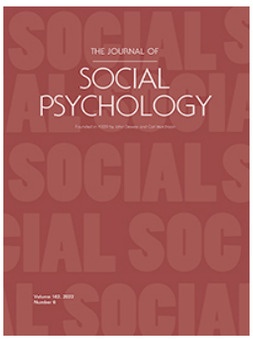

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Perceived changes in trait attributions to others and the self

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ABSTRACT

A study was conducted to examine the perceived changes in the impressions of others or self on 133 trait dimensions. Attributions to others were reportedly more negative over time whereas attributions to self were more positive over time. Perceived changes in others' traits appear to be guided by basic behavioral inference processes. Trait beliefs about others tend to be revised when the traits are common and disconfirming behavior is infrequent and more diagnostic. Positive trait impressions of others change more frequently because they are more prevalent and because negative behaviors (that disconfirm positive attributions) are less frequent and more diagnostic than positive behaviors. In contrast, revisions of trait impressions of the self appear to be driven heavily by self-evaluation motivations such as the desire to see self-improvement. The favorableness of changes in trait self-concepts were positively correlated with self-esteem. The consequences of the observed patterns of attributional change for interpersonal relations are discussed.

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Attribution; correspondent behavior; self-concept; disconfirmation

Trait attributions are not static. Our impressions of others' traits are often revised as behavior and relationships change, and new information is acquired. Our impressions of our own traits may be similarly revised over time as a result of changes in our behavior and perspective, and the assimilation of new information about ourselves. In this study, we examined which trait impressions of others and the self are most susceptible to reported change. In particular, our study examined whether positive trait attributions are generally subject to greater revision than negative trait attributions. We also investigated whether changes in trait impressions of others are paralleled by similar changes in trait impressions of the self. Finally, the study examined why some trait attributions change more than others.

Changes in trait impressions of others

The effects of increasing social interaction and familiarity on impressions of others and interpersonal functioning are highly dependent on the nature of the relationship. Studies of the mere exposure effect have shown that familiarity may increase liking for persons that are relatively unknown (e.g., Reis et al., 2011; Swap, 1977). Research on partner knowledge has shown that greater attitude and trait familiarity in close relationships is associated with lower conflict, greater support, and more positive feelings toward partners and the relationship (e.g., Neff & Karney, 2005; Sanbonmatsu et al., 2012; Swann et al., 1992).

Nevertheless, research suggests that impressions of most people in a person's life tend to become more negative over time. As familiarity with others increases, differences in attitudes and traits may become apparent which contribute to diminished liking (Norton et al., 2007, 2013; Sanbonmatsu et al., 2012; for a contrasting view, see, Ullrich et al., 2013). Studies of experience sampling indicate that impressions that become negative tend to stay negative because further social interaction is diminished

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(Denrell, 2005). Sampling also tends to be truncated sooner when negative information is received because it is perceived to be higher in diagnosticity than positive information (Prager et al., 2018).

We believe that another fundamental reason why positive attributions may be more apt to change is because they are more commonplace. People form more favorable trait impressions than unfavorable trait impressions because positive trait correspondent behavior is more normative and frequent (Sanbonmatsu et al., 2015). Initial trait attributions are also shaped by self-presentation behaviors that are typically positive. Because they are more prevalent to begin with, positive trait impressions may be more apt to change than negative trait impressions. For example, honest behavior is much more commonplace than dishonest behavior. As a consequence, perceivers are more likely to form the impression that a person is honest than dishonest. Because attributions of honesty are more common, people may change their minds about someone being honest more often than they change their minds about someone being dishonest.

An even more important reason why positive impressions of others may be more susceptible to change is because negative trait correspondent behavior is less common and expected, and, hence, more heavily weighted than positive trait correspondent behavior. Sanbonmatsu et al. (2015) showed that trait inference is heavily driven by the perceived baserate of correspondent behavior. The subjective frequency of trait-consistent relative to trait-inconsistent behavior shapes the behavioral expectations of trait stereotypes. The pattern of correspondent behaviors expected of persons possessing and not possessing a trait, in turn, determines the weighting of behavior, that is, the number of instances needed to confirm and disconfirm a trait (Rothbart & Park, 1987).

When trait-consistent behavior is relatively common, the perceived likelihood of the behavior is high, and more instances are needed for confirmation of the trait. Moreover, because the expectation of trait-inconsistent behavior is low, relatively few instances are needed for disconfirmation. For example, honest behavior is more common than dishonest behavior to the point that honest people are expected to behave honestly all of the time. Because of this, relatively few instances of dishonesty are sufficient for disconfirmation. In contrast, when trait consistent behavior is infrequent and trait inconsistent behavior is frequent, greater evidence is needed for disconfirmation. Attributions of dishonesty are resistant to change because everyone is honest sometimes which make instances of honest behavior less diagnostic and disconfirming.

Sanbonmatsu et al. (2015) showed that positive trait correspondent behavior is generally perceived to be less diagnostic than negative trait correspondent behavior because it is typically more common and expected. Because negative correspondent behavior is perceived to be more diagnostic, positive trait impressions may be more susceptible to change than negative trait impressions. In contrast, negative trait impressions may be less likely to be revised when disconfirmatory acts are observed because positive correspondent behavior is more common. Moreover, negative trait attributions may have a stronger foundation in that they are often based on negative behaviors that are relatively uncommon and high in perceived diagnosticity.

Changes in trait impressions of the self

Many conceptions of the self are consistent over time (Marsh et al., 1998; Swann & Bosson, 2010). The stability of the self stems from the tendency to filter and interpret information in a manner that is consistent with preexisting self-concepts (e.g., Kulik et al., 1986; Swann & Bosson, 2010), consistencies in behavior stemming from regularities in social contexts and groups (e.g., Serpe, 1987), and continual efforts to verify personal identities (e.g., Oyserman, 2007; Swann & Bosson, 2010). While the general identities that people harbor may be relatively enduring, the specific conceptions of self that often serve as the basis for everyday choices (Moore et al., 2016) may be more malleable (e.g., Markus & Kunda, 1986). That is, they be more apt to be selectively activated or revised as a function of context and experience (Oyserman et al., 2012).

Peoples' views of themselves are closely tied to their general sense of self-worth or self-esteem. The causal influence is bi-directional as changes in specific conceptions of the self may affect self-esteem,

and the need to maintain self-esteem may color peoples' evaluations of their traits and abilities (e.g., Brown & Dutton, 1995). Research shows that self-esteem is not consistent over the lifespan. A review of the literature by Robins and Trzesniewski (2005) concluded that "self-esteem is relatively high in childhood, drops during adolescence, rises gradually throughout adulthood, and then declines sharply in old age" (p. 158). Thus, self-esteem generally increases over time in adults before declining rapidly after the age of 69. These changes in self-worth during adulthood are likely affect how people see themselves. Indeed, a review of the literature on stability and change in the self by Demo (1992) concluded that self-evaluation generally becomes more favorable over the life span. Individuals may evaluate their selves more favorably and develop higher self-esteem as they get older because of increases and improvements in physical and cognitive abilities, job involvement and satisfaction, coping skills, knowledge, income, housing, relationships, status, and numerous other factors (e.g., Demo, 1992). Thus, the developmental literature suggests that the attribution of specific traits to the self may generally become more positive over time.

There may be even more important dynamics that shape perceptions of change in personal traits. Current beliefs and motivations often contribute to the reconstruction of events and experiences that are stored in memory (e.g., Loftus, 2003). People sometimes recreate their past behaviors and attitudes so that they are more consistent with their current attitudes and preferences (e.g., Bem & McConnell, 1970; Ross et al., 1981). In addition, they reconstruct the past in a way that allows them to believe that the self has improved (Wilson & Ross, 2001). For example, research has shown that people tend to exaggerate the extent to which they have been transformed by weight control and smoking cessation programs (Ross & Conway, 1986). This further suggests that people may be inclined to perceive their current traits more favorably than their past traits.

Do changes in trait impressions of the self parallel changes in trait impressions of others?

Attribution theories (e.g., Jones & Davis, 1965; Kelley, 1967) have long assumed that the primary basis for beliefs about the traits of others is behavior. Self-perception theory (Bem, 1967) similarly postulated that observations of personal behavior are central to inferences about the self. If attributions to others and the self are based heavily on the same observed behaviors, there should be a high degree of concordance between revisions in trait impressions of others and revisions in trait impressions of the self. Moreover, one might expect that as further information is gathered, impressions ofothers and impressions of the self should change in concert with one another. Specifically, both conceptions of others and the self might become more negative because of the observation of socially undesirable behaviors that are high in perceived diagnosticity.

However, as we suggested previously, the attribution of traits to the self may also be affected by powerful self-evaluation motivations (Sedikides & Strube, 1995; Taylor et al., 1995). The need to enhance the self and maintain high self-esteem (e.g., Brown & Dutton, 1995; Krueger, 1998; Taylor & Brown, 1988) may lead to more favorable assessments of current traits. Moreover, the need for self-improvement (Sedikides & Strube, 1995; Taylor et al., 1995) may contribute to the belief that personal traits have changed for the better. Thus, there may be different processes driving revisions of trait impressions of the self and revisions of trait impressions of others. Attributions to the self may be determined less by basic behavioral inference mechanisms and more by self-evaluation motivations that contribute to positive trait beliefs.

A study of changes in trait impressions of others and the self

Research was conducted to investigate the perceived change in the traits of others and the self. Following Rothbart and Park (1986), Sanbonmatsu et al. (2015), and Tausch et al. (2007), independent groups of participants completed a questionnaire requiring them to make a specific judgment for a large set of traits. One cohort of participants estimated the frequency with which their impressions of

others changed on each trait dimension. For example, these participants were asked to estimate how often they had changed their minds about another person being honest. A second cohort estimated whether their trait impressions of their selves on each dimension had changed. For example, these participants indicated if their impression of their honesty had changed. The mean estimated frequencies across participants were converted to standard scores to create normative indices of the relative frequency of change in each trait impression. The standardized estimates of the frequency of change in trait impressions of others and trait impressions of the self were analyzed in combination with the normative ratings of trait favorability, frequency, and diagnosticity generated by Rothbart and Park (1986) and the normative ratings of the baserate of correspondent behavior generated by Sanbonmatsu et al. (2015) to determine the patterns and determinants of changes in trait impressions.

The results were organized into three sets of analyses. The first set of analyses examined the patterns of revision characterizing trait impressions of others and the self. We hypothesized that participants would report greater change in positive trait attributions than negative traits attributions to others while reporting greater change in negative trait impressions of the self and, hence, more favorable trait attributions to the self over time.

The second set of analyses sought to explain why trait beliefs about others vary in the likelihood of change. We hypothesized that changes in trait attributions to others are guided heavily by basic behavioral inference processes in which the baserate and perceived diagnosticity of correspondent behavior play a crucial role. Following Sanbonmatsu et al. (2015), we anticipated that trait beliefs are more likely to be revised when they are common and when disconfirming behavior is infrequent and diagnostic. Hence, we predicted that participants would report greater change in positive attributions than negative attributions to others because of the greater frequency of positive trait impressions and the greater diagnosticity of negative correspondent behavior that disconfirms positive trait attributions.

The third and final set of analyses attempted to explain the patterns of revision of trait impressions of the self. These analyses explored the role of behavioral inference processes as well as the impact of self-evaluation motivations on changes in trait self-concepts. Self-esteem was measured to explore the possibility that the revision of self-conceptions of negative traits rather than positive traits may also result from changes in self-worth over time.

Method

This research complied with the American Psychological Association Code of Ethics and was approved by the Institutional Review Board at the University of Utah (IRB_00093100).

Participants

One hundred fifty-two male and female undergraduates (63.8% female and 36.2% male, $M = 22.4$ years of age) enrolled in psychology courses at a large public university participated in the study for course credit. Participation was limited to native English speakers.

Independent groups of participants completed a questionnaire in which they made judgments across a large set of trait dimensions. Rothbart and Park (1986) obtained judgments from 10 or 11 participants on each dimension and then excluded the data of a very small number of participants whose judgments deviated substantially from those of the rest of sample. We took a different approach to obtain a reliable set of trait related ratings or norms; we sought judgments from a much larger number of participants under the assumption that this would minimize the impact of any outliers. Our intention was to obtain judgments from at least 25 participants for each judgment. However, we collected additional data because of unexpected demand for experimental participation and credit from our subject pool. In 2012, 53 participants completed a survey about changes in trait impressions of others. The data from 4 of these participants who skipped more than 20% of the total questions were

excluded from the primary analyses. In 2017, 99 participants completed a survey about changes in trait impressions of the self.

The primary analyses in the study were across traits. The number of traits that were measured (133) determined the power to identify the interrelations between the different trait related qualities and beliefs that were measured. Thus, the power of the primary statistical tests that were performed were unaffected by the number of participants completing each survey. The number of participants completing each survey, of course, determined the reliability of the trait, behavior, and change ratings.

While mixed-effects regression analyses that accounted for participant variance would have been ideal for our study, they were not possible because several of the rating sets were taken from previous studies (Rothbart & Park, 1986; Sanbonmatsu et al., 2015). Thus, individual participant data for some of the key measures were not available. We addressed potential concerns about differences in participant variance between measures by analyzing the reliability or consistency across participants (see results).

Procedure

The study was presented as an investigation of person perception. Participants completed one of two lengthy questionnaires at their own pace in a computer laboratory. Changes in attributions to others were measured on a paper and pencil questionnaire whereas changes in attributions to the self were measured through a Qualtrics survey on a computer. After completing half of the items, they were given a break. They were encouraged to skip a question when they were unfamiliar with a trait word. Specifically, they were told, "we prefer that you not respond to an item if you are uncertain about the meaning of a behavioral term."

Stimulus materials

The questionnaires presented a series of questions about 133 traits. The set of trait adjectives that were utilized in the study were generated by Rothbart and Park (1986), who derived their list from earlier studies by Katz and Braly (1933), Anderson (1968), and Norman (1967). The set was compiled to have relatively equal numbers of highly favorable, moderately favorable, neutral, moderately unfavorable, and highly unfavorable trait adjectives. Following Sanbonmatsu et al. (2015), the original list of target traits developed by Rothbart and Park was reduced from 150 to 133 because 8 of the trait adjectives did not afford a clear trait vs. behavior distinction, and 9 of the traits were unfamiliar to many participants in our pool. The order in which the questions about particular traits were presented in the questionnaires was randomly determined.

Change in trait impressions of others

The questionnaire about change in trait impressions began with the following introduction:

> We often form impressions of people's traits. For example, at work we might develop the impression that a colleague is unusually bright or dull. Obviously, the beliefs that we form about the characteristics of a person are subject to change. Often we receive information that leads us to alter our impression of an individual's traits. In this study of person perception, we would like you to estimate the frequency with which you have changed your impressions of persons on particular trait dimensions.

Participants answered two questions about their change in their trait impressions of others on every dimension. On the first question, participants indicated whether they had ever been mistaken in their belief that a person possessed a particular trait on a multiple (4) choice question anchored by *never* and *many times*. For example, for the trait *boastful*, participants were asked:

> Have you ever made the mistake of believing someone was boastful when that person was not?
> a. Never

b. Once
c. A few times
d. Many times

On the second question, participants indicated the frequency with which they had changed their mind about someone possessing a particular trait. For example, for the trait *boastful*, participants were asked:

Have you ever changed your mind about someone being boastful?
a. Never
b. Once
c. A few times
d. Many times

We assumed that participants would have trait impressions of persons on every dimension because the questions were about the totality of trait impressions they had formed in their personal histories. Participants were instructed to skip an item if they never had impressions of others on the trait dimension in question.

Change in trait impressions of the self

The self-survey differed from the trait impressions of others survey in two ways. First, participants were asked only one question pertaining to each trait. We opted not to ask two questions because prior analyses (Rothbart & Park, 1986; Sanbonmatsu et al., 2015) have been limited to one measure and because we sought to lower the survey completion time demanded of participants. Second, participants were given the option of indicating if they never had a particular trait impression of themselves. While we assumed that participants had trait impressions of others on nearly every trait dimension, we recognized that they were highly unlikely to have attributed every trait to themselves at some point in their personal histories.

The survey about trait impressions of the self began with the following instructions:

> People have impressions of their personal traits. For example, a person might see herself or himself as smart but impulsive. Some views of ourselves stay the same over time. Other impressions of our traits change. In this study, we would like you to indicate whether your impression of yourself on particular trait dimensions has changed or stayed the same.

The question asked participants to indicate whether a trait they previously attributed to themselves still described them or if their self-concept on that trait dimension had changed. For example, for the trait *adventurous*, participants were asked, "Have you changed your impression of your adventurousness? That is, do you see yourself as less adventurous now than you did before?" The response choices were "Yes, I see myself as less adventurous now than I did before," "No, I still see myself as adventurous," and "I never saw myself as adventurous." Participants answered this question for each of the 133 traits.

After indicating perceived changes in self on the 133 trait dimensions, participants answered the question "Has your overall impression of yourself become less favorable or more favorable over time" on a 5 point scale anchored by 1 = *much less favorable* and 5 = *much more favorable* and the question "Has your view of your personal traits become more negative or more positive over time" on a 5 point scale anchored by 1 = *much more negative* and 5 = *much more positive*.

Finally, participants completed the Rosenberg (1965) self-esteem scale. On this self-report scale, respondents indicate their agreement or disagreement with 10 self-relevant statements such as "All in all, I am inclined to feel that I am a failure." The scale has been shown to have strong internal consistency, reliability and validity, and is one of the most widely administered measures of self-esteem in psychology (Blascovich & Tomaka, 1993).

Results

Reliability among judges

The levels of agreement or reliability characterizing the ratings of traits and behaviors, and judgments of change across participants were assessed by Cronbach's alpha. Although this procedure usually looks at the degree of interrelatedness among a set of items over a group of judges, following Rothbart and Park (1986), we reversed items and judges, and looked at the degree of agreement among judges over the set of 133 trait items. The coefficient alpha values for each of the ratings or judgment featured in the study are presented in Table 1. The statistics for the three trait ratings were taken from Rothbart and Park. The statistics for the baserate of correspondent behavior were taken from Sanbonmatsu et al. (2015).

The coefficient alpha values for all of the measures ranged from .81 to .93 which indicated high overall agreement across participants. The high levels of reliability across participants in the judgments of change in trait attributions to others, mistakes in trait attributions to others, and change in trait attributions to self over the set of 133 traits indicates that there was considerable consistency across participants in their perceptions of which trait attributions changed and did not change. Note that we imputed the mean judgment across all judges and traits in instances where values were missing. Because this imputation could not capture the interrelations between variables, it is likely to have lowered our estimates of reliability or agreement. Nevertheless, the Cronbach's alphas for the three measures of change were very high. The high levels of consistency across participants completing each survey diminishes concerns that any differences in the effects or patterns between measures stemmed from differences in participant variability.

Changes in trait beliefs about others and the self

The first set of analyses focused on the patterns of revision characterizing trait impressions of others and the self. Specifically, the analyses examined the extent to which changes in impressions of others and changes in impressions of the self vary as a function of trait favorability.

Changes in trait attributions to others

The mean frequency of change in trait impressions of others across traits was 1.49 (SD = .38) while the mean frequency of mistakes in trait impressions of others was 1.60 (SD = .32) on 4 point scales anchored by 0 = *never* and 3 = *many times*. As expected, the two measures were highly correlated, r = .92, p <.00001. The primary analyses focused on the measure of frequency of change in trait impressions of others because it was most similar to the measure of changes in trait impressions of the self.

The mean perceived change in trait impressions across participants was calculated for each trait. These means were converted to standard scores to create normative ratings of the frequency of

Table 1. Cronbach's alpha across judges for ratings of traits and behaviors, and attributions.

	Cronbach's Alpha	N
Favorability of trait*	.97	10
Frequency of trait*	.84	11
Instances needed to disconfirm*	.81	10
Baserate of correspondent behavior**	.87	40
Change in trait attributions to others	.90	49
Mistakes in trait attributions to others	.86	49
Change in trait attributions to self	.93	99

*Statistics from Rothbart and Park (1986)
**Statistics from Sanbonmatsu et al. (2015)

perceived change for each trait.[1] The normative ratings of change in impressions of others for each of the 133 traits are presented in the Appendix. Ahigher standard score indicates a higher frequency of perceived change. The correlation between these ratings and the normative ratings of trait favorability from the Rothbart and Park (1986) study was calculated. A higher standard trait favorability score indicates a more positive trait rating. The correlation between trait favorability and the frequency of change was significantly positive (see, Table 2), as positive trait impressions of others changed more than negative trait impressions. Note that the degrees of freedom in all of the correlational statistics was 131 because all of the analyses involved the identical set of 133 traits.

Changes in trait attributions to self

Participants indicated they still had a trait, they had a trait and changed, or they never had a trait on each of the 133 trait dimensions. On average, participants indicated that they never possessed 34.3% of the traits. Focusing on instances in which participants reportedly possessed a trait at some point in time, an average of 34.8% of their trait beliefs about the self changed. Thus, an average of 65.2% of their self-trait attributions did not change.

The percentage of participants indicating change in trait self-concepts on each dimension were converted to standardized scores with higher scores reflecting greater change. These normative ratings are presented in the Appendix. The correlation between the frequency of trait self-concept change and the ratings of trait favorability was highly negative (see, Table 2); participants were much more likely to report change in negative trait impressions of the self than change in positive trait impressions of the self.

The percentage of participants indicating that they never had a trait on each dimension were also converted to standardized scores with higher scores reflecting a higher percentage of participants never possessing the trait. The correlation between trait favorability and the percentage of participants never having a trait was −.719, $p < .0001$, $R^2 = .52$, 95% CI = [−.84, −.60]. Thus, participants were much more likely to report never having a negative trait than never having a positive trait.

Table 2. Correlations between change in trait attributions and trait inference variables.

	Change in trait impressions of others	Change in trait impressions of self
Favorability of trait	.25**	−.86***
	(.06)	(.75)
	[.08, .42]	[−.95, −.78]
Frequency of trait	.30***	−.24**
	(.09)	(.06)
	[.13, .46]	[−.41, −.08]
Baserate of correspondent behavior	.41***	−.25**
	(.17)	(.06)
	[.25, .57]	[−.41, −.08]
Instances needed to disconfirm	−.38**	.66***
	(.14)	(.44)
	[−.54, −.22]	[.53, .79]

R^2 in parentheses
CI in brackets
N = 133
** $p < 0.01$, *** $p < .001$

[1] Sanbonmatsu et al. (2015) misreported that the calculation of the normative ratings of the baserate frequency of trait consistent behavior, the expectation of trait consistent behavior by persons with the trait, and the other trait related judgments in their study began with the conversion of each participant's judgments to standard scores. In actuality, the mean judgments across judges for each trait dimension were calculated first. These means were then converted to standard scores. Hence, the procedure used in determining the normative ratings in the present and Sanbonmatsu et al. (2015) studies differed from that of the Rothbart and Park (1987) study. However, it should be noted that the correlations between the ratings resulting from the two methods of calculation were extremely high.

What makes trait impressions of others susceptible to change?

The second set of analyses examined why some trait impressions of persons tend to change while others remain stable. In particular, the analyses focused on the role of the baserate of correspondent behavior, trait frequency, and the perceived diagnosticity of trait inconsistent behavior in revisions of trait impressions of others.

Baserate of correspondent behavior

The standard scores of the baserate of correspondent behavior associated with each trait were taken from Sanbonmatsu et al. (2015). Larger standard scores reflect a higher perceived frequency of trait-consistent behavior relative to trait-inconsistent behavior. Changes in trait beliefs about others were highly positively correlated with the baserate of correspondent behavior (see, Table 2). Traits attributions are more apt to change if trait-inconsistent (disconfirming) behavior is relatively infrequent and trait-consistent behavior is frequent

Trait frequency

The standard scores of perceived trait frequency generated by Rothbart and Park (1986) were used in the analyses. Larger standard scores are indicative of higher perceived frequency. As expected, perceived trait frequency was significantly correlated with the likelihood of change suggesting that common or frequent trait impressions are revised more often than uncommon trait impressions.

Behavioral instances needed to disconfirm a trait

The standard scores of the number of instances needed to disconfirm a trait were taken from Rothbart and Park (1986). Larger scores indicate a greater number of behavioral instances needed for disconfirmation. Rothbart and Park (1986) suggested that changes in trait attribution should be determined by the diagnosticity of disconfirming evidence as reflected by the number of instances needed to disconfirm a trait. Consistent with their theorizing, the amount of evidence needed for disconfirmation was negatively correlated with the likelihood of change in trait beliefs about others. As the number of instances needed to disconfirm a trait decreases, the likelihood of change increases. For example, the belief that a person is cruel is not readily subject to change ($z = -.71$) as a large amount of evidence is needed to disconfirm the trait ($z = 1.16$). In contrast, the belief that a person is polite tends to change more frequently ($z = .31$) as much less evidence is needed for disconfirmation ($z = -1.18$).

Why the baserate of correspondent behavior is predictive of change in trait attributions

The foregoing analyses suggests two reasons why the frequency of trait-consistent behavior relative to trait-inconsistent behavior is strongly predictive of change in trait impressions of others. First, prior research by Sanbonmatsu et al. (2015) revealed a strong positive correlation between the baserate of correspondent behavior and trait frequency. When trait consistent behavior is common relative to trait inconsistent behavior, people are more likely to form correspondent impressions. Trait impressions that are more prevalent, of course, are more apt to change. Hence, there may be a strong correlation between the baserate of correspondent behavior and change in trait attributions because more frequent correspondent behavior increases the commonality of traits.

Second, the findings of Sanbonmatsu et al. (2015) suggest that the baserate of correspondent behavior determines the amount of evidence needed for disconfirmation. The number of instances needed to disconfirm a trait, in turn, determine the likelihood of change. When trait-inconsistent behavior is infrequent, it is less expected of persons with the trait, and is perceived to be highly diagnostic (Sanbonmatsu et al., 2015). Consequently, when disconfirming behavior is observed, it may be more likely to lead to change in trait impressions. In contrast, when disconfirming behavior is relatively common, it is expected even of persons having the trait and may have less effect on trait beliefs.

An analysis was performed to test whether the relation between the frequency of correspondent behavior and the likelihood of change is multi-mediated by the number of instances needed for

disconfirmation and trait frequency. The bootstrapping analysis (N = 133, 10,000 bootstrap resamples) indicated that this relation was partially mediated by the number of instances needed for disconfirmation (indirect effect = .08, SE = .04, 95% CI = .026 to .167) but not by trait frequency (indirect effect = .04, SE = .09, 95% CI = −.135 to .231). The total effect of the frequency of correspondent behavior on change remained significant when the potential mediators were included in the model (direct effect = .290, SE = .115, 95% CI = .062 to .518). Thus, it appears that the baserate of correspondent behavior determines the likelihood of change primarily by affecting the perceived diagnosticity of behavior. Note that the mediation analyses do not demonstrate that the frequency of a trait is not a contributor to change in trait attribution. Rather, they fail to show that trait frequency mediates the impact of the frequency of correspondent behavior on trait attribution revisions.

Why are positive trait beliefs about others more likely to change than negative trait beliefs?

Sanbonmatsu et al. (2015) showed that positive trait correspondent behavior occurs far more frequently than negative trait correspondent behavior. Because they are less common and more diagnostic, negative correspondent behaviors may disconfirm positive trait attributions more than positive correspondent behaviors disconfirm negative trait attributions. Positive trait beliefs may also be more apt to change because they are more common as a result of the greater frequency of positive trait correspondent behavior relative to negative trait correspondent behavior.

A mediation analysis tested whether the baserate of correspondent behavior mediates the relation between the favorableness of trait impressions and change. Bootstrapping (N = 133, 10,000 bootstrap resamples) indicated that the baserate of correspondent behavior fully mediated this relation (indirect effect = .09, SE = .04, 95% CI = .026 to .181). The total effect of the favorableness of trait attributions on change became non-significant when the baserate of correspondent behavior was included in the model (direct effect = .153, SE = .079, 95% CI = −.0036 to .309). Thus, it appears that positive trait attributions are more likely to change than negative trait attributions because of differences in the frequency of correspondent (trait-consistent relative to trait- inconsistent) behavior.

What makes trait impressions of the self susceptible to change?

The third and final set of analyses attempted to explain the patterns of revision of trait self-concepts. In particular, the analyses examined if the factors contributing to changes in trait impressions of others similarly lead to changes in trait impressions of the self. The roles of self-evaluation processes and self-esteem were also explored.

Baserate of correspondent behavior

Changes in trait beliefs about the self were highly negatively correlated with the baserate of correspondent behavior. Trait self-concepts were more apt to change if trait-inconsistent behavior is frequent relative to trait-consistent behavior. This relation, of course, is opposite the relation observed between correspondent behavior and revisions of trait impressions of others.

Trait frequency

The frequency of traits was negatively correlated with the likelihood of change in trait impressions of the self. The less common the trait, the more trait self-concepts tended to change. This was also different from the relation observed between trait frequency and revisions of trait impressions of others.

Behavioral instances needed to disconfirm a trait

Changes in trait beliefs about the self were highly negatively correlated with the diagnosticity of disconfirming behavior. As the number of instances needed to disconfirm a trait increased, the likelihood of likelihood of change in trait impressions of the self actually increased.

Why are changes in trait impressions of the self associated with less frequent correspondent behavior, less common traits, and less diagnostic trait-inconsistent behaviors?

The trait inference factors examined in our study were associated with changes in trait self-concepts and changes in trait concepts of others in nearly opposite ways. The correlations between revisions of trait impressions of the self, and the frequency of correspondent behavior, the diagnosticity of trait-inconsistent behavior, and trait frequency appear to be driven primarily by trait favorability. People tend to be motivated and inclined to believe that their personal traits become less negative and more positive over time. Because perceived change is greater for negative traits which are less common, changes in trait beliefs about the self are negatively correlated with trait frequency. Because perceived change is greater for negative traits which are disconfirmed by positive correspondent behaviors that are more common and less diagnostic, changes in trait beliefs about the self are associated with trait-inconsistent behaviors that are more common and less diagnostic.

Thus, the dynamics of reported changes in trait impressions of the self and changes in trait impressions of others appear to be very different. Again, we believe that the baserate and diagnosticity of correspondent behavior, and trait frequency determine which trait beliefs about others change. In our view, these dynamics operate independently of the favorableness of the trait. In contrast, we believe that the negative correlation between change in trait beliefs about the self, and these trait inference variables are the consequence of the motivation to see trait self-concepts more positively.

Evidence for these very different processes is provided by Table 3, which presents the partial correlations between the trait inference variables and changes in trait attribution with trait favorability controlled. When the favorableness of traits is held constant, the correlations between revisions of trait impressions of others and the frequency of correspondent behavior, trait frequency, and the number of instances to disconfirm remain largely the same (i.e., they are similar to Table 2). Indeed, z-score comparisons revealed that there were no significant differences between the correlations with trait favorability controlled and not controlled, all z's < .75.

In contrast, the correlations between revisions of trait impressions of the self and the frequency of correspondent behavior, trait frequency, and the number of instances to disconfirm largely disappeared when trait favorability was controlled. Z score comparisons of the correlations revealed that when trait favorability is included as a covariate, the correlation between revisions of self-trait attributions and trait frequency ($z = 2.39$, $p = .017$), the baserate frequency of correspondent behavior ($z = 1.57$, p = .117), and the number of instances to disconfirm ($z = 5.01$, $p < .001$) tended to be lower. Thus, the relations between the trait inferences variables and changes in trait impressions of the self appear to be the incidental result of perceiving greater change in negative trait self-concepts than positive self-concepts.

General changes in self over time and self-esteem

Because of an experimental mix-up, only 46 participants completed the self-esteem scale and the two measures of general changes in self. The mean favorableness of participants' reported changes in their overall impressions of themselves over time was 3.67 (SD = .905) which was significantly more positive than the midpoint of 3, $t(44) = 4.94$, $p < .001$, $d = .74$, difference from 3.0 = .67, 95% CI = [.39, .94].

Table 3. Partial correlations between change in trait attributions and trait inference variables with trait favorability controlled.

	Change in trait impressions of others	Change in trait impressions of self
Frequency of trait	.24**	.05
	(.06)	(.00)
Baserate of correspondent behavior	.37***	−.06
	(.14)	(.00)
Instances needed to disconfirm	−.30***	.17*
	(.09)	(.03)

R^2 in parentheses
N = 133
* p = 0.05, ** p < 0.01, *** p < .001

Thus, overall impressions of self were reportedly more favorable over time. The mean favorableness of participants' reported changes in their beliefs about their personal traits was 3.70 (SD = .866) which was also significantly more favorable than the midpoint of 3, $t(45) = 5.45$, $p < .001$, $d = .81$, difference from 3.0 = .70, 95% CI = [.44, .95]. Thus, trait self-concepts were reportedly more favorable over time. Not surprisingly, the two scales of self-change were significantly correlated with one another, $r(43) = .442$, $p = .002$. Thus, following the pattern of reported revision in specific self-trait attributions, participants generally perceived that their views of themselves and their traits were more positive presently than in the past.

The role of self-esteem in the revision of trait attributions to the self was explored. The relation between changes in specific trait self-concepts and self-esteem was examined by first calculating the correlation between the change in trait beliefs and trait favorability across the 133 trait dimensions in each participant. These correlations reflected the favorableness of each participants' change in trait self-concepts, with a higher correlation indicating greater change in positive traits than negative traits.

The mean correlation between self-esteem and the correlational index of the favorableness of change in trait self-concepts was highly significant, $r(44) = -.524$, $p < .001$, $R^2 = .27$, 95% CI = [−.78, −.26]. Thus, as self-esteem increased, participants reported greater change in negative than positive trait self-attributions. Paralleling this finding, the single item measure of the favorableness of participants' perceptions of the changes in their personal traits over time was positively correlated with self-esteem, $r(44) = .366$, $p = .012$, $R^2 = .13$, 95% CI = [.08, .65]. Thus, increases in self-esteem were associated with the tendency to perceive positive changes in trait self-concepts across the two measures. Self-esteem was not significantly correlated with the favorableness of revisions of overall impressions of the self, $r(43) = .189$, $p = .213$. $R^2 = .01$, 95% CI = [−.11, .49].

Discussion

Trait impressions of others appear to become more negative over time. Participants in our study reported greater change in the perceived positive traits of others than in the perceived negative traits. This finding is consistent with prior research that has shown that evaluations of other persons become increasingly unfavorable (e.g., Denrell, 2005; Norton et al., 2007). Our study contributes to this literature by showing greater negativity in attributions across a broad spectrum of traits.

In contrast, specific trait impressions of the self appear to become more favorable over time. Participants in our study were more likely to report changes in their negative traits than in their positive traits. In addition, they reported that their views of their traits were generally more favorable over time. Thus, revisions in trait attributions to the self do not parallel revisions in trait attributions to others. This lack of concordance suggests that reported changes in trait conceptions of others and changes in trait self-concepts are not grounded in the same behavioral evidence and attributional change processes.

Our research also revealed much about why trait impressions of others are subject to revision and why positive trait impressions change more than negative trait impressions of others. Trait attributions that are more common are more likely to change. Trait attributions of others are also more apt to be revised when the baserate of correspondent (trait-consistent) behavior is high and the baserate of trait-inconsistent behavior is low. The mediation analysis suggests that when trait-inconsistent (disconfirming) behavior is infrequent, the perceived diagnosticity of disconfirming behavior is high which contributes to greater change in trait attributions.

The findings indicate that positive trait impressions of others are more likely to change than negative trait impressions because they are more common. Perhaps more importantly, positive attributions are more apt to change because (disconfirming) negative trait-related behavior is less frequent and expected, and, hence, more heavily weighted than positive trait-related behavior. In contrast, negative trait attributions are more resistant to change because disconfirming socially

desirable behavior tends to be commonplace and lacking in perceived diagnosticity. The mediation analysis confirmed that positive trait attributions are more subject to change than negative trait attributions because of differences in the frequency of correspondent (trait-consistent relative to trait-inconsistent) behavior.

Changes in trait attributions to the self appear to be driven by very different processes. The frequency and diagnosticity of disconfirming behavior, and trait frequency were correlated with revisions of trait impressions of the self in a manner opposite that of change in trait impressions of others. The covariation analyses suggests that these correlations were the consequence of the widespread tendency to revise negative rather than positive trait beliefs about the self. These changes in self-attribution are likely to have been driven by the need to perceive the self favorably and by the motivation to see the current self as better than before (e.g., Sedikides & Strube, 1995; Taylor et al., 1995).

The revision of self-conceptions of negative traits rather than positive traits may also result from changes in self-worth over time. Our study revealed that the favorableness of reported changes in trait self-attributions is associated with higher self-esteem. As we reviewed, self-esteem generally increases over the life span before diminishing in old age (Robins & Trzesniewski, 2005). Revisions in trait impressions of the self may parallel the changes in self-esteem through bidirectional causal effects, and the influence of life changes in factors such as status, skills, and relationships.

Research indicates that positive information is generally less diverse and more similar than negative information (Unkelbach et al., 2019). This suggests that when a change in a positive trait attribution to others or the self occurs, it is likely to be paralleled by changes across a number of related positive trait dimensions. In contrast, because of greater differentiation, a change in negative attribution is more apt to be limited to a single or narrow set of trait dimensions.

A strength of the methodology of the reported study is our measurement of attributional processes and changes across a large and broad spectrum of trait dimensions. Most social cognitive studies examine the dynamics of attribution in, at most, a handful of traits. This is problematic, because the test traits often vary in terms of qualities such frequency and familiarity that typically have unaccounted effects on the observed processes and outcomes. By investigating changes in impressions across nearly all of the most common trait categories or dimensions, concerns about the generality of the findings across traits were minimized.

Caution is warranted in directly comparing the changes in attributions to others and changes in attributions to the self because of basic differences in the measures and cohorts. Although the questionnaires were completed by students in the same participant pool at the same institution, they were administered in different years. Moreover, the measure of others assessed perceived changes in trait attributions to many people whereas the measure of the self necessarily assessed perceived changes in trait attributions to one person. A related difference was that the measure of others featured four response options (never, one, a few, many) while the measure of self was binary in that it assessed change or no change in attributions. The process of recalling instances of change in many persons on a trait dimension may be different from the process of recalling change in one person. In future research it might be better to get measures of changes in attributions to individual others using the same scale that is used to assess changes in attributions to the self. However, it will be difficult to identify and measure changes in trait attributions to the entire set of persons that a participant knows and has known.

Changes in trait beliefs were not determined through the comparison of trait attributions measured at different points in time. Instead, revisions were measured retrospectively. Thus, our study examined perceived changes rather than actual changes in trait attributions. Perceptions of change may be influenced by the misremembering or reconstruction of previous impressions (e.g., Wilson & Ross, 2001), the development of new general attitudes toward others or the self, and by the motivation to see present personal traits as an improvement over past traits. While it will be important for future studies to examine whether there are real changes in trait attributions over time, perceptions of change may be what matters most. It is perceived change in the traits of others that may affect interpersonal relations and perceived changes in the traits of self that may guide decision making.

The tendency to form more favorable views of the traits of self and more negative views of the traits of others is unlikely to benefit relationships. Attachment theory (e.g., Bartholomew & Horowitz, 1991) suggests that the combination of negative conceptions of others and positive conceptions of self may contribute to dismissive behavior toward others. In particular, individuals who develop increasingly negative impressions of others' traits relative to their own traits may become more avoidant of interaction (e.g., Denrell, 2005) and less tolerant, engaging, and intimate. These changes in perception may also affect social influence and decision making. Specifically, they may lower the willingness to follow the example and advice of others and lead some persons to rely more on their own bad judgment. Finally, increasingly unfavorable trait conceptions of others and favorable trait conceptions of self are not likely to foster good will toward the less fortunate. The support and assistance provided to others may diminish as negative outcomes are attributed more to unfavorable dispositions rather than unfavorable situations.

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Appendix Ratings of 133 Traits on Six Scales

Traits	Change in trait impressions of others	Change in trait impressions of the self	Trait favorability	Base rate of correspondent behavior	Number of instances to DISCONFIRM trait	Trait frequency
Adventurous	−0.08	−0.93	1.27	−0.11	0.17	0.02
Aggressive	−0.27	1.42	−0.36	−0.68	0.89	0.46
Alert	−0.30	−0.62	0.99	0.74	−0.55	1.36
Ambitious	0.55	−0.96	0.89	0.55	0.35	1.43
Argumentative	−0.02	0.31	−0.59	0.23	0.98	0.55
Arrogant	0.87	1.41	−0.96	−0.47	0.53	−0.07
Artistic	−0.21	−0.25	0.89	−0.82	0.89	−0.24
Average	0.55	0.12	−0.08	2.44	−0.37	1.61
Benevolent	−0.37	−1.00	0.54	−0.59	0.00	−0.27
Boastful	−0.59	1.09	−1.10	0.52	0.98	0.73
Boring	1.57	0.39	−1.24	−0.26	−0.82	−0.50
Brilliant	−0.14	−0.39	1.31	−1.51	0.08	−2.17
Candid	−0.92	−1.11	0.23	−0.67	−0.73	−0.95
Complainer	−1.03	0.98	−1.20	2.20	0.98	1.43
Compulsive	−0.97	0.71	−0.65	0.37	0.98	−0.07
Conceited	1.06	1.27	−1.29	−0.59	0.80	0.64
Conservative	1.00	0.31	0.06	0.37	−0.01	1.25
Considerate	1.38	−1.21	1.45	0.56	1.81	0.64
Conventional	−0.73	−0.28	0.01	1.15	−0.10	1.18
Courteous	0.28	−1.44	1.41	0.51	−1.00	0.73
Cowardly	−0.88	0.99	−1.10	−0.38	−0.82	−1.04
Cruel	−0.71	1.51	−1.80	−2.29	1.16	−1.57
Cunning	−0.95	−0.29	−0.04	−0.84	0.44	−0.60
Deceitful	0.05	0.73	−1.58	−0.87	1.88	−0.84
Deceptive	−0.11	0.60	−1.01	−0.90	2.42	−0.60
Decisive	−0.40	0.54	0.89	0.14	−0.64	0.21
Dependable	1.95	−1.24	1.54	0.60	−1.72	0.37
Dependent	−0.08	0.82	−0.41	0.86	0.53	0.55
Eccentric	−0.69	−0.45	−0.41	−1.55	0.98	−1.47
Efficient	0.68	−0.74	1.13	0.48	−0.10	0.02
Energetic	−0.52	0.79	1.13	0.65	0.26	0.64
Evasive	−1.22	0.34	−0.92	−0.35	0.89	−1.47
Faithful	0.26	−0.87	1.45	0.60	−1.81	0.55
Flirtatious	0.55	0.23	−0.31	1.36	1.16	1.34
Forgiving	1.00	−0.98	1.50	−0.55	−1.27	0.37
Frivolous	−1.65	0.47	−0.37	−0.28	0.35	0.21
Frugal	0.28	−0.06	0.12	−0.89	−0.55	−0.09
Generous	0.74	−0.79	1.13	0.10	−0.64	−0.33
Gentle	0.05	−1.22	1.50	0.10	−1.45	0.28
Gluttonous	−0.96	0.35	−1.11	1.04	0.71	−0.42
Good-natured	1.57	−1.36	1.27	1.66	−0.10	1.61
Greedy	0.11	1.04	−1.52	1.56	1.16	0.73
Happy-go-lucky	0.67	−1.61	0.52	−1.17	−0.28	−0.07
Honest	1.32	−1.24	1.68	0.77	−2.50	1.08
Hostile	−1.28	1.14	−1.34	−1.97	1.43	−0.69
Humble	1.13	−0.97	0.29	−0.70	−0.91	−1.66
Humorless	−0.14	0.85	−1.38	−0.41	−0.46	−1.82

(*Continued*)

(Continued).

Traits	Change in trait impressions of others	Change in trait impressions of the self	Trait favorability	Base rate of correspondent behavior	Number of instances to DISCONFIRM trait	Trait frequency
Ignorant	0.93	2.03	−1.29	0.49	0.62	−0.85
Illogical	0.54	0.98	−1.20	−0.10	0.26	0.28
Imaginative	−0.90	−0.42	1.27	−0.20	0.80	0.46
Imitative	−1.16	0.66	−0.83	1.05	0.53	1.70
Impulsive	−0.46	0.26	0.24	0.18	0.53	0.46
Independent	0.43	−1.27	1.13	1.20	−0.64	1.08
Individualistic	−0.24	−0.96	0.94	0.27	−0.46	−0.14
Industrious	−1.52	−0.87	0.99	−0.49	−0.37	−0.14
Innocent	0.87	1.51	0.10	−0.18	−0.71	−0.95
Intelligent	2.14	−1.00	1.36	0.47	−0.82	0.64
Intolerant	−0.30	1.38	−1.20	−0.23	0.71	−0.69
Jealous	0.74	0.61	−0.69	0.72	0.17	1.87
Jovial	−1.59	−0.12	1.02	0.75	−0.19	0.46
Kind	1.76	−1.41	1.59	1.69	−1.72	1.34
Lazy	0.81	0.43	−1.20	1.57	0.98	0.73
Loud	−0.78	0.45	−0.45	0.28	0.89	0.55
Malicious	−1.19	1.81	−1.52	−2.24	1.07	−1.11
Materialistic	0.43	0.54	−0.73	2.02	0.26	2.14
Meditative	−1.98	−0.70	0.20	−1.78	0.44	−1.11
Methodical	−1.58	−1.07	0.10	0.18	−0.46	−0.78
Meticulous	−0.82	−0.60	0.03	−1.20	−1.27	−2.01
Naïve	−0.08	1.66	−0.73	0.28	0.08	−0.50
Neat	0.54	−0.46	0.99	−0.38	−0.10	1.08
Old-fashioned	−1.98	0.57	−0.13	−1.95	−0.28	−0.33
Open-minded	1.63	−1.48	1.54	−0.52	−1.00	0.46
Outgoing	0.30	−0.10	0.80	0.98	0.53	0.90
Overbearing	0.36	1.20	−1.06	−0.90	0.62	−0.33
Passionate	0.17	−0.83	0.62	0.61	−0.73	0.46
Perceptive	0.15	−1.29	1.31	−0.10	−0.91	0.02
Persistent	−0.78	−0.82	0.34	0.51	−0.82	0.46
Phony	0.09	1.25	−1.57	0.67	1.52	0.11
Pleasant	0.93	−1.12	1.40	1.86	−0.91	2.05
Pleasure-loving	−0.67	−1.04	0.85	1.54	0.35	2.22
Polite	0.31	−1.52	1.22	1.60	−1.18	1.18
Ponderous	−1.08	−1.30	0.06	−0.93	−0.30	−0.50
Practical	0.09	−1.23	1.08	0.62	−0.46	1.18
Progressive	−1.16	−1.13	0.94	0.61	−0.73	−0.76
Proud	−0.40	0.06	0.24	1.45	−0.19	2.14
Quarrelsome	−0.52	0.95	−1.10	−0.56	1.16	−0.33
Quick-tempered	−0.40	0.93	−1.10	0.20	1.16	0.46
Quiet	1.19	0.07	0.24	0.01	−0.55	0.21
Radical	−1.52	0.17	−0.17	−1.87	0.98	−0.95
Resentful	−0.14	1.29	−0.87	−0.63	0.89	0.02
Reserved	0.68	−0.46	0.01	0.42	−0.82	0.28
Revengeful	−1.34	1.24	−1.48	−0.47	1.25	−0.60
Righteous	0.30	−0.14	−0.22	−0.06	−0.19	−0.78
Rigid	−0.84	0.94	−0.78	−0.31	−0.46	−0.69
Romantic	0.49	−0.69	0.80	0.44	−0.28	0.46
Rude	1.76	1.69	−1.66	−0.93	1.52	0.02

(*Continued*)

(Continued).

Traits	Change in trait impressions of others	Change in trait impressions of the self	Trait favorability	Base rate of correspondent behavior	Number of instances to DISCONFIRM trait	Trait frequency
Self-confident	1.06	−0.58	1.17	0.60	−0.46	0.21
Selfish	1.19	0.95	−1.34	2.03	0.62	0.83
Sensitive	0.86	−0.71	1.08	0.36	−1.18	0.46
Sensual	−1.40	−0.72	1.17	0.18	0.08	0.73
Shallow	0.87	1.33	−1.34	0.50	0.35	−0.50
Shrewd	−0.98	−0.54	0.18	−1.49	−0.37	−0.50
Shy	1.19	0.75	0.10	−0.14	−1.09	1.08
Sincere	2.08	−1.25	1.40	0.83	−1.36	1.25
Skeptical	−0.33	−0.39	0.01	0.81	−0.01	1.25
Sly	−1.03	−0.18	−0.64	−1.29	1.43	−0.69
Smug	−0.56	1.38	−0.95	−0.97	1.16	−0.66
Somber	−0.86	−0.07	−0.03	−1.32	−0.10	−0.84
Sophisticated	0.49	−1.10	0.38	−0.80	−1.27	−0.95
Spiteful	−0.40	1.40	−1.24	−1.42	1.34	0.02
Sportsmanlike	−0.75	−1.23	1.27	0.46	−0.73	1.25
Straightforward	−0.27	−0.95	1.08	−1.07	−0.82	−0.07
Stubborn	0.24	0.07	−0.73	0.86	0.62	1.18
Stupid	1.38	1.60	−1.06	0.49	−0.46	−1.30
Suave	−1.23	−0.10	0.29	−0.22	−1.72	−1.57
Suggestible	−1.01	0.26	0.20	0.40	0.44	−0.07
Superstitious	−2.05	0.81	−0.64	−0.84	0.44	−0.50
Suspicious	−0.14	0.55	−0.64	−0.49	0.89	0.83
Talkative	−0.23	0.15	0.29	0.80	0.26	1.18
Thoughtful	−1.48	1.00	1.22	0.09	−1.63	0.37
Tough	−0.63	1.00	0.01	0.78	−0.91	−0.07
Treacherous	0.98	−2.11	−1.32	−2.35	1.43	−1.92
Trustworthy	−1.37	1.51	1.54	0.77	−1.81	0.99
Truthful	−1.29	1.63	1.45	0.35	−2.44	0.99
Understanding	−1.48	1.19	1.68	0.67	−1.27	0.64
Unethical	1.40	−0.84	−1.15	−1.08	2.06	−0.84
Uninhibited	0.79	−0.77	0.80	−1.44	−0.37	−1.20
Unreliable	1.30	1.19	−1.52	−0.45	1.52	−0.42
Untruthful	1.45	0.62	−1.66	−0.16	1.43	−0.85
Very religious	0.20	1.95	−0.55	0.36	−1.18	−1.47
Violent	2.10	−1.67	−1.61	−2.23	2.69	−0.08
Wise	−1.19	0.62	1.36	−0.45	−0.46	−1.47
Witty	−0.84	−0.40	1.13	−0.49	0.62	−0.51