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Neuroticism Is Linked With Liberal Ideology in Young, but not Old, People in the United States

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ABSTRACT

Polarization in the United States is partly due to a remarkable ideological divide between generations. Although substantial research has investigated why old people have become more conservative, less is known about why young people have become more liberal. The article investigates this by probing the role of neuroticism. It hypothesises that, compared to older cohorts, younger ones have grown up during a more competitive historical period that has led many to become more neurotic and, in turn, to support the left. This predicts that, in the United States, neuroticism is linked with liberal ideology in young, but not old, people. This prediction is supported in two studies. A third study found no such effect outside the United States, suggesting that the effect observed in the United States is not due to aging but to generational experiences. Overall, these findings highlight a potential role for neuroticism in explaining why young Americans have become more liberal.

1 | Introduction

Political conflict in the United States has reached levels that are extraordinary in the recent history of the country. Polarization, on the rise among political elites already since the seventies (Hetherington 2001; McCarty 2019; Wilson et al. 2020), has recently skyrocketed also within the general population (Pew Research Center 2014, 2017). At the same time, partisanship has become more salient, with people sorting themselves more and more along partisan identities (Fiorina and Abrams 2008; Levendusky 2009; McCarty 2019) and expressing greater negative evaluation of those who support the opposite party (Iyengar et al. 2019). In polls, many Americans now assert that violence aimed at avoiding political threats is justified (Washington Post-UMD Poll 2021). This sentiment is reflected in recent events such as the assault to the Capitol after the 2020 elections and the attempted assassination of Donald Trump during the 2024 electoral campaign. Understanding the processes driving political conflict in the United States is therefore as important as ever.

The causes of this phenomenon are multifarious, but substantial evidence indicates that a key factor is the ideological divide between generations (Pew Research Center 2018; Twenge 2023). The data show that old people are gravitating more and more towards conservative positions, whereas the young are becoming increasingly more liberal. Substantial research has investigated why the old have moved to the right, highlighting the impact of factors such as economic decline, perceived alienation and cultural backlash (Berman 2021; Norris and Inglehart 2019; Rodrik 2021). Less is known about why the left's popularity has grown among the young. Regarding this question, a promising line of enquiry has probed the role played by anxiety and depression (Della Volpe 2022; Gimbrone et al. 2022; Twenge 2023). This research is inspired by evidence of a dramatic increase of anxiety and depression among the young as documented both by self-report and behavioural measures (e.g., number of suicides and attempted suicides) (e.g., American Psychological Association 2023; Curtin 2020; Twenge 2023; Twenge et al. 2019). Various authors have stressed anxiety and depression as being

central experiences for many young people in the United States (Campbell and Manning 2018; Della Volpe 2022; Twenge 2023), as reflected in titles of popular books such as 'The anxious generation' (Haidt 2024) and 'Can't even: how millennials became the burnout generation' (Petersen 2021). Some authors have argued that anxiety and depression are primary factors that are spurring many young people towards embracing liberal views (Della Volpe 2022). In support of this idea, evidence has shown that, in young cohorts, anxiety and depression are indeed more frequent among liberals than among conservatives (Gimbrone et al. 2022; Twenge 2023).

Inspired by this line of enquiry, the present article investigates why young people in the United States have become more liberal by examining the link between ideology and anxiety/depression. Rather than focusing specifically on depression and anxiety, though, the article considers the construct of neuroticism (Eysenck 1991; Widiger and Oltmanns 2017). This reflects a basic personality trait indicating one's predisposition to depression, anxiety and to similar forms of mental illness (Eysenck 1991). Neuroticism is a broader concept than depression and anxiety, and therefore, it is better suited to be investigated within the general population. Thus, the article aims at exploring the link between ideology and neuroticism in the United States. Previous research has reported that in the United States neuroticism is higher among liberals compared to conservatives (Gerber et al. 2010; Mondak and Halperin 2008). The article aims at assessing whether this relationship is at work in all birth cohorts or only in younger ones. As argued below, addressing this question may help to clarify why young people in the United States have become more liberal. The next section spells out the precise empirical hypotheses that will be tested in three empirical studies.

2 | Hypotheses

The article examines the link among three key variables: age, ideology and neuroticism. Up to the present, empirical research in the United States has documented three pieces of evidence concerning the link among these variables:

a. In the United States, young people are more liberal than old people. This has been documented poll after poll (Ellis and Stimson 2012; Jennings and Niemi 1981; Petlzman 2019; Pew Research Center 2018; Twenge 2023) and has been confirmed by the voting pattern observed at least since the election of Barack Obama as president in 2008 (Della Volpe 2022).

b. In the United States, young people have higher neuroticism than old people. Though the construct of neuroticism has rarely been measured as such, various studies have reported higher anxiety and depression in younger cohorts (e.g., American Psychological Association 2023; Curtin 2020; Twenge 2023; Twenge et al. 2019). Given the tight link between anxiety/depression and neuroticism (Eysenck 1991), these studies indirectly support the claim that neuroticism is higher among the young.

c. In the United States, liberals have higher neuroticism than conservatives. This has been documented directly by studies that have focused on the construct of neuroticism as such (Gerber et al. 2010; Mondak and Halperin 2008).

How can one explain these three pieces of evidence? A straightforward explanation is provided by what we can call the *General Effect Hypothesis*, which proposes that, generally speaking, neuroticism encourages people to support the political left. Some scholars have advanced this hypothesis reasoning that, given its heightened anxiety levels, neuroticism may motivate a person to seek the protection offered by welfare policies typically advocated by the left (Fatke 2017). Tepe and Vanhuysse (2020), for example, have reasoned that, given their elevated anxiety, neurotic people crave insurance against all forms of danger, including social risks such as unemployment or ill health. Welfare policies, which are at the core of left-wing ideologies, offer protection for such risks, and this is why, according to this argument, neurotic people would lean towards the left. An alternative hypothesis reaches the same conclusion. This is based on the idea (Gerber et al. 2010; Fatke 2017) that, because of its associated emotionality, neuroticism predisposes people to empathise with others who strive for societal change, once again leading them to sympathise with the left. The notion that neuroticism encourages people to embrace the left aligns with evidence showing that, in most countries worldwide (Fatke 2017), including the United States (Gerber et al. 2010; Mondak and Halperin 2008), neuroticism is indeed more common among left-wing supporters. Note that, according to this view, the notion that neuroticism promotes a left-wing ideology applies to all generations. In other words, the link between neuroticism and ideology is postulated to be invariant across generations. Applying this idea to the United States, the argument is that, because neuroticism has surged within young cohorts, young people have become more liberal.

The evidence overviewed at the start of this section is consistent with the General Effect Hypothesis. Yet, it can also be interpreted according to an alternative explanation that we refer to as the *Generational Hypothesis*. As this label suggests, this hypothesis stresses generational differences in explaining the data. The *Generational Hypothesis* rejects the prediction that neuroticism promotes support for the left equally in all generations; rather, it asserts that, in the United States, the link between neuroticism and ideology is stronger in young compared to old cohorts. In other words, it hypothesises that the finding that, in the United States, liberals have higher neuroticism than conservatives (Gerber et al. 2010; Mondak and Halperin 2008) is driven primarily by an effect concerning young people, not old ones.

What is the rationale behind the Generational Hypothesis? To illustrate the argument, it is instructive to compare society from the end of World War Two to the end of the seventies (I shall call this *post-war period*) versus society from the end of the seventies to the present (I shall call this *contemporary period*).[1] There is a broad consensus among scholars that the two periods differ at many levels (e.g., Amin 2011; Hacker and Pierson 2010; Kuttner 2018; Piketty 2014; Rossinow 2015), as, for instance, contended recently by Robert Putman's book 'Upswing' (Putnam 2020). Compared to the contemporary period, in the post-war period the economy was characterised by higher growth, lower inequality, tighter regulations, stronger unions, greater employment stability, greater reliance on manufacturing instead of services (including finance), and on higher male presence in the workforce (e.g., Cahill and Konings 2017; Eberstadt 2016;

Hacker and Pierson 2010; Kuttner 2018; Markham 2022; Piketty 2014; Standing 2011). Although average education has increased in the contemporary period, the return to college education has also grown, as reflected in a larger salary gap between workers with and without college (Long 2010; Oreopoulos and Petronijevic 2013). This has led to higher pressure for students in terms of standards to achieve, extracurricular activities to practise and in terms of college debt (Doepke and Zilibotti 2019; Elliott and Lewis 2015; Putnam 2016; Twenge 2006). At the social level, the contemporary period has registered a widespread deterioration of social capital as documented by a diminished role of civil institutions such as local, religious, service and volunteering organizations, accompanied by greater segregation between different social classes (Bishop 2009; Putnam 2000, 2016, 2020). According to various authors, the economic and social changes just described have marked a shift from a more collectivistic culture, where the emphasis was on the welfare of the group and on conforming to its norms, to a more competitive one, where the emphasis is on independence, personal achievement and individualism (Putnam 2000, 2016, 2020).

The distinction between the post-war and contemporary periods implies that old and young people in America have had very different life experiences. For older people, the formative years (childhood, adolescence and young adulthood) have occurred during the post-war period, a more collectivistic age. Younger cohorts, by contrast, have spent their formative years during the contemporary period, a more competitive age. The Generational Hypothesis asserts that this has led to important psychological differences across generations. Specifically, it identifies two key implications. First, growing up during the contemporary age, as younger people in the United States have, means that during their formative years these people have experienced higher educational and occupational pressure, diminished social support, higher competition and greater job insecurity. All these point to the development of higher levels of anxiety and depression, and thus to higher levels of neuroticism—as indeed supported by available evidence (e.g., American Psychological Association 2023; Curtin 2020; Twenge 2023; Twenge et al. 2019). The second prediction ensuing from the Generational Hypothesis is that, among those who have become more neurotic because of growing up during the contemporary period, many have become aware of the social causes of their enhanced neuroticism (Della Volpe 2022). This may have led them to criticize the way society has been working during the contemporary period and therefore to support the political left—an ideology that criticizes competition, strives for job security and seeks to boost social capital by building an inclusive society.

In short, the Generational Hypothesis asserts that growing up during the contemporary period in the United States has led young people to become more neurotic and has led those of this generation who have become more neurotic to support the political left. This fits with the available empirical evidence described above, showing that (1) young people are more liberal than old people, (2) young people have higher neuroticism than old people, and that (3) liberals have higher neuroticism than conservatives. Still, the Generational Hypothesis also implies an additional prediction that remains to be tested: the prediction that, in the United States, the link between neuroticism and ideology is stronger among young compared to old people.

To spell out the rationale behind the Generational Hypothesis' empirical predictions, consider the following simplified scenario. Imagine that, in the post-war American society, the percentage of young people reporting high neuroticism was 10%.[2] Assuming that post-war America was not much conducive of neuroticism, the 10% value can be considered being largely the product of genetic predisposition. In this society, say, 60% of high neurotic people would identify themselves as liberal and 40% as conservative (meanwhile, 40% of low neurotic people would report being liberal and 60% would report being conservative). Now imagine that, in contemporary America, the rate of neuroticism among young people has surged to 30%, with the 20% difference being due to the new societal changes and not to genetic factors. Let's assume that, as claimed by the Generational Hypothesis, among the young neurotic people of contemporary America, many have come to realise that their neuroticism is due to how the contemporary society works. This implies that a greater percentage of them will support a liberal versus conservative ideology (as the liberal ideology criticizes competition, strives for job security and seeks to boost social capital by building an inclusive society), say 80% (instead of 60% in the past) versus 20% (instead of 40% in the past), respectively (meanwhile, 40% of low neurotic people would still identify themselves as liberal, and 60% would still identify themselves as conservative). If this scenario approximates reality, then the following predictions ensue: (1) young people are more liberal than old people; (2) young people have higher neuroticism than old people; (3) liberals have higher neuroticism than conservatives; and (4) the link between neuroticism and ideology is stronger among young compared to old people. Note that the latter prediction emerges because in the older generation, the liberal/conservative odd is 60%/40% for high neurotics versus 40%/60% for low neurotics, whereas in the younger generation, the liberal/conservative odd is 80%/20% for high neurotics versus 40%/60% for low neurotics. The first three predictions have already been supported empirically (see above) and are shared by the Generational Hypothesis and by the General Effect Hypothesis alike. Crucially, the fourth prediction is what distinguishes the Generational Hypothesis from the General Effect Hypothesis, and it remains to be investigated empirically.

The present article aims at testing the fourth prediction. This is done in Study 1 based on secondary analyses of the General Social Survey (GSS) (Davern et al. 2024) and in Study 2 based on a new sample of participants. To anticipate, the results confirm the hypothesis that, in the United States, the link between neuroticism and ideology is stronger among young compared to old people. Still, the two initial studies are unable to clarify whether the effect is due to aging or to generational experience. It is possible that, in virtually all societies, the link between neuroticism and ideology is stronger among the young. This would be consistent with the notion that the effect is due to aging. By contrast, the Generational Hypothesis maintains that the effect is not due to aging, but to different life experiences made by different generations in the United States. If this hypothesis is correct, then we would expect that the stronger link between neuroticism and ideology observed among the young is not universal, but it is specific to the United States and to similar societies. To arbitrate between the role played by aging versus generational experience, Study 3 extends the analysis outside the United States by focusing on countries from various geographical and cultural regions worldwide. If aging is the key factor, then a

stronger link between neuroticism and ideology among the young should be observed in most countries. If, instead, generational experience is the key factor, then the effect should emerge only in the United States and in similar countries, not everywhere.

3 | Study 1

The first study examines a representative sample of the American population as provided by the GSS. For the most recent year available (2022), the survey includes two items (see below) that tap into the construct of neuroticism. These were used to derive a neuroticism score. Alongside, we examined ideology based on an item asking participants to what extent they saw themselves as conservative or liberal. The data were analysed by fitting a linear regression model of ideology having age, neuroticism and their interaction as predictors alongside sex, income, education and ethnicity as covariates of no interest. We predicted that the interaction term was significant and that this was driven by a stronger effect of neuroticism upon ideology in younger compared to older participants.

3.1 | Participants

The analyses were based on the GSS, one of the largest and most long-lasting surveys of the USA population based on representative samples (Davern et al. 2024). Participants included were those tested during the 2022 wave for which all the variables used in the linear regression model were available. The resulting sample comprised 1644 participants.

3.2 | Measures

Neuroticism was calculated as being equal to the average across two items ($r(1642) = 0.723$, $p < 0.001$). One item asked respondents how often they felt nervous in the past 2 weeks; the other item asked them how often they could not control worrying in the past 2 weeks. Options available for each item were 'not at all' (1), 'several days' (2), 'more than half days' (3) and 'nearly every day' (4).

Ideology was assessed on the basis of item asking participants whether they thought of themselves as liberal or as conservative along a 7-point scale ranging from 'extremely liberal' (1) to 'extremely conservative' (7).

The other variables considered were age (expressed in years), gender (male = 0; female = 1), education (highest year of school completed), income (family income in constant dollars) and ethnic group (White = 0; non-White = 1).

3.3 | Results

Descriptive statistics are reported in Table 1 (females were 831, and non-White participants were 426). The data were analysed by fitting a linear regression model of ideology having age and neuroticism (both predictors were centred) and their interaction as predictors alongside sex, income, education and ethnicity as covariates of no interest. The results are reported in Table 2 and show a significant age–neuroticism interaction. To break down this effect, we looked at the conditional effect of neuroticism at three different age levels, that is, the mean age, the mean age plus one standard deviation and the mean age minus one standard deviation (Figure 1). Higher neuroticism predicted a more liberal ideology at 29 (i.e., the mean age minus one standard deviation; effect = −0.269, $t = -4.60$, $p < 0.001$, 95% CI [−0.384, −0.154]) and at 43 (i.e., the mean age; effect = −0.136, $t = -2.88$, $p < 0.001$, 95% CI [−0.229, −0.043]), but not at 57 (i.e., the mean age plus one standard deviation; effect = −0.003, $t = -0.43$, $p = 0.966$, 95% CI [−0.152, 0.145]). A Johnson–Neyman analysis indicated that the effect of neuroticism was significant up until age 47 (where $p = 0.05$), while being non-significant at higher ages.

To ensure that the finding of a significant age–neuroticism is robust, Table S1 reports the same regression model as above but now also with all two-way interactions including neuroticism. The table shows that the age–neuroticism interaction effect remains significant also within this model.

Is the age–neuroticism interaction effect driven by specific groups of participants, or is it general? For example, is the effect present only in females and not in males? To address this question, Table S2 reports the same regression model as above but now also with all two-way interactions including neuroticism or age and all three-way interactions including age and neuroticism. The table shows that none of the three-way interactions was significant. This indicates that, in the United States, the age–neuroticism interaction is at play independent of gender, ethnicity, income and education.

In conclusion, the analyses of the GSS support our hypothesis that, in the United States, the link between neuroticism and ideology is stronger among young compared to old people.

4 | Study 2

A shortcoming of Study 1 is that the two items employed to measure neuroticism are not based on a validated scale. For example, it is problematic that the items refer to experiences concerning the past 2 weeks, whereas the construct of neuroticism refers to a stable personality predisposition. To address this, Study 2 sought to replicate the findings that emerged in Study 1 in a new sample, adopting a validated scale to measure neuroticism.

4.1 | Participants

Six hundred participants resident in the United States were recruited online via the Prolific website. The pre-screening system offered by Prolific ensured that the number of males and females was roughly equal and that the number of liberal and conservative participants was roughly equal across different ages. The latter procedure was employed to ensure that enough participants with different ideologies were recruited across different ages. The sample size was established a priori using the G-Power software (Faul et al. 2007) and based on a linear regression analysis with seven predictors, $\alpha = 0.05$, 1-$\beta = 0.9$ and a small effect size of $f^2 = 0.02$. This resulted in 528 participants that were rounded

TABLE 1 | Descriptive statistics for Study 1

Variable	Mean	Std. deviation	Skewness	Kurtosis
Age	43.37	14.040	0.305	−0.740
Neuroticism	1.6715	0.82236	1.298	1.010
Education	14.58	2.820	−0.342	0.946
Income	60,465.31	45,888.078	1.084	0.152
Ideology	3.91	1.527	−0.012	−0.586

TABLE 2 | Regression model of ideology fitted in Study 1.

Predictor	Coefficient	Standard error	*t*	*p*	Coefficient 95% CI	
Intercept	5.779	0.3332	17.3448	<0.001*	5.1255	6.4325
Neuroticism	−0.1363	0.0474	−2.877	0.004*	−0.8318	−0.2631
Age	0.0167	0.0027	6.1803	<0.001*	0.0114	0.022
Age × neuroticism	0.0095	0.0034	2.7517	0.006*	0.0027	0.0162
Sex	−0.272	0.0738	−3.6859	<0.001*	−0.4168	−0.1273
Education	−0.0977	0.014	−6.9904	<0.001*	−0.1251	−0.0703
Ethnicity	−0.2645	0.0843	−3.1383	0.002*	−0.4298	−0.0992
Income	0	0	−0.3834	0.702	0	0

Note: $R^2 = 0.084$, $F(7, 1636) = 21.51$, $p < 0.001$; *$p < 0.05$.

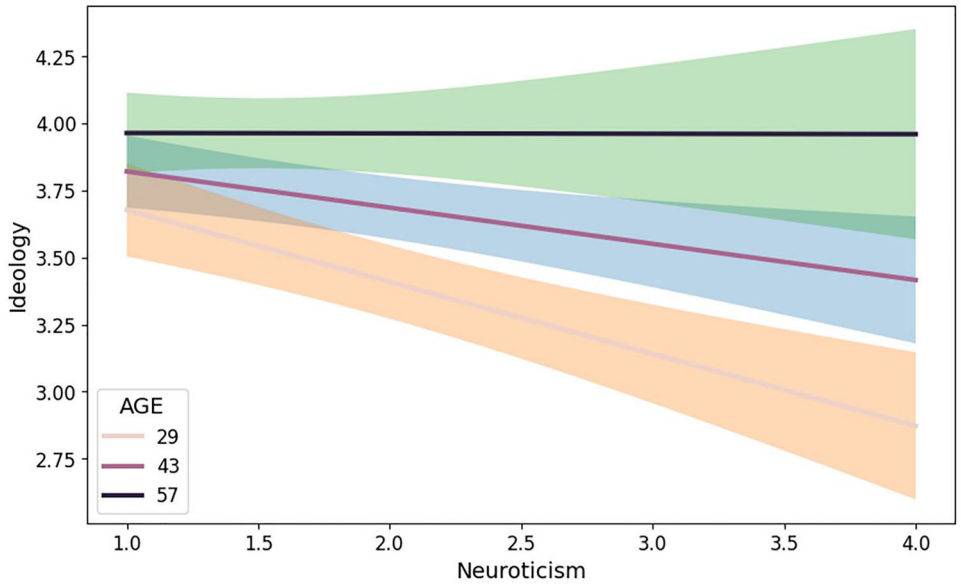

FIGURE 1 | Study 1: Relationship between neuroticism and ideology for different ages (the mean age (43), the mean age minus one standard deviation (29) and the mean age plus one standard deviation (57)) with 95% confidence interval. [Colour figure can be viewed at wileyonlinelibrary.com]

to 600. The study was approved by the ethics committee of the university to which the corresponding author is affiliated.

4.2 | Measures

To assess neuroticism, we used the eight items used to measure this construct in the Big Five Inventory (BFI; John and Srivastava 1999), one of the most widely used personality questionnaires. Each item reports a statement about a personality characteristic (e.g., 'I see myself as someone who is depressed, blue'). Participants have to indicate whether they agree or not with the statement by using a 5-point scale ranging from 'disagree strongly' (1) to 'agree strongly' (5).

Ideology was assessed on the basis of an item asking participants to describe their political ideas using a 7-point scale ranging from 'very liberal' (1) to 'very conservative' (7). The other variables

TABLE 3 | Descriptive statistics for Study 2.

Variable	Mean	Std. deviation	Skewness	Kurtosis
Age	41.35	18.006	0.44	−1.215
Neuroticism	22.5250	8.24172	0.103	−0.912
Education	3.5800	1.03055	0.018	−0.309
Income	3.92	1.857	0.091	−1.164
Ideology	3.8133	1.89767	0.073	−1.167

TABLE 4 | Regression model of ideology fitted in Study 2.

Predictor	Coefficient	Standard error	*t*	*p*	Coefficient 95% CI	
Intercept	6.1169	0.6663	9.181	<0.001*	4.8083	7.4254
Neuroticism	−0.0407	0.0101	−4.032	<0.001*	−0.0605	−0.0209
Age	0.0081	0.0101	1.6909	0.0914	−0.0013	0.0175
Age × neuroticism	0.0013	0.0005	2.5299	0.012*	0.0003	0.0024
Sex	−0.2296	0.1562	−1.4697	0.142	−0.5364	0.0772
Education	−0.2146	0.0815	−2.6323	0.009*	−0.3748	−0.0545
Ethnicity	0.0059	0.1679	0.0352	0.972	−0.3239	0.3357
Income	0.1177	0.0451	2.6104	0.009*	0.0291	0.2062

Note: $R^2 = 0.078$, $F(7, 592) = 7.13$, $p < 0.001$; *$p < 0.05$.

considered were age (expressed in years), gender (male = 0; female = 1), education (highest level of education completed, ranging along six levels from 'less than high school degree' (1) to 'doctoral or professional degree' (6)), income (total pre-tax household income in past year ranging along seven levels from 'less than $20,000' (1) to '$150,000 or more' (7)) and ethnic group (White = 0; non-White = 1).

4.3 | Results

Descriptive statistics are reported in Table 3 (females were 300, and non-White participants were 216). As for study one, the data were analysed by fitting a linear regression model of ideology having age and neuroticism (both predictors were centred) and their interaction as predictors alongside sex, income, education and ethnicity as covariates of no interest. The results are reported in Table 4 and, again, show a significant age–neuroticism interaction. To break down this effect, we looked at the conditional effect of neuroticism at three different age levels, that is, the mean age, the mean age plus one standard deviation and the mean age minus one standard deviation (Figure 2). Higher neuroticism predicted a more liberal ideology at 23 (i.e., the mean age minus one standard deviation; effect = −0.065, $t = -4.66$, $p < 0.001$, 95% CI [−0.092, −0.037]) and at 41 (i.e., the mean age; effect = −0.041, $t = -4.03$, $p < 0.001$, 95% CI [−0.061, −0.021]), but not at 59 (i.e., the mean age plus one standard deviation; effect = −0.017, $t = -1.21$, $p = 0.227$, 95% CI [−0.044, 0.010]). A Johnson–Neyman analysis indicated that the effect of neuroticism was significant up until age 54 (where $p = 0.05$), while being non-significant at higher ages.

To ensure that the finding of a significant age–neuroticism is robust, Table S3 reports the same regression model as above but now also with all two-way interactions including neuroticism. The table shows that the age–neuroticism interaction effect remains significant also within this model. Finally, as in Study 1, we asked whether the age–neuroticism interaction effect is driven by any specific groups of participants. Table S4 reports the same regression model as above but now also with all two-way interactions including neuroticism or age and all three-way interactions including age and neuroticism. The table shows that none of the three-way interactions was significant. This confirms Study 1 as it indicates that, in the United States, the age–neuroticism interaction is at play independent of gender, ethnicity, income and education.

Altogether, by employing a validated measure of neuroticism in a new sample, Study 2 replicates Study 1. It confirms that, in the United States, the link between neuroticism and ideology is stronger among the young.

5 | Study 3

Studies 1 and 2 demonstrate that, in the United States, the link between neuroticism and ideology is stronger among young people. Is this due to aging or to generational experience? One way to investigate this is to assess whether the effect can be found in countries outside the United States. If aging is the key factor, then the effect should emerge in most countries. If generational experience is the key factor, then the effect should be confined to the United States and to similar countries. To

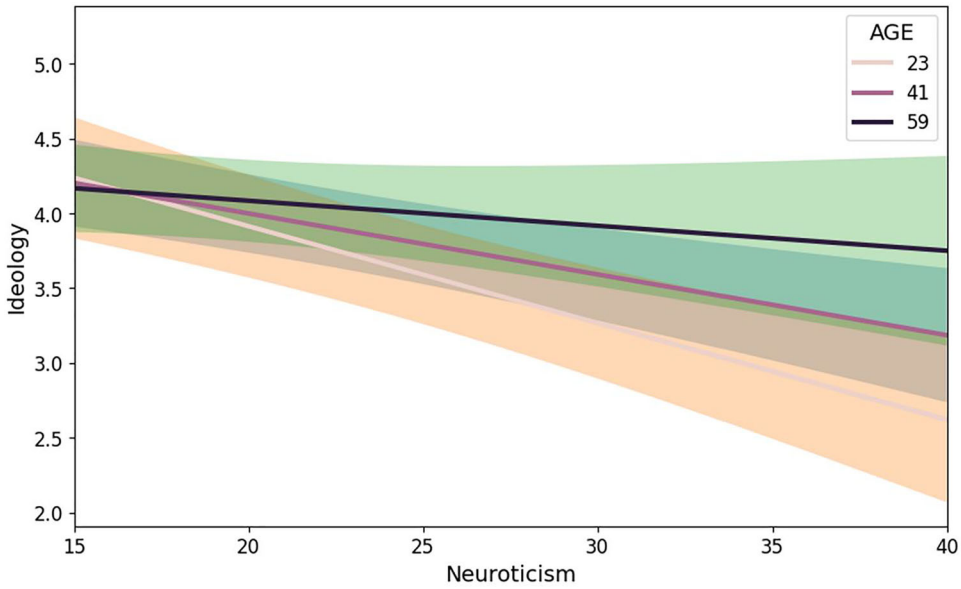

FIGURE 2 | Study 2: Relationship between neuroticism and ideology for different ages (the mean age (41), the mean age minus one standard deviation (23) and the mean age plus one standard deviation (59)) with 95% confidence interval. [Colour figure can be viewed at wileyonlinelibrary.com]

arbitrate between the aging and the generational experience hypothesis, Study 3 extends the analysis to countries outside the United States by examining data from the World Value Survey (WVS) (Inglehart et al. 2014). One wave of this survey (Wave 6) includes items that tap into the construct of neuroticism. On this basis, the age–neuroticism interaction could be assessed in twenty countries from various geographical and cultural regions worldwide.

5.1 | Participants

The analyses were based on the WVS, one of the largest and most long-lasting surveys with a worldwide scope based on representative samples (Inglehart et al. 2014). Participants included were those tested during Wave 6 (2010–2014) for which all the variables used in the linear regression model described below were available. The resulting sample comprised 23,368 participants from 20 countries (the sample size for each country is reported in Table S5). Note that the United States was not included in this study because the variables examined here were not available for that country.

5.2 | Measures

Wave 6 of the WVS includes a shortened version of the BFI, the BFI-10 (Rammstedt and John 2007), where each personality trait is assessed based on two items. Neuroticism was calculated as being equal to the average across the two relevant items of the BFI-10. Each item reports a statement about a personality characteristic ('I see myself as someone who gets nervous easily' and 'I see myself as someone who is relaxed, handles stress well', the latter being reverse-coded). Participants have to indicate whether they agree or not with the statement by using a 5-point scale ranging from 'disagree strongly' (1) to 'agree strongly' (5).

Ideology was assessed on the basis of an item asking participants to place themselves on the left-right spectrum using a 10-point scale ranging from 'left' (1) to 'right' (10).

The other variables considered were age (expressed in years), gender (male = 0; female = 1), education (ranging on nine levels from 'no formal education' to 'university level education') and income (income decile).

5.3 | Results

Descriptive statistics for each country are reported in Table S6. To account for the fact that participants are nested within countries, we used multilevel modelling to fit a model of ideology having age, neuroticism and their interaction as predictors alongside education, income and gender as covariates (all predictors were centred to each country). Except for the interaction term, each predictor was linked with a random effect (the intercept was also associated with a random effect). The results of the analyses are reported in Table 5. Contrary to the United States, no age–neuroticism interaction emerged here. For completeness, Table 6 reports the age–neuroticism interaction effect separately for each country (this was estimated on the basis of a regression model of ideology fitted separately to each country having age, neuroticism, their interaction, education, income and gender as predictors, with all predictors being centred to each country). When countries are considered in isolation, no one manifests a significant age–neuroticism interaction. The only exception is Rwanda, although in this case the sign of the effect is opposite to the one that emerged in the United States in Studies 1 and 2. In other words, in Rwanda, as age increases, the association between neuroticism and left-wing ideology becomes stronger.

TABLE 5 | Multilevel regression model of ideology fitted in Study 3.

Predictor	Coefficient	Standard error	*t*	*p*	Coefficient 95% CI	
Intercept	5.727	0.194	29.480	<0.001*	5.346	6.108
Neuroticism	−0.040	0.031	−1.313	0.189	−0.101	0.020
Age	0.004	0.002	2.114	0.035*	0.000	0.007
Age × neuroticism	0	0.001	−0.030	0.976	−0.002	0.002
Sex	−0.046	0.046	−0.997	0.319	−0.136	0.044
Education	−0.054	0.013	−4.169	<0.001*	−0.080	−0.029
Income	0.068	0.017	4.087	<0.001*	0.035	0.100

Note: Conditional $R^2 = 0.148$; *$p < 0.05$.

TABLE 6 | Effect for the age–neuroticism interaction estimated separately for each country in Study 3 (presentation is in descending order).

Country	Coefficient	95% CI	
Yemen	0.0360	−0.0010	0.0730
Libya	0.0080	−0.0070	0.0230
Haiti	0.0060	−0.0040	0.0160
The Netherlands	0.0050	−0.0020	0.0120
Thailand	0.0050	−0.0080	0.0180
Tunisia	0.0040	−0.0080	0.0160
South Africa	0.0040	−0.0040	0.0120
Palestine	0.0030	−0.0110	0.0170
Ecuador	0.0020	−0.0120	0.0160
Georgia	0.0010	−0.0090	0.0110
Pakistan	0.0010	−0.0100	0.0130
Brazil	0.0000	−0.0090	0.0090
Germany	−0.0010	−0.0060	0.0050
Lebanon	−0.0020	−0.0150	0.0100
Colombia	−0.0030	−0.0110	0.0050
Hong Kong	−0.0050	−0.0120	0.0030
Egypt	−0.0060	−0.0140	0.0020
Iraq	−0.0060	−0.0220	0.0110
Algeria	−0.0090	−0.0220	0.0040
Rwanda	−0.0120*	−0.0220	−0.0020

Note: *$p < 0.05$.

In summary, the analyses of the WVS reveal that, around the world, there is no evidence of any age–neuroticism interaction akin to the one observed in the United States. In other words, they indicate that the interaction effect found in the United States is absent in many geographical and cultural regions of the world. This is at odds with the hypothesis that aging is responsible for the interaction effect documented by Studies 1 and 2 in the United States, while being consistent with the notion that generational experiences characterising the United States are crucial to explain this effect.

6 | Discussion

Studies 1 and 2 show that, in the United States, higher neuroticism is linked with a more liberal ideology in young, but not old, cohorts. Study 3 found no such effect when examining countries from other geographical and cultural regions worldwide. As the effect is not as widespread across societies, Study 3 supports the notion that the age–neuroticism interaction observed in the United States is not due to aging, but to generational experiences specific to that country.

Which generational experiences explain the effect? As illustrated above, the Generational Hypothesis asserts that a key factor is that young (old) cohorts have grown up in a more competitive (collectivistic) culture. During their formative years, younger cohorts have experienced higher educational and occupational pressure, diminished social support, higher competition and greater job insecurity; these may have boosted neuroticism in many people. In turn, these people may have eventually become aware of the social causes of their neuroticism, leading them to support the left.

Although our findings are compatible with the Generational Hypothesis, it is nonetheless important to stress that alternative explanations cannot be ruled out. We assess these potential alternatives here. The key aspect to note is that our analyses are not causal but correlational. Therefore, the Generational Hypothesis' assumption that, in young people, neuroticism encourages support for the left may turn out to be incorrect. In-line with the Generational Hypothesis, most research on the topic has presupposed that, as personality traits are formed in early childhood and remain relatively stable during the life span, personality influences ideology (Caprara and Vecchione 2013; Cichocka and Dhont 2018; Osborne et al. 2021; Sibley and Duckitt 2010). Yet, an empirical study (Verhulst et al. 2012) has cast doubt on this assumption by reporting that a common genetic factor influences both personality and ideology, implying that the relationship between the two variables is, at least in part, spurious. However, our findings can hardly be explained by the existence of a common genetic predisposition for left-wing ideology and neuroticism. First, it is doubtful that genetic differences between young and old Americans can explain differences in neuroticism. Second, even assuming that a genetic profile conducive to left-wing ideology and neuroticism is more frequent

in young Americans, this would produce greater neuroticism and more liberal ideology, but not greater correlation between the two variables, among the young. In other words, genetics may explain why neuroticism and ideology are typically correlated in a certain way in most groups but does not explain why the strength of the correlation varies across groups of comparable genetic profile. Based on these considerations, the notion that ideology and neuroticism are influenced by a common genetic factor appears to be inadequate to explain the findings reported in the present article.

Another potential explanation of our findings calls upon the role played by social media. It has been suggested that, among young Americans, left-wing ideology boosts depression/anxiety by increasing social media use (Twenge 2023). This hypothesis is based on evidence suggesting that, generally speaking, social media use boosts depression/anxiety (Keles et al. 2020; Lopes et al. 2022) and on evidence showing that young liberals spend more time on social media than young conservatives (Pew Research Center 2021). Based on this evidence, the proposal is that young liberals have used social media more and hence have become more depressed/anxious (Twenge 2023). The hypothesis just described is compelling, and it should not be ruled out. Still, it remains incomplete as far it says nothing about why young people in America have moved to the left. By contrast, the Generational Hypothesis offers an explanation of this by highlighting the potential influence of neuroticism. All in all, as our study is correlational, the causal processes responsible for the age–neuroticism interaction effect upon ideology observed in the United States remain ultimately to be determined. The Generational Hypothesis offers an intriguing interpretation, but other explanations, especially one calling upon the role of social media, cannot be ruled out and deserve consideration.

Even if it is true that neuroticism encourages support for the left more among young than old Americans, it is important to stress that, ultimately, our findings do not clarify *why* this occurs. In the introduction, we have speculated that this may be the consequence of a shift from a collectivistic to a competitive culture in the United States. This hypothesis is intriguing, but our article does not test it directly. An interesting avenue for future research is to carry out a systematic enquiry of *why* the link between neuroticism and left-wing ideology is stronger among Americans.

To address this question, comparative analyses can offer valuable insight. Study 3 found no age–neuroticism interaction outside the United States. It is important to acknowledge that the different pattern observed in the United States compared to the other countries may be due to the use of different sampling methods and items. Still, although Study 3 should not be considered conclusive on the matter, at least it aligns with the hypothesis that the age–neuroticism interaction is absent in many countries. This opens up the question of which characteristics of a country produce the age–neuroticism interaction. The hypothesis attributing a role to the shift from a collectivistic to a competitive society is intriguing, but it remains to be tested. Other factors may count as well. The United States is relatively unique in many ways, for example in terms of military hegemony, rate of obesity or wealth, just to name a few; some of these features may enable the age–neuroticism interaction to emerge. One way to explore the origin of the age–neuroticism interaction is to adopt a comparative approach, looking at the relationship between certain country characteristics (e.g., shift from a collectivistic to a competitive society) and the strength of the interaction effect.

Panish and Delton (2025) have recently clarified the link between ideology and neuroticism by breaking down these constructs into their components. After distinguishing *anxiety* from *volatility* (two major facets of neuroticism), they have reported that left-wing ideology is independent of volatility while being more frequent among people exhibiting higher anxiety. Moreover, they found that neuroticism (measured based on the anxiety facet) is linked more strongly with attitudes concerning economics compared to items asking participants to place themselves on the liberal-conservative scale. The link between neuroticism and economic concerns has been supported also by Tepe and Vanhuysse (2020), who have observed that greater neuroticism increases a general dissatisfaction with social and financial security, and by Helminen et al. (2022), who have shown that neuroticism is linked with higher concerns for economic inequality, preservation of the environment, and lower work ethic. In the present article, we did not differentiate between different facets of neuroticism, nor we considered the role of attitudes concerning the economic sphere. An interesting research avenue is to explore whether the age-ideology interaction observed in the United States targets specifically the link between the anxiety facet and economic attitudes, as previous research (Delton and Panish 2025; Helminen et al. 2022; Tepe and Vanhuysse 2020) suggests.

Relatedly, the age–neuroticism effect observed in the United States may emerge for one of two reasons. It may emerge because the link between neuroticism and specific attitudes (e.g., economic attitudes) is stronger among the young. Alternatively, it may emerge because young people interpret the concepts of 'liberal' and 'conservative' differently than old people. For example, imagine a scenario where neuroticism is linked with left-wing views on the economy across all ages and where, compared to old people, young people link more strongly the concept of 'liberal' with left-wing views on the economy. This scenario implies an age–neuroticism interaction as the one observed here. As this example illustrates, our analysis is unable to establish whether the age–neuroticism interaction occurs because neuroticism is linked with specific attitudes differently across cohorts, or because the terms 'liberal' and 'conservative' have different meanings across cohorts. Research examining the role of specific attitudes is needed to arbitrate between these two alternative hypotheses.

In conclusion, the article documents a stronger link between neuroticism and ideology among young compared to old Americans. An intriguing possibility is that this emerges because, compared to older cohorts, younger ones have grown up in a more competitive society, leading many to become more neurotic and in turn to support the left. This may help understanding why political polarization has been growing in the United States. It suggests that, at least in part, young people are gravitating towards the left because of their enhanced neuroticism, whereas

among the old, neuroticism appears to have no impact upon ideology.

Conflicts of Interest

The author declares no conflicts of interest.

Data Availability Statement

The data relative to Study 1 are available at https://gss.norc.org/. The data relative to Study 2 are available at https://osf.io/3mrze/?view_only=389513dfcaff4d27a02b86db5278f36f. The data relative to Study 3 are available at https://www.worldvaluessurvey.org/wvs.jsp.

Endnotes

[1] For simplicity, here, we have assumed a sharp separation between the two periods. However, based on social, economic and political data, it is more accurate to consider the shift from one period to the next as graded rather than as sudden.

[2] To describe this scenario, we will rely on hypothetical percentage values. It is important to stress that although the precise values are irrelevant for the argument, what counts is the rank among the different percentage values.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.

Supporting Table S1. Regression model of Ideology fitted in Study 1 with all two-way interactions including neuroticism. **Supporting Table S2**. Regression model of Ideology fitted in Study 1 with all two-way interactions including neuroticism and/or age and all three-way interactions including age and neuroticism. **Supporting Table S3**. Regression model of Ideology fitted in Study 2 with all two-way interactions including neuroticism. **Supporting Table S4**. Regression model of Ideology fitted in Study 2 with all two-way interactions including neuroticism and/or age and all three-way interactions including age and neuroticism. **Supporting Table S5**: Sample size for Study 3 broken down for each country. **Supporting Table S6**: Descriptive statistics for Study 3 broken down for each country.