Personality traits do not cause political trust: Evidence from twin and cohort data

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Abstract

People's political trust tends not to vary much in adulthood, and one explanation for this is that underlying personality traits cause people to develop different levels of political trust. Personality traits, being largely heritable and stable after early life, may develop first, and then affect how people develop political trust. As we might expect, those who are more agreeable and less neurotic tend to be more politically trusting, and I confirm this with a meta-analysis. However, I argue that these correlations should not be interpreted causally. Using twin data, I find that the associations between agreeableness, neuroticism, and political trust are heavily confounded by family background. Subsequent tests using variance decomposition models and long-run cohort data suggest that most of this confounding is genetic in origin. In sum, my evidence suggests that both political trust and personality traits develop in childhood and are similarly influenced by genetic factors. Personality traits do not cause people to develop trust attitudes, instead the association between them is explained by common underlying genetic factors which cause political trust and personality traits to develop alongside one another.

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Are political attitudes purely political? It is often argued that they are not, and that underlying personality traits explain our political beliefs just as well as they explain our other patterns of behaviour (Mondak 2010b; Gerber et al. 2011). In this view, it is argued that our political ideologies and patterns of political behaviour are to a substantial extent caused by stable personality traits, which are themselves formed in early life and are also largely heritable. This explanation suggests that our personality traits are formed first and then go on to govern our interactions with the world around us, including the political system.

One important attitude that could be caused by our personality traits is our political trust. This is a key indicator of democratic health and is associated with several important consequences, including electoral turnout and compliance with the law (Devine 2024), and many studies have tried to understand its causes. Recently, researchers have found that political trust tends to be quite stable in long run panel data, and it tends not to respond to political events in the ways often previously thought (Devine and Valgarðsson 2024). One possible explanation for this stickiness is that political trust, as with many other political attitudes, may be influenced by our underlying personality traits, and correlational evidence tends to support this claim (Cawvey et al. 2018; Mondak et al. 2017).

However, recent work has reconsidered the personality basis to many political attitudes. Earlier studies tended to rely on cross-sectional designs to measure the correlations between personality traits and political attitudes, which are vulnerable to reverse causation (Bakker et al. 2021a) and to unmeasured confounders related to family background (Ahlskog and Oskarsson 2023). This evidence might then not be sufficient to support the view that personality traits causally affect ideological views and political participation. Instead, it might be that personality traits remain important to understanding political attitudes, but not because personality is causally prior to those attitudes. Instead, both personality traits and political beliefs are closely connected dispositions formed early in life which then mutually influence one another throughout our lives (Bakker et al. 2021a).

This paper applies a similar logic to the relationship between personality traits and political trust. I first use a meta-analysis with data from 23 studies to confirm that both agreeableness (positively) and neuroticism (negatively) are associated with political

trust. However, using data from a twin study, I show that these associations are heavily confounded by family background. This in turn raises the question of whether the confounding is primarily due to common genetic factors predicting personality traits and political trust or shared early life experiences affecting both political trust and personality traits. Combining the twin data with longitudinal cohort data from the UK, I then show that almost all this confounding is genetic. This suggests that personality traits and political trust are likely to be closely connected dispositions linked to common inherited causes rather than there being a direct causal relationship from personality traits to political trust.

In what follows, I first outline why political trust may have a basis in personality traits, before arguing that any relationship between personality and political trust is likely to be confounded by pre-adult political socialization and genetic factors. I then review the data I use to disentangle this relationship, before demonstrating that the association between personality traits and political trust is confounded by family background. I conclude by suggesting that political trust is likely formed earlier in life than previously thought, and that common genetic factors cause political trust and personality traits to develop simultaneously, rather than personality traits being causally prior to political trust. In this sense, political trust and personality traits are closely entwined, but not in a linear causal fashion.

Personality traits and political trust

Personality traits – relatively stable patterns of thoughts, feelings and actions which differentiate people from one another – are thought to affect many aspects of our lives, and our political attitudes are no exception. Personality has at various stages been argued to causally affect our ideological beliefs (Ahlskog 2023; Bakker 2017; Hatemi et al. 2014; Jost et al. 2008), our social attitudes (Hirsh et al. 2010; Fatke 2017; Caprara et al. 2006; Schoen and Schumann 2007), our patterns of political participation (Dynes et al. 2019; Hibbing et al. 2011; Blais and St-Vincent 2011), our feelings of political efficacy (Cawvey 2023; Vecchione and Caprara 2009), our attitudes toward democracy (Kim-Leffingwell 2023; Miklikowska 2012), and our susceptibility to populist messaging (Bakker et al. 2021b). More recently, it has been argued that personality traits equally affect our political trust (Bromme et al. 2022; Cawvey et al. 2018; Mondak et al. 2017).

Often, political trust is thought to be a rational attitude, comprised of ongoing evaluations of the political system (Meer and Hakhverdian 2017; Van Elsas 2015), and therefore personality traits are rarely included in analyses of political trust. The strong associations between political trust and economic performance (Meer 2017a; Meer 2017b), political incivility (Bøggild and Jensen 2024) and political scandals (Ares and Hernández 2017) are thought to support the idea of trust as a rational response to events and policies. Summarizing the early literature, Levi and Stoker (2000, p. 481) state that: "whether citizens express trust or distrust is primarily a reflection of their political lives, not their personalities nor even their social characteristics".

However, there are reasons to reconsider this rationalist view of political trust. Recent work suggests that trust is a stable attitude in long-run panel data (Devine and Valgarðsson 2024). In addition, political trust shows less responsiveness to some events than previously thought (for example, Kelly and Tilley 2024). This appears inconsistent with a purely rational view of political trust in which people are expected to constantly update their trust. It has therefore been argued that political trust may have non-evaluative components related to early life socialization, or to disposition (Kelly et al. 2025; Kettlewell and Tymula 2024). One explanation for this is that political trust may be related to stable underlying personality traits. In this view, political trust is still influenced by events, but to a lesser extent. Some people are predisposed by their personality traits to be more trusting than others, and this tends to persist through changes in context.

Personality can be conceptualized in different ways, but the Big Five is one of the most used frameworks (Costa Jr et al. 2019; Goldberg 1992). Its five dimensions: agreeableness, neuroticism, extraversion, neuroticism and conscientiousness, show substantial cross-cultural replicability (McCrae et al. 1998) and re-test reliability (Gosling et al. 2003). It is therefore favoured in personality psychology research. For these reasons I focus on the Big Five dimensions, but much of my argument is likely to apply to alternative conceptualisations of personality such as the HEXACO model[1].

Personality traits are associated with political trust

[1]See Feher and Vernon (2021) for a review of alternatives to the Big Five conceptualisation of personality.

We know that two of the Big Five personality traits are correlated with political trust. Previous cross-sectional studies have found that agreeableness and neuroticism are associated with political trust (Robertson 2024; Cawvey et al. 2018; Mondak et al. 2017; Freitag and Ackermann 2016). Summarising these studies, the meta-analysis conducted by Bromme et al. (2022) finds generally positive associations between agreeableness and political trust, and generally negative associations between neuroticism and political trust. By contrast, there are not significant relationships between political trust and conscientiousness, openness, or extraversion[2]. It appears then that agreeableness and neuroticism may be important to understanding how people form political trust.

In addition, these correlations are plausible because there are both direct and indirect links between these personality traits and political trust. The direct links with political trust are clearest for agreeableness, which is related to people's capacities for affection, generosity and compliance (John et al. 2008). Indeed, generalized trust is sometimes considered a component of agreeableness (Weinschenk and Dawes 2019). Those who are more agreeable are deferential to authority, and more likely to take statements by those authorities at face value (John et al. 1991). They are also more forgiving, which may moderate the negative effect of events such as political scandals or poor economic performance on their trust (Strelan 2007). Those who are less agreeable also tend to be more susceptible to populist messaging designed to lower trust in established political institutions (Bakker and Lelkes 2018). We would therefore expect the more agreeable to also have higher levels of political trust.

There are also direct links between neuroticism and political trust. Neuroticism (or emotional stability) relates to levels of anxiety, irritability and hostility (John et al. 2008). Those who are more neurotic interpret events more negatively and experience generally lower affect (Rafienia et al. 2008; Costa and McCrae 1980). It seems likely that these biases would also apply when forming political trust. As Cawvey et al. (2018) summarize: "in-

[2]For the other three dimensions (openness, conscientiousness and extraversion), there is no consistent evidence about their relationship with political trust (Cawvey et al. 2018; Mondak et al. 2017) While some studies report a positive association between extraversion and political trust (Anderson 2010a; Hiraishi et al. 2008; Dinesen et al. 2014), the preponderance of studies do not find statistically significant relationships (Freitag and Bauer 2016; Dohmen et al. 2008; Mondak and Halperin 2008; Anderson 2010b) and this is confirmed by the meta-analysis from Bromme et al. (2022) There are also no consistent theoretical expectations. For example, while the more conscientious might feel a greater sense of duty toward their government, they are also less likely to grant political trust without substantial evidence (Dinesen et al. 2014)

dividuals high in emotional stability perceive... institutions as partners for success, rather than as potential threats to their well-being". We would therefore expect people high in neuroticism to form more negative political trust judgements for the same events and policies compared to those lower in neuroticism. In addition, those high in neuroticism are likely to be more readily seek out negative information about politics which could further lower their political trust compared to those lower in neuroticism. Accordingly, people high in neuroticism tend not to trust others in their daily lives (Dinesen et al. 2014) and it seems likely that this would also apply to their political trust.

Beyond these direct mechanisms, commensurate personality traits predict health and socioeconomic outcomes in adulthood and these also predict political trust. Those higher in agreeableness and lower in neuroticism tend to be more financially successful and to remain in more robust health throughout their lives (Almlund et al. 2011; Roberts et al. 2007). Both of these benefits are likely to positively dispose them toward the political system, because those in poorer personal and financial health may blame state institutions for not remedying their concerns. As we would expect, therefore, both economic and health status are positively associated with political trust (see Meer 2017b for economic outcomes and Mattila and Rapeli 2018 for health outcomes). The positive association between agreeableness, neuroticism and political trust are therefore plausible because there are both direct and indirect links between these personality traits and political trust.

Interpreting the associations between personality traits and political trust

It is often argued that personality traits are formed before political attitudes, and therefore cross-sectional associations between personality traits and political beliefs can be interpreted causally (Mondak 2010a; Mondak 2010b). Indeed, personality traits tend to stabilize early in life, and the correlations between personality traits in early and later life are high (Costa Jr et al. 2019). If one accepts that political trust is a rational attitude, which people constantly update, then it seems natural to assume that personality traits are causally prior to political trust, and this is the approach taken by much research on personality and political attitudes. In this view, political trust is formed after people's underlying personality traits, as a result of the political events they experience after their formative years.

However, a significant problem with this view is that the relationship between personality traits and political trust could be confounded by family background. This background particularly refers to early life conditions, for example socioeconomic status and health, and inherited genetic traits, both of which may affect political trust (Kettlewell and Tymula 2024; Schoon and Cheng 2011). In this view, any causal relationship between personality traits and political trust is much weaker than the observed positive correlations might suggest, because it is confounded by the common background of those who become more politically trusting and develop commensurate personality traits. This is particularly important because these confounding variables are not measured in standard observational designs, previous studies may have overstated the relationship between personality traits and political trust.

What might these confounders look like? The first group of confounders are inherited dispositional factors known to affect both personality traits and political trust. While personality traits show some variability in adulthood (Costa Jr et al. 2019), they tend to be stable after early life. It is therefore suggested that a substantial proportion of their variance is genetic in origin, with heritability estimates for personality traits typically being over 50 per cent (Bleidorn et al. 2022; Vukasović and Bratko 2015; Riemann et al. 1997)[3]. Equally, recent work suggests that political trust also has a genetic basis. Heritability estimates for political trust range from 30 to 50 per cent (Kelly and Tilley 2024; Kettlewell and Tymula 2024; Dawes et al. 2014). Most of the variation in political trust, as we would expect, is not attributable to genetic factors. However, there is nonetheless a substantial heritable component to political trust, which tallies with similar findings for other political attitudes (Dawes et al. 2014; Sturgis et al. 2010). To the extent that the heritable components of personality traits and political trust overlap, the relationship between them will be confounded.

The second set of possible confounders are those related to early life conditions, which are also a substantial determinant of political trust. One example is that political trust is strongly associated with early life household socioeconomic status. Those who grow up in

[3]A 50 per cent heritability estimate means that 50 per cent of the variation in each personality trait is statistically explained by heritable factors shared within twin pairs. This does not imply a Mendelian parent-to-child heritability as seen for certain heritable diseases such as cystic fibrosis.

higher income brackets tend to feel more comfortable with their lives in general, and with the political system. Accordingly, those in higher income brackets report higher political trust (Mayne and Hakhverdian 2017), as do those who report greater financial satisfaction (Catterberg and Moreno 2006), and, importantly, those who grew up in more financially comfortable households (Schoon et al. 2010; Schoon and Cheng 2011; Hooghe et al. 2015). Early life experiences are therefore a substantial determinant of political trust in adulthood.

Similarly, those whose early life is more comfortable tend to be more agreeable, and less neurotic, in later life. Kitamura and Fujihara (2003) show that early relocations are associated with neuroticism in later life[4], and Kandler et al. (2012) show that negative early life events, such as prolonged illness or parental separation, predict neuroticism and lower agreeableness in later life[5]. One caveat is that these relationships could be confounded if a latent genetic trait shared by parents and their children predicts both personality traits and the probability of experiencing these negative events. For example, parents high in neuroticism and low in agreeableness may be more likely to separate, and because personality traits are substantially heritable, their children are likely to share these traits to some extent, but this does not necessarily mean that the separation caused the children to express these personality traits. However, these thoughts aside, there is reasonable evidence that the relationship between personality traits and political trust may be confounded by early life conditions.

While this sounds plausible, in fact we should expect most of the confounding to be genetic for several reasons. Heritability estimates for personality traits tend to be very high, with the meta-analysis from Vukasović and Bratko (2015) suggesting between 40 and 50 per cent heritability for the most personality traits and 50 per cent typically being used as a benchmark (Jang et al. 1996). By contrast, estimated shared environmental variance tends to be low, which is most closely associated with early life conditions (Polderman et al. 2015; Jang et al. 1996)[6]. Similarly, while heritability estimates for political trust

[4]Although one should note that this relationship could be confounded by a latent genetic trait (to an extent shared by parents and their children) predicting both neuroticism and willingness to relocate.

[5]By contrast, experiences of "positive" early life events (such as improvements in household financial status) are associated with extraversion and openness in later life.

[6]In a standard decomposition model, the variance in a trait is separated into additive genetic, shared environmental, and non-shared environmental components. The additive genetic component estimates the proportion of the population-level variation in the trait which is attributable to genetic variation (and importantly does not necessarily indicate Mendelian parent to child heritability). While the shared environmental component is most closely associated with the early life environment of the twins, some early life conditions will also be measured by the non-shared environmental component of the model.

are lower, typically 30 to 40 per cent, shared environmental variance is low (Kettlewell and Tymula 2024; Dawes et al. 2014). It appears likely, therefore, that genes would be mostly responsible for any unmeasured confounding between personality and political trust.

In sum, I argued that when accounting for confounding factors related to family background, personality traits may be less important for political trust than previous evidence might suggest[7]. This means that the observed correlations between personality traits and political trust could mislead us as to the nature of the relationship between them. In what follows, I combine evidence from a twin study and longitudinal cohort data to estimate the relationship between personality traits and political trust while accounting for previously unmeasured confounders related to family background.

Hypotheses

My hypotheses follow straightforwardly from the preceding discussion. I first hypothesize that some of the Big Five personality traits are correlated with political trust.

H1 There are associations between the Big Five personality traits and political trust.

H1a. Agreeableness is positively associated with political trust.

H1b. Neuroticism is negatively associated with political trust.

When accounting for family background (early life conditions and heritable dispositions), I argued that there is unlikely to be any remaining relationship between personality traits and political trust. This means that the descriptive claims in Hypothesis 1 cannot be interpreted causally. I therefore hypothesize that:

Specifically, those events in early life which made the twins more different in personality will be included in the non-shared environmental part of the model (Torgersen and Janson 2002). It is therefore highly likely that early life conditions still have some role in predicting personality traits, and it is certainly not the case that genetic factors alone explain personality, because the non-shared environmental estimates tend to be high, indicating that events in later life have a substantial role in predicting personality traits. However, the preponderance of evidence on personality traits favours an interpretation in which early life factors are substantially less important than genetic factors.

[7]Similar concerns have already been raised in previously assumed causal relationships between personality traits and other political attitudes. For example, Ahlskog (2023) shows that when accounting for family background, the relationship between extraversion and political participation is eliminated, while Dawes et al. (2014) and Verhulst et al. (2012) come to the same conclusion about all Big Five dimensions. Similarly, (Weinschenk and Dawes 2017; Weinschenk and Dawes 2018) show that the relationships between personality traits, political interest, and one's sense of civic duty are not robust to accounting for family background. Kandler et al. (2012) also show that genetic factors account for most of the correlation between personality traits and political ideology.

H2 The associations between the Big Five personality traits and political trust are not causal in origin.

This confounding has two possible sources: early life conditions such as socioeconomic status, and inherited genetic factors which predict both personality traits and political trust. The remaining two hypotheses account for these two possible sets of confounders, with the first suggesting that the confounding is genetic in origin.

H3 The associations between the Big Five personality traits and political trust are confounded by inherited dispositional factors.

H3a. The association between agreeableness and political trust is confounded by inherited dispositional factors.

H3b. The association between neuroticism and political trust is confounded by inherited dispositional factors.

The final hypothesis then refers to the possibility that the confounding is instead due to early life socialization.

H4 The associations between the Big Five personality traits and political trust are confounded by shared early life conditions.

H4a. The association between agreeableness and political trust is confounded by shared early life conditions.

H4b. The association between neuroticism and political trust is confounded by shared early life conditions.

Data and method

I conducted three independent studies which each tackled one or more of the hypotheses. The first study establishes whether associations exist between personality and trust and therefore tests Hypothesis 1, while Study 2 and Study 3 test whether these associations are confounded and if so, try to identify the source of this confounding. These studies therefore test Hypotheses 2-4.

Study 1. Meta analysis

The first step is to establish whether the Big Five personality traits are associated with political trust. For this purpose, I expanded and updated the meta-analysis dataset from Bromme et al. (2022). The authors of that study collected results measuring at least one of the Big Five personality traits and trust in politicians or national political institutions[8]. I built on this and increased the number of studies in the meta-analysis dataset from 16 studies to 23 studies by taking the steps outlined below.

The first step was that I broadened the search procedure. Bromme et al. (2022) created their dataset by forward searching articles citing Mondak and Halperin (2008) and Mondak (2010b). I expanded their dataset with a systematic Web of Science search with the keyword: ("political trust" OR "trust in politics" OR "political distrust") AND ("personality" or "extraversion" or "conscientiousness" or "neuroticism" or "agreeableness" or "big five" or "big 5"). Following Bromme et al. (2022), I included studies which report a correlation or regression coefficient between at least one of the Big Five personality traits and at least one measure of trust in politicians or political institutions, at the local or national levels. However, I also included studies published after 2020, which was the latest year included in the original data. This step added four studies to the meta-analysis dataset. In addition, I included studies which used the same data sources, for which I compensated by including random effects for the data source in my models. This added three more studies to the dataset[9]. This led to a final dataset with 23 studies and 123 coefficients, covering all the Big Five dimensions (see Appendix A for full details).

Following Devine (2024), I estimated partial correlations between political trust and each of the Big Five personality traits. I then standardized these to run from 0 to 1 and I ran a hierarchical model for each of the Big Five traits, with random intercepts for the study, for the political trust measure type, personality measure type, and for the dataset. The intercept from these models is the standardized meta-analytical coefficient, and it can be interpreted as the standardized effect of a one standard deviation change in the per-

[8]Bromme et al. (2022) also included a study which measured trust in supranational political institutions (for example, trust in the European Union). I excluded this study because trust in European institutions is likely to be confounded with ideology and Euroscepticism and does not tend to be strongly correlated with trust in national or local institutions (by contrast, levels of trust in local and national institutions tend to be highly correlated, see Muñoz (2017) for more details).

[9]See the Appendix for a full list of studies added at each step of the procedure.

sonality trait of interest on political trust. I also report the proportion of studies finding a positive or negative relationship for each trait.

Study 2. Twin study

The second step is to establish whether the associations between the Big Five dimensions and political trust are confounded by family background. For this purpose, I use twin data, which has the key advantage that the twins are known to be genetically very similar, and to have grown up in the same environment. This allows me to estimate the relationship between personality traits and political trust while controlling for these confounders[10]. I use the Minnesota Twins Political Survey (MTPS) which is the only twin study to measure both political trust and the Big Five dimensions. The sample is restricted to twins for whom I have information on all relevant variables for both siblings, and it includes both monozygotic (MZ) and dizygotic (DZ) twins. These data are summarized in Table 1.

Table 1: Summary of twin data

Dataset	Country	Survey fieldwork	N	MZ pairs	DZ pairs	Age range
Minnesota Twins Political Survey (MTPS)	USA	2008-2009	1349	356	240	53-62

I measure political trust using the standard American National Election Study battery, which asks four questions about trust in government and in politicians[11]. To reduce measurement error, I collate these into a scale which I standardized to run from 0-1. The scale shows reasonable reliability as indicated by Cronbach's Alpha ($\alpha = 0.69$).

I measure the Big Five dimensions using the 44-item Big Five Inventory (John et al. 1991). These data show high reliability as indicated by Cronbach's Alpha (α= 0.86 for agreeableness, $\alpha = 0.86$ for extraversion, $\alpha = 0.76$ for conscientiousness, $\alpha = 0.83$ for neuroticism and $\alpha = 0.82$ for openness to experience). The 44-item BFI scale is generally more reliable than shorter personality batteries, including when measuring the associations between personality traits and political attitudes (Boston et al. 2018; Bakker and Lelkes 2018; Rammstedt et al. 2013). See Appendix B for full descriptive statistics and factor analyses for the political trust and personality scales.

[10]Where twins did not grow up in a shared environment (for example, due to adoption), this is flagged in the data and those twins are excluded.

[11]See Appendix B for full question wordings.

I test the relationships between the Big Five personality traits and political trust using discordant twin models. The discordant twin design uses the observation that MZ twins are genetically near identical and share the same family environment due to their common upbringing. By testing differences within twin pairs – comparing how differences in each personality trait relate to differences in political trust – I can estimate the relationship between the Big Five personality traits and political trust while controlling for family-related confounders. In effect, this approach treats one twin as a credible (albeit imperfect) counterfactual for the other and asks whether the twin with higher political trust is also higher (or lower) on the relevant personality trait.

In practical terms, this involves comparing two models. The first is a naïve model in which I regress the personality trait on political trust while controlling for only birth year fixed effects, sex, and an interaction between the two. The second replaces these controls with twin pair fixed effects, focusing solely on within-pair variation isolated from confounding factors related to family background. If the relationship between personality and political trust is confounded by these factors, then the coefficient for political trust will decrease in those models (Ahlskog and Oskarsson 2023). Since MZ twins share 100 per cent of their genetic information, I expect the most confounding in the MZ models and therefore, in line with previous co-twin studies on personality traits, I use MZ twins as the baseline models.

One caveat with the discordant twin design is that in the unlikely but conceptually possible event that the genetic (or environmental) components to the two traits completely overlap, but one trait is entirely causally prior to the other, then a co-twin model might incorrectly interpret this relationship as being confounded. For example, if genes cause people to develop a given personality trait, and the same genes cause people to develop political (dis)trust, but this is because personality traits are entirely causally prior to political trust, then the co-twin model would not differentiate between this scenario and genetic confounding. To test this possibility, I also ran several direction of causation models. These are variance decomposition models in which one adds additional paths to represent a causal relationship between the two traits of interest. Typically, one runs a saturated model with no causal relationship (a Cholesky model) and then compares the model fit to

unidirectional and bidirectional causal models. If the causal models provide a meaningful improvement in model fit, then this provides some evidence for a causal relationship. Otherwise, confounding (no causal relationship) remains the most supported interpretation[12].

It is not possible to pinpoint the exact sources of confounding in a discordant twin model. If the relationship between personality traits and political trust is attenuated when including family fixed effects in the co-twin models, this suggests that the relationship is confounded. However, this confounding could be due to shared early life conditions, inherited dispositional factors, or both. To test the relative importance of these factors in driving the confounding, I use the bivariate twin model. This extends the univariate twin model – where variation in a single trait is decomposed into additive genetic (A), shared environmental (C) and unique environmental (E) components – to two or more traits. It allows me to estimate the covariation between two traits which can be attributed to genetic and environmental factors and thereby to estimate the source of any confounding between personality traits and political trust.

Study 3. Cohort data

The final data I use is longitudinal cohort data from the United Kingdom. These data are drawn from the 1958 National Child Development Study, and I summarize them in Table 2. These data track respondents from birth and contain questions related to early life conditions which are not recorded in standard observational data. The study measures political trust and the Big Five personality traits in its age 51 wave, which I then merged with data on early life conditions drawn from the age 0 to age 16 waves[13].

Table 2: Summary of cohort data

Dataset	Country	Survey fieldwork	N	Age range (early life conditions)	Age range (personality traits and political trust)
National Child Development Study (NCDS)	UK	1958-2009	3410	0-16	53-62

Political trust is measured using a two-item battery which I again standardized to run

[12]Direction of causation models are less reliable than co-twin models when there is non-shared environmental confounding (Rasmussen et al. 2019) and so their results should be interpreted with a degree of caution. Nonetheless, they are the only way to directly compare the hypotheses of reverse and reciprocal causation with those of personality traits causing political trust or there being no causal relationship in either direction.

[13]The reported sample size is the final sample with complete information on political trust, the Big Five personality traits, and the current and early life conditions listed in Table 3.

from 0-1. Although the trust measures across the cohort and twin data cover several different objects of trust, recent research suggests that there is little substantive difference between these measures (Devine 2024). In addition, the political trust scale shows high reliability (α= 0.71)[14].

The Big Five personality domains are measured using the same Big Five Inventory as in the MTPS. The five dimensions again show high reliability (α = 0.86 for agreeableness, α = 0.86 for extraversion, α = 0.76 for conscientiousness, α = 0.83 for neuroticism and α = 0.82 for openness to experience). This allows for comparison with the twin study results and avoids the reliability issues with short personality batteries. See Appendix C for full descriptive statistics and factor analyses for the political trust and personality scales.

The key advantage of the cohort data is the ability to precisely measure control variables both in the current day and in early life. Table 3 summarizes the covariates I include at both stages, with the former drawn from the age 51 wave and the latter from the age 0 to age 16 waves. These covariates cover the major correlates of political trust for which there was not substantial missingness, including education (Mayne and Hakhverdian 2017), health (Mattila and Rapeli 2018), socioeconomic status (Meer and Hakhverdian 2017), interpersonal trust (Sønderskov and Dinesen 2016) and supporting the incumbent political party (Hetherington and Rudolph 2015). In a few cases, I could not include relevant variables due to substantial missingness, but I was able to include most major correlates of political trust.

Table 3: Summary of control variables in the 1958 UK cohort study

Current day controls (age 51)	Early life controls (age 0-16)
Socioeconomic:	*Socioeconomic:*
Home ownership, self-reported general health region, income, social class, education level self-assessed financial situation, self-assessed annual change in financial situation.	Father's education level, mother's education level social class, grandfather's social class, economic hardship indicator, social care indicator, whether eligible for free school meals, household income.
Other	*Other*
Social trust, life satisfaction, political interest, party support, social functioning scale.	Parental social functioning scale, sex at birth, whether parents read books (indiactors).

[14]See Appendix C for a confirmatory factor analysis.

Note. Region = government office region. Social class = Occupational social class according to the Goldberg (1992) Schema. Social functioning scale = *describe social functioning scale.*

While the bivariate twin model allows me to estimate the proportion of any confounding attributable to genetic factors and to early life conditions, it does not directly measure either of these sets of variables. I therefore use the cohort data to directly measure confounding attributable to shared early life conditions[15]. I do this by comparing a naïve model, including only the personality traits, age and sex, to a model controlling for the early life conditions listed in Table 3. If the relationship between personality and trust is confounded by early life conditions, then we would expect to see attenuation in the latter model. If not, then genetic confounding remains the most supported interpretation.

Analysis

Study 1: Meta analysis

The first step is to demonstrate whether the Big Five personality traits are associated with political trust. Table 4 summarizes the standardized partial correlations between the Big Five dimensions and political trust, with 123 coefficients from 23 studies.

Table 4: Standardized meta-analytical effects of the Big Five personality traits on political trust.

	(1)	(2)	(3)	(4)	(5)
Big Five Dimension	Agreeableness	Neuroticism	Conscientiousness	Extraversion	Openness
Standardized partial correlation	0.090*	−0.058*	0.003	0.026	0.027
	(0.019)	(0.019)	(0.029)	(0.020)	(0.024)
Prop. positive	88%	13%	64%	61%	57%
Num. obs.	24	22	22	22	22
Num. studies	23	22	22	22	21

Note. *p $<$ 0.05. Standardized partial correlations (Fisher's Z) and their standard errors shown. The dataset is an updated version of that constructed by Bromme et al. (2022), which includes 123 coefficients from 23 studies.

[15]Similar measures of the genetic component to political trust are not available. Most behavioural and attitudinal phenotypes are highly polygenic (influenced by many genes at once), no single gene would account for trust (Charney and English 2012). Nonetheless, recent advances in behavioural genetics now allow for direct measures of the genetic disposition toward polygenic traits, and this includes more direct measures of the genetic components of the Big Five personality traits (Spychala et al. 2022; Weiss et al. 2016). However, the polygenic indices contained in studies which also measure political trust (for example, the US National Longitudinal Study of Adolescent Health) are not yet sufficiently reliable for the Big Five personality traits to be used in my analysis. I leave the task of more directly testing for genetic confounding to future research once suitable polygenic indices are available.

Agreeableness and neuroticism are clearly associated with political trust. For agreeableness, 86% of studies report a positive coefficient. The standardized partial correlation is also positive and statistically significant at the 5 per cent level. For neuroticism, 85% of the included studies report a negative coefficient, and the standardized coefficient is negative and statistically significant. The associations are moderate and comparable to other meta-analytical effects in political science. The effect of agreeableness on trust is comparable to the effects of political trust on environmental and immigration policy preferences, while the effect of neuroticism is comparable in size (and opposite in direction) to the effect of political trust on electoral turnout. Both effects are larger than the effect of ethnic diversity on interpersonal trust (Fisher's Z = -0.025, Dinesen et al. (2020)) and the effect of agreeableness is comparable to the rally effect of terror attacks (Fisher's Z = 0.09, Godefroidt 2023[16]). It appears therefore that there are robust associations between agreeableness and neuroticism, and political trust[17].

By contrast, and as expected, it does not appear that the other three Big Five dimensions (conscientiousness, extraversion and openness) are associated with political trust. While all three of the associations are positive, they are generally small and not statistically significant. The largest coefficient is for openness, although there was substantial variability in this case. Almost half of the studies reported a negative coefficient and the magnitudes varied substantially across studies, indicating that there is no robust effect on political trust. I therefore find support for Hypothesis 1 (and specifically, for Hypotheses 1a and 1b); there are associations between two of the Big Five personality traits and political trust[18].

Study 2: Twin study

The next step of my analysis is to test whether the previously established associations between two of the Big Five personality traits and political trust are confounded by family

[16]Partial correlations cannot be interpreted analogously to zero order correlations. Doucouliagos (2011) argues that for meta-analyses in economics, a partial correlation above 0.07 should be interpreted as moderate, and a partial correlation over 0.33 should be interpreted as large.

[17]For agreeableness, there is some evidence of publication bias potentially inflating the estimate: Egger's p-value < 0.01, Egger's limit $= 0.045$. There is, however, no such evidence for neuroticism: Egger's p-value > 0.05. There is, nonetheless, evidence of heterogeneity in both cases: Higgin and Thompson's $I^2 > 0.75$.

[18]Given that there are around 20 observations for each personality trait, it is not possible to disaggregate the results by political trust question type. Nonetheless, the meta-analysis on the consequences of trust by Devine (2024) did not find variation between question types, so I do not expect this to cause heterogeneity.

background. Table 5 reports the results from a co-twin control study between the Big Five personality traits and political trust. The naïve models are reported first (with only age, sex and their interaction as controls) followed by the twin pair fixed effects models for each trait.

Table 5: Co-twin models for the Big Five personality traits and political trust.

Dependent variable	Political trust scale									
Personality trait	Agreeableness		Neuroticism		Extraversion		Conscientiousness		Openness	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Agreeableness	0.293*	0.143	−0.165*	−0.078	−0.028	0.003	0.018	−0.094	−0.053	0.132
	(0.067)	(0.099)	(0.047)	(0.073)	(0.043)	(0.076)	(0.65)	(0.097)	(0.055)	(0.095)
Twin pair FE	N	Y	N	Y	N	Y	N	Y	N	Y
Observations	763	763	760	760	768	768	764	764	768	768
Adjusted R^2	0.026	0.348	0.001	0.331	0.002	0.340	0.001	0.331	0.002	0.342

Note. *p<0.05. Standardized effect sizes and their standard errors shown. The data is from the Minnesota Twins Political Survey. The naïve models include controls for age, sex, and an interaction term between age and sex. The fixed effects models include fixed effects for each twin pair. All models cluster their standard errors within households. See Appendix B for DZ twin results.

In the naïve models, the results from the meta-analysis hold true. Agreeableness and neuroticism have statistically significant associations with political trust (positive for agreeableness and negative for neuroticism). Again, the magnitudes are similar to the meta-analysis, with the positive effect of agreeableness being around 50 per cent larger than the negative effect of neuroticism. These effects are also quite large. A one standard deviation increase in agreeableness is associated with approximately a 0.3 standard deviation increase in political trust, while a one standard deviation increase in neuroticism is associated with just under a 0.2 standard deviation decrease in political trust.

However, neither of these associations are robust to controlling for family background when including twin pair fixed effects in the models. In both cases, the association more than halves and loses statistical significance. It appears therefore that the associations between agreeableness and neuroticism, and political trust, are likely to be confounded by family background and are therefore unlikely to be causal in origin. I therefore find support for Hypothesis 2, that personality traits are not causally associated with political trust.

These results are robust in several ways, and I report robustness tests in Appendix B. First, bivariate Cholesky decomposition models also suggest that there is no causal relation-

ship, because the e_{12} path coefficient (which represents the unconfounded shared variance between personality and political trust), is essentially zero and statistically insignificant in both cases. I also present robustness checks for: measurement error corrections, outlier corrections, and demonstrating sufficient within-twin variance for a co-twin analysis. I also give a simulation-based power analysis which suggests that the MTPS data is well powered[19].

One additional concern might be that, in an unlikely but conceptually possible scenario, the genetic component to personality traits and political trust might substantially overlap, but there is still a causal relationship between personality and trust. In this view, instead of the relationship being genetically confounded, genes cause personality and trust, and personality causes trust, but the co-twin models mimic confounding due to the overlap in the genetic components of personality and trust. To rule out this possibility, I ran several direction of causation models (Gillespie and Martin 2005) between agreeableness and neuroticism, and political trust and I present these in Table 6. These compare the fit of several structural equation models, beginning with a bivariate decomposition model and then adding causal pathways in both directions between each personality trait and political trust.

Table 6: Direction of causation models between personality traits and political trust.

Dataset	Dependent variable	Model	Fit (-2lnL)
MTPS	Agreeableness	**No causal relationship**	1540.4
		Personality causes trust	1588.6
		Trust causes personality	1590.2
		Reciprocal causation	1588.6
	Neuroticism	**No causal relationship**	2486.9
		Personality causes trust	2510.1
		Trust causes personality	2510.1
		Reciprocal causation	2510.1

[19]One particular concern might be that the confounding between agreeableness and political trust may be explained by trust being a component of agreeableness which cannot be meaningfully measured separately. Generalized interpersonal trust is sometimes considered part of agreeableness and is in turn strongly associated with political trust (Sønderskov and Dinesen 2016). The attenuation in the co-twin models might then reflect trust and agreeableness being conceptually inseparable, rather than confounding due to family background. However, this seems unlikely. For one thing, the most recent research suggests that the correlation between political and interpersonal trust is explained by political trust causing interpersonal trust and not the other way around (Dinesen et al. 2022). For another, in Appendix B, I report correlations between the items in the agreeableness scale, and the political trust scale. The correlations between each item and the other items in the agreeableness scale are in all cases substantially higher than the correlation between that item and the political trust scale.

Note. The data is from the Minnesota Twins Political Survey. The results are from Direction of Causation models using data from MZ and DZ twins. All models control for age and sex. The "no causal relationship" models are saturated (Cholesky decomposition) models, while the remaining three models add causal paths from personality to trust, vice-versa, and then both paths simultaneously in the "reciprocal causation model". Lower -2lnL indicates best fit (in bold). All models were run with the package 'umx' in R.

For both agreeableness and neuroticism, including causal paths between personality and political trust in either direction worsens the fit of the model[20]. For agreeableness, no model provides an improvement in fit to the common cause model. For neuroticism, the common cause model and the reciprocal causation models are the best fitting. Combined with the bivariate decomposition results, in which the e_{12} path coefficients are all close to zero and statistically insignificant, there is no evidence for a causal relationship in either direction. Direction of causation models should be interpreted cautiously in the presence of non-shared environmental confounding, which the co-twin models suggest may be present (Rasmussen et al. 2019). Nonetheless, the bivariate decomposition models suggest that 70-90 per cent of the confounding is likely to be genetic in origin, which mitigates this concern. When combined with the discordant twin results[21], therefore, I find support for Hypothesis 2; it does not appear that there is a causal relationship between any of the Big Five personality traits and political trust.

My results thus far suggest that the relationship between personality traits and political trust is confounded by family background. However, they do not provide direct evidence as to whether this confounding is primarily due to shared heritable dispositions or shared early life factors. Using data from the bivariate Cholesky models, Table 7 shows the proportion of the correlations between political trust, agreeableness sand neuroticism that can be attributed to shared heritable dispositions (%Rg) and to the shared early life environment in which the twins were raised (%Rc). For completeness, I also report %Re, which does not provide further information about confounding but indicates the covariation between trust and personality traits attributable to factors other than the common heritable predispositions and early life environment shared by the twins (and therefore the covariation that was used to estimate the relationship between the personality traits and political trust in the fixed effects models in Table 5).

[20] In some cases, competing models are estimated with the same log-likelihood to one decimal place. This indicates that the additional paths in the subsequent models do not provide any improvement in model fit.

[21] While non-shared environmental confounding can still bias parameter estimates in discordant twin models (Frisell et al. 2012), this tends to be to a far lesser extent than in direction of causation models. In addition, the corrections for measurement error presented in Appendix B demonstrate that this is unlikely to be a substantial issue in this case.

Table 7: The proportional genetic (%Rg), common environmental (%Rc) and unique environmental (%Re) correlations between personality traits and political trust.

Dataset	Dependent variable	%Rg	%Rc	%Re
MTPS	Agreeableness	71.1	00.0	26.7
		[38.0; 100.0]	[00.0, 00.0]	[00.0; 30.7]
	Neuroticism	87.5	00.0	10.0
		[14.0; 100.0]	[00.0, 00.0]	[00.0; 53.2]

Note. The data is on MZ and DZ twins from the Minnesota Twins Political Survey. Point estimates and bootstrapped 95 per cent confidence intervals are shown, derived from a bivariate Cholesky decomposition model. The models control for age and sex. All estimates have been rounded to one decimal place. The point estimates for %Rc are above zero, but negligible. All models were run with the package 'umx' in R.

While there is substantial variability in the results for the genetic and unique environment components, common environmental factors play no role in the association between personality traits and political trust. For both agreeableness and neuroticism, none of the correlation is attributable to early life environmental conditions shared by the twins. By contrast, about 70 per cent of the correlation between agreeableness and political trust is attributable to shared heritable factors. Similarly, around 90 per cent of the correlation between neuroticism and political trust is attributable to shared heritable factors. This tallies with the bivariate Cholesky models, in which there was no evidence that shared environmental factors influence political trust. It appears therefore that the relationship between personality traits and political trust may be confounded by common heritable dispositions, but it is definitely not confounded by the common upbringing shared by the twins. I therefore do not find support for Hypothesis 4, but I do find some qualified support for Hypothesis 3.

Study 3: Cohort study

My results thus far suggest that the associations between the Big Five personality traits and political trust are confounded, and that shared heritable dispositions are primarily responsible for this confounding. Nonetheless, it is still possible that some of the confounding in the twin model is accounted for by early life conditions and that the twin models fail to pick up on this because they measure these early life conditions indirectly. To test directly for confounding with early life conditions, Table 8 reports the results of an analysis of longitudinal cohort data. Model 2 includes controls for current conditions and

model 3 also includes controls for early life conditions.

Table 8: Personality traits, political trust and early life conditions in the 1958 cohort study.

	(1)	(2)	(3)
Dependent variable	Political trust scale		
Model	No controls	Current controls	All controls
Agreeableness	0.124*	0.095*	0.097*
	(0.021)	(0.020)	(0.020)
Neuroticism	-0.121*	-0.073*	-0.074*
	(0.019)	(0.018)	(0.018)
Extraversion	-0.004	-0.014	-0.011
	(0.020)	(0.018)	(0.018)
Conscientiousness	-0.007	-0.009	-0.008
	(0.019)	(0.018)	(0.018)
Openness	0.148*	0.020	0.007
	(0.020)	(0.019)	(0.019)
Current day controls	N	Y	Y
Early life controls	N	N	Y
Num. obs	3410	3410	3410
Adjusted R^2	0.072	0.242	0.249

Note. * $p < 0.05$. The data is from the 1958 National Child Development Study. Model 1 controls for age and sex. Model 2 additionally controls for the current day conditions outlined in Table 2. Model 3 additionally controls for the early life conditions outlined in Table 2.

Once again, I do not find any evidence of confounding due to shared early life conditions. In the naïve model, the associations between personality traits and political trust are similar to those in the meta-analysis. Agreeableness is again positively associated with political trust, and neuroticism is negatively associated with political trust. These associations are of similar magnitude, and both are statistically significant at the 5 per cent level. These associations are then diminished slightly when adding in controls for current conditions in Model 2. One slight deviation from Study 1 and Study 2 is that in the naïve model, there is a positive and statistically significant association between openness and political trust, but this is eliminated when controlling for current conditions.

However, importantly, when controlling additionally for early life conditions in Model 3, there is no change in either of the coefficients on agreeableness or neuroticism, which remain statistically and substantive significant[22]. I therefore do not find support for Hy-

[22]These results are robust in several ways, and I report robustness tests in Appendix C. These include: re-running the models with each personality trait included separately, re-running the models while ex-

pothesis 4; the relationship between personality traits and political trust is not confounded by early life conditions. Overall, therefore, it seems that the confounding between personality traits and political trust is primarily attributable to heritable dispositions.

Summary

In sum, while the meta analysis demonstrates that there are robust associations between two of the Big Five personality traits and political trust, this does not mean that agreeableness or neuroticism cause people to develop different levels of political trust. The co-twin models show that these associations are substantially reduced when controlling for family background, and the direction of causation approach suggests that the best fitting model is one with no causal relationship in either direction. Although it is likely that both shared early life conditions and inherited traits play a role in this confounding, both the twin models and the longitudinal cohort data suggest that inherited factors are most responsible.

Conclusion

Maintaining trust in political institutions is crucial for democratic politics. Without reasonable levels of political trust, we might expect people to stop participating in political life, to reduce their compliance with the law, or to lose respect for core democratic principles. However, the origins of political trust are less clear. While it has often been argued that trust is an evaluative attitude which people update in response to new information, others have argued that trust is a socialized attitude formed in early life which is then quite stable. Recent evidence has built on this suggestion and argued that this might be partly explained by underlying personality traits causing political trust, following similar claims made about other political attitudes.

However, the evidence presented in this paper suggests that we should be cautious about interpreting the relationship between personality traits and political trust. While personality and political trust are closely connected, they are unlikely to be linked by a causal relationship from personality traits to political trust. While there are robust associ-

cluding interpersonal trust from the current day controls, and re-running the models while including an additional political trust variable in the political trust scale.

ations between agreeableness (positive) and neuroticism (negative) and political trust, as confirmed by the meta-analysis, the evidence in this paper suggests that these are mostly accounted for by genetic confounding. When accounting for family background in a twin-pair fixed effects design, the associations between agreeableness, neuroticism, and political trust lost statistical significance. Direction of causation models also suggest that there is unlikely to be a causal connection between personality traits and political trust. In sum, therefore, the evidence presented here suggests that both personality traits and political trust are dispositions formed in early life, but by different combinations of genetic and environmental factors, meaning that variation in personality traits is not responsible for differences in people's levels of political trust.

It should be noted that the absence of a causal connection between personality traits and political trust does not imply that trust is not a socialized or stable attitude. In fact, the evidence in this paper suggests even more strongly that political trust is formed in early life. Following previous work which suggests that there is a substantial heritable component to political trust (Kelly et al. 2025), the evidence presented here suggests that common genetic factors explain the associations between agreeableness, neuroticism, and political trust. In this view, political trust is a disposition formed early in life influenced by both heritable factors and early life conditions, but it is not directly influenced by personality traits. Instead, different heritable dispositions and early life conditions are likely to explain how political trust is formed.

Of course, as with any research, there are some caveats to my findings. For one thing, although my evidence suggests that most of the confounding between personality and political trust is related to genes rather than early life conditions, it is still likely that early life conditions matter to some extent. Not all such conditions can be measured in the cohort models, and a portion of the confounding in the co-twin models is likely due to early life conditions. In addition, parents' decisions about the environment in which their children are raised will to some extent be influenced by inherited traits shared with those children, further complicating efforts to separate early life conditions from inherited factors. Further research using more comprehensive measures may be useful to uncover any confounding missed in this study.

Nonetheless, these caveats aside, my findings have significant implications for our understanding of the origins of political trust and political attitudes more generally. Broadly, this research contributes to recent work which casts doubt on assuming causal relationships between personality and political attitudes (Verhulst et al. 2012; Dawes et al. 2014). While personality traits are strongly associated with many political attitudes, it is increasingly apparent that a unidirectional causal model, in which personality traits are formed early in life and are causally prior to political attitudes, is not supported by the data. Instead, both personality traits and some political attitudes are likely to be dispositions formed early in life which then fluctuate and mutually influence one another throughout the life span (Bakker et al. 2021a).

Specifically, my findings suggest that a unidirectional causal model is unsupported for political trust and that personality and political trust are closely connected by shared heritable pathways. This further implies that political trust is likely formed much earlier in life than traditional evaluative accounts would suggest (Devine and Valgarðsson 2024)[23]. Trust being formed early also has policy implications. To the extent that political trust is a stable attitude formed in early life, it may be more difficult for policy interventions to alleviate the low and declining political trust observed in many democracies today.

It should be emphasised that the absence of a causal relationship does not mean that personality is unimportant for the study of political trust. The substantial genetic confounding between political trust and personality suggests that both are dispositions formed very early in life and influenced by common genetic factors. In this sense, personality traits remain important to understanding political trust, but not because personality is causally prior to trust. Instead, personality traits and political trust are closely connected dispositions both formed early in life.

The relationship between personality traits and political attitudes is, therefore, likely to be complex. For one thing, while it seems likely that political trust is formed much earlier in life than earlier research presumed, the processes by which trust is formed in early life are not well understood, and neither is the role of personality traits in these pro-

[23]This is not to deny that evaluations matter for political trust. Events and policies are still likely to influence people's political trust, but perhaps less than a purely evaluative account of trust would suggest, as the over-time stability in political trust found by Devine and Valgarðsson (2024) illustrates.

cesses. It may be that political trust and personality are formed by separate processes and there is indeed no connection between the two, but this seems unlikely. Instead, several genetic and environmental pathways are likely to link personality traits and political trust in early life, and further research could, where possible, seek to identify these processes, for example by using more longitudinal data.

In addition, while largely stable in adulthood, both trust and personality traits tend to fluctuate around their long-run means. Future research could therefore seek to identify the factors that cause short-term fluctuations in trust and whether these are mediated by changes in personality (for example, whether negative economic events influence political trust via neuroticism), perhaps by using appropriate panel data. One promising avenue is the idea that personality traits moderate the effect of political events on political trust evaluations (Robertson 2024).

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