
Neuroticism and Attitudes Toward Action in 19 Countries

Journal of Personality 83:3, June 2015
© 2014 Wiley Periodicals, Inc.
DOI: 10.1111/jopy.12099

Molly E. Ireland,¹ Justin Hepler,² Hong Li,³ and Dolores Albarracín⁴

¹Texas Tech University

²University of Nevada, Reno

³Battelle Center for Analytics and Public Health

⁴University of Pennsylvania

Abstract

Although individuals scoring high on Neuroticism tend to avoid taking action when faced with challenges, Neuroticism is also characterized by impulsivity. To explore cognitive biases related to this costly behavior pattern, we tested whether individuals who rated themselves as higher in Neuroticism would evaluate the general concepts of action and inaction as, respectively, more negative and positive. We further investigated whether anxiety and depression would mediate and individualism-collectivism would moderate these relations in a large international sample. Participants ($N = 3,827$ college students; 69% female) from 19 countries completed surveys measuring Neuroticism, attitudes toward action and inaction, depression, anxiety, and individualism-collectivism. Hierarchical linear models tested the above predictions. Neuroticism negatively correlated with attitudes toward action and positively correlated with attitudes toward inaction. Furthermore, anxiety was primarily responsible for emotionally unstable individuals' less positive attitudes toward action, and individuals who endorsed more collectivistic than individualistic beliefs showed a stronger negative association between Neuroticism and attitudes toward action. Researchers and practitioners interested in understanding and remediating the negative consequences of Neuroticism should pay greater attention to attitudes toward action and inaction, particularly focusing on their links with anxiety and individualism-collectivism.

Neuroticism is a personality trait defined by the experience of chronic negative affect—including sadness, anxiety, irritability, and self-consciousness—that is easily triggered and difficult to control. It is unsurprising, then, that Neuroticism is reliably linked with negative life outcomes, including less satisfying relationships and more frequent divorces (Fisher & McNulty, 2008; Karney & Bradbury, 1995), as well as decreased subjective well-being and shorter life spans (Friedman, Kern, & Reynolds, 2010). In this study, we consider an issue of relevance for understanding and managing the fallout of Neuroticism: whether and under what conditions Neuroticism is associated with favorable or unfavorable cognitive representations of action and inaction.

Although the primacy of other Big Five traits has been called into question, Neuroticism (or Emotional Instability) has been consistently identified as a personality trait across nearly all personality frameworks. Before five-factor models (Goldberg, 1990; McCrae & Costa, 1987) reached near-consensus in personality, Eysenck (1947) included neuroticism as one of his two (and later three) major personality traits (Eysenck & Eysenck, 1977), and emotional stability was included as one of Cattell's (1946) 16 primary personality

factors. However, its seemingly contradictory facets have resulted in criticisms that Neuroticism is “an overinclusive, easy-to-invoke, societally evaluative wastebasket label for an unwieldy hodgepodge of quite different person-qualities” (Block, 2010, p. 9).

Indeed, Neuroticism is characterized by a number of heterogeneous negative emotions. Neuroticism is broadly defined as chronic negative affect and vulnerability that may manifest as depression, anxiety, irritability, moodiness, or impulsiveness (Costa & McCrae, 1995; DeYoung, Quilty, & Peterson, 2007; John & Srivastava, 1999). Vulnerability, or the tendency

We are grateful to the following for survey distribution and translation: Rong Su, Moon-Ho Ringo Ho, Sungjin Hong, Tarcan Kumkale, Jerome Rossier, Koorosh Massoudi, Huajian Cai, Sonia Roccas, Javier Arce-Michel, Cristina de Sousa, Rolando Diaz-Loving, Maria Mercedes Botero, Lucia Mannetti, Claudia Garcia, Pilar Carrera, Amparo Cabalero, Masatake Ikemi, Darius Chan, Allan Bernardo, Fernando Garcia, Inge Brechan, and Greg Maio. Thanks also to Chris Jones for his input throughout the preparation of this article.

Correspondence concerning this article should be addressed to Molly E. Ireland, MS 2051 Psychology Building, Department of Psychology, Texas Tech University, Lubbock, TX 79409. Email: molly.ireland@gmail.com.

to be easily upset, is central to the trait, whereas the particular negative emotions and behaviors that indicate Neuroticism vary between individuals and theories (Block, 2010). In other words, despite being commonly recognized as a major personality trait in both folk and academic psychology, Neuroticism appears to be relatively incoherent. Especially considering the negative life consequences associated with Neuroticism, it is critical that we improve our understanding of the cognitive representations that underlie emotionally unstable behavior patterns. In doing so, we may discover attitudes that Neuroticism and the negative emotions that define it have in common.

Many of the negative outcomes associated with Neuroticism hinge on emotionally unstable individuals' tendency to avoid acting when confronted with major and minor life stressors. Across both physical and mental challenges, Neuroticism is linked with disengagement and less active coping (Carver & Connor-Smith, 2010; Hirsh, DeYoung, & Peterson, 2009). For example, individuals who score higher on Neuroticism tend to exercise less (De Moor, Beem, Stubbe, Boomsma, & De Geus, 2006; Lochbaum, Litchfield, Podlog, & Lutz, 2012) and are less likely to adhere to prescribed health care regimens (Bruce, Hancock, Arnett, & Lynch, 2010; Jerant, Chapman, Duberstein, Robbins, & Franks, 2011; Wheeler, Wagaman, & McCord, 2012). Less emotionally stable individuals also have more negative attitudes toward major life transitions, such as relocation and changing jobs (Otto, Dalbert, & Luther, 2012), and experience worse health and more stress when these changes occur (Kling, Ryff, Love, & Essex, 2003). Accordingly, withdrawal and inhibition are described as key characteristics of Neuroticism in theories concerning the Big Five (DeYoung et al., 2007; John & Srivastava, 1999), behavioral approach and inhibition systems (Carver, Sutton, & Scheier, 2000), internalizing disorders (Settles et al., 2012), and temperament (Elliot & Thrash, 2010).

Although Neuroticism is broadly associated with a tendency toward inaction, it has also been linked with increased activity in certain contexts. Impulsivity is often included as a facet of Neuroticism alongside negative affect (Costa & McCrae, 1995; DeYoung et al., 2007). Impulsive actions are characterized by a lack of self-control (Carver, 2005; Cross, Copping, & Campbell, 2011) and include failures to plan, inattention, poorly regulated or uninhibited motor activity, and sensation seeking (Patton & Stanford, 1995; Reise, Moore, Sabb, Brown, & London, 2013). Impulsive behavior in response to stress specifically, or negative urgency, often takes the form of destructive actions such as alcohol abuse or aggression and is common among very emotionally unstable individuals (Settles et al., 2012). With respect to action and inaction, impulsive behavior often involves increased motor activity but can manifest as either action (e.g., drug abuse, shopping) or inaction (e.g., tardiness, lack of planning).¹

Emotionally unstable individuals tend to both avoid beneficial actions and act impulsively across diverse domains and circumstances. Thus, there appears to be a basic difference between how emotionally stable and unstable individuals

represent the general concepts of action and inaction. General action encompasses any cognitive or motor output and is not tied to a particular object or context (Albarracín et al., 2008; Albarracín, Hepler, & Tannenbaum, 2011; Laran, 2010). Accordingly, general action goals, or the desire to be active irrespective of the activity, can be satisfied by any expenditure of mental or physical energy (Albarracín & Handley, 2011; Albarracín & Hart, 2011; Albarracín et al., 2011; Hepler, Albarracín, McCulloch, & Noguchi, 2012; Hepler, Wang, & Albarracín, 2012). In contrast with the approach and avoidance framework (Carver & White, 1994), the desire to be active or "do something" does not necessarily indicate approach motivation, nor does the desire to be inactive always entail avoidance. Rather, action goals can be satisfied equally by both approach (e.g., engaging with an enemy) and avoidance (e.g., fleeing from a threat). Likewise, inaction goals can be reached by approaching (e.g., attending meditation class) or avoiding (e.g., closing one's office door) a desired state of inactivity.

The next step in investigating the link between Neuroticism and attitudes toward action and inaction is to identify which aspects of negative affectivity might be driving these attitudes. Two key psychopathologies that could decrease proactive behavior among emotionally unstable individuals are depression and anxiety. Depression is associated with less motivation to reach goals or rewards and decreased ability to inhibit negative thoughts that interfere with enjoyment of everyday activities (Gotlib, Krasnoperova, Yue, & Joormann, 2004). For anxious individuals, both actual and imagined action trigger fear and a sense of being out of control, resulting in withdrawal and inaction (Mogg & Bradley, 1998). Both anxiety and depression have been linked with inaction and are presumably associated with more negative attitudes toward action; however, anxiety appears to be more treatable through programs of gradually increasing activity levels in a feared or avoided domain (Deacon & Abramowitz, 2004; Hopko, Magidson, & Lejuez, 2011).

Just as behavioral manifestations of Neuroticism are sensitive to social context (Ireland & Mehl, in press; Mehl, Gosling, & Pennebaker, 2006), whether individuals express negative beliefs about action may depend on whether it is practical or socially acceptable to do so. Understanding cultural variation in how personality relates to attitudes may be particularly critical in studying Neuroticism, given its highly variable action tendencies and heterogeneous negative emotions. Individualism-collectivism is an individual difference that varies widely across countries and may moderate the link between Neuroticism and inaction, particularly in international samples (Singelis, Triandis, Bhawuk, & Gelfand, 1995). Interdependence, the cornerstone of collectivism, requires considering the social consequences of one's behavior before acting (Trafimow, Clayton, Sheeran, Darwish, & Brown, 2010). Behavioral consequences are an important determinant of attitudes (Ajzen & Fishbein, 2005), and elaborating on behavioral consequences results in more elaborated attitudes that may then be more predictive of behaviors (Fabrigar, MacDonald, &

Wegener, 2005). Because Neuroticism can be conceptualized as a behavioral syndrome, or a collection of related intentions and behaviors, Neuroticism-relevant attitudes may be more predictive of Neuroticism for collectivistic individuals.

In summary, emotionally unstable individuals have a complex and costly relationship with action and inaction. On one hand, they avoid action when it might benefit them. On the other hand, Neuroticism is associated with impulsivity and its negative consequences. This pattern of behavior raises the question of how emotionally unstable individuals represent and evaluate action and inaction at a general, conceptual level. Specifically, do emotionally unstable individuals dislike action, or do they have generally positive views of action despite alternately avoiding and suffering from it?

To begin investigating these questions, we assessed attitudes toward action and inaction and Neuroticism in a large sample of participants from 19 countries. We further tested potential psychopathological mediators (depression and anxiety) and a social moderator (individualism-collectivism) of the link between attitudes toward action/inaction and Neuroticism. Specifically, we predicted that (a) individuals with less positive attitudes toward action and more positive attitudes toward inaction would rank higher on Neuroticism, (b) both anxiety and depression would mediate this association, and (c) the link between attitudes toward action/inaction and Neuroticism would be stronger among those who rate themselves as more collectivistic and less individualistic.

METHOD

Across 19 countries in Europe, Asia, the Middle East, South America, Central America, and North America, 3,827 college students (2,626 female) participated in exchange for course credit. All surveys were translated from English and back-translated to ensure accuracy and readability in each country. Due to data entry errors, 16 participants were excluded from analysis.

Five surveys measured (a) *attitudes toward action and inaction* (McCulloch, Li, Hong, & Albarracín, 2012) in separate 11-item subscales,² including “Action is important in people’s lives” and “Inaction offers many benefits” (1 = *strongly disagree*, 7 = *strongly agree*); (b) *Neuroticism* using eight items from the Big Five Inventory (BFI; John & Srivastava, 1999), including “I see myself as someone who can be moody,” “worries a lot,” and “is depressed, blue” (1 = *strongly disagree*, 5 = *strongly agree*); (c) *anxiety* with the State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983), including state-anxiety items such as “I have disturbing thoughts” and trait-anxiety items such as “I feel inadequate” (1 = *almost never*, 7 = *almost always*); (d) *depression* using the Beck Depression Inventory (BDI-II; Beck, 1996), which includes 21 behavioral reports regarding the degree to which individuals engage in a number of dysphoric behaviors, such as crying and negative thoughts (e.g., 0 = *I do not feel I am worthless*, 3 = *I feel utterly worthless*); and (e)

individualism-collectivism using the Horizontal and Vertical Individualism and Collectivism Scale (Singelis et al., 1995), which includes items regarding individualism (e.g., “What happens to me is my own doing”) and collectivism (e.g., “I like sharing things with my neighbors”); 1 = *strongly disagree*, 9 = *strongly agree*). Individualism-collectivism was calculated as individualism scores minus collectivism scores to increase ease of interpretation. Multilevel confirmatory factor analyses (CFA) showed measurement equivalence across nations for each scale (all RMSEA < .10, CFI > .99, SRMR < .05; see Zell et al., 2012).

One country, Argentina, had low internal reliability for attitudes toward action ($\alpha = .38$). For the remaining countries, reliabilities for all scales ranged from acceptable to good ($\alpha = .52-.90$). Because analyses with and without Argentina yielded identical conclusions, results are reported with all 19 countries included.

Analytic Strategies

All analyses (main effects, mediation, and moderation) used hierarchical linear models (HLMs) that allowed slopes and intercepts to vary randomly between countries as follows:

$$Y_{ij} = \gamma_{00} + \gamma_{10}X_{ij} + u_{0j} + u_{1j}X_{ij} + e_{ij}$$

Where Y_{ij} represents individual i ’s Neuroticism score in country j , γ_{00} represents the intercept or the mean Neuroticism for all i individuals across j countries, γ_{10} represents the average beta coefficient relating a predictor to Neuroticism across all subjects and countries, u represents random country-level deviations from the fixed effects (γ_{00} and γ_{10}), and e_{ij} represents the error term, or individual i in country j ’s deviation from his or her predicted Neuroticism score. Including both random effects terms allows us to improve generalizability of regression models by taking into account how the observed relationships vary between countries. Specifically, random country-level intercepts allow for the possibility that mean attitudes toward action/inaction, anxiety, and depression vary between countries. Likewise, random country-level slopes were included to account for the variability in the strength of the relationship between attitudes toward action/inaction and Neuroticism between countries. Predictors and outcome variables were z -scored to increase the interpretability of beta weights.

Neuroticism is treated as the outcome in all regression models. Because the data are correlational and the relation between Neuroticism and attitudes toward action and inaction is presumably bidirectional, either variable could be considered as the outcome. However, we elected to use Neuroticism as the outcome variable for theoretical and practical reasons. Our interest in the link between Neuroticism and action/inaction was based on evidence that action avoidance is responsible for many of the trait’s negative life consequences. Individuals attempting to change this behavior pattern, in the

context of either counseling or self-talk, will presumably have more success in changing a specific attitude or mental health variable (e.g., anxiety) than changing a personality trait. Thus, construing attitudes toward action/inaction, anxiety, and depression as specific causal factors that lead to a more general pattern of emotionally unstable behavior made the most sense for our purposes.³

RESULTS

We first tested the prediction that individuals with less positive attitudes toward action (ATA) and more positive attitudes toward inaction (ATI) would be more emotionally unstable by regressing Neuroticism on both ATA and ATI separately. Results confirmed that ATA and ATI, respectively, correlated with Neuroticism negatively ($\beta = -0.09$, $SE = .02$, $t = 4.91$, $p < .001$) and positively ($\beta = 0.09$, $SE = .03$, $t = 3.19$, $p = .001$). For ATA, effects were negative in each country but were approximately zero ($\beta < .05$) in three (Argentina, Philippines, and Japan). For ATI, effects were positive in all but one country (United States) and were approximately zero in three others (Philippines, Norway, and China; see Table 1).

Notably, ATA and ATI themselves were unrelated ($\beta = 0.02$, $SE = .05$, $t = 0.32$, $p = .75$), consistent with the theory that action and inaction goals are independent dimensions rather than two ends of a spectrum (Albarracín et al., 2011). For example, enjoying exercise or hard work does not mean that one does not value the rest that makes those activities possible.

Table 1 Country-Level Random Effects of Attitudes Toward Action and Inaction on Neuroticism

Country	Action		Inaction	
	Intercept	β	Intercept	β
Argentina	0.25	-0.04	0.21	0.10
Bolivia	-0.02	-0.09	0.02	0.09
China	0.07	-0.07	0.05	0.04
Colombia	-0.11	-0.11	-0.06	0.11
Guatemala	-0.19	-0.13	-0.22	0.05
Hong Kong	0.04	-0.09	0.03	0.08
Israel	-0.25	-0.14	-0.20	0.12
Italy	-0.03	-0.10	0.04	0.16
Japan	0.48	-0.01	0.26	0.23
Mexico	-0.14	-0.11	-0.13	0.05
Norway	-0.16	-0.13	-0.14	0.04
Philippines	0.25	-0.04	0.22	0.02
Portugal	-0.10	-0.10	-0.08	0.12
Singapore	0.04	-0.08	0.04	0.11
Spain	0.15	-0.08	0.15	0.08
Switzerland	0.03	-0.08	-0.02	0.14
Turkey	-0.27	-0.17	-0.11	0.27
United States	-0.18	-0.12	-0.16	-0.04
Wales	0.13	-0.07	0.08	0.08

Note. Beta weights are regression coefficients for action and inaction from separate models, with predictors and the outcome standardized (z-scored).

In fact, attitudes toward action and inaction tend to be modestly positively correlated (McCulloch et al., 2012).

Before running additional analyses, we tested whether participant sex moderated any of the above results. Women tend to score higher on Neuroticism than men do and have also been found to manifest Neuroticism differently in everyday behavior (Mehl et al., 2006). Although, as expected, women reported more emotional instability than men did ($\beta = -0.21$, $SE = .08$, $t = -2.74$, $p = .006$), sex did not interact significantly with either ATA or ATI to predict Neuroticism, $ps = .231$ and $.060$, respectively. The marginal ATA \times Sex interaction was driven by the finding that women, but not men ($p = .186$), showed a positive association between ATI and Neuroticism ($\beta = 0.11$, $SE = .03$, $t = 3.53$, $p < .001$). As sex did not significantly moderate either ATI or ATA, we did not include that variable as a control in the models below; however, conclusions were identical when controlling for sex.

Mediation

Next, we explored depression and anxiety as possible mediators of the link between attitudes toward action/inaction and Neuroticism. ATA correlated negatively with depression and anxiety (both $ps < .001$), whereas ATI correlated with neither (both $ps > .28$). Next, depression and anxiety were each separately entered alongside ATA as predictors of Neuroticism. In the depression model, the effect of ATA decreased ($\beta = -0.05$, $SE = .02$, $t = -3.08$, $p = .002$), but both depression and ATA scores continued to significantly predict Neuroticism. In the anxiety model, the effect of ATA weakened to nonsignificance ($p > .24$), and anxiety continued to positively correlate with Neuroticism ($\beta = 0.64$, $SE = .01$, $t = 49.92$, $p < .001$). A bias-corrected bootstrap confidence interval (Selig & Preacher, 2008) indicated that anxiety mediated the neuroticism-action association (indirect effect = $-.06$, 95% CI $[-.08, -.03]$).

Moderation

We predicted that more individualistic and less collectivistic individuals would show a weaker association between attitudes toward action/inaction and Neuroticism. To test that prediction, we examined the main effects and two-way interactions of individualism-collectivism and attitudes toward action and inaction in two separate models. ATA interacted with individualism-collectivism ($p = .009$), but ATI did not ($p > .90$). To further test the possibility that the significant ATA \times Individualism-Collectivism interaction was driven by country-level norms concerning individualism and collectivism rather than individual tendencies, we also regressed Neuroticism on the interaction of mean country-level individualism-collectivism and ATA. That interaction did not approach significance ($p = .451$), suggesting that individual differences rather than differences between the social norms of each country were responsible for the moderation.

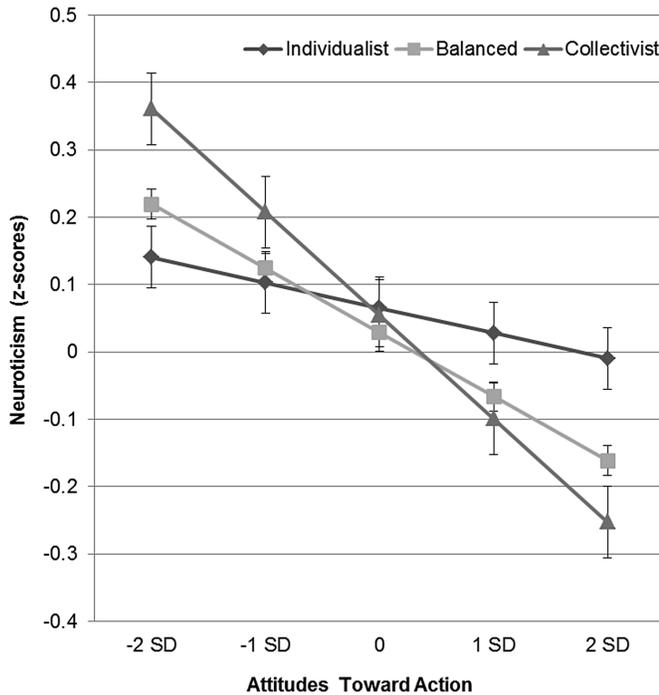


Figure 1 Predicted means from multilevel models regressing Neuroticism on attitudes toward action at low (collectivist), moderate (balanced), and high (individualist) levels of individualism-collectivism, as defined by z-scores. Error bars are standard errors.

Decomposing individualism-collectivism into high ($z > 1$), moderate ($-1 < z \leq 1$), and low ($z \leq -1$) groups demonstrated that the relation between ATA and Neuroticism was significantly negative for individuals who were more collectivistic than individualistic ($\beta = -0.15$, $SE = .05$, $t = -2.90$, $p = .004$) and balanced ($\beta = -0.10$, $SE = .02$, $t = -4.33$, $p < .001$), but not for those who were more individualistic than collectivistic ($\beta = -0.04$, $SE = .05$, $t = -0.82$, $p = .415$; see Figure 1). Although we treated individualism-collectivism as a single variable, conclusions were identical when each variable was treated as a separate dimension. That is, the association between ATA and Neuroticism was nonsignificant for those who were low in collectivism or high in individualism (both $ps > .05$), but it was significantly negative for all other groups ($p < .003$).

Notably, collectivists and individualists had similarly positive attitudes toward action overall. Individualism correlated positively with ATA ($\beta = 0.14$, $SE = .02$, $t = 5.47$, $p < .001$) and was uncorrelated with ATI ($p = .399$). Collectivism correlated positively with ATA ($\beta = 0.18$, $SE = .02$, $t = 9.61$, $p < .001$) and had a modest negative association with ATI ($\beta = -0.05$, $SE = .02$, $t = -2.08$, $p = .038$).

DISCUSSION

A large multicultural sample revealed that individuals with more positive attitudes toward inaction and more negative

attitudes toward action tend to be more emotionally unstable. The negative association between attitudes toward action and Neuroticism remained after controlling for depression but not anxiety. Furthermore, the individuals who showed the strongest association between negative attitudes toward action and Neuroticism were those higher in collectivism than in individualism.

Neuroticism is associated with avoiding action in a wide range of stressful circumstances, ranging from resistance to changes at work to noncompliance with medical regimens. In psychopathology in particular, Neuroticism is considered an internalizing disorder characterized by overcontrolled behavior (i.e., withdrawal and inhibition). However, Neuroticism is also linked with impulsivity, particularly in response to stress or distress. To arrive at a coherent understanding of Neuroticism, we must reconcile these behavior patterns. Given that behavior is largely driven by attitudes, the first step in resolving these contradictory tendencies is examining relevant attitudes. We have shown that Neuroticism is associated with more positive attitudes toward inaction and less positive attitudes toward action, and that the latter effect is mediated by anxiety.

These findings build on prior evidence that Neuroticism is associated with decreased activity across a broad range of behaviors (Hirsh et al., 2009), suggesting that emotionally unstable individuals do not avoid action despite acknowledging its usefulness but rather *represent* action less favorably and inaction more favorably than emotionally stable individuals do. Unlike prior research on attitudes associated with Neuroticism, these findings address attitudes toward general action and inaction rather than specific stressful activities (Otto et al., 2012). As general action and inaction goals predict a wide array of cognitive and motor actions (e.g., voting, exercise, eating; Albarracín et al., 2011; Hart & Albarracín, 2012; Noguchi, Handley, & Albarracín, 2011), attitudes about these goals have broad consequences for behavior across diverse contexts and cultures.

Mediation analyses suggested that emotionally unstable individuals' less positive attitudes toward action were driven primarily by anxiety rather than sadness or depression. As depression and anxiety are typically treated differently and have distinct diagnoses, these results have practical implications for emotionally unstable individuals desiring to overcome tendencies toward inaction. Theoretically, our findings suggest that those higher in Neuroticism avoid action—particularly when faced with life stressors—not because they are uninterested in action per se, as you might find among depressed individuals, but because they find the idea of action aversive or frightening. If fear rather than depression or disinterest is driving the negative association between Neuroticism and attitudes toward action, it would help to make sense of emotionally unstable individuals' tendency to either act impulsively or withdraw in the face of life stressors. That is, both failing to act and acting in maladaptive ways could be caused by a fear of cognitive (e.g., formulating a plan) and motor action (e.g., carrying that plan out).

A moderator analysis revealed that the predicted negative correlation between Neuroticism and attitudes toward action was stronger among individuals who were more collectivistic and less individualistic. The moderation was significant for individuals' self-reported individualism-collectivism but not countries' mean levels of these traits, suggesting that individual differences rather than geographic variation were primarily responsible for this pattern of results. The moderation by individualism-collectivism is consistent with the idea that individuals who are more collectivistic and thus more interdependent are more likely to elaborate on their emotionally unstable behavior patterns and therefore endorse attitudes that are consistent with those behaviors (Trafimow et al., 2010).

Although the moderator effects were driven by individual differences rather than variation across countries, we believe that these findings provide a useful first step in exploring social moderators that are theoretically relevant to the Neuroticism-action link. Specifically, assessing individual differences in interdependence and individuality, or related constructs such as agency/communion and independent/relational self-construals, may help to make sense of unexplained variance in the behavioral manifestations of Neuroticism. Individual-level studies may also benefit from studying whether Neuroticism that is characterized by socially triggered negative affect in particular, rather than generalized anxiety or depression, is more strongly associated with attitudes toward action among more collectivistic individuals. More broadly, at the level of social groups, future research may investigate whether the Neuroticism-action link varies as a function of social norms and structural variables that encourage or limit individual differences in action and inaction (e.g., gender equality, religion).

Although the correlational nature of our design makes any proposed explanatory mechanisms tentative, we provisionally assume that attitudes toward action and inaction are bidirectionally linked with Neuroticism and with anxiety in particular. Future experiments may investigate whether persuading individuals to have more positive attitudes toward action decreases self-reported Neuroticism, anxiety, and action avoidance. Although experimentally creating cultural, personality, and psychopathological variables experimentally is less feasible, longitudinal cross-cultural studies or experiments that highlight the salience of each characteristic to examine its effects on attitudes toward action may come closer to uncovering causal mechanisms. For example, a study might test the proposed collectivism moderation by manipulating the language of a survey to subtly highlight individualism or collectivism for individuals who identify with both collectivistic and individualistic cultures (see Ramírez-Esparza, Gosling, Benet-Martínez, Potter, & Pennebaker, 2006).

Our conclusions are additionally limited by the fact that participants' responses were entirely self-reported. Although using individual surveys rather than behavioral measures or informant reports made it more feasible to collect data across

several continents, it also limits the study to variables that participants are able to introspect on and forces us to rely on participants' own insights (Schwarz, 1999). Future research should complement self-reports with close others' opinions of participants' attitudes and personality traits (Vazire, 2006). This line of research would also benefit from exploring the connection between attitudes toward action and participants' actual actions in response to neutral and challenging stimuli in both experimental and real-world settings.

Many of Neuroticism's negative life consequences stem from a tendency to either avoid proactive actions or act impulsively, particularly in stressful circumstances. To understand why emotionally unstable individuals shun adaptive actions, we must follow the behavior back to its source. Here we have confirmed that individuals with less positive attitudes toward action and more positive attitudes toward inaction tend to score higher on Neuroticism and have identified key mediators and moderators of these effects in a large cross-cultural sample. These results lay the groundwork for finding new methods of studying and ultimately preventing the negative consequences of neurotic inaction and impulsivity. Specifically, more attention should be paid to the negative emotions that characterize Neuroticism. If the inaction that is associated with Neuroticism is driven more by anxiety than depression, as our results suggest, then increasing exposure to action may be sufficient to combat tendencies to avoid proactive behavior. It is promising that although overall Neuroticism levels remain relatively stable across time, the emotional response of anxiety can be effectively regulated.

Notes

1. As noted in the main text, impulsivity can take the form of action or inaction. However, impulsivity may be more commonly associated with actions, including wandering thoughts, restlessness, or the general desire to be active. Because impulsive actions are often harmful or risky, we suspect that, despite its association with cognitive and motor activity, impulsivity is not associated with positive representations of action. For these reasons, we believe that the impulsiveness that characterizes some emotionally unstable individuals will probably not result in a positive association between Neuroticism and attitudes toward action.
2. The current 11-item Action and Inaction subscales are expanded versions of the five-item scales used originally in McCulloch et al. (2012). The most notable change was the balance of positively and negatively worded items: Whereas the earlier scales used only positively worded items, the expanded scales added four reverse-scored statements for each subscale (e.g., "Being active (inactive) is unpleasant"). Average reliability across the expanded Action and Inaction subscales was good ($\alpha = .73$) and comparable to the shorter forms ($\alpha = .72$), with principle components analyses for both supporting a single-factor interpretation for each dimension (see McCulloch et al., 2012). We recommend that the longer scale be used when time permits in order to avoid the possibility that scores are influenced by response sets.

3. Although we argue that, given our research questions, it makes sense to treat attitudes toward action inaction as predictors of Neuroticism, our main conclusions would have been the same had we treated these attitudes as outcomes. Specifically, in two multilevel models regressing attitudes toward action and inaction on Neuroticism, including random country-level slopes and intercepts for Neuroticism, Neuroticism predicted less positive attitudes toward action ($\beta = -0.10$, $SE = .02$, $t = -4.97$, $p < .001$) and more positive attitudes toward inaction ($\beta = 0.07$, $SE = .02$, $t = -2.74$, $t = 3.41$, $p = .006$).

References

- Ajzen, I., & Fishbein, M. (2005). The influence of attitudes on behavior. In D. Albarracín, B. Johnson, & M. P. Zanna (Eds.), *The handbook of attitudes* (pp. 173–221). Mahwah, NJ: Erlbaum.
- Albarracín, D., & Handley, I. M. (2011). The time for doing is not the time for change: Effects of general action and inaction goals on attitude retrieval and attitude change. *Journal of Personality and Social Psychology*, **100**, 983–998.
- Albarracín, D., Handley, I. M., Noguchi, K., McCulloch, K. C., Li, H., Leeper, J., Brown, R. D., et al. (2008). Increasing and decreasing motor and cognitive output: A model of general action and inaction goals. *Journal of Personality and Social Psychology*, **95**, 510–523.
- Albarracín, D., & Hart, W. (2011). Positive mood + action = negative mood + inaction: Effects of general action and inaction concepts on decisions and performance as a function of affect. *Emotion*, **11**, 951–957.
- Albarracín, D., Hepler, J., & Tannenbaum, M. (2011). General action and inaction goals: Their behavioral, cognitive, and affective origins and influences. *Current Directions in Psychological Science*, **20**, 119–123.
- Beck, A. T. (1996). *Beck Depression Inventory*. Philadelphia: Harcourt.
- Block, J. (2010). The five-factor framing of personality and beyond: Some ruminations. *Psychological Inquiry*, **21**, 2–25.
- Bruce, J. M., Hancock, L. M., Arnett, P., & Lynch, S. (2010). Treatment adherence in multiple sclerosis: Association with emotional status, personality, and cognition. *Journal of Behavioral Medicine*, **33**, 219–227.
- Carver, C. S. (2005). Impulse and constraint: Perspectives from personality psychology, convergence with theory in other areas, and potential for integration. *Personality and Social Psychology Review*, **9**, 312–333.
- Carver, C. S., & Connor-Smith, J. (2010). Personality and coping. *Annual Review of Psychology*, **61**, 679–704.
- Carver, C. S., Sutton, S. K., & Scheier, M. F. (2000). Action, emotion, and personality: Emerging conceptual integration. *Personality and Social Psychology Bulletin*, **26**, 741–751.
- Carver, C. S., & White, T. L. (1994). Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: The BIS/BAS scales. *Journal of Personality and Social Psychology*, **67**, 319–333.
- Cattell, R. B. (1946). *The description and measurement of personality*. New York: World Book.
- Costa, P. T., & McCrae, R. R. (1995). Domains and facets: Hierarchical personality assessment using the Revised NEO Personality Inventory. *Journal of Personality Assessment*, **64**, 21–50.
- Cross, C. P., Copping, L. T., & Campbell, A. (2011). Sex differences in impulsivity: A meta-analysis. *Psychological Bulletin*, **137**, 97–130.
- Deacon, B. J., & Abramowitz, J. S. (2004). Cognitive and behavioral treatments for anxiety disorders: A review of meta-analytic findings. *Journal of Clinical Psychology*, **60**, 429–441.
- De Moor, M. H. M., Beem, A. L., Stubbe, J. H., Boomsma, D. I., & De Geus, E. J. C. (2006). Regular exercise, anxiety, depression and personality: A population-based study. *Preventive Medicine*, **42**, 273–279.
- DeYoung, C. G., Quilty, L. C., & Peterson, J. B. (2007). Between facets and domains: 10 aspects of the Big Five. *Journal of Personality and Social Psychology*, **93**, 880–896.
- Elliot, A. J., & Thrash, T. (2010). Approach and avoidance temperament as basic dimensions of personality. *Journal of Personality*, **78**, 865–906.
- Eysenck, H. J. (1947). *The structure of human personality*. New York: Wiley.
- Eysenck, H. J., & Eysenck, S. B. G. (1977). *Psychoticism as a dimension of personality*. London: Hodder and Stoughton.
- Fabrigar, L. R., MacDonald, T. K., & Wegener, D. T. (2005). The structure of attitudes. In D. Albarracín, B. T. Johnson, & M. P. Zanna (Eds.), *Handbook of attitudes and attitude change* (pp. 79–124). Mahwah, NJ: Erlbaum.
- Fisher, T. D., & McNulty, J. K. (2008). Neuroticism and marital satisfaction: The mediating role played by the sexual relationship. *Journal of Family Psychology*, **22**, 112–122.
- Friedman, H. S., Kern, M. L., & Reynolds, C. A. (2010). Personality and health, subjective well-being, and longevity. *Journal of Personality*, **78**, 179–216.
- Goldberg, L. R. (1990). An alternative “description of personality”: The Big-Five factor structure. *Journal of Personality and Social Psychology*, **59**, 1216–1229.
- Gotlib, I. H., Krasnoperova, E., Yue, D. N., & Joormann, J. (2004). Attentional biases for negative interpersonal stimuli in clinical depression. *Journal of Abnormal Psychology*, **113**, 127–135.
- Hart, W., & Albarracín, D. (2012). Craving activity and losing objectivity: Effects of general action concepts on approach to decision-consistent information. *Social Psychological and Personality Science*, **3**, 55–62.
- Hepler, J., Albarracín, D., McCulloch, K. C., & Noguchi, K. (2012). Being active and impulsive: The role of goals for action and inaction in self-control. *Motivation and Emotion*, **36**, 416–424.
- Hepler, J., Wang, W., & Albarracín, D. (2012). Motivating exercise: The interactive effect of general action goals and past behavior on physical activity. *Motivation and Emotion*, **36**, 365–370.
- Hirsh, J. B., DeYoung, C. G., & Peterson, J. B. (2009). Metatraits of the Big Five differentially predict engagement and restraint of behavior. *Journal of Personality*, **77**, 1085–1102.
- Hopko, D. R., Magidson, J. F., & Lejuez, C. W. (2011). Treatment failure in behavior therapy: Focus on behavioral activation for depression. *Journal of Clinical Psychology*, **67**, 1106–1116.

- Ireland, M. E., & Mehl, M. R. (in press). Natural language use as a marker of personality. In T. Holtgraves (Ed.), *Oxford handbook of language and social psychology*. New York: Oxford University Press.
- Jerant, A., Chapman, B., Duberstein, P., Robbins, J., & Franks, P. (2011). Personality and medication non-adherence among older adults enrolled in a six-year trial. *British Journal of Health Psychology*, *16*, 151–169.
- John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 102–138). New York: Guilford Press.
- Karney, B. R., & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: A review of theory, methods, and research. *Psychological Bulletin*, *118*, 3–34.
- Kling, K. C., Ryff, C. D., Love, G., & Essex, M. (2003). Exploring the influence of personality on depressive symptoms and self-esteem across a significant life transition. *Journal of Personality and Social Psychology*, *85*, 922–932.
- Laran, J. (2010). The influence of information processing goal pursuit on postdecision affect and behavioral intentions. *Journal of Personality and Social Psychology*, *98*, 16–28.
- Lochbaum, M., Litchfield, K., Podlog, L., & Lutz, R. (2012). Extraversion, emotional instability, and self-reported exercise: The mediating effects of approach-avoidance achievement goals. *Journal of Sport and Health Science*, *2*, 176–183.
- McCrae, R. R., & Costa, P. T. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology*, *52*, 81–90.
- McCulloch, K. C., Li, H., Hong, S., & Albarracín, D. (2012). Naïve definitions of action and inaction: The continuum, spread, and valence of behaviors. *European Journal of Social Psychology*, *42*, 227–234.
- Mehl, M. R., Gosling, S. D., & Pennebaker, J. W. (2006). Personality in its natural habitat: Manifestations and implicit folk theories of personality in daily life. *Journal of Personality and Social Psychology*, *90*, 862–877.
- Mogg, K., & Bradley, B. P. (1998). A cognitive-motivational analysis of anxiety. *Behaviour Research and Therapy*, *36*, 809–848.
- Noguchi, K., Handley, I. M., & Albarracín, D. (2011). Participating in politics resembles physical activity: General action patterns in international archives, United States archives, and experiments. *Psychological Science*, *22*, 235–242.
- Otto, K., Dalbert, C., & Luther, M. (2012). Individual differences in job-related relocation readiness: The impact of personality dispositions and social orientations. *Career Development International*, *17*, 168–186.
- Patton, J. H., & Stanford, M. S. (1995). Factor structure of the Barratt Impulsiveness Scale. *Journal of Clinical Psychology*, *51*, 768–774.
- Ramírez-Esparza, N., Gosling, S. D., Benet-Martínez, V., Potter, J., & Pennebaker, J. W. (2006). Do bilinguals have two personalities? A special case of cultural frame switching. *Journal of Research in Personality*, *40*, 99–120.
- Reise, S. P., Moore, T. M., Sabb, F. W., Brown, A. K., & London, E. D. (2013). The Barratt Impulsiveness Scale-11: Reassessment of its structure in a community sample. *Psychological Assessment*, *25*, 631–642.
- Schwarz, N. (1999). Self-reports: How the questions shape the answers. *American Psychologist*, *54*, 93–105.
- Selig, J. P., & Preacher, K. J. (2008). Monte Carlo method for assessing mediation: An interactive tool for creating confidence intervals for indirect effects [Computer software]. Retrieved from <http://quantpsy.org/>
- Settles, R. E., Fischer, S., Cyders, M. A., Combs, J. L., Gunn, R. L., & Smith, G. T. (2012). Negative urgency: A personality predictor of externalizing behavior characterized by neuroticism, low conscientiousness, and disagreeableness. *Journal of Abnormal Psychology*, *121*, 160–172.
- Singelis, T. M., Triandis, H. C., Bhawuk, D. P. S., & Gelfand, M. J. (1995). Horizontal and vertical dimensions of individualism and collectivism: A theoretical and measurement refinement. *Cross-Cultural Research*, *29*, 240–275.
- Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Trafimow, D., Clayton, K. D., Sheeran, P., Darwish, A. E., & Brown, J. (2010). How do people form behavioral intentions when others have the power to determine social consequences? *Journal of General Psychology*, *137*, 287–309.
- Vazire, S. (2006). Informant reports: A cheap, fast, and easy method for personality assessment. *Journal of Research in Personality*, *40*, 472–481.
- Wheeler, K., Wagaman, A., & McCord, D. (2012). Personality traits as predictors of adherence in adolescents with type I diabetes. *Journal of Child and Adolescent Psychiatric Nursing*, *25*, 66–74.
- Zell, E., Su, R., Li, H., Ho, M. R., Hong, S., Kumkale, T., Rossier, J., et al. (2012). Cultural differences in attitudes toward action and inaction: The role of dialecticism. *Social Psychological and Personality Science*, *4*, 521–528.