15**	0.07	0.25***	0.20***	0.33***	0.07	0.24***	-0.36***	-0.31***	0.42***	0.51***	0.23***	0.49***							
15. Future orientation (ZTPI)	3.84	0.67	-0.46	0.15	0.32***	0.24***	0.25***	0.41***	0.54***	0.21***	0.41***	-0.30***	-0.23***	0.53***	0.65***	0.46***	0.66***	0.50***						
HEXACO traits																								
16. Honesty-humility	3.36	0.68	0.02	-0.35	0.31***	0.01	-0.06	0.11*	0.30***	0.16***	0.12*	-0.30***	-0.18***	0.30***	0.18***	0.11*	0.37***	0.37***	0.31***					
17. Emotionality	3.42	0.63	-0.17	-0.30	0.33***	0.19***	0.12*	0.22***	0.26***	0.33***	0.20***	-0.09	0.02	0.17***	0.05	0.05	0.08	0.10*	0.16***	0.22***				
18. eXtraversion	3.19	0.65	-0.06	-0.07	0.12*	0.04	0.22***	0.08	0.22***	0.05	0.13**	-0.10*	0.00	-0.06	0.41***	0.18***	0.25***	0.12*	0.19***	-0.04	-0.14**			
19. Agreeableness vs. Anger	2.84	0.60	-0.02	-0.10	0.18***	-0.01	-0.08	0.11*	0.13**	0.07	0.04	-0.10*	0.01	0.22***	0.02	0.07	0.16***	0.09	0.14**	0.30***	0.00	-0.02		
20. Conscientiousness	3.45	0.51	-0.16	-0.02	0.32***	0.33***	0.28***	0.48***	0.51***	0.23***	0.40***	-0.32***	-0.30***	0.65***	0.72***	0.79***	0.69***	0.47***	0.65***	0.24***	0.10*	0.23***	0.14**	
21. Openness to experience	3.26	0.69	0.21	-0.42	-0.10*	-0.01	0.10*	0.12*	-0.01	-0.12*	0.13**	-0.09	-0.19***	0.13**	0.23***	0.00	0.08	0.31***	0.22***	0.14**	0.02	0.06	0.10*	0.16**

Note. Goal classes numbers (#) mirror those in Costantini & Perugini (2018). ZTPI = Zimbardo Time Perspective Inventory.
* $p < .05$, ** $p < .01$, *** $p < .001$

Table S12. Study 3 - Multiple regressions, goal classes predicted by conscientiousness assessed through the Adjective Checklist of Conscientiousness (Costantini, Richetin, et al., 2015) *and by other HEXACO personality traits assessed by the HEXACO-60* (Ashton & Lee, 2009).

#	Goal class	H	E	X	A	C	O	R^2
				Conscientious Goals				
8	Comply with rules	0.17**	0.26***	0.11	0.12	0.31***	-0.18***	0.32***
10	Have control	-0.10	0.16**	0.00	-0.02	0.34***	-0.03	0.14***
11	Personal realization	-0.13	0.14*	0.19***	-0.08	0.21***	0.09	0.13***
12	Do something well, avoid mistakes	-0.07	0.17**	0.02	0.07	0.42***	0.07	0.23***
13	Accomplish something, observe a commitment	0.16**	0.19***	0.18***	0.05	0.41***	-0.09	0.35***
17	Be safe	0.05	0.30***	0.07	0.05	0.20***	-0.17**	0.19***
25	Think, reflect	-0.01	0.17**	0.08	0.00	0.33***	0.09	0.18***
				Unconscientious Goals				
16	Avoid or manage things you do not care about	-0.23***	0.00	-0.05	0.01	-0.27***	-0.03	0.17***
26	Do not think	-0.14	0.11	0.08	0.11	-0.28***	-0.16**	0.14***

Note. Each line represents a multiple regression in which traits are entered as predictors of a goal class. The values refer to betas and the last column reports the explained variance. H, E, X, A, C, and O indicate respectively Honesty-humility, Emotionality, eXtraversion, Agreeableness vs. Anger, Conscientiousness, and Openness to experience. Goal classes numbers (#) mirror those in Costantini & Perugini (2018). P-values were corrected for multiple comparisons using the Bonferroni method, considering that we performed nine multiple regressions.
* $p < .05$, ** $p < .01$, *** $p < .001$

Table S13. Study 3 - Network edges with 95% confidence intervals, presented in order of absolute size.

Edge	Value [95% boostrap CI]
G08-G17	0.366 [0.294; 0.451]
IMC-SCS	0.301 [0.220; 0.374]
G10-G25	0.281 [0.212; 0.375]
G12-G25	0.275 [0.199; 0.340]
G12-G13	0.265 [0.176; 0.330]
G16-G26	0.260 [0.172; 0.346]
G10-G12	0.256 [0.177; 0.333]
SCS-FU	0.248 [0.171; 0.327]
IND-SCS	0.247 [0.192; 0.341]
G11-G12	0.239 [0.174; 0.327]
IND-FU	0.235 [0.163; 0.306]
G08-G13	0.230 [0.144; 0.313]
IND-G11	0.185 [0.142; 0.334]
ORD-SCS	0.159 [0.077; 0.245]
FU-G13	0.153 [0.077; 0.215]
CFC-FU	0.150 [0.067; 0.232]
IND-CFC	0.149 [0.065; 0.210]
ORD-G10	0.145 [0.095; 0.279]
G11-G25	0.139 [0.067; 0.221]
G17-G26	0.135 [0.074; 0.229]
IND-G13	0.124 [0.062; 0.193]
IMC-FU	0.110 [0.023; 0.193]
G10-G17	0.107 [0.008; 0.178]
G10-G16	0.107 [0.027; 0.179]
G13-G25	0.106 [0.016; 0.169]
IND-ORD	0.106 [0.046; 0.213]
IMC-CFC	0.096 [0.013; 0.193]
G17-G25	0.093 [0.008; 0.177]
IMC-G08	0.090 [0.000; 0.170]
SCS-CFC	0.084 [0.000; 0.181]
ORD-FU	0.084 [0.004; 0.153]
G08-G10	0.077 [0.000; 0.171]
G12-G17	0.073 [0.000; 0.150]
G17-G16	0.055 [0.000; 0.160]
FU-G25	0.054 [0.000; 0.136]
G08-G12	0.051 [0.000; 0.139]
G11-G13	0.047 [0.000; 0.139]
G11-G17	0.042 [0.000; 0.180]
IMC-G25	0.039 [0.000; 0.113]

ORD-G13	0.035 [0.000; 0.113]
ORD-G12	0.035 [0.000; 0.128]
SCS-G08	0.035 [0.000; 0.138]
IMC-ORD	0.029 [0.000; 0.110]
IMC-G17	0.022 [0.000; 0.150]
G13-G17	0.017 [0.000; 0.107]
G10-G13	0.006 [0.000; 0.111]
IMC-G12	0.002 [0.000; 0.113]
ORD-G11	-0.007 [-0.157; 0.000]
SCS-G26	-0.013 [-0.090; 0.000]
IMC-G11	-0.025 [-0.164; 0.000]
SCS-G16	-0.050 [-0.108; 0.000]
G13-G16	-0.070 [-0.207; -0.024]
SCS-G11	-0.077 [-0.187; -0.028]
CFC-G16	-0.091 [-0.181; 0.000]
CFC-G26	-0.094 [-0.187; 0.000]
IND-G16	-0.171 [-0.236; -0.089]
IMC-G26	-0.181 [-0.270; -0.108]

Note. IMC = impulse-control, IND = industriousness, ORD = orderliness, SCS = self-control scale, CFC = consideration of future consequences, FU = future orientation. Goal class numbers follow Costantini and Perugini (2018): G08 = Comply with rules; G10 = Have control; G11 = Personal realization; G12 = Do something well, avoid mistakes; G13 = Accomplish something, observe a commitment; G17 = Be safe; G25 = Think, reflect; G16 = Avoid or manage things you do not care about; G26 = Do not think.

Table S14. Study 3 – Supplementary Study. Average binary and continuous scores for Affective (A), Behavioral (B), Cognitive (C) and Goal (G) content. The last two rows report means (*M*) and standard deviations (*SD*) of each score.

	Binary Score				Continuous Score			
Adjective	A	B	C	G	A	B	C	G
accurato	0.0	0.9	0.8	0.6	0.0	4.1	3.2	2.2
affidabile	0.4	0.9	0.5	0.5	1.1	3.8	2.3	2.0
approssimativo	0.1	0.8	0.8	0.4	0.2	3.7	3.4	1.1
attendibile	0.2	0.6	0.7	0.1	0.6	2.1	3.0	0.4
attento	0.2	0.7	0.9	0.5	0.5	3.0	4.1	2.0
caotico	0.1	0.9	0.7	0.2	0.1	4.4	2.7	0.4
cauto	0.5	0.9	0.8	0.4	1.7	4.2	3.2	1.5
controllato	0.8	0.9	0.9	0.5	3.3	3.2	4.1	1.6
coscienzioso	0.4	1.0	1.0	0.6	1.3	4.2	4.4	2.4
diligente	0.1	1.0	0.2	0.9	0.2	4.7	0.7	3.4
disciplinato	0.1	0.9	0.8	0.5	0.1	4.4	2.9	2.1
disordinato	0.0	1.0	0.3	0.2	0.0	4.7	1.0	0.5
disorganizzato	0.0	1.0	0.8	0.5	0.0	4.5	3.2	2.0
distratto	0.1	0.8	0.9	0.2	0.2	3.5	3.6	0.6
efficace	0.0	0.8	0.2	0.9	0.0	3.4	1.0	4.2
fidato	0.6	0.8	0.7	0.0	1.8	3.7	2.8	0.0
impreciso	0.0	1.0	0.3	0.3	0.0	4.7	0.8	0.8
imprudente	0.7	0.9	0.7	0.0	2.0	4.3	2.6	0.0
impulsivo	1.0	1.0	0.6	0.2	3.9	4.4	2.7	0.7
inaffidabile	0.2	0.9	0.5	0.1	0.6	4.2	2.0	0.2
inattendibile	0.2	0.8	0.6	0.1	0.7	2.7	2.7	0.1
incosciente	0.4	1.0	0.6	0.1	1.9	4.5	2.3	0.3
incostante	0.7	1.0	0.2	0.7	1.8	4.2	0.8	2.8
indolente	0.6	0.9	0.3	0.5	1.9	3.8	1.2	1.8
industrioso	0.0	1.0	0.5	1.0	0.0	4.2	1.9	3.6
irresponsabile	0.3	1.0	0.7	0.3	0.8	4.3	2.7	0.8
istintivo	0.7	1.0	0.8	0.2	3.2	4.1	3.1	0.6
laborioso	0.0	1.0	0.2	0.8	0.0	4.5	0.8	2.9
negligente	0.1	1.0	0.6	0.6	0.2	4.6	2.1	2.2
ordinato	0.0	1.0	0.6	0.2	0.0	4.7	2.3	0.5
organizzato	0.0	0.9	0.7	0.9	0.0	4.1	2.4	3.6
pignolo	0.3	0.9	0.8	0.3	0.6	4.2	3.3	1.0
pigro	0.3	0.9	0.4	0.5	0.8	4.2	1.4	1.7
preciso	0.0	0.9	0.7	0.7	0.0	4.2	2.6	3.3
prudente	0.3	0.9	0.9	0.4	1.2	4.2	3.9	1.3
responsabile	0.2	0.9	0.9	0.7	0.8	4.1	4.1	3.1
riflessivo	0.3	0.5	0.9	0.4	0.6	1.9	4.2	1.3
rispettoso	0.5	0.9	0.7	0.0	1.7	3.6	2.9	0.0
sconsiderato	0.2	0.9	0.7	0.4	0.8	4.2	3.3	0.9
sfaticato	0.3	0.7	0.3	0.4	0.6	3.1	1.1	1.2
spericolato	0.5	1.0	0.3	0.1	1.9	5.0	1.1	0.1
sregolato	0.6	0.8	0.6	0.1	2.0	3.6	2.2	0.2
svogliato	0.2	0.9	0.3	0.4	0.5	4.0	1.2	1.0
tenace	0.3	0.9	0.3	0.8	0.8	3.9	1.4	3.7
M	0.28	0.90	0.61	0.41	0.92	3.98	2.47	1.50
SD	0.26	0.11	0.24	0.27	0.97	0.66	1.07	1.19

Table S15. Study 3 – Supplementary Analyses. Multiple regressions, goal classes predicted by conscientiousness assessed through a subset of nine items of the Adjective Checklist of Conscientiousness (Costantini, Richetin, et al., 2015) *and by other HEXACO personality traits assessed by the HEXACO-60* (Ashton & Lee, 2009).

#	Goal class	H	E	X	A	C	O	R^2
				Conscientious Goals				
8	Comply with rules	0.17**	0.21***	0.15**	0.11	0.30***	-0.16***	0.30***
10	Have control	-0.09	0.12	0.05	-0.03	0.28***	-0.01	0.10***
11	Personal realization	-0.14*	0.10	0.21***	-0.08	0.24***	0.10	0.14***
12	Do something well, avoid mistakes	-0.05	0.13*	0.08	0.07	0.32***	0.09	0.16***
13	Accomplish something, observe a commitment	0.16**	0.14*	0.23***	0.05	0.34***	-0.07	0.29***
17	Be safe	0.04	0.24***	0.10	0.04	0.26***	-0.15**	0.19***
25	Think, reflect	-0.01	0.12	0.12	-0.01	0.31***	0.10	0.16***
				Unconscientious Goals				
16	Avoid or manage things you do not care about	-0.24***	0.02	-0.09	0.00	-0.22***	-0.05	0.15***
26	Do not think	-0.14*	0.13	0.04	0.10	-0.26***	-0.17**	0.13***

Note. Each line represents a multiple regression in which traits are entered as predictors of a goal class. The values refer to betas and the last column reports the explained variance. H, E, X, A, C, and O indicate respectively Honesty-humility, Emotionality, eXtraversion, Agreeableness vs. Anger, Conscientiousness, and Openness to experience. Goal classes numbers (#) mirror those in Costantini & Perugini (2018). P-values were corrected for multiple comparisons using the Bonferroni method, considering that we performed nine multiple regressions.
* $p < .05$, ** $p < .01$, *** $p < .001$

Study 1. Details of power analysis for partially overlapping samples t-tests

Analytic power equations for the partially overlapping samples t-test are not available; therefore we performed a simulation (Perugini, Gallucci, & Costantini, 2018) to calculate power for Study 1. We considered four possible scenarios for the effect size, expressed as a standardized mean difference of $d = .30$, $d = .40$, $d = .50$ and $d = .60$. We also considered three scenarios for the correlation among paired observations ($r = .20$, $r = .50$, and $r = .80$). Combinations of d and r were obtained by simulating data from a bivariate normal distribution with N observations, the SDs equal to 1, and the correlation between variables equal to r. The mean of one of the variables was then set to 0 and the other to d. Sample sizes ranging from N = 100 to N = 500 in steps of 5 were simulated. To account for the planned missing data design, in which one-fifth of the observations were paired and four-fifths were unpaired, we deleted data from one variable for four-fifths of the sample. For each combination of sample size, effect size, and correlation, we simulated $B = 1000$ samples. For each simulated sample, we performed one-tailed partially overlapping t-test (Derrick, Russ, Toher, & White, 2017; Derrick, Toher, & White, 2017) using the R package *Partiallyoverlapping* (Derrick, 2018).

Instead of simply considering the observed proportion of significant results for each condition as an estimate of power, we employed the logistic regression approach proposed by Schoemann and colleagues (Schoemann, Boulton, & Short, 2017). For each combination of d and r, we used sample size to predict whether the analysis returned a significant result. This approach allows increasing the precision of the power estimates by exploiting information from all sample sizes to estimate power for each sample size. The results are shown in Figure S1 and indicate that a sample of size N = 300 yields 98% power to detect a medium effect size $d = .50$ even assuming a correlation among repeated measures as low as

r = .20. Results for other combinations of effect size, correlation among repeated measures, and sample size are also presented in Figure S1.

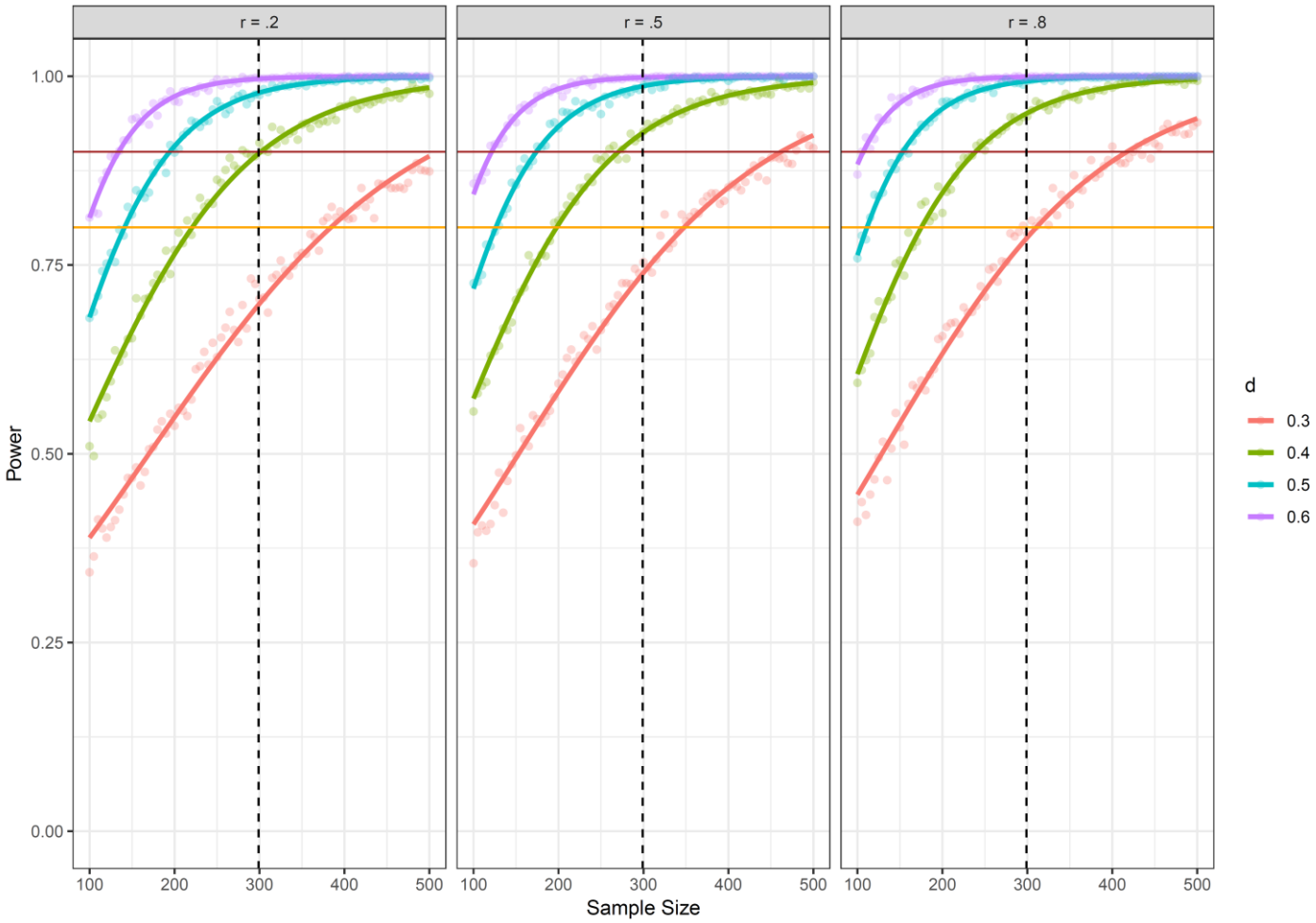

Figure S1. Power simulation for partially overlapping t-tests in Study 1. The orange and the brown horizontal lines correspond to a power of .80 and of .90 respectively. The vertical dashed line corresponds to the final sample of N = 299.

Study 2. Supplementary Analyses

Goal importance and BFI-2

Conscientiousness, as assessed through the BFI2 (Soto & John, 2017), showed a significant correlation with the overall importance of conscientious goals (r = .30, p < .001) and of unconscientious goals (r = -.28, p < .001). After the other Big Five traits were included as a predictors of goal importance, conscientiousness was the strongest predictor of the subjective importance of conscientious goals (β = .29, p < .001), followed by agreeableness (β = .19, p = .001) and neuroticism (β = .18, p = .001), with nonsignificant contributions from the remaining factors (ps > .25; R^2 = .15, p < .001). Conscientiousness was also a significant predictor of the importance of unconscientious goals (β = -.20, p < .001), however other personality traits contributed in the prediction of unconscientious goals. In particular, the importance of unconscientious goals was predicted more strongly by agreeableness (β = -.26, p < .001) and more weakly by openness to experience (β = .13, p = .019), with nonsignificant contributions of extraversion (β = .11, p = .061) and neuroticism (β = .08, p = .167; R^2 = .20, p < .001).

Table S5 reports multiple Tobit regressions in which each of the 21 goal classes was predicted by all Big Five traits. Table S6 reports simple Tobit regressions, in which each Big Five trait was entered as a predictor independent of the others. Results were generally close to those obtained by considering the HEXACO model. In multiple regressions, five of the 11 conscientious goal classes and two of the 10 unconscientious goal classes were predicted by conscientiousness. Unlike regressions in which HEXACO traits were considered, conscientious goal classes “personal realization” and “think, reflect” were not significantly predicted by conscientiousness, whereas goal class “rebel, transgress the rules” was significantly predicted by conscientiousness.

Willingness to change Honesty-humility

Two established measures of willingness to change personality have been developed within the Big Five framework (Hudson & Roberts, 2014; Robinson, Noftle, Guo, Asadi, & Zhang, 2015), and did not assess the willingness to change a sixth factor, namely Honesty-humility (Ashton & Lee, 2005; Ashton et al., 2004). An ancillary aim of this study was thus extending two prominent measures of willingness to change personality traits, the Change Goals Big Five Inventory (C-BFI; Hudson & Roberts, 2014) and the Big Five Trait-Change Goal Inventory (BF-TGI; Robinson et al., 2015) to assess the willingness to change this trait.

Participants completed an initial pool of 16 items (see Table S7), modeled on the Change Goals Big Five Inventory (C-BFI; Hudson & Roberts, 2014), which assessed their willingness to change different aspects of their Honesty-humility (e.g., Ashton & Lee, 2007; Lee & Ashton, 2004). We performed a PCA to identify the best subset of items. Five eigenvalues had value larger than one (the first six eigenvalues were 4.30, 1.95, 1.27, 1.08, 1.00, and 0.86), the scree-plot indicated that a single-component or a two-component solutions could be appropriate, and parallel analysis (Horn, 1965) suggested that two components explained more variance than the 95th percentile of the corresponding components extracted from random data (the 95th percentile of the first components extracted from random data were 1.48, 1.37, 1.30, 1.23, 1.18, and 1.13). In the two-component solution ("2 Comp.", Table S7), the second component received sizeable loadings only from reverse-scored items, thus making it of difficult interpretation. Therefore, we focused on the one-component solution ("1 Comp." in Table S7). Most items showed a satisfactory loading on the first component. Five items (e.g., #2, #3, #7, #11, and #12) showed poor loadings and were thus excluded from the final scale. Three additional items (#6, #14, and #15) were removed because they performed relatively worse than other similar items, to obtain a final scale including eight items, which is the typical length of C-BFI subscales (Hudson & Roberts, 2014). The final set of items showed satisfactory loadings on the first component ("Final" in Table S7).

Table S8 reports descriptive statistics and the multi-trait multi-method correlation matrix (Campbell & Fiske, 1959) among the BF-TGI and the C-BFI subscales. Correlations on the validity diagonal ranged from $r = .34$ to $r = .40$ (all ps $< .001$) and were larger than corresponding heterotrait-heteromethod correlations. The only exception was the new BF-TGI Honesty-humility scale, which showed a similar correlation with the willingness to change Honesty-humility ($r = .34$, $p < .001$) and the willingness to change agreeableness ($r = .34$, $p < .001$) assessed by the C-BFI. This might depend on the conceptual overlap between some agreeableness facets in the Big Five model and the Honesty-humility in the HEXACO model (Ashton & Lee, 2005). Whereas the heterotrait-monomethod correlations of the BF-TGI items were generally low, in line with previous studies (Hudson & Fraley, 2015; Hudson & Roberts, 2014), most heterotrait-monomethod correlations among C-BFI scales were positive and significantly different from zero, which could indicate the presence of a method factor for the C-BFI.

Table S9 reports correlations between personality traits and the willingness to change them. As in previous studies (Hudson & Fraley, 2016; Hudson & Roberts, 2014; Miller, Baranski, Dunlop, & Ozer, 2019; Robinson et al., 2015), the willingness to change conscientiousness, extraversion, and neuroticism correlated negatively and significantly with the current level of the corresponding traits. The only exception was that the correlation between the willingness to change agreeableness as assessed through the C-BFI and the current level of agreeableness assesses through the BFI-2 was not significantly different from zero ($r = -.09$, $p = .106$). The correlations between current levels of openness and the willingness to change the trait were small, with a positive significant correlation only between openness was assessed with the C-BFI and openness to experience assessed through the HEXACO-60. This result is in line with the idea that individuals with low openness might not be open also to the idea to become more open (Hudson & Roberts, 2014).

Honesty-humility showed a significant positive correlation with the willingness to change Honesty-humility only when assesses through the C-BFI, but not through the BF-TGI. This result suggests that, like for openness to experience, individuals with low Honesty-humility do not seem to be willing to become more honest. This might reflect the fact that low Honesty-humility involves strategic behaviors that involve exploiting other individuals, and that might involve a payoff for the individual (Ashton & Lee, 2007, 2008; Hilbig, Kieslich, Henninger, Thielmann, & Zettler, 2018; Lee et al., 2013), who might thus be unwilling to change. Some of our result point instead to the opposite possibility, that honest individuals might be those more willing to become even more honest and humble. However, the positive correlation between Honesty-humility and the willing to increase in the trait did not generalize across the two measurement instruments considered, the C-BFI and the BF-TGI, and therefore needs further investigation.

Study 3. Supplementary Study and Supplementary Analyses

In Study 3, to limit the possibility of semantic similarities between goals and questionnaire items, we employed the Adjective Checklist of Conscientiousness (ACC; Costantini et al., 2015) to examine goal-trait relationships (see Table S12). The interpretability of this analysis relies on the assumption that trait adjectives do not overlap semantically with goals. When the goals used in this work were first generated (Costantini & Perugini, 2018), care was taken to exclude goals that included ACC adjectives (e.g., goals like "I want to be more *organized*"), with the aim of limiting the possibility of semantic overlaps. However, the possibility that some adjectives may have goal-content implicitly embedded within their definitions had not been examined[11]. We thus performed a supplementary study and a supplementary analysis of Study 3 data aimed at (1) examining the amount of goal content embedded in ACC adjective definitions, and (2) inspecting whether goal-trait relationships emerged in Study 3 could be simply explained by content overlap at the item level (Mõttus, 2016).

Our methodology was inspired by studies employing expert raters to examine different aspects of item content (Angleitner, John, & Löhr, 1986; Pytlik Zillig, Hemenover, & Dienstbier, 2002; Wilt & Revelle, 2015). Both Wilt & Revelle (2015) and Pytlik Zillig and colleagues (2002) investigated the amount of affective (A), behavioral (B), cognitive (C) content within IPIP items (Goldberg et al., 2006), with Wilt and Revelle assessing also desire (D) content. These studies used ipsative ratings, asking raters to indicate the relative proportion of each type of content within each item. In line with the aims of our research program, in addition to A, B, and C content, we chose to investigate goal (G) content. Instead of using ipsative ratings, we instructed experts to first indicate whether each of A, B, C, and G content was integral part of the definition each adjective and, if this was the case,

[11] We wish to thank Dr. Dustin Wood for suggesting this possibility.

to indicate the extent to which specific content was part of each adjective's definition. This strategy was preferred to a relative rating for four reasons: (1) Ipsative data are dependent and not normally distributed (Pytlik Zillig et al., 2002). (2) The use of a dichotomous judgment before a finer grained rating reflected our twofold interest, which was first determining whether G content was implied in each item and second quantifying the amount of A, B, C and G content. (3) We asked raters to rate whether A, B, C, and G content was part of the definition of each adjective, instead of indicating the amount of each type of content within each item (Wilt & Revelle, 2015), because we did not want to identify adjectives that had a genuine relationship with goals, but adjectives that had a semantic relationship (i.e., G content embedded within their definitions). (4) As Wilt and Revelle (2015) noticed, adjectives "may contain too little information to provide ABCD ratings" (p. 481). Our strategy allowed us to inspect the absolute amount of A, B, C and G within each adjective, being thus open to the possibility that some adjectives might include less A, B, C, and G content than others.

Method

We invited 10 experts, blind to our study and hypotheses, to participate in the study. All experts were native Italian speakers and had a consolidated background either in linguistics or in personality psychology, as reflected by a PhD and a publication record in these fields. Experts were provided with definitions of A, B, C, and G that mirrored those used in previous similar works (Pytlik Zillig et al., 2002; Wilt & Revelle, 2015). Affects (A) were defined as "internal and evaluative, valenced states, including patterns of feelings, emotions, and feeling-like states"; Behaviors (B) were defined as "overt and directly observable actions, including both active (e.g., bike-riding) and passive (e.g., watching television) behaviors, but not including strictly mental events (e.g., thinking)"; Cognitions (C) were defined as "thoughts, beliefs, patterns, or modes of thinking"; Goals (G) were defined as "something one is trying to obtain or achieve".

Experts were presented with 44 adjectives (e.g., "accurate" - accurate) in a random order. For each adjective and each element, they answered two questions, the presentation of the second being dependent on their response to the first. First they were asked to indicate whether A, B, C, and G content was integral part of the definition of each adjective by responding to four questions on a dichotomous scale, 0 (*No, this element is not integral part of the definition of the adjective*) or 1 (*Yes, the element is integral part of the definition of the adjective*). In case of a positive response, they also rated the extent to which that element was integral part of the definition of the adjective, on a 5-point scale from 1 (*A little*)[12] to 5 (*Very Much*). To facilitate their work, experts were also provided with three definitions of each adjective taken from prominent Italian dictionaries, Treccani (www.treccani.it/), Garzanti (www.garzantilinguistica.it/), and De Mauro (https://dizionario.internazionale.it/)[13]. The study was administered with the Qualtrics software (https://www.qualtrics.com/).

For each adjective-element pair, we obtained a *binary score* and a *continuous score*. The binary score was simply the rater's answer to the first question. The continuous score ranged between 0 and 5: When a rater responded negatively to the first question, the continuous score took value 0; when the rater responded positively, the continuous score took a value between 1 and 5, corresponding to the response to the second question. The design included a single predictor, *type of element*, with four levels, A, B, C, and G. Observations were clustered both within raters and within adjectives.

[12] The first point of the scale was labeled "a little" instead of, for instance, "not at all", because the raters were presented this second question only if they had already indicated, in the previous question, that a certain element was integral part of the definition of an adjective.

[13] Some adjectives can have different meanings in Italian when applied to different objects. Whenever possible, we included only definitions and examples that pertained to a person's description. For three adjectives that lacked a definition within one of the dictionaries, we reported only two definitions.

Results

Supplementary Study Results

Average binary and continuous scores for each adjective-element pair are reported in Table S14. We assessed consistency among the 10 raters for the four binary scores and for the four continuous scores, using ICC(3,10) intra-class correlation coefficients (Shrout & Fleiss, 1979). A generally larger reliability was observed for G (binary = .80, continuous = .85) and A content (binary = .79, continuous = .83), whereas a lower reliability was observed for C (binary = .67, continuous = .72) and B (binary = .44, continuous = .61) content.

We performed a random-intercept logistic ANOVA, in which the binary score was predicted by the type of element. To account for the clustered structure of the data, the model included random intercepts for both raters and items. The results indicated a significant effect of the type of element, $\chi^2(3) = 449.92$, $p < .001$. The estimated probabilities that an element was considered necessary for defining an adjective was .26 for A content (95% CI = [.18, .36]), .91 for B content (95% CI = [.86, .94]), .62 for C content (95% CI = [.50, .71]), and .40 for G content (95% CI = [.30, .51]). A post-hoc test with Bonferroni correction indicated that all probabilities were significantly different from each other (all *p*s < .001). We also performed a random-intercept ANOVA model, in which the continuous scores was predicted by the type of element. The results indicated a significant effect of the type of element, $F(3, 1704) = 264.04$, $p < .001$. The estimated marginal means indicated that, on a scale from 0 to 5, the importance of A content was 0.92 (95% CI = [0.53, 1.30]) and that it was 3.98 for B content (95% CI = [3.60, 4.36]), 2.47 for C content (95% CI = [2.09, 2.85]), and 1.50 for G content (95% CI = [1.12, 1.89]). A post-hoc test with Bonferroni correction indicated that all means were significantly different from each other (all *p*s < .001). Overall, these results suggested that B and C content resulted to be the most important defining elements of conscientiousness adjectives, followed by G content, with a minor role of A content.

Supplementary analysis of Study 3 data

Starting from these results, we performed an additional analysis on Study 3 data. First, we computed a new conscientiousness score, by averaging nine adjectives that showed an average binary score for G content lower or equal to .10. These were adjectives rated as not including G content as a necessary part of their definition by at least nine out of ten raters. The average continuous scores of these nine adjectives indicated that their definition included mostly B (3.74) and C content (2.40), a smaller portion of A content (1.47), and a negligible portion of G content (0.144). The aggregated score was sufficiently reliable (Cronbach's $\alpha = .79$, $\omega = .91$). We regressed the subjective importance of conscientious and unconscientious goals assessed in Study 3 on this goal-content free conscientiousness score as well as on the other HEXACO traits assessed with the HEXACO-60. The results, presented in Table S15, showed a very similar pattern of those in Table S12.

Discussion

The first aim of this supplement was to examine the amount of goal content included in the definition of conscientiousness adjectives. Consistent with previous studies (Pytlik Zillig et al., 2002; Wilt & Revelle, 2015), the results showed that behavioral content was the most important defining element of conscientiousness adjectives, followed by cognitive content. Goal content resulted less important than both behavioral and cognitive content. Affective content played the least important role. The second aim of this study was to inspect whether the relationships between conscientiousness and subjective goal importance in Study 3 could be simply explained by the presence of goal content in conscientiousness items. The results showed that even when conscientiousness was assessed only by items that did not include goal content in their definitions, the pattern of results was unchanged. Together, these results suggest that the correlations between conscientiousness and goals

emerged in our work reflect genuine relationships, and not a simple overlap in the content of some of the items included in the scales (Mõttus, 2016).