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## **Goals and plans for Big Five personality trait change in young adults**

**Robinson, Oliver C.**

University of Greenwich, UK

Email: o.c.robinson@gre.ac.uk

**Nofle, Erik E.**

Willamette University, USA

**Guo, Jen**

Northwestern University, USA

**Asadi, Samaneh**

University of Yazd, Iran

**Zhang, Xiaozhou**

University of Alberta, Canada

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**Abstract**

Four studies were conducted on young adults' goals and plans to change personality traits. In Study 1, a new trait change goal assessment tool, the *BF-TGI*, found Neuroticism to be the most frequently cited trait for a change goal. In Study 2, data was gathered from the UK, Iran and China. Iran showed a higher prevalence of normative change goals than the UK and China. Study 3 investigated plans to change traits. Extraversion and Conscientiousness plans were more specific than for the other traits. Study 4 investigated whether goals and plans to change predict change over 12 months, and found that goals and plans to change Conscientiousness and Neuroticism predicted change in the opposite direction to the goal.

**Keywords:**

Goals, plans, traits, culture, change, longitudinal, Big Five

### **Goals and plans for Big Five personality trait change in young adults**

The market for self-help books and self-improvement workshops is booming. People believe that with the right tips and enough effort, they can rid themselves of undesirable personality characteristics and increase positive ones (Chiu, Hong, & Dweck, 1997; Nofhle, 2013). But does this belief reflect actuality? The self-help literature is based mostly on hope, not evidence, and empirical research looking at goal-directed attempts at personality development is currently scarce. The current study explores the extent to which goals and plans for personal change at the level of Big Five traits are present during young adulthood, what the content of these goals and plans are, and whether they predict change over a period of a year.

Of all the age ranges of the lifespan, young adulthood has been found to be one of the most prolific in terms of personality trait change (Donnellan & Lucas, 2008). In a meta-analysis of mean-level Big Five longitudinal trait change across the lifespan, aggregated intra-individual change was greatest between ages 18 and 29 (Roberts, Walton, & Viechtbauer, 2006). Furthermore, young adulthood shows lower rank-order stability for traits than adults in older age groups (Roberts & DelVecchio, 2000). Indeed, recent analysis of data from 62 nations has found that personality change in young adults in the direction of increased Conscientiousness and Agreeableness, and lower Neuroticism, may be cross-culturally universal (Bleidorn et al., 2013).

Several theories purport to explain the change towards increased Conscientiousness, Agreeableness and lower Neuroticism, and would in turn help to explain goals to change in these directions. Socio-analytic theory advanced by Hogan and Roberts (2004) state that as they age, individuals aim for personality maturity as perceived by others, which involves being liked, admired and respected. In terms of Five Factor Model traits, they postulate that

this means becoming more agreeable, more emotionally stable and more conscientious. Neo-Eriksonian models of life course change, such as the model of emerging adulthood, also help to explain why this age range is a key time for personality change (Arnett, 2000). The model reasons that due to demographic shifts in the past half century, the first decade of adult life has become a time of continued identity exploration, during which traditional commitments such as marriage and parenthood are deferred until later (Reifman, Arnett, & Colwell, 2007; Robinson, 2012). Identity exploration that occurs in emerging adulthood is in part facilitated by young people actively seeking to develop themselves in ways that are conducive to a sense of authenticity (Robinson & Smith, 2010), while looking for roles and relationships that are likely to support that sense of being authentic in the long-term (Lanz & Tagliabue, 2007). Those that experience emerging adulthood have a unique opportunity to explore and experiment with new behaviours that may lead to personality change (Arnett, 2004), however not all young adults will enjoy the mixture of independence and deferred commitments that defines emerging adulthood, particularly those in disadvantaged socio-economic groups and certain immigrant ethnic minorities (Stein, 2006; Suárez-Orozco, Yoshikawa, Teranishi, & Suárez-Orozco, 2011).

Recent studies have examined desired and self-predicted personality trait change in populations of young adults. When emerging adults are asked to rate whether they expect their own personality to change over the next year, over 90% report expecting to increase in Extraversion (E), Conscientiousness (C), Openness to Experience (O) and Emotional Stability (ES), while 75% expect an increase in Agreeableness (A) over the next year (Nofhle, 2011). Additionally, when asked to imagine changes over four years into the future, young adults expect E and C to show the biggest and most personally important changes (Nofhle, 2013). This pattern of consistent expectation and desire to increase E, A, C, O, and ES over an imagined four-year period has been replicated in Japanese and Russian young adult

samples as well. In fact, Japanese young adults show expectations of change in greater magnitude than a matched American sample (Woods, Noffle, Nartova-Bochaver, & Robinson, 2013).

This research provides convincing evidence that young adults desire and idealise personality change. However, having an ideal is not the same as having a goal, for the latter implies intent to act but the former does not. Despite the literature on ideals and desires for change, what is not yet known is the extent to which young adults set goals to enact change, make definitive action-based plans to reach those goals, and monitor their progress towards their goals (Carver & Scheier, 1998).

### **The nature of goals and plans**

A goal specifies a temporary or permanent future state that a person either wants (if intrinsically motivated) or feels obliged (if extrinsically motivated) to achieve (Ryan, Sheldon, Kasser, & Deci, 1996). Having a goal creates an inner tension between one's actual state and goal state, resolution of which requires problem-solving and action (Bandura, 2001; Newell & Simon, 1972).

Goals differ in both discrete and continuous ways. The *presence* of a goal is discrete rather than continuous, according to several theories (Carver & Scheier, 1998; Gollwitzer, 1996), but pursuing multiple goals is possible if they are at different levels of abstraction and do not conflict (Carver & Scheier, 1998). Goals also differ in a scaled, continuous way, for example in how desired they are (Hudson & Roberts, 2014) and whether the end result is intrinsically or extrinsically motivated (Kasser & Ryan, 1996). Additionally, goals differ in the kind of future they specify. A goal can be directed at bringing about changes in the self (Salmela-Aro, Pennanen, & Nurmi, 2001), or in the external social/physical environment (Eigner, 2001). Goals also vary radically in time scale from minutes to many years. Generic long-term goals are often referred to as life goals or personal

strivings, while short-term goals are referred to as concrete goals or process goals (Emmons, 1996, 1999; Schmuk & Sheldon, 2001).

Long-term abstract goals must be translated into an achievable set of short-term subgoals (Bandura, 2001; Emmons, 1992). Achievement of each sub-goal acts as feedback that the higher-level goal is being realised, and thus that progress is being made (Newell & Simon, 1972). Moreover, planning is central to self-regulation; it involves internalised cognitive modelling of future actions, in terms of *what* activities to do, *when* to do them, and *how* to do them (Gollwitzer, 1999; Masicampo & Baumeister, 2011; Miller, Galanter, & Pribram, 1960). A plan acts like a map to move between actual state and goal state. Without such a map, self-regulation and goal-directed activity is haphazard or at best a process of trial-and-error.

### **Self-regulated personality change**

Hennecke, Bleidorn, Denissen and Wood (2014) recently proposed a functionalist model of self-regulated personality change that stipulates conditions for goal-directed efforts to change one's personality or behaviour. These are; the perceived *value* of the goal state and the *expectancy* that efforts will be successful. The model also states that goals will only lead to enduring change if the corresponding behaviours become *habitual*. For example, taking up relaxation exercises or mindfulness will only reduce Neuroticism if the exercises or practice are regularly undertaken (van den Hurk et al., 2011).

A small number of studies have looked at the longitudinal link between goals and traits by exploring life-goal domains and how they relate to personality characteristics (e.g., Lüdtke et al., 2009; Roberts, O'Donnell, & Robins, 2004). However, very little research has examined the link between traits and personality change goals in particular. One exception is Hudson and Roberts (2014) who have developed a measure for personality trait change goals and explored the link between these goals and traits, life satisfaction and daily behaviour.

Trait change goals were measured by asking participants to rate 44 items of the Big Five Inventory, modified to refer to wanting, e.g. “I want to be talkative” or “I want to have a forgiving nature.” These items were rated on a five point scale of: *much more than I currently am, more than I currently am, I do not want to change in this trait, less than I currently am, much less than I currently am*. The most prevalent traits for change goals were Emotional Stability (Neuroticism scored in reverse), followed by Conscientiousness and Extraversion. Agreeableness and Openness showed the lowest prevalence, with equal ratings. Desires to change on all five traits were found to be almost all pertaining to change in the same direction, with only 3% or less stating a desire to change down on a trait. The research explored a link between change goals and current daily behaviour, but found no systematic relationships.

### **Aims of the present research**

The research we present in this article was conducted at the same time as the work of Hudson and Roberts (2014), without knowledge of their parallel endeavours. Our approach is different, incrementally useful, and complementary in focus to theirs. We propose a different measure for assessing conscious goals to alter one’s phenotypic trait expression. Our measure of goals avoids the use of the term ‘want’ as goals can be initiated both out of want, but also out of a sense of unwanted need or obligation. Furthermore, the psychometric preference for decomposing traits into multiple lower-order items is possibly problematic, as multiple goals to change lower-order behaviours do not necessarily equate to the more ambitious goal to change a higher-order trait, even if those lower-order behaviours show inter-correlations. Thus we believe that a fresh approach is called for in goal assessment. We also assess plans for change, as well as goals, and investigate longitudinal prediction of goals and plans over a period of 12 months.

The four studies reported in this article were aimed at developing and validating a personality trait change goal assessment instrument, and exploring the prevalence and correlates of such goals in young adults in the UK and in two comparison collectivist cultures (China and Iran). A further aim was to gain open-ended data on plans to bring about such change. Plan descriptions were thematically coded to indicate what kinds of activity the plans comprised of, and were coded to scale the specificity of the plan. Finally, longitudinal trait change data was gained to explore whether goals and plans predict intra-individual change over the course of a year.

## **STUDY 1**

### **Goals for trait change in UK young adults**

Study 1 aimed to develop and test an instrument for assessing goals to change on the Big Five personality traits. Some predictions were possible based on previous research, but in some areas we were unable to make specific predictions, so framed research questions instead. We predicted that goals to change traits would show a normative direction (more C, A, E, and O, and less N), following research that links these changes with positive personality development (Hogan & Roberts, 2004) and desired personality change (Nofle, 2013). To test this prediction, we compared prevalence ratings of (a) goals to increase, (b) goals to decrease, and (c) no goal responses, for all traits. Based on past studies of expected personality change and change goals (Hudson & Roberts, 2014; Nofle, 2013), we predicted there would be significant differences between traits in goal prevalence, with C, E and N showing higher prevalence than O and A. The desire for personality change in young adults is often motivated by feelings of inauthenticity or dissatisfaction with self (Robinson & Smith, 2010), therefore we also predicted that authenticity and self-acceptance would be (a) higher in those with no goal than those with goals, and (b) negatively related to the overall number of

reported trait change goals. Finally, we also explored gender differences in prevalence of trait change goals, as an open-ended research question.

### **Method**

The sample consisted of 292 young adults from the UK between the ages of 18 and 28 (112 males and 180 females). The mean age was 22 ( $SD = 2.4$ ). 150 were existing students, 111 were employed young adults, and 31 were unemployed young adults. Students were recruited by word-of-mouth announcements around the university, while non-students were recruited via contacting university alumni. Participants were informed that they would be entered into a prize draw for vouchers. All questionnaires were administered using the online delivery system, Qualtrics.

### **Measures**

**Big Five Trait-Change Goal Inventory (BF-TGI).** The instrument for assessing the presence of goals to change on the Big Five traits is shown in Appendix A. Each item describes one of the Big Five traits by way of the trait name and the six prototype adjectives for the trait developed by John (1989) and McCrae and John (1992).

We employed a single item containing multiple adjectival descriptors, in order to ensure that the goal reported was at the level of general trait. Goals exist at lower levels of abstraction, and deconstructing the trait into separate lower-order items would have meant risking assessing behaviour change goals rather than trait change goals. In addition, single-item measures of perceived personality change have been usefully employed in previous research (e.g. Robins, Nofle, Trzesniewski, & Roberts, 2005).

We decided to employ a categorical response scale to measure the presence of the change goal, rather than its importance or intensity, for the reasons outlined earlier in the Introduction. Next to each item in the measure, three response options were provided: “*I have*

*a goal to become less like this,” “I have no goal to change on this trait,” and “I have a goal to become more like this.”*

**Authenticity.** Authenticity was measured with the *Authentic Living* subscale of the Authenticity Scale (Wood, Linley, Maltby, Baliousis, & Joseph, 2008). This subscale taps into the extent to which an individual’s outer self is felt to be reflective of their inner ideal self. This was the aspect of authenticity hypothesised to relate to personality change goals. The scale comprises the following four items: *“I think it is better to be yourself, than to be popular,” “I always stand by and express what I believe in,” “I am true to myself in most situations,”* and *“I live in accordance with my values and beliefs.”* Cronbach’s alpha for this subscale in the current sample was  $\alpha = .73$ .

**Self-acceptance.** Self-acceptance was measured using the *Self-Acceptance* subscale of the 18-item version of Ryff and Keyes’s (1995) Psychological Well-Being (PWB) scale. The three items of the subscale are: *“I like most parts of my personality,” “When I look at the story of my life, I am pleased with how things have turned out so far,”* and *“In many ways, I feel disappointed about my achievements in life.”* The Cronbach’s alpha value in the present sample was  $\alpha = .72$ .

## Results

There were five hypotheses in the study, therefore a Bonferroni correction was used to correct the significance level to  $p < 0.01$  for all tests. To test the first hypothesis that goals to change Big Five traits would be significantly more prevalent in the one direction (more C, A, E, and O and less N) than the other, the percentage of respondents who reported a decrease goal, no goal or an increase goal for all five traits was computed. Chi-square tests were used to test the difference between frequencies within each trait. As predicted, the differences between the goals to increase or decrease, and no-change responses differed significantly. A very strong trend towards change in one direction was shown for goals on all traits. For E, A,

C and O, goals are normatively to *increase* the trait; for Neuroticism the vast majority have a goal to decrease. Chi Square tests showed the within-trait differences between increase, decrease and no-change frequencies were significant for all traits. Percentage frequencies,  $\chi^2$  and corresponding  $p$  values are shown in Table 1.

*[Insert Table 1]*

To test the hypothesis that the Big Five traits would differ in the extent to which they are the target for goal-directed change, increase goals and decrease goals were combined together into a single compound variable, '*goal to change*'. Figure 1 shows the percentage of participants who reported a goal to change, with traits in ordinal sequence from the highest frequency to the least. Our hypothesis as to the order of cross-trait difference was supported: N was the most frequently cited trait in terms of change goal (75.3%), followed by E (64.7%), then C (61.6%), O (58.2%) and lastly A (40.8%). A was the only trait for which fewer than half of participants stated a goal to change.

*[Insert Figure 1]*

Cochran's Q test is designed for testing within-groups data with a binary categorical DV, so was chosen to test the cross-trait differences between goal prevalence. It was found that the difference between traits was significant ( $Q = 85.4, df = 4, p < 0.001$ ). Using a visual inspection of error bars as a post-hoc analysis, with non-overlapping bars representing  $p < 0.01$  (Cumming & Finch, 2005), it was inferred that the source of the effect came from the difference between (a) N and all other traits, and (b) A and all other traits.

To test the hypothesis that personality change goals would relate negatively to authenticity and self-acceptance, t-tests were run with a two-level IV (have goal vs. not have goal), and DVs of authenticity and self-acceptance. Homogeneity of variance assumptions were met. No differences were found for E, A and O. For C, those with change goals showed

lower Authenticity ( $M = 6.07$ ) than those with no goal ( $M = 6.39$ );  $t(259) = -2.4, p < 0.01$ .

For N, both Self-Acceptance and Authenticity showed lower levels in those with goals than without goals (*Self Acceptance*:  $M_{\text{no goal}} = 4.92, M_{\text{goal}} = 4.54$ ;  $t(259) = -2.46, p < 0.01$ .

*Authenticity*:  $M_{\text{no goal}} = 6.36, M_{\text{goal}} = 6.11$ ;  $t(259) = -2.45, p < 0.01$ ).

Finally, to explore gender differences, the proportion of men and women reporting change goals for each trait was calculated. Chi-square tests were calculated for each trait, but no gender differences emerged as significant.

### Discussion

As predicted, goals to change Big Five traits are normative in young adults; a majority of participants reported change goals for all traits, with the exception of A. Furthermore, change goals generally showed a strong normative direction; over 95% who had a change goal for C, E, and O aimed to increase the trait, and 96% with a change goal for N aimed to decrease it. For A, there was more heterogeneity in the direction of change goals, with 21% who had a change goal aiming to decrease. There is clearly an ambiguity over the perceived worth of Agreeableness, and that may be due to Agreeableness being perceived to relate to being passive and controllable by others (Hogan & Roberts, 2004).

The order of prevalence found in trait change goals partially matches the findings of Hudson and Roberts (2014). Like us, they found the most prevalent trait for change goals was N, with C and E in second and third place. A and O were the least prevalent traits for change goals in both studies. This suggests a reliable ordinal sequence of trait change priorities in young adults.

Given that N showed the highest prevalence of change goals across the five traits in our sample, this suggests that in the area of personality change, young adults are predominantly concerned with intentional attempts to become less anxious, to worry less and to be more emotionally positive. This fits with the theory of emerging adulthood, which

proposes that the age range of 18-28 is one of emotional instability and attempts at self-improvement designed to find stability within and without (Arnett, 2004).

Trait change goals relate to Authenticity and Self-Acceptance, but not universally. Authenticity was related to goals for two traits (C, N) and to total number of goals, while Self-Acceptance was only related to N. On the other hand, E, A, and O goals did not relate to authenticity and self-acceptance, contrary to expectation. This deserves further attention in future studies, using alternative measures of self-acceptance and authenticity, to explore whether the link with authenticity and self-acceptance is specific to C and N in other difference across traits holds across measures and demographics.

## **STUDY 2**

### **Personality goals across cultures: Comparing the UK with China and Iran**

Having explored personality change goals in a sample of UK young adults, we tested whether the findings would replicate in samples from different cultures. If the BF-TGI elicited cross-cultural data that conformed to predictions, this would provide evidence that it was assessing personality goals in an externally valid and replicable way. Young adults from China and Iran, two countries rated high for the value of collectivism (Hofstede, Hofstede, & Minkov, 2010), were sampled as the comparison cultures.

It was predicted that goals to change personality traits would be significantly more prevalent in China and Iran than in the UK. Following the findings from Study 1, an ordinal sequence of traits in terms of change goal prevalence was predicted; the most prevalent for goals would be N, following by O, E, C at the same level, and A as least prevalent. In addition to assessing personality change goals, we measured actual and ideal levels of personality traits, and authenticity. It was predicted that in all countries, the presence of a trait change goal would predict higher self-reported discrepancy between actual and ideal levels of a trait, and lower authenticity.

Previous research found that Japanese students desire and expect more change in their personality than US students (Woods et al., 2013). Tentatively, this may suggest that in collectivist cultures, where conformity of personality to external norms is stronger than in individualistic cultures, more people seek to change their personality towards an internal ideal (Hofstede et al., 2010). Thus we predicted that young adults in Iran and China would subjectively aspire to personality change more than in their Western counterparts, and thus show a higher prevalence of personality change goals.

### **Method**

The sample comprised a total of 445 young adults aged 18 to 28. From the UK, 163 adults participated (67 male, 96 female,  $M_{age} = 22$ ). From Iran, there were 124 participants (40 male, 84 female,  $M_{age} = 23$ ), and from China, there were 158 participants (78 male, 80 female,  $M_{age} = 23$ ). All participants were living and studying in their home country. They were recruited by academics for no course credit or financial incentive, and non-students were recruited by students referring their friends to the study. For the Iranian and Chinese samples, the questionnaires were translated into Farsi and Mandarin respectively. The translations were conducted by professional translators and checked for accuracy by two bilingual academics.

### **Measures**

Personality trait change goals were assessed using the Big Five Trait-Change Goal Inventory (BF-TGI), as described in Study 1. The Authentic Living subscale of the Authenticity Scale, as described in Study 1, was used to measure Authenticity. Cronbach alpha values were strong in the UK ( $\alpha = .82$ ) and satisfactory in Iran ( $\alpha = .66$ ) and Russia ( $\alpha = .69$ ). The 30-item *Temporal Big Five Behavior Frequency Scale* was used to measure actual and ideal levels of traits (Nofhle, 2013). Example items include ‘assertive’, ‘sincere’ and ‘responsible’. For actual level, instruction was ‘How you act now’ and for ideal level,

instruction was ‘How you would ideally want to act’. The response scale was a 7-point Likert scale, running from “1 = *Never*” to “7 = *Always*.” Cronbach alpha values for all traits, both actual and ideal levels, were adequate to strong in all three countries except for Openness in Iran. Subsequent item analysis showed strong inter-item correlations for all items except ‘unconventional’ in the Iranian data. Thus Openness was recalculated without that item for all countries, and the Cronbach alpha values were raised to satisfactory levels. All Cronbach alpha figures are shown in Footnote 1.<sup>1</sup>

**Actual – ideal discrepancy scores.** The discrepancy between actual and ideal levels of each trait was indexed for each individual by computing the standard deviation of their ideal score and actual score. The resulting intra-individual SD reflects the size of the discrepancy between the two values for each participant, with larger SDs indicating a greater difference between actual and ideal. These were then summed to create a ‘total actual-ideal discrepancy’ score for each participant.

## Results

There were five hypotheses in the current study, therefore a Bonferroni correction set the significance level at  $p < 0.01$  for all tests. To test the relative extent of change goals across countries, prevalence of change goals in the normative direction (increase E, A, C, and O; decrease N) was compared, followed by the prevalence of non-normative change goals (decrease E, A, C, and O; increase N). Figures 2a and 2b show the percentage of individuals within each country reporting normative and non-normative goals. For the normative goals, N was the most frequently targeted trait for change all in all three countries, followed by C and

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<sup>1</sup> **UK** (E actual  $\alpha = .81$ , A actual  $\alpha = .82$ , C actual  $\alpha = .85$ , N actual  $\alpha = .77$ , O actual  $\alpha = .72$ , E ideal  $\alpha = .75$ , A ideal  $\alpha = .83$ , C ideal  $\alpha = .73$ , N ideal  $\alpha = .71$ , O ideal  $\alpha = .71$ ); **Iran** (E actual  $\alpha = .81$ , A actual  $\alpha = .72$ , C actual  $\alpha = .65$ , N actual  $\alpha = .76$ , O actual  $\alpha = .68$ , E ideal  $\alpha = .68$ , A ideal  $\alpha = .67$ , C ideal  $\alpha = .67$ , N ideal  $\alpha = .72$ , O ideal  $\alpha = .65$ ), **China** (E actual  $\alpha = .83$ , A actual  $\alpha = .75$ , C actual  $\alpha = .80$ , N actual  $\alpha = .61$ , O actual  $\alpha = .66$ , E ideal  $\alpha = .82$ , A ideal  $\alpha = .87$ , C ideal  $\alpha = .88$ , N ideal  $\alpha = .70$ , O ideal  $\alpha = .65$ )

E. For the UK and China, A was the least frequent change goal, for Iran it was O. These patterns show considerable within-country consistency and cross-country stability in the patterns for normative trait change goals. The UK showed the lowest percentage of individuals wishing to change in all traits and Iran having the highest.

*[Insert Figure 2]*

For normative goals, Iran showed a higher prevalence than the UK and China. For non-normative goals, China showed a higher prevalence than the UK and Iran. To test whether the relationship between goal frequencies and countries was significant for each trait, 3x3 Chi-square tests were run separately for each trait with 3-level goal type (increase goal / no goal / decrease goal) x 3-level country (UK, Iran, China). All traits showed significant goal x country relationships (**A**:  $\chi^2(4) = 31.88, p < 0.0001$ ; **C**:  $\chi^2(4) = 23.13, p < 0.0005$ ; **E**:  $\chi^2(4) = 11.78, p < 0.01$ ; **N**:  $\chi^2(4) = 17.31, p < 0.005$ ; **O**:  $\chi^2(4) = 16.50, p < 0.005$ ).

We predicted that across all countries, those with a goal to change their personality trait would show a greater actual-ideal discrepancy value in that same trait than those with no goal. To test that hypothesis, we computed t-tests for each trait within each country separately using the composite two-level variable of ‘goal or no goal’ as an IV and actual-ideal discrepancy as the DV. Actual-ideal discrepancy values for goal and no-goal responses across all five traits and three countries are shown in Table 2, along with *t* values and significance. In the UK and China, all ideal-actual discrepancies were significantly higher in the goal group than the non-goal group, except for N in China. In Iran, the differences between means were all in the expected direction, but only O showed significance between the goal and no goal groups. Thus our predictions for how actual-ideal discrepancy would relate to trait change goals were supported for the UK and China, but only weakly supported for Iran.

*[Insert Table 2]*

## **Discussion**

Goals to change traits were found to be a majority concern among young people in all three countries, with the exception of Agreeableness in China and the UK. In line with our prediction, both collectivist cultures – Iran and China – showed a higher frequency of personality change goals than the UK. This suggests that intentions to increase or decrease personality traits are not specific to individualist cultures, but on the contrary may be more likely to exist in cultures that have a higher expectation of external personality conformity, and thus a more prevalent goal to change towards a perceived true level.

Goals are not simply a function of a cognitive ideal-actual discrepancy, they are adopted because the person believes that action is *possible* to resolve the discrepancy (Hennecke et al., 2014). In light of this fact, the lack of difference between ideal-actual discrepancy across the goal and no-goal conditions in Iran may reflect the fact that in Iran those with no goal may have ideal levels that are significantly different from actual values, but lack a goal to change because they do not see a realistic possibility of changing to achieve their ideal. This may also be the case in China with N.

Goals to change traits require plans and goal-directed activities to reach fruition. The following study explores what kind of plans young adults put in place to attempt to bring their personality goals to realisation.

## **STUDY 3**

### **Plans for personality change**

Following the first two studies that looked at goals for personality change in young adults, Study 3 investigated plans for personality change in this same age group. For an abstract goal such as a trait-change goal to be realised in action, a plan helps to sequence actions over a period of time in a strategic manner (Masicampo & Baumeister, 2011; Miller et al., 1960). Plans operate better if they are specific in content and timing (Gollwitzer, 1996).

Given the lack of existing taxonomies of personality development plans, we decided to collect trait change plan data using open-ended questions. Our aims were to develop thematic and scalar coding schemes and check their reliability, and then explore the following research questions: (1) What kind of plan content is most frequently cited for each trait? (2) Are there differences across traits in terms of plan specificity?

### **Method**

Participants were 177 young adults (101 female, 76 male) aged 18 to 28 ( $M_{\text{age}} = 22$ ) from the UK. 125 were students, 52 were non-students.

### **Measures**

The Big Five Trait-Change Goal Inventory (BF-TGI), as described in Study 1, was used to select individuals who have goals to change personality traits. If a person reported a trait change goal, they were presented with the subsequent page with open-ended questions about plans. Appendix B outlines the wording a participant would encounter if they specified having a goal to change their level of Extraversion, as an example.

**Plan specificity.** We coded responses for plan specificity using a 4-point scalar coding system, developed based on self-regulation plan theory:

1. *No plan*
2. *A general plan:* A plan, but no particular time or place to enact it, and no activity to help bring it about.
3. *A semi-specific plan:* A plan, with some idea of activity, but without conveying a sense of any commitment or a clear intent to enact the plan. For semi-specific, activities will be mentioned as opposed to entirely general plans, but often as conditional or as possibilities or maybes.
4. *A specific plan:* A plan a clear sense that the person has an idea of when, where or how the plan will be pursued". They need to have mentioned an activity that they actually have planned, i.e. that they 'will' do or are doing.

Two researchers independently coded plan specificity for all five traits from a random selection of 100 plans. The inter-rater reliability was calculated using Cohen's kappa as

$\kappa = .82$ , showing ‘almost perfect’ agreement, according to kappa’s standard interpretation (Landis & Koch, 1977). Examples of plans provided at the three different levels of specificity for Extraversion are as follows:

**General plan:** “Get involved in discussions in which I share similar interests”

**Semi-specific example:** “Stop being so shy, make the effort to make conversation with people, force myself to put up with awkward situations/conversations.”

**Specific plan example:** “I currently enjoy climbing and hope to get better at this by going more often to the climbing wall when I have spare time. It’s a great social atmosphere too. I also want to go running in the evenings or do some yoga, recently having bought a pair of trainers to get myself started, and a yoga mat!”

**Plan content.** Themes for the content of plans were developed inductively on a random subsample of 60 cases. Two researchers studied the content of the plan themes, and grouped them into categories that contained conceptual commonalities. In order to enhance parity of thematic abstraction across traits, the same number of themes was elicited for each trait (6 themes + ‘Other’ theme, so 7 in total). The two coders then met to compare their schemes and to reach agreement on the coding system. Following this process a set of named codes was agreed for all traits. Then two different researchers coded plan responses from an additional 50 randomly selected individuals. Multiple codes were attributable to a single response, so percentage agreement was used as an index of inter-rater reliability as Cohen’s kappa was not appropriate as a reliability metric (Miles & Huberman, 1994). Agreement was calculated at 90.1%, supporting the thematic coding scheme as highly reliable. Appendix C provides verbatim examples of all of the plan themes (except ‘Other’).

## Results

Of those who reported having a goal to change on a trait, the majority had a plan. Among those with E and A goals, 84% reported having plans to reach their goal, 79% did with C goals, 65% with N goals had plans, and 63% of those with O goals had a plan too.

Gender differences in plan specificity were analysed. T-tests revealed no gender differences in specificity on any of the traits. Differences in plan specificity across the Big Five traits were then explored. Figure 3 shows the mean level of plan specificity for the five traits. E and C showed the most specific plans, followed by A and N, then O. Repeated measures ANOVAs to test the difference between traits were ruled out due to the small number of participants ( $N = 26$ ) who had plan ratings for all five traits. Instead paired t-tests were employed to explore differences between within-subjects paired data points. To take account of the number of tests run, we corrected the  $p$  value for significance to  $p < 0.01$ . It was found that for plan specificity, E and C were significantly different to O (E-O:  $t(78) = 3.99$ ,  $p = 0.001$ . C-O:  $t(69) = 4.71$ ,  $p = 0.001$ ), and C was significantly different to N,  $t(87) = 3.00$ ,  $p = 0.004$ . The remaining tests were non-significant.

*[Insert Figure 3]*

The nature of plan content was explored in an open-ended and descriptive way. All themes, along with  $N$  and % frequencies of themes, are shown in Table 3. The top-rated plans for all five traits are as follows: E - More socialising and being more sociable; A - Greater acceptance, forgiveness and humility; C - Start using organisational aids; N - Strategies to worry less and think more positively; and O – Seek more creative activities and creative interests. Certain plan activities occur across multiple traits, including health and fitness, more socialising, and improving work life, suggesting that these are seen to be activities that

affect multiple traits. This data is provided to convey the ‘what’ of trait change plans in a descriptive sense, rather than for use with inferential statistics.<sup>2</sup>

*[Insert Table 3]*

### **Discussion**

The majority of young adults who have a goal to change their personality traits also have a general or specific plan to achieve to this goal. E and A goals were the most frequently linked to a plan, and had the most specific plans. The themes shown in Table 3 provide a first taxonomic structure of personality change plans for other researchers to further refine and use. The development of a psychometric instrument is achievable based on this thematic content, and this would facilitate exploring the structure of plans across the five traits using factor analysis.

The plan themes have possible applied implications. The most popular plan activities shown in the table may provide a useful basis for developing personal development sessions with young adults, given that young adults spontaneously see them as ways of effecting personal change, and so will be motivated to engage in them. Openness change is more difficult to plan for than other traits for young adults, which in turn implies that interventions aimed at enhancing Openness, such as the *Do Something Different* program (Fletcher & Pine, 2012), may be useful in facilitating such desired change, given that young adults have difficulty in formulating their own plans to become higher on O despite having goals to change it.

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<sup>2</sup> The reader is encouraged to contact the corresponding author if they would like verbatim examples of the codes.

## STUDY 4

### Goals and plans as longitudinal predictors of personality change

Previous research has found that goals to change one's life circumstances (e.g. gain more money and friends) do not predict longitudinal change in personality traits (Lüdtke et al., 2009), but as yet no studies have explored whether goals that aim specifically for trait change have longitudinal predictive power. The present study aimed to establish whether trait-change goals and plans predict change on a self-report trait measure over a transitional period of 12 months. If we found that goals and plans do predict change, this would support the effectiveness of efforts at self-regulated personality change, but if not, then this may suggest that goals and plans to change one's personality are, at least over the course of a year, ineffectual.

The 12-month period for the study was selected as the year following leaving higher education. Transitional years are times of more pronounced trait change than years of social stability (Moss & Sussman, 1980), therefore we presupposed that the transition out of higher education would be an appropriate timeframe to explore self-regulated personality change. All participants commenced the study two months after completing the final year of an undergraduate degree at a UK university, and were not intending to go back into education the following year.

Given the importance that self-regulation theory places on the strategic combination of goals and plans to bring about change, we predicted that trait change goals combined with semi-specific or specific plans would predict trait change in the desired direction over the subsequent 12 months, but that goals with vague plans or no plans would not effect change any more than having neither goal nor plan. We also predicted that plan specificity would correlate positively with trait change.

## Method

Data was first gathered two months after students completed the final assessments of their degree (T1), and then after twelve months (T2). Data on personality traits and change goals was gathered on both occasions. Participants were given a shopping voucher upon completion of all phases as an incentive for participation. At Time 1, the sample comprised 195 individuals aged 18 to 28 who had just completed an undergraduate degree. By the end of the project, this had reduced to 170, representing an attrition rate of 13%. The analyses presented here pertain only to the 170 (32 male, 138 female) who completed the study. No substantive demographic differences were found between the completers and non-completers.

## Measures

Trait goals were assessed with the *Big Five Trait-Change Goal Inventory* (BF-TGI), as described in Study 1, and plans were assessed using the *Trait Change Plans Open-Ended Questions*, coded for specificity using the 4-point scale described in Study 3. Trait levels at T1 and T2 were measured using the 44-item *Big Five Inventory* (John et al., 1991). All questionnaires were administered online. During each phase, participants were given a month within which to complete the questionnaires.

## Results

We first explored the temporal consistency of goals by correlating goals at Time 1 with goals after a year. All traits showed a significant test-retest correlation, but given that change goals are by their nature ephemeral and time-bound, it is fitting with theory that these correlations are of moderate to low effect size. Change goals in Conscientiousness showed the highest level of stability over 12 months ( $r(168) = .35, p < 0.001$ ), followed by Agreeableness ( $r(168) = .30, p < 0.001$ ), Extraversion ( $r(168) = .28, p < 0.001$ ), Neuroticism ( $r(168) = .21, p < 0.01$ ), and Openness change goals ( $r(168) = .17, p < 0.05$ ).

We predicted that change for each trait would be predicted by presence of a goal and by plan specificity. As an index of change, we used residualised change scores, calculated by regressing T2 scores on T1 scores and using the saved residual as an index of change. This change index is widely considered superior to raw change scores (i.e. T2 minus T1), for it provides a measure of how much difference there is between T1 and T2, while reducing the dependence of the change scores on the initial baseline score (due to regression to the mean, high scores tend to change down over time, and low scores tend to change up, meaning that change scores are typically negatively correlated with baseline score).

For each trait, we ran a 2-stage hierarchical regression, in which the residual change score was entered as the DV, goals were in Stage 1, and plan specificity in Stage 2. Table 4 shows  $R^2$  values, predictor Beta values and significance levels for all five traits.

*[Insert Table 4]*

For all traits,  $\beta$  values of goals were negative, and for C and N they were significant. When plan specificity was also included as a predictor, both predictors showed negative associations but neither was significant. The overall regression model was significant for both C and N with both goals and plans included as predictors. This suggests that having a goal to decrease N was associated with a slight increase in the trait over time, and having a goal to increase C was associated with a slight decrease in the trait over time.

*[Insert Table 5]*

To further explore the source of this counter-to-prediction finding, in Table 5 we present the zero-order correlations between change goals, T1 scores, T2 scores, residualised change scores, and raw change scores. Due the exploratory nature of this post-hoc analysis, significance is indicated for  $p < 0.05$  and  $p < 0.01$ . The table shows that, in support of the

regression outcome, C goals relate significantly negatively to both residualised and raw change. For N, only the residualised score shows significance.

The table also shows that change goals relate negatively to trait scores at both T1 and T2, for the four traits of E, A, C and N. In other words, being relatively low on E, A and C relates to having a goal to increase, and being high on N relates to having a goal to decrease. For O, this negative relationship does not apply; goals are positively related to trait level at T1 and T2 (this is significant for T1), suggesting that those who have O want more of the trait, but being low in O does not motivate goals to increase.

Finally, Table 5 provides important information on how raw and residualized change scores relate. Correlations between raw and residualized change are all over  $r = .9$ . Correlations between raw change scores and T1 scores are all negative, as predicted. In contrast, residualized change scores and T1 scores for all traits are  $r = .00$ . However we can also see that the residualizing correction process, while removing the link between T1 scores and change, simultaneously inflates the positive correlation between T2 score and change to high levels (all such correlations over  $r = .6$ ). This suggests that the correction process may introduce statistical bias as well as eliminate it.

## Discussion

Having a goal and plan to change a personality trait was associated with a significant negative effect on change in C and N over time. In other words, aiming and trying to become more conscientious or less neurotic had the opposite change effect to that which was intended. Plan specificity had no positive relationship with trait change. For C (and to a lesser extent for N), there was a negative correlation between specificity and longitudinal change, a curious finding which suggests that for C, those who have more specific plans to change are less likely to change than those whose plans are vaguer.

One possible explanation is highlighted by Table 5; individuals who have goals to increase C tend to be low in C, and those who have goals to decrease N tend to be higher in it than those with no goal, and this baseline trait level that relates to having a goal may actually work against subsequent desired change more than having a goal works for it.

The residualised change scores cancel out the influence of the baseline T1 score on change scores, so should negate the above interpretation, which relies on the confounding effect of baseline values. We checked this by entering the T1 score into the regressions as a Stage 3, and the  $\beta$  values were zero, so goals were not acting a proxy for baseline values. However the correction process does *not* negate the link between T2 scores and change, indeed it inflates it, and T2 scores show the same relationship to goals as T1. Thus the effect of trait on the goal-change relationship cannot be discounted and the above interpretation of findings may still be valid.

Another interpretation of the findings relates to the effects of personality change goal failure over the period in question on subsequent trait self-appraisal. Attempts to change one's personality for the better during the transition out of university are clearly prevalent but unlikely to be successful, and this may lead to *self-appraisals of failure* in goal-directed efforts at self-improvement. For those who had a goal to change in positive ways during this period, the perceived failure of attempts to change may lead to lowered self-appraisals of the trait in question, particularly given the tendency of trait change goal-setters to be lower on that trait in the first place. For those who did *not* try to change their personality during the post-university transition, there is no chance of perceived failure in this regard, and this may lessen negative self-appraisals over the intervening 12 months of the study, and this may help to explain the apparent relationship with goals and changing in undesired directions.

Future research should attempt to replicate the finding in other cohorts and at other points in the life course to explore and refine possible reasons for the unexpected finding that

goals and plans undermine positive change in C and E. Goals and plans to change oneself may be more effective in a stable period of life when external influences are at a minimum, rather than during the challenges of the post-university transition, and there may be testable interventions possible that increase the likelihood of bring positive change to fruition.

### **General Discussion**

Goals to change one's personality are prevalent in young adults. Only 5% of the UK sample in Study 1 had no goals to change any personality traits, and 89% had two goals or more. Such goals are by no means an artefact of individualist values; they were found to be even more prevalent within the two collectivist comparison cultures of Iran and China.

Neuroticism is the most prevalent target for goal-directed change for young adults in the UK, Iran and China. This fits with the postulates of the theory of emerging adulthood; Arnett (2004) has found that this age range is characterised by a focus on the self and by instability of many kinds. Aiming to change Neuroticism is about addressing tendencies towards emotional negativity, and thus is very much about *self*-transformation. Given that emerging adulthood is a time of instability and fluidity in identity and personality, young adults are living within a window of opportunity to increase their resilience to negative emotions (Masten et al., 2004). There are a number of resilience-enhancing programs that have been shown to be effective in reducing anxiety in children and in decreasing Neuroticism (e.g. Challen, Machin, & Gillham, 2014). Thus we believe that what is now needed is a resilience (and thus emotional stability) enhancing intervention targeted at emerging adults. Given that over three quarters of our sample wanted to decrease Neuroticism, this intervention should be attractive to the majority, and thus be focused on building strengths rather than correcting pathology. We intend to develop such an

intervention ourselves in the near future and evaluate its effectiveness at bringing about stable personality change.

Previous research on desired and expected levels of personality traits in emerging adults has found that in US students, Emotional Stability (Neuroticism scored in the reverse direction) had the largest discrepancy between actual and desired levels, followed by Extraversion and Conscientiousness, and then Agreeableness and Openness (Woods et al., 2013). This is a close fit with the cross-trait prevalence of personality change goals shown in Figure 2. However, other data showed that Extraversion and Conscientiousness were *expected* to change more than other traits and were perceived as more important to change than Emotional Stability in a US sample (Nofle, 2011). This could relate to a cross-cultural difference between the US and the three countries in this study. It could also be due to the fact that stating a goal differs from stating perceived importance; a goal reflects a commitment to change that will in part be a function of importance, but also of how achievable and realistic the goal is (Hennecke et al., 2014). Further research could explore the interaction between expectancy and value of goal states by also assessing the perceived importance and achievability of trait change goals.

A small proportion of individuals expressed a desire to change in the opposite direction to the normative direction – individuals within this minority wanted to develop lower E, A, C, O and higher N. The trait that attracted the most non-normative responses was Agreeableness: 7% stated they had a goal to become less agreeable, and some gave plans to bring this goal. For example, one participant said *“I am too nice at times at a detriment to myself but am not sure what I am going to do about it as it is my nature,”* while another said *“Be more assertive & say no more.”* The non-normative minority on Agreeableness and all traits should be better understood, as although they represent only a small proportion of

emerging adults, by understanding such discrepant examples a phenomenon such as self-regulated personality change can become more roundly understood.

Plans to bring about personality change were varied in their specificity and content. Some plan activities, such as exercise, socialising, gaining meaningful work, and improving organisational skills, were themes that emerged across multiple traits and so are seen to have varied perceived benefits for personality development by young adults. Moreover, many of these phenomena have been actually demonstrated to be associated with personality development during adulthood (e.g., Hudson, Roberts, & Lodi-Smith, 2012; Stephan, Sutin, & Terracciano, 2013). Extraversion and Conscientiousness had the most *specific* plans, a finding that reflects the perceived importance of change in these traits shown in prior research (Noftle, 2011).

Study 4 showed that semi-specific or specific plans are rare in young adults; the majority with goals have no plan or a vague plan that is hard to distinguish in generality from the goal itself, and thus lacks the concrete and tangible aspects of beneficial planning (Miller et al., 1960). Indeed those with goals but vague plans to become less neurotic actually increased in Neuroticism over 12 months, while those with neither goal nor plan did not, suggesting that half-baked attempts at personality change may be worse than none at all. Even with those who stated specific plans, there was little mention of a timeframe or sequencing of activities, suggesting that the plans lacked those implementation intentions (time frame-based aspects of planning), which have been shown to be good predictors of action and change (Gollwitzer, 1999). As part of our proposed personality development workshops for young adults, we intend to provide strategies for helping to frame plans for personality change in a more precise and time-bound manner, and explore if this kind of intervention allows goals to be more effectively translated into action and term development.

Across the 12-month period following university, goals and plans to change personality traits were ineffective in bringing about change, and plan specificity was unrelated to longitudinal change. Indeed goals tend to predict change away from them. This may reflect the fact that personality change is in fact not conducive to goal-directed efforts. However another explanation may be that the period of the study and/or the nature of the assessments was not conducive to exploring the effects of goals. We chose the post-university year because we predicted it would be a time of personality fluidity, however it may be that the *common* difficulties of the post-university transition such as finding work, finding new accommodation and decreased contact with friends, lessened the effect of any individual differences factors on change and in turn negated the effect of goals to change. It may be that personality goals would be more likely to show longitudinal change during a stable year after the post-university transition. A third explanation may be that we only gained data on the presence of a goal, but did not assess the amount of trait change desired as part of the goal, the importance of the goal, the achievability of the goal, and the timeframe within which the goal is to be realised. All these should be explored in future studies. A further explanation is that a 12-month period is too short to show substantive or significant change, and that a lengthier longitudinal study is required to highlight self-regulated trait changes.

The measures of goals and the open-ended plan assessment used in the present paper have opened up new lines of inquiry in the area of self-regulated personality change. The single-item measures of personality goals have the benefit of ensuring that reported goals are at the level of Big Five traits rather than the level of facets, micro-traits or behaviour; short measures are also quite efficient. However the flipside is that single-item measures increase the possibility of measurement error, thus in future studies the relative predictive merits of collated single-item and multiple-item measures should be contrasted.

In summary, goals and plans to change personality are common in young adults. Almost all of this age group believe in the possibility of self-directed personality development and make goals and plans to achieve it. However, plans are of no use if they are not more precise than the goal they serve, and goals are of no use in effecting change if they do not lead to change over and above those who are maturing anyway without a conscious goal. In the words of the poet Robert Burns, “the best laid plans of mice and men oft go wrong.” It seems that young adults are full of good intentions, but that they may require extra support and external intervention if they are to turn goals into the actual change they desire.

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Table 1. Percentage frequencies of decrease goals, no goals, and increase goals for all five traits (highest figure of three within trait highlighted in bold)

	Goal to become less (%)	No goal to change (%)	Goal to become more (%)	$\chi^2$ (df = 2)
Extraversion (E)	1.7	35.3	<b>63.0</b>	165.1**
Agreeableness (A)	6.8	<b>59.2</b>	33.9	120.3**
Conscientiousness (C)	2.4	38.4	<b>59.2</b>	144.9**
Neuroticism (N)	<b>71.9</b>	24.7	3.4	215.4**
Openness (O)	2.4	41.8	<b>55.8</b>	134.4**

\*\* =  $p < 0.001$

Figure 1. Percentage of sample reporting goal to change (increase or decrease) on each of the Big Five traits, with error bars set at 95% CI

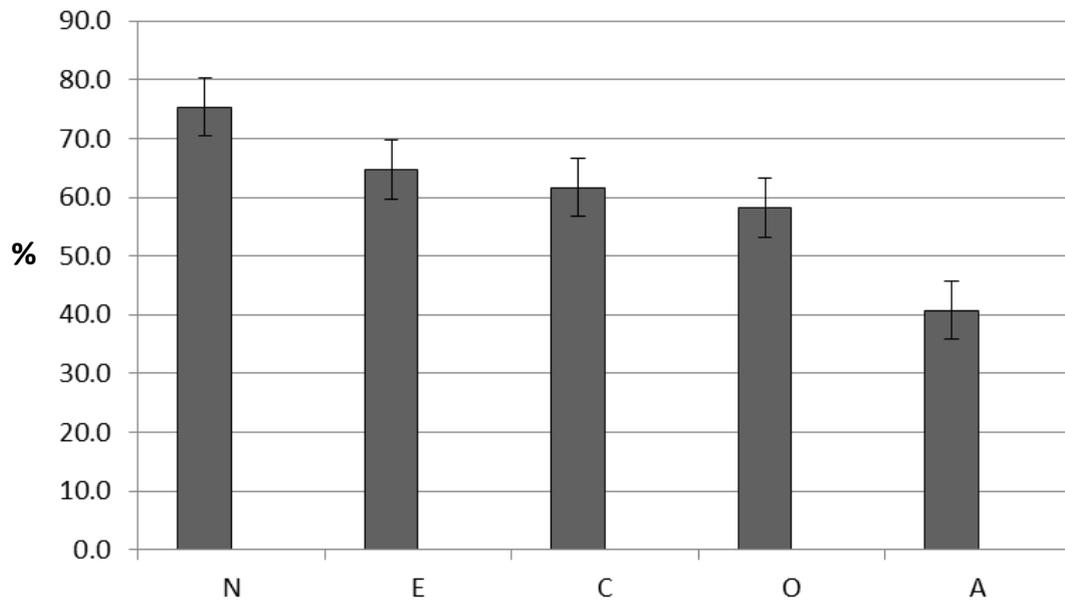
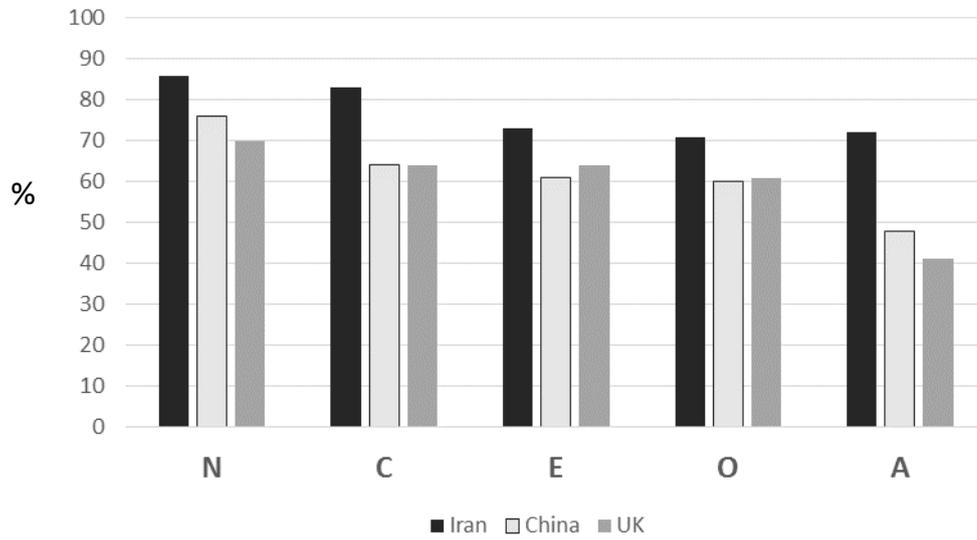
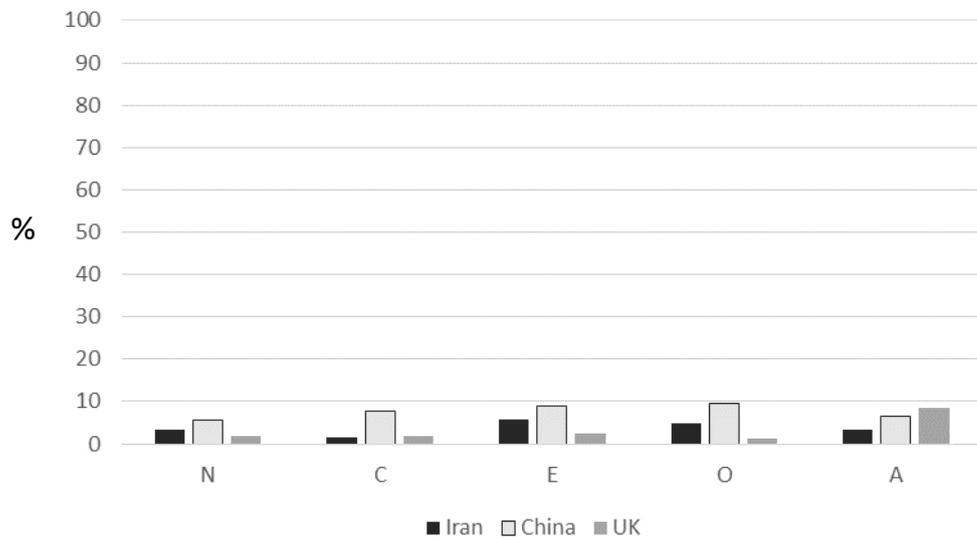


Figure 2. Prevalence of normative and non-normative trait change goals in Chinese, British and Iranian samples

a) Percentage reporting normative goals (i.e. goals to increase E, A, C, O, decrease N)



b) Percentage reporting non-normative goals (goals to decrease E, A, C, O, increase N)



Note: N = Neuroticism, C = Conscientiousness, E = Extraversion, O = Openness, A = Agreeableness

Table 2. Actual-ideal discrepancy means and t values with significance

		UK	Iran	China
		<i>df</i> = 125	<i>df</i> = 114	<i>df</i> = 140
E	No goal	0.58	0.76	0.51
	Goal to change	0.91	0.77	0.85
	<i>t</i>	-4.55**	-0.49	-3.97**
A	No goal	0.47	0.46	0.49
	Goal to change	0.65	0.52	0.71
	<i>t</i>	-2.60**	0.62	-2.62*
C	No goal	0.57	0.72	0.62
	Goal to change	0.90	0.79	0.90
	<i>t</i>	-3.17**	0.64	-3.13*
N	No goal	0.80	0.99	0.81
	Goal to change	1.28	1.27	0.89
	<i>t</i>	-3.93**	-1.42	-0.69
O	No goal	0.46	0.51	0.40
	Goal to change	0.63	0.74	0.61
	<i>t</i>	-2.55*	-2.67*	-3.00*

Note:

\* = difference significant at  $p < 0.01$

\*\* = difference significant at  $p < 0.001$

Table 3: Plan content themes for all five traits

<b>Extraversion (total plans = 100)</b>	<b>N</b>	<b>%</b>	<b>Agreeableness (total plans = 64)</b>	<b>N</b>	<b>%</b>	<b>Conscientiousness (total plans = 95)</b>	<b>N</b>	<b>%</b>	<b>Neuroticism (total plans = 94)</b>	<b>N</b>	<b>%</b>	<b>Openness to Experience (total plans = 71)</b>	<b>N</b>	<b>%</b>
More socialising and being more sociable	38	38.0	Greater acceptance, forgiveness, humility	29	45.3	Start using organisational aids	41	43.2	Strategies to worry less	44	46.8	Seek more creative activities and creative interests	35	49.3
Be more assertive and self-expressive	35	35.0	Complimenting and appreciating others	12	18.8	Be more goal directed and planful	38	40.0	Increase self-motivation and self-belief	28	29.8	Explore new places and travel	18	25.4
Better health and fitness	35	35.0	Keeping calm and keeping Perspective	9	14.1	Avoid procrastination and laziness	21	22.1	Be organised and occupied	19	20.2	Be more curious and open to other's opinions	10	14.1
Engaging in more activities outside of work or study	24	24.0	Being more self-focused and less trusting	9	14.1	Be more responsible	9	9.5	Use relaxation methods	15	16.0	Be more spontaneous	7	9.9
Employment and volunteering	14	14.0	Other	8	12.5	Better employment	5	5.3	Engage in therapy / talk to someone	9	9.6	More socialising and being more sociable	6	8.5
Other	6	6.0	Providing more help and care	6	9.4	Other	5	5.3	Other	8	8.5	Go to more art and culture events	6	8.5
Organising one's life better	3	3.0	Better listening and communication	2	3.1	More healthy lifestyle	2	2.1	Better health and fitness	5	5.3	Other	4	5.6

Note: grey box = only plan theme that pertains to actualising non-normative trait change (to bring about lower agreeableness)

Figure 3. Means for plan specificity across five traits, with error bars set at 95% CI

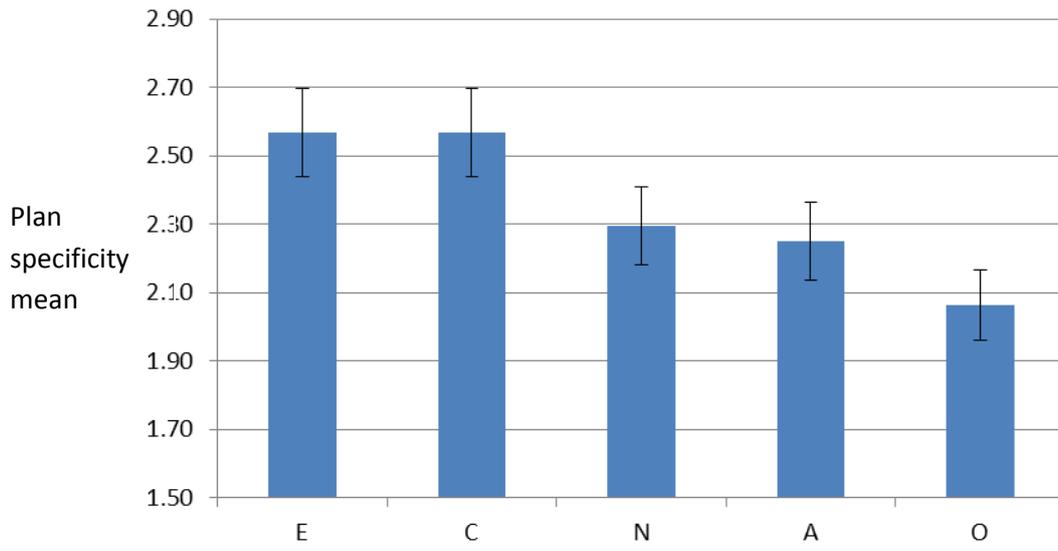


Table 4. Hierarchical regression results with 12-month residual trait change scores as DV, and goal presence and plan specificity entered as IVs in 2 stages

		E	A	C	N	O
Stage 1	Goal - $\beta$ value	-.10	-.07	-.20**	-.14**	-.05
Stage 2	Goal - $\beta$ value	-.20	-.11	-.12	-.23*	-.11
	Plan - $\beta$ value	.12	.06	-.11	-.15	.09
Stage 2 $R^2$		.13	.09	.22**	.18*	.09

Note: \* =  $p < 0.05$ , \*\* =  $p < 0.01$

Note: Goal = goal presence

Note: Plan = plan specificity

Note:  $df = 1,168$

Table 5. Correlations between goals, T1 scores, T2 scores, raw change scores, residualized change scores, for all five traits

		T1 score	T2 score	Residual change	Raw change
E	Change goal	-.14*	-.17*	-.10	-.04
	T1 score		.72**	.00	-.39**
	T2 score			.69**	.36**
	Residual change				.92**
A	Change goal	-.04	-.07	-.07	-.05
	T1 score		.79**	.00	-.42**
	T2 score			.61**	.23**
	Residual change				.91**
C	Change goal	-.28**	-.34**	-.21**	-.14*
	T1 score		.74**	.00	-.23**
	T2 score			.68**	.49**
	Residual change				.97**
N	Change goal	-.24**	-.26**	-.14*	-.04
	T1 score		.64**	.00	-.37**
	T2 score			.77**	.48**
	Residual change				.93**
O	Change Goal	.16*	.10	-.05	-.09
	T1 score		.80**	.00	-.25**
	T2 score			.60**	.38**
	Residual change				.97**

E = Extraversion, A = Agreeableness, C = Conscientiousness, N = Neuroticism, O = Openness to Experience

\* Correlation is significant at the 0.05 level (1-tailed).

\*\* Correlation is significant at the 0.01 level (1-tailed)

### Appendix A. Big Five Trait-Change Goal Inventory (BF-TGI)

*Instructions to participants:*

Some people have goals to change or develop their personality traits in the future. This questionnaire assesses whether that is the case for you.

Below, five broad personality traits (Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness) are briefly described by way of six adjectives. Please read the characterisation of each trait and then tick *one* of the three boxes next to it to specify whether you have a goal to become less like that trait, more like that trait, or whether you have no goal to change on that trait.

<b>Extraversion</b> – characterised by being active, assertive, energetic, enthusiastic, outgoing, talkative	I have a goal to become <b>less</b> like this <input type="checkbox"/>	I have <b>no</b> goal to change on this trait <input type="checkbox"/>	I have a goal to become <b>more</b> like this <input type="checkbox"/>
<b>Agreeableness</b> – characterised by being appreciative, forgiving, generous, kind, sympathetic, trusting	I have a goal to become <b>less</b> like this <input type="checkbox"/>	I have <b>no</b> goal to change on this trait <input type="checkbox"/>	I have a goal to become <b>more</b> like this <input type="checkbox"/>
<b>Conscientiousness</b> – characterised by being efficient, organised, planful, reliable, responsible, thorough	I have a goal to become <b>less</b> like this <input type="checkbox"/>	I have <b>no</b> goal to change on this trait <input type="checkbox"/>	I have a goal to become <b>more</b> like this <input type="checkbox"/>
<b>Neuroticism</b> – characterised by being anxious, self-pitying, tense, touchy, unstable, worrying	I have a goal to become <b>less</b> like this <input type="checkbox"/>	I have <b>no</b> goal to change on this trait <input type="checkbox"/>	I have a goal to become <b>more</b> like this <input type="checkbox"/>
<b>Openness to Experience</b> – characterised by being artistic, curious, imaginative, insightful, original, having wide interests	I have a goal to become <b>less</b> like this <input type="checkbox"/>	I have <b>no</b> goal to change on this trait <input type="checkbox"/>	I have a goal to become <b>more</b> like this <input type="checkbox"/>

## Appendix B: Trait change plans open-ended questions

If the respondent selected ‘goal to become less’ or ‘goal to become more’ for the above trait change items, they were then shown instructions and a text box on the next page of the electronic questionnaire, which requested open-ended information about plans they have to achieve their goal. The example of Extraversion is shown below:

If the participant stated that they have a goal to become *more extraverted*, they were shown the following question and text box:

“You stated that you have a goal to become **more extraverted** (i.e. generally more active, assertive, energetic, enthusiastic, outgoing, talkative). Do you currently have any ideas for things you will do (or stop doing) to bring this change about? If so, please outline your plans briefly in the box below. If you have no ideas at the moment, just write 'no plans'.”

If they stated that they have a goal to become *less extraverted*, they were shown the following:

“You stated that you have a goal to become **less extraverted** (i.e. generally more active, assertive, energetic, enthusiastic, outgoing, talkative). Do you currently have any ideas for things you will do (or stop doing) to bring this change about? If so, please outline your plans briefly in the box below. If you have no ideas at the moment, just write 'no plans'.”

If they chose ‘no goal’ for Extraversion, then no instruction or box was shown for that trait.

This display logic applied in the same way for all five trait change goals, with the words in bold changed accordingly for each trait.

## APPENDIX C – Example extracts for plan themes by trait

Trait	Theme	Example extract
E	More socialising and being more sociable	"I plan to try more social situations. Even if I just go for a hour."
	Be more assertive and self-expressive	"I need to be more open and not scared to give my opinion"
	Better health and fitness	"Join the gym to become more active and energetic"
	Engaging in more activities outside of work or study	"looking at going skydiving etc, want to be more active."
	Employment and volunteering	"Make social contacts at work, job fairs, etc to widen the friends' circle to get more chances of landing jobs."
A	Organising one's life better	"I will try achieve the active goal by planning my days ahead and making to do lists."
	Greater acceptance, forgiveness, humility	"Learn to forgive others, find common ground and praise others (work colleagues)."
	Complimenting and appreciating others	"Telling my wife I appreciate her, be kinder to others by being more thoughtful."
	Keeping calm and keeping perspective	"swearing less, understanding what life is about"
	Being more self-focused and less trusting	"put personal needs ahead of others, reduce favours given."
C	Providing more help and care	"Continue doing voluntary work with charities. Pray more often."
	Better listening and communication	"Listen to the other persons point of view and not let their opinion go in one ear and out the other."
	Start using organisational aids	"Writing everything down, using planners and taking notes on future plans."
	Be more goal directed and planful	"I definitely need to be more efficient and multitasked in completing work and be more organised"
	Avoid procrastination and laziness	"Spend less time getting distracted by simple things such as Xbox, Facebook etc and stop convincing myself this is of better use of my time."
N	Be more responsible	"Gain more responsibilities and be more organize"
	Better employment	"I think if I had a job that I enjoyed I would be more efficient than I currently am (which is in a job I do not enjoy)."
	More healthy lifestyle	"I have stopped smoking and have started using what would have been my 'smoking breaks' to plan more effectively my time."
	Strategies to worry less	"the area I am focusing on improving is to become less anxious and worrying excessively. In order to achieve this I will need to adapt a free mentality, meaning that I will need to express my feelings more regardless"
	Increase self-motivation and self-belief	"Highlight my best attributes to myself."
O	Be organised and occupied	"From assignments, placement and lack of free time I can feel anxious, tense, touchy and tend to worry. I will aim to change this by planning ahead and making sure I have free time for myself"
	Use relaxation methods	"Hopefully I would be able to become less tense by learning relaxation techniques"
	Engage in therapy / talk to someone	"Possibly seeking therapy in the near future."
	Better health and fitness	"Eat healthy and sleep more for a healthier lifestyle - this may make me feel better in myself."
	Seek more creative activities and creative interests	"Do things that are generally out of my comfort zone and interact with more artistic people. I would also like to learn an instrument that would help me be more artistic and imaginative."
O	Explore new places and travel	"I would like to go travelling which will help me to become more open"
	Be more curious and open to other's opinions	"I feel I need to attend different cultural groups to gain awareness about how different cultures live in order to provide the best care I can when working with individuals."
	Be more spontaneous	"Take risks, do something outside of my comfort zone, don't always think about the 'what if'."
	More socialising and being more sociable	"By meeting more people and doing more things so I'm becoming involved in varying activities"
	Go to more art and culture events	"I would like to visit more museums and become more culturally aware."