The Selfish Diploma: Impact of Field of Study in University Education on Preferences for Redistribution



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1. Introduction

In the context of established democracies, educational attainment—or the lack thereof—has long been recognized by both scholars and the broader public as a key determinant of political attitudes and behaviors (Norris and Inglehart 2019). However, a substantial body of prior research claiming to assess the impact of secondary and tertiary education on attitudinal change has come under growing scrutiny for its methodological limitations and questionable external validity (e.g., Weakliem 2002; Kam and Palmer 2008; Persson 2013). Some scholars argue that attitudinal differences associated with education are better explained by the socio-economic positions into which highly educated individuals disproportionately sort themselves, rather than by education itself (Stubager 2008). Others argue that cross-sectional survey-based research controlling only for measured personal background characteristics often fail to adequately account for self-selection into universities, as those characteristics, which are highly endogenous to educational attainment, are often poorly measured by or entirely absent from the surveys (Campbell and Horowitz 2016; Sieben and De Graaf 2004). Consequently, the observed association between education and liberal values may be substantially inflated, rendering it difficult to determine whether the relationship is truly causal or merely a reflection of selection-induced collinearity.

In response to these concerns, several studies have sought to improve causal identification strategies. One approach has employed exogenous variation in educational attainment—such as changes in compulsory schooling laws—as instrumental variables (e.g., Bullock 2021; Cavaille and Marshall 2019; Marshall 2016). Another line of research has leveraged newly available longitudinal datasets, utilizing within-sibling and within-individual fixed effects models to more rigorously estimate the effects of education on attitudes (Simon 2022; Scott 2022). While these approaches mark important methodological advancements,

each faces limitations: the former is typically restricted to the domain of secondary education, offering limited leverage in assessing the impact of tertiary education, and the latter has so far yielded limited and mixed results. More importantly, fine-grained subject-level studies on the attitudinal effects of university education are still largely in absence.

It is precisely this gap in the literature that the present study seeks to address. Adopting both a cross-sectional and a longitudinal design, it employs data from the General Social Survey and the Socio-Economic Panel, aiming to estimate not only whether but also how university education influences individuals' support for economic redistribution. Using proportional odds logistic regression and difference-in-means tests of within-individual attitude changes, the analysis finds a pronounced negative correlation between support for redistribution and completing degrees in Applied Social Sciences, such as finance, management, and economics. There is also some evidence suggesting that studying Normative Social Sciences, such as political science and sociology, leads to increased support for redistribution. These findings contribute to a more comprehensive understanding of the mechanisms through which higher education may shape political preferences, particularly in relation to distributive justice.

This study advances several central hypotheses. First, studying different majors in university results in a field-specific income effect, which subsequently translates into different degrees of preference for redistribution among college graduates. Students in fields commonly associated with high-paying careers, such as finance or computer science, may prefer lower levels of redistribution because they expect to be net contributors in such policy schemes. In contrast, those who pursued fields such as history and foresee careers in lower-paying professions like public education may be more likely to support greater government redistribution, which could directly improve their material well-being.

Second, the knowledge and cognitive training imparted through university education likely vary by the field of study, potentially affecting students' conceptual understanding of social inequality and policy interventions. Differences in disciplinary curricula may foster varying levels of awareness about structural barriers to social mobility and the normative justifications for government intervention. As Waldfogel et al. (2021) note, individuals' capacity to recognize and accurately interpret socio-economic stratification plays a critical role in shaping their attitudes toward redistribution. Therefore, a physics student and a sociology student may diverge significantly in their support for redistributive policies because the latter obtained critical knowledge about the society through their unique course offerings that is conducive to the formation of socio-economically inclusive ideas. Their redistributive attitudes may also differ due to the drastically different cognitive demands required to succeed in their respective fields, thereby influencing their understanding of individualism, meritocracy, and the role of the state in mitigating wealth gaps.

Lastly, fields of study also structure distinct social environments and peer networks, hence shaping students' socialization experiences in ways that influence political attitudes. A growing body of political psychology literature emphasizes that college-based socialization processes — shaped by campus culture, peer demographics, and socio-economic diversity — play a central role in fostering prosocial behavior and socio-cultural inclusion (Westlake et al. 2019; Bowman 2010; Mendelberg 2017). It is thus plausible that students majoring in the social sciences, Natural Sciences, or the arts and Humanities are exposed to different forms of social influence and peer norms, which in turn shape their attitudes toward redistribution. This research seeks to disentangle these disciplinary effects to better understand how university education functions not merely as a credentialing mechanism, but as a formative space for political preference development.

2. Theoretical Framework and Hypotheses

Formal education is arguably one of the most universally shared experiences in modern society, with college education being particularly diverse in its structure, content, and influence across different regions and institutions. In its conventional form, undergraduate education entails a commitment to at least one academic discipline, the completion of a prescribed curriculum that includes both core and elective coursework, active participation in extracurricular activities, and the demonstration of satisfactory performance in various evaluative processes. The nature of this experience can vary dramatically depending on the institution, field of study, and pedagogical approach, leading to substantial differences in the intellectual, cultural, and ideological environment encountered by students.

Given this variation, it is of significant scholarly interest to examine how different university experiences shape students' attitudes, particularly in relation to politically and socially relevant issues. The process of completing a degree in disciplines such as the social sciences, Natural Sciences, or arts and Humanities entails distinct cognitive demands, domain-specific knowledge acquisition through interactions with specialized faculty, and varied patterns of peer socialization. These dimensions collectively serve as mechanisms through which ideational and ideological influences are transmitted, potentially leading to attitudinal shifts that extend beyond mere disciplinary proficiency. However, despite the centrality of higher education in shaping worldviews, much of the existing literature has treated the college experience as a largely homogenous phenomenon, neglecting the role of fine-grained disciplinary differences in shaping ideological orientations (Gerber and Cheung 2008). The body of research that does recognize the importance of horizontal stratification within post-secondary institutions (e.g., Song and Glick 2004; Thomas 2000) has put greater emphasis on labor market outcomes rather than attitudinal transformations that may emerge

from these disciplinary divergences. Addressing this gap is crucial for a more nuanced understanding of the educational process and its long-term implications for political and social attitudes.

2.1. The significance of college education on attitudes

To begin examining how attending college influences attitudes toward redistribution, it is first necessary to establish that experiences occurring in early adulthood continue to play a meaningful role in shaping individuals' ideological development. A substantial body of research indicates that a significant portion of an individual's social and political attitudes are shaped during adolescence, as this period represents a critical stage in the formation of ideological orientations and value systems. Viewpoints on specific issue topics appear to form during this period of life and are often solidified shortly thereafter. For example, Gopal et al. (2014) found that interactions with other female family members during adolescence concerning issues such as menstruation, pregnancy, and childbirth play a significant role in shaping women's attitudes toward family formation and reproductive rights later in life. Similarly, Evans and Neundorf (2018), examining the British electoral context, found that core political values—such as attitudes toward equality, the government, and individualism—appear to be rather stable as early as in early adulthood, even among individuals aged 15–24.

While not necessarily in direct contrast to this line of research, many other studies suggest that political attitudes still remain at least partially malleable and can be reshaped through experiences encountered during early adulthood. Stoker and Jennings (2008) employed a longitudinal panel dataset consisting of multiple waves of interviews conducted over more than three decades, involving 1,669 American high school seniors and their parents. Their findings indicate that individuals' partisanship and political preferences begin

to stabilize gradually following early adulthood. The authors attribute this process of attitudinal consolidation to the formative experiences encountered during this stage of life—education being one of the most significant—which serve as important and unprecedented forms of "repeated trials" with the political environment. This is when young adults begin to develop enduring evaluative dispositions and emotional attachments to political parties through activities such as voting, engaging with political information, and internalizing institutional norms. In other words, going to college opens eighteen-year-olds to an unprecedented socialized environment that affords them with newfound freedom to interact with and be shaped by the political world. Over time, these experiences contribute to the crystallization of stable political identities by middle ages. Kiley and Vaisey (2020) used data from the 2006–2014 General Social Survey, analyzing 183 attitudinal and behavioral items across three survey waves to test competing models of attitudinal change. Employing a statistical model that differentiates persistent change from temporary variation or measurement error, the authors found that while individual attitudes become stable around age 30, there is notable evidence of attitudinal fluidity prior to this age. Therefore, while the development of value systems through familial transmission during childhood and adolescence is significant, experiences as young adults still hold considerable power to shape and leave enduring marks on an individual's ideological compass.

What, then, is the role of higher education participation, arguably one of the most transformative environmental shifts individuals undergo in their lifetime, in shaping the relative fluidity of political attitudes during the "impressionable years" of early adulthood (Simon 2022)? While recent surveys indicate a broad public consensus in favor of education as a means to strengthen contemporary Western democracies (Schleifer et al. 2022), there is a parallel and increasingly salient perception of ideological divergence between the educated

elite and the grassroots working class (Plutzer & Berkman 2018; Harris 2018; Dinan 2020). Whether the attitudinal differences commonly attributed to higher education are genuinely the consequence of educational experiences themselves, or rather a reflection of pre-existing life circumstances that are endogenous to educational attainment—such as prior socialization, cognitive predispositions, or material affluence—demands scholarly investigations.

Disentangling the causal impact of higher education from these confounding factors is essential for a clearer understanding of its role in political socialization and preference formation. If empirical evidence demonstrates that higher education experiences exert a robust influence on political attitudes even after accounting for selection effects and socioeconomic background, then it must be understood as a powerful independent force in shaping individual and collective political orientations. Under such conditions, the continued expansion of university enrollment would carry significant implications for democratic outcomes and electoral dynamics in the years ahead. Conversely, if attitudinal shifts associated with higher education are primarily attributable to selection processes or are mediated strongly by material resources, then the explanatory power of education as a political socialization mechanism must be reassessed. In this case, greater attention must be paid to alternative structural cleavages—such as class, race, or geographic location—in accounting for contemporary patterns of political behavior and ideological realignment.

2.2. Education and income-related economic conservatism

Stephens and Long (1970), in their influential literature review on the attitudinal effects of education, famously concluded that "education liberalizes." Indeed, it has become something of a conventional wisdom in political science and sociology that higher levels of education correlate with more liberal positions on social issues such as civil liberties, racial

and ethnic inclusion, and gender equality. These domains, not coincidentally, have remained at the forefront of contemporary political discourse and scholarly inquiry. In contrast, however, the effect of higher education on economic attitudes such as views toward redistribution, taxation, and government intervention has received comparatively less scholarly attention. Frequently, it is often treated as axiomatic that education affects economic attitudes almost exclusively through its influence on income potential and associated material self-interest. This assumption has, until recently, seldom been critically interrogated or tested thoroughly in either theoretical or empirical terms. Although the assumption captures only part of the complex relationship between education and economic attitudes, it nonetheless serves as a useful and necessary starting point for the analytical framework of this paper.

The mediating role of material self-interest in shaping the relationship between educational attainment and support for right-leaning economic attitudes is well-established in the literature (e.g., Alesina and Glaeser, 2004; Brooks and Manza, 2007; Page and Shapiro, 1982). A common theoretical perspective holds that higher education indirectly influences economic preferences by positioning individuals within more privileged socioeconomic strata. Generally speaking, college-educated individuals are more likely to secure higher-paying employment and occupy less replaceable job roles due to their specialized skills, which also contributes to their labor market resilience compared to their less-educated counterparts (Autor 2014; Oreopoulos and Petronijevic 2013). These structural advantages enhance their material incentives to resist policies perceived as economically redistributive due to the disproportionate financial burden such policies may impose on higher-income earners. Thus, part of the association between education and opposition to redistribution is a function of the material benefits education affords.

As education enriches, policy demand switches. The notion that an individual's position on the income distribution influences their preference for redistribution originates from the models developed by Meltzer and Richard (1981). Their model (referred to as the MR model) posits that individuals whose income falls below the population mean have stronger incentives to support more generous governmental welfare provisions, as they stand to benefit more directly from redistributive policies; conversely, individuals whose income is above the mean have stronger incentives to oppose taxation and redistribution, as they anticipate net losses. Given that educational attainment is a key determinant of upward income mobility, the standard logic of the MR model implies that individuals with higher levels of education, by virtue of their elevated earning capabilities, should exhibit lower demand for redistribution. This theoretical link has been widely corroborated by a substantial body of empirical research, which consistently finds a negative association between education and support for redistributive policies. Using OLS regressions on the General Social Survey and the World Value Survey data as well as cross-country comparisons, Alesina and Giuliano (2009) find that, consistent with material self-interest theories, higher income is strongly associated with lower support for state intervention in the economy and that education contributes to this relationship by increasing people's income levels. Weakliem (2002) also employs data from the World Values Survey from 1989 to 1993 across 40 countries to examine how education affects a wide range of political opinions using multilevel regression models. The study finds that while education is generally associated with more liberal views on social and cultural issues, it tends to produce more conservative attitudes on core economic questions such as support for government ownership, income equality, and state responsibility. Interestingly, these conservative effects persist even after controlling for respondents' occupational class, suggesting that education might also

influence economic attitudes by conferring values aligned with individualism and market-oriented preferences. Employing multivariate regression models, Surridge (2016) likewise finds higher education to be associated with greater economic conservatism and social liberalism. Once social class and pre-adult factors such as parental background and cognitive ability are accounted for, the direct effect of education on economic attitudes is substantially reduced.

Beyond dictating where individuals may find themselves financially in present times, higher levels of educational attainment also tend to enhance confidence in one's future economic prospects. In this context, self-interested motivations to avoid taxation may not be limited to present circumstances but may also reflect anticipatory concerns about future income. In other words, the desire to minimize future tax burdens can weigh just as heavily as immediate financial considerations in shaping attitudes toward redistribution. On one hand, pessimistic expectations regarding future financial well-being are found to strongly associate with greater support for government assistance, whereas optimistic income projections, heavily influenced by educational attainment, tend to reduce such support (Alesina and La Ferrara 2005). Rehm (2009, 2011, 2016) and Iversen and Soskice (2001), along with others such as Sinn (1995) and Moene and Wallerstein (2003), contend that both occupational contexts and the transferability of job-specific skills play a central role in shaping individuals' economic risk exposure and thereby influence their support for redistributive policies. Rueda and Stegmueller (2019) further advanced this direction of inquiry, arguing that individuals' expectations about future income, even when temporally distant, exert an influence on present attitudes toward redistribution comparable to that of current income. All of the aforementioned variables are significantly influenced by education, rendering them pivotal

elements in the interrelationship between education, material self-interest, and anti-redistribution sentiment.

These arguments raise an important question that is relevant to the scope of this study: to what extent do differences in future expectations, shaped by one's field of study in college, influence attitudes toward redistribution even before individuals enter the labor market? Put differently, prior to obtaining employment and having the opportunity to adjust expectations based on actual labor market experiences, how do anticipated earning potentials and projected occupational trajectories—formed during the course of one's academic training—affect economic preferences? There are compelling reasons to believe that such anticipatory beliefs play a meaningful role. For instance, a computer science student who envisions a lucrative career at a firm like Amazon or Google may already develop incentives to oppose redistributive policies well before receiving a salary. Conversely, a history or sociology student aspiring to become a public school teacher may be inclined to support increased government spending on public goods such as subsidized housing immediately upon graduation. The central relationship at issue that has often been overlooked in prior research is whether the choice of college major generates salient differences in students' expectations about income and their perceived position within the redistributive structure even before any actual labor market experience is acquired, and whether such expectations translate into differences in redistributive demand. Therefore, the following hypothesis can be made:

H1: Field of study in college influences expected future income at the point of graduation, which in turn shapes support for redistribution, with higher-income-associated fields predicting lower support and lower-income-associated fields predicting higher support.

2.3. Education, knowledge, and sophisticated cognitive reasoning

The long-standing scholarly consensus that opposition to redistribution is primarily the product of economically self-interested calculations fostered by education captures only one dimension of a broader and more multifaceted relationship. While it is well-documented that higher education leads to greater income, occupational security, and material incentives to resist redistribution, such economic pathways do not fully account for the complex ideological shifts that may accompany educational attainment. Given the rich informational environment of higher education, which entails not only the transmission of knowledge but also prolonged engagement with diverse peer cohorts and exposure to competing worldviews, it is unlikely that education's influence on redistributive attitudes operates exclusively through material self-interest. Indeed, educational institutions function not only as mechanisms of skill acquisition and labor market sorting, but also as sites of cognitive mobilization and ideological formation.

Different fields of study, with their distinctive disciplinary assumptions and normative orientations, may exert varying influence on students' ideological frameworks through both formal instruction and informal socialization processes. The curriculum serves as a vehicle for the top-down diffusion of dominant ideational frames — such as conceptions of meritocracy, individual responsibility, and structural inequality — that shape how students understand the role of the state and the legitimacy of redistribution. At the same time, the informal learning environment, including discussions with faculty and exposure to institutional norms, further contributes to the internalization of particular political values. However, when it comes to preferences for redistribution, the direction and strength of influence from these educational channels remain empirically ambiguous. While some disciplines may encourage critical perspectives on inequality and a stronger commitment to

distributive justice, others may promote market-oriented thinking and individualistic explanations of socioeconomic outcomes. The process of committing to hard work, undertaking standardized evaluations, and ultimately obtaining a degree may itself carry a distinct ideological message. Moreover, the ideological content transmitted through education is not necessarily uniform or universally internalized, but may interact with students' prior dispositions and the broader institutional context.

This paper will structure its review of the current literature in the following way. Section 2.3a will focus primarily on existing studies of how the transmission of social, political, and economic knowledge through formal curriculum could shape economic attitudes. Section 2.3b will shift attention to the effect of subject-specific ideology and cognitive development that may translate into economic left-right dispositions. Last but not least, section 2.4 discusses the processes of socialization, particularly those arising from peer interactions and the broader campus social environment, which further shape students' preferences toward redistribution.

2.3.1 Acquisition of socio-political and socio-economic knowledge

When discussing the ideational dimension of education, scholars often emphasize its socially progressive and inclusive effects, which stem from the development of a more sophisticated understanding of social structures and dynamics. These insights then manifest into behaviors and attitudes characteristic of a progressive democratic citizenry. Nunn, Crockett, and Williams (1978) contend that increased schooling provides knowledge that enhances individuals' understanding of civil liberties and democratic processes, broadens awareness of diverse human experiences and values, and fosters greater flexibility and rationality in ways of thinking that ultimately translate into norms of democratic restraint.

This points directly to the role of education in shaping civic-minded attitudes and democratic dispositions through informational enrichment. Building on this line of inquiry, Dee (2004) explores the causal impact of education by leveraging potentially exogenous variations in educational attainment, primarily the availability of local two-year community college programs. He found that exposure to college curricula exerts a weak but independent effect on greater voting participation, understanding for the importance of free speech, and higher civic engagement reflected by increased newspaper readership. Dee argues that, since these programs are community-based and therefore do not substantially alter students' social networks relative to non-attendees, the observed attitudinal changes are primarily attributable to classroom-based learning rather than peer-driven socialization. Hagendoorn (2018) analyzes multiple cross-national survey datasets, such as the European Values Study, Eurobarometer, and ISSP, to examine the relationship between education and ethnic tolerance. The study finds that higher educational attainment, by fostering greater knowledge and awareness of ethnic and racial outgroups, consistently corresponds to reduced levels of animosity toward these groups, even after controlling for factors such as income, age, gender, and political ideology. Last but not least, Spruyt (2014) shows that higher education is associated with significantly lower susceptibility to populist rhetoric due to the abilities to identify misinformation, stronger affirmation of the institutional norms of liberal democracy, and more sophisticated understanding of the complex political systems that protect minority rights.

Currently, the relationship between classroom-acquired socio-political knowledge, the subsequent development of progressive civic attitudes, and redistributive preferences remains largely under-explored in the existing literature. Nonetheless, there are compelling theoretical reasons to believe that these dimensions are not isolated from each other. First, a deeper

awareness of the lived experiences of socio-political out-groups and reduced racial prejudice significantly promote support for redistribution by cultivating greater "social affinity" toward welfare recipients (Caváille and Trump 2015). Lee, Roemer, and Van der Straeten (2006) further substantiate this claim by showing that racism and xenophobia diminish support for redistribution through an "anti-solidarity effect," whereby individuals oppose welfare policies more strongly when they perceive racial or immigrant minorities as the primary beneficiaries. Conversely, individuals with heightened feelings of social affinity and shared identity with marginalized groups are more inclined to view redistribution as a legitimate and morally justified mechanism for enhancing collective well-being. Additional studies (e.g., Alesina and Glaeser 2004) provide further evidence supporting the idea that racism and xenophobia tend to heighten opposition to redistributive policies. Finally, trust in the effectiveness of democratic institutions, strengthened by increased socio-political understanding, also appears to bolster pro-redistribution attitudes. Such trust directly influences perceptions of the government's capacity to carry out resource redistribution in a fair and effective manner (de Koster et al. 2012).

Given that greater knowledge of socio-politically relevant issues substantially shapes individuals' attitudes toward these issues, it logically follows that students majoring in subjects that impart such knowledge may exhibit stronger pro-redistribution attitudes compared to those majoring in subjects that do not. Perhaps the most direct empirical support for the attitudinal impact of education through the channel of knowledge transmission comes from Garoutte and Bobbitt-Zeher (2011), who investigated how different pedagogical approaches influence college undergraduates' views on social stratification during mandatory introductory sociology courses. Their findings indicate that, at least in the short term, both interactive group-based learning and traditional lecture-based instruction independently

contribute to modest but statistically significant increases in students' understanding of structural inequality and their recognition of the barriers to upward mobility disproportionally encountered by marginalized groups. These results directly suggest that even routine exposure to critical content within standard curricula, in this case being sociology, can foster attitudinal shifts toward a more nuanced understanding of how individual effort and external factors collectively shape a person's life trajectory.

As Alesina and Giuliano (2009) and Alesina and Glaeser (2004) have argued, most people do, in fact, attempt to distinguish between inequality driven by effort and that driven by luck, yet they strongly disagree on what constitutes effort and luck. For example, is a person born into generational wealth who becomes successful later in life purely a matter of good luck? Is running a business aground entirely the result of poor effort? If it is due to a lack of business acumen, is some form of government assistance deserved? It is not difficult to see that the distinction individuals make between inequality arising from structural societal factors and that resulting from individual effort carries significant implications for their redistributive preferences, and that the internalization of field-specific knowledge can directly shape where this line is drawn. For instance, while sociology courses have been shown to encourage students to adopt a more inclusive and nuanced understanding of structural inequality, thereby laying the ideological groundwork for viewing income redistribution as a legitimate policy response, disciplines such as physics and economics may either fail to address these issues or, in some cases, promote frameworks that implicitly challenge or downplay the relevance of structural explanations. Some empirical evidence support the conclusion that university courses, especially those in economics, are usually taught with an implicit conservative perspective that associates government redistribution with lower levels of aggregate welfare (Pascarella and Terenzini 1991). This emphasis on market efficiency

within economics curricula may reinforce meritocratic beliefs, as it often frames reduced state intervention as conducive to optimal outcomes. Such framing can, in turn, lead to diminished support for redistribution. Indeed, proponents of meritocracy frequently argue that when individuals who exert genuine effort are allowed to retain the rewards of their labor rather than having their gains redistributed, society as a whole stands to benefit from increased productivity and overall efficiency (Newman et al. 2015).

To succinctly summarize this section, academic fields that offer deeper insight into the structural mechanisms of society and promote democratic civic engagement are more likely to cultivate favorable attitudes toward redistribution. In other words, students who are regularly exposed to analyses of structural inequality and develop an understanding of the socio-economic challenges faced by others are more inclined to view redistribution as a necessary tool for advancing social justice. Conversely, fields that either do not provide such perspectives or prioritize market-oriented frameworks may limit students' development of economic solidarity with disadvantaged groups. An important distinction must be made, however, among disciplines traditionally classified as social sciences, as some may appear to fall into the prior category but, in terms of instructional content and epistemological orientation, align more closely with the latter. Degrees such as accounting, finance, and business administration are typically classified as social sciences, yet their emphasis on economic reasoning and the application of technical knowledge to business-related challenges is likely to foster market-oriented thinking. This orientation may, in turn, inhibit the development of attitudes supportive of redistribution. Therefore, it is necessary to distinguish in empirical analysis between what may be termed *Applied Social Sciences*—social science degrees characterized by a focus on technical problem-solving and economic

applications—and *Normative Social Sciences*, which put more emphasis on the study of equality, civic life, and socio-political structures.

Based on this reasoning, the following hypothesis can be proposed:

H2a: Fields of study differ in their transmission of socio-economic and political knowledge, such that students in Normative Social Sciences (e.g., sociology, politics) exhibit greater support for redistribution due to increased awareness of inequality and structural barriers, whereas students in Applied Social Sciences who are taught more efficiency-focused and market-oriented perspectives demonstrate lower support for redistribution. Meanwhile, students in Natural Sciences do not exhibit significant attitudinal change due to lack of exposure to socio-economic and political knowledge.

2.3.2 Field-specific ideology and cognitive demands

It must also be noted that the ideological dimension of education may operate independently of the explicit instructional content delivered through the formal curriculum. While courses in political science or sociology may expand students' understanding of the welfare state, macro-level inequality, and the structure of political institutions—thereby deepening their awareness of diverse social experiences and potentially fostering solidarity with lower-income groups—these same courses can also contribute to the internalization of ideologies that frame social stratification as the natural outcome of competitive social mechanisms. In such cases, economic inequalities may be interpreted not as structural failures requiring corrective redistribution, but as the legitimate result of differential effort, ability, and personal responsibility. Whereas the former perspective can strengthen economic

solidarity with disadvantaged populations, the latter embeds evaluative judgments that may weaken, or even reverse, support for redistributive policies.

For example, recent research by Gelepithis and Giani (2022) demonstrates that, compared to technically oriented vocational training, college education exerts a more pronounced negative effect on economic solidarity with the financially disadvantaged. The reason behind might have to do with increased sophistication in people's thinking about fairness and deservingness. On the one hand, pursuing formal education is challenging for most families due to the requirement of vast amounts of resource input, primarily time and money. Reasonably, highly educated individuals demand greater economic returns on their investment, justify hard work and commitment above all else as the legitimate means of success, and perceive redistribution beneficiaries as "able but unwilling to work" (Erikson & Tedin 2015), thereby undeserving of the nation's help. Additionally, universities may adopt performance evaluation criteria that emphasize individual achievement and reward competitive, self-reliant mindsets, implicitly framing welfare recipients as undermining the meritocratic returns on students' educational investments. This pattern has been documented in contexts such as the Danish education system, where institutional norms portray redistribution as conflicting with the logic of earned success (Martin 2018). From this perspective, higher education can be viewed as inherently conservatizing, as its emphasis on individualism and personal effort as prerequisites for academic success may serve to legitimize existing social hierarchies rather than critically interrogate or challenge them.

Building on these insights, it is reasonable to hypothesize that different academic disciplines place varying degrees of emphasis on individualism and personal effort. In this context, higher education may foster greater endorsement of meritocratic ideals not necessarily by explicitly teaching the efficiency of meritocratic systems, but rather by

promoting the adoption of cognitive frameworks that align with meritocratic ideological orientations. Disciplines such as engineering, mathematics, and physics require mastery of specialized technical knowledge and typically train students to think within linear, causal models. Students in these fields often operate in academic environments that prioritize standardized assessments and clearly defined problem-solving approaches. This structure can lead to the internalization of the belief that outcomes are directly attributable to individual effort, discipline, and competence (Doerr et al. 2021; Stevens et al. 2007). When educational experiences reinforce a clear-cut meritocratic logic, students may come to interpret social outcomes, such as wealth accumulation or occupational status, as justly earned, rather than as products of broader structural forces. Within this framework, redistributive policies may be seen not as mechanisms for promoting equity, but as unjust intrusions that undermine the value of individual achievement. Similarly, applied social science disciplines such as economics, finance, and business administration also put greater emphasis on standardized assessments, technical proficiency, and problem-solving mindsets that are rooted in calculative reasoning in comparison to Normative Social Sciences. Much like the Natural Sciences, these fields promote cognitive frameworks that privilege individual effort, precision, and efficiency. As a result, they may similarly undermine equity-oriented thinking by reinforcing meritocratic beliefs that social and economic outcomes are primarily the result of personal discipline and competence—a "no pain, no gain" logic that frames redistribution as a reward for underperformance rather than a corrective to structural inequality.

By contrast, normative social science disciplines such as political science and sociology emphasize critical, reflexive, and holistic modes of thinking. These fields train students to recognize complexity, ambiguity, and multifactorial causality in social outcomes that are due to the inherent variability of human societies and institutions (Jugl 2022). Such

intellectual training challenges simplistic, individualistic explanations for phenomena like poverty and inequality, and encourages students to consider the structural and institutional factors that shape individual life chances. As a result, these disciplines are more likely to cultivate ideological orientations that support redistribution as a necessary and legitimate strategy for advancing social justice.

Based on this reasoning, the following hypothesis can be proposed:

H2b: Fields of study also shape students' cognitive orientations, with Normative Social Sciences cultivating complex, multi-causal reasoning that fosters acceptance of redistribution as a legitimate response to inequality, while Natural Sciences and Applied Social Sciences promote thinking patterns that, combined with limited socio-political knowledge, reduce students' support for redistribution by reinforcing meritocratic and individualistic interpretations of social outcomes.

2.4. Education, socialization, and internalization of values

While knowledge acquisition and cognitive (re)orientation primarily occur through formal instruction in the classroom, one could argue that socialization during the college experience is largely shaped outside of it. The socialization model, which views the impact of education through the lens of peer socialization, delivers a clear message: individuals internalize the norms and values prevalent in their educational environment. In many cases, the effects of socialization may exert a more enduring influence on attitudes than the mere acquisition of knowledge or cognitive development. The values, beliefs, and behavioral norms adopted during formative educational experiences often continue to shape individuals'

thinking and worldview long after they have left formal schooling (Kingston et al., 2003; Van de Werfhorst and De Graaf, 2004).

Scholars diverge in their assessments of the outcomes of educational socialization, particularly in relation to the liberal–conservative spectrum. Jacobsen (2001), for instance, examined attitudinal changes among two groups of Norwegian university students whose academic majors typically led to employment in either the public or private sector. Despite the differing career trajectories associated with their fields of study, both groups exhibited increasing ideological convergence over the course of their university education and developed stronger anti-authoritarian values. The author attributes this shift primarily to informal socialization processes, including sustained interactions among peers and engagement with faculty members, which facilitated the diffusion of shared norms and values across disciplinary boundaries. However, a growing body of scholarship emphasizes the role of socio-economic privilege and disciplinary stratification in shaping the nature of socialization within higher education, often leading to a less liberalizing effect than traditionally assumed. Mendelberg et al. (2017) argue that being embedded in economically affluent and socially homogeneous cohorts, such as those found in many U.S. liberal arts colleges, may foster pro-wealth attitudes that would not be predicted solely by institutional type or curriculum. Similarly, Bowman (2010) finds that students majoring in Natural Sciences and engineering—fields in which students are less likely to enroll in diversity-related courses or engage with peers from diverse ethnocultural backgrounds—exhibit significantly greater opposition to affirmative action policies. These findings suggest that limited exposure to socio-cultural diversity within specific academic contexts can hinder the development of inclusive attitudes. Further empirical evidence of the conservatizing effects

of elite educational environments has been documented by other scholars as well, including Lee, Roemer, and Van der Straeten (2006) and Phelan et al. (1995).

Importantly, those who teach within different academic disciplines are themselves products of field-specific socialization, which further reinforces the ideological orientations embedded in each field. Faculty members are typically individuals who have undergone extensive training and professional development within their discipline, internalizing its epistemological assumptions, methodological preferences, and normative commitments over time. As such, they are not neutral conveyors of knowledge but rather active participants in transmitting the intellectual culture of their field. This recursive process, whereby students are socialized by instructors who themselves have been shaped by the same disciplinary norms, helps sustain and reproduce distinct ideological climates across academic fields.

The aforementioned cross-subject variations in peer composition and faculty ideological orientation suggest the existence of additional pathways through which higher education shapes attitudes toward redistribution. A critical question, then, is the extent to which attitudinal shifts that occur over the course of a college education are shaped by the socializing environments specific to different academic disciplines—environments that may either reinforce or challenge norms related to economic solidarity and individualism. It is plausible that certain fields attract a higher concentration of socio-economically privileged students and faculties, thereby cultivating peer dynamics that exert a conservatizing influence on classmates through shared assumptions about merit, effort, and entitlement. In contrast, disciplines characterized by more demographically and socio-economically diverse communities of scholars may foster more inclusive peer environments, where exposure to differing life experiences broadens students' perspectives and strengthens their sense of

solidarity with economically disadvantaged groups. Based on this reasoning, the third hypothesis of this research is proposed as follows:

H3: Exposure to less demographically and socio-economically diverse peer environments in both Normative and Applied Social Sciences is associated with lower support for redistribution, whereas greater peer diversity in other fields of study is associated with higher support for redistribution.

It should also be noted that, given this study's objective of isolating subject-specific attitudinal effects, cross-institutional variations in ideological climate and socialization experiences must be carefully accounted for in empirical analyses. Differences in institutional culture may confound the relationship between field of study and political attitudes, making it essential to control for such factors in empirical analyses. In their pioneering, albeit controversial, study on the ideological composition of faculty in elite American universities, Rothman et al. (2005) provided substantial evidence of ideologically based disparities in academic advancement. Their findings suggest that Republican-leaning faculty members are significantly underrepresented in the most prestigious universities and in institutions located on the West Coast. This implies that the ideological environment of a university may exert an independent influence on students' political development. Consequently, studying the same academic subject at Ohio State University versus at UC Berkeley, for example, could lead to markedly different redistributive attitudes, even if students are exposed to comparable disciplinary content. Recognizing and addressing such institutional variation is therefore not only a methodological necessity, but also essential to understanding the full range of educational influences on political belief formation.

2.5. Empirical challenges

Regardless of the perspective—whether through knowledge transfer, cognitive training, or socialization—it is essential to control for selection bias in studies of college education's effects on redistribution preferences. Decisions to enroll in certain types of post-secondary education are not stochastic processes; quite the contrary, they are determined by a plethora of preceding life experiences that have much wider attitudinal implications beyond dictating self-assignments to various university majors. Therefore, inadequately addressing the challenges associated with selection could seriously jeopardize the credibility of any causal inferences made about education.

Unfortunately, traditional cross-sectional survey-based research has often drawn criticism in exactly this arena (Campbell and Horowitz 2016; Sieben and De Graaf 2004). Ordinary least squares regression analysis requires the exogeneity assumption to hold: that is, the values of the independent variables must not be correlated with unobserved factors. While random assignment in experimental settings ensures this condition by breaking any correlation with the outcome of interest, observational studies must carefully consider this assumption. Models constructed in violation of such principle will bias the estimates, often substantially and in unpredictable directions (Achen 1986). For studies on the effects of education, the myriad personal, familial, and contextual factors that precede one's decision to enroll in college—such as the often indirect and implicit transmission of parental values and aspirations conducive to obtaining higher education—are admittedly endogenous to attitudes. These factors are extremely difficult to capture and operationalize in the first place, let alone control for in regression-based cross-sectional data modeling. Kam and Palmer (2008) offered a qualified empirical rebuttal of the longstanding academic consensus that education causes greater political participation. They leveraged multiple waves of panel survey data,

which included a comprehensive range of measurements of both respondents' and their parents' attributes. By employing propensity score matching, Kam and Palmer grouped together individuals who attended college with those who did not but shared sufficiently similar background characteristics so that their predicted propensities of going to college are comparable, making it possible to treat their differences in educational attainment as quasi-random. The results of their study show that the true degree of an educational effect on political participation, after matching background characteristics, is indistinguishable from zero. Persson (2013) also employed a similar matching technique to examine the relationship between education and participation, and arrived at similar results that support education as a "proxy" for individual qualities in predicting democratic engagement.

The typical method for addressing non-randomness in independent variables involves the use of instrumental variables, and several studies have undertaken efforts in this area. For example, Bullock (2021) used mandatory schooling laws in the 48 contiguous US states as instruments for education and merged this data with measures of attitudes, educational attainment, and state residency from the American National Election Studies and the General Social Survey. He found that secondary education in the US tends to have a conservatizing effect on economic attitudes, leading to increased opposition to redistribution. Similarly, both Marshall (2016) and Cavaille and Marshall (2019) take advantage of changes in schooling regulations in Great Britain and Western Europe to explore attitudinal variations resulting from enforced high-school attendance. Both studies found that increased levels of secondary education completion lead to a considerable right-wing shift in economic attitudes. While there is still room for agreement on whether mandatory education policies are truly exogenous to attitudinal outcomes, the more fundamental problem limiting the application of instrumental variables in this study is that qualified IVs for college education are essentially

impossible to find. No country in the world mandates tertiary education attendance as it does for secondary education. Even in countries like Austria where college is essentially free, enrollment remains a completely voluntary decision. Other potential options for instrumental variables that previous studies have explored, such as proximity to post-secondary institutions (e.g., Milligan et al. 2004; Dee 2004), encounter similar challenges in justifying their exogeneity to personal backgrounds.

More recent studies have been able to make empirically more robust examinations of the effect of college education thanks to the availability of high quality longitudinal data like the British Cohort Study (BCS) and the British Household Panel Study (BHPS). These datasets provide valuable inter-temporal measurements of individual characteristics and allows researchers to investigate attitudinal changes within respondents over time with the assurance that personal backgrounds have remained constant. Simon (2022) and Scott (2022) were both inspired by this concept and constructed within-individual fixed effect models using longitudinal surveys. However, their findings were contradictory: the former claimed to have "demystified" the link between higher education and progressive ideology, while the latter reported that college education tends to shift individuals toward more economically right-wing positions. This divergence in empirical conclusions underscores the need for further investigation, and it is within this context that the present study aims to adjudicate between these competing accounts.

3. Data and Empirical Analysis

3.1 Cross sectional analysis

As discussed in Section 2.5, we must acknowledge that using cross-sectional data and regression modeling to analyze how education influences attitudinal change involves notable endogeneity concerns. Chief among these is the challenge of adequately accounting for individual background characteristics such as socio-economic status, pre-existing political beliefs, family transmissions of values, and personality traits—all of which are likely to influence both individuals' self-selection into particular college majors and their preferences regarding redistribution. These confounding factors may introduce bias into coefficient estimates and complicate efforts to ensure comparability between individuals with different levels or types of education. Consequently, the causal interpretability of cross-sectional results is limited, and observed associations may, to some extent, reflect selection effects rather than the independent influence of education.

Despite this, cross-sectional analyses can still provide valuable insights, particularly when data limitations are paramount. Fixed effects modeling strategies, such as the ones used by Scott (2022) and Simon (2022), must rely on high-quality panel data with consistent measurements of the relevant variables over time. For an analysis that aims to take a step beyond prior research that looked only at the effect of tertiary education attendance and examine more fine-grained attitudinal variations by fields of study, such data can be very difficult to obtain. This paper will eventually attempt to employ panel data in following sections to explore how within-individual change analyses compare to cross-sectional results. That section will provide a more in-depth explanation of why even the German Socio-Economic Panel (SOEP) data—one of the most widely used and highly regarded panel datasets—still presents major data limitations that likely affect other panel data as well and

make fixed effects modeling with a sufficient sample size extremely difficult to achieve. Other more experimental methods, such as those that attempt to exploit pseudo-random variations in college admission processes to create experiment-like conditions for addressing endogeneity, impose substantial time and resource demands that, unfortunately, exceed the scope and capacity of this research.

This study will begin by employing a proportional odds logistic regression (POLR) model on data from the American General Social Survey (GSS). Given that attitudes toward redistribution are commonly measured through ordinal survey items, POLR models, while not without limitations, offer an empirically appropriate approach. They are particularly well-suited to handling ordinal outcome variables and provide an efficient means of exploring general patterns in the data, especially in examining whether educational backgrounds are associated with systematic differences in redistributive preferences. Although POLR does not fully address the issues of endogeneity or selection bias, it nonetheless facilitates a structured investigation of broad empirical associations that will help inform future research strategies.

3.1.1 Proportional odds logistic regression

Proportional odds logistic regression (POLR) is a widely adopted empirical strategy in social science research. It has been employed in diverse areas such as studies of quality of life (Coverdill 2011), trust in the military (Chen 2024), attitudes toward immigrants (Jones and Martin 2017), and vaccine uptake intentions (Noor and Moore 2025). Unlike ordinary least squares (OLS) regression, which assumes a continuous dependent variable that can take on any real value along a scale, POLR is designed for outcomes that are categorical yet ordered (O'Connell 2006). This distinction makes POLR especially appropriate for modeling attitudes toward redistribution, which are most often measured using ordinal survey items—

for example, responses ranging from “strongly disagree” to “strongly agree” on whether the government should reduce income inequality. While such responses are not continuous in the strict statistical sense, they do reflect a meaningful progression, with higher categories representing higher/lower support for redistribution depending on the survey construction. Moreover, POLR does not rely on the assumptions of normality and homoscedasticity that are central to OLS regression yet often violated when dealing with ordinal survey data (O’Connell 2006).

Proportional odds logistic regression (POLR) does rely on the parallel lines assumption, which requires that the effect of each predictor variable, such as college major and various control variables, on the odds of being in a higher category of redistribution preference remains constant across all thresholds of the outcome variable. In other words, the estimated relationship between the predictors and the dependent variable is assumed to be the same regardless of which cut point is used to divide the ordinal scale. Put more simply, this means that the effect of an independent variable on the odds of choosing a higher response category is assumed to be the same whether one is comparing “agree” to “disagree” or “strongly agree” to “agree,” for example. This assumption will be empirically tested for using the Brant test and reported along with the results.

3.1.2 Data and variables

The General Social Survey (GSS) is one of the most widely used and respected data sources in the social sciences, offering a rich foundation for analyzing public opinion and social trends in the United States. Conducted by the National Opinion Research Center (NORC) at the University of Chicago, the GSS has been administered biennially since 1972, with the most recent wave completed in 2022. The survey includes a broad core of questions

covering demographic characteristics, behavioral patterns, and political and social attitudes, along with rotating modules on specialized topics. Its comprehensive and well-structured design makes it particularly well-suited for studies examining the relationship between individual characteristics and policy preferences.

This section of the study draws on a subset of GSS data collected between 2006 and 2018. In these seven survey waves, respondents with a college degree were asked to report their specific field of study. The survey included a detailed list of 82 major options, offering significantly more information than the broad categories such as STEM or liberal arts that are commonly used in prior research. These major options will be classified into five broader fields of study based on the theoretical framework and the requirements of hypothesis testing. Such classification will then serve as the independent variable in the analysis.

The outcome variable, support for redistribution, is measured using responses to the following survey question:

- "…Think of a score of 1 as meaning that the government ought to reduce the income differences between rich and poor, and a score of 7 meaning that the government should not concern itself with reducing income differences. What score between 1 and 7 comes closest to the way you feel?"

  1 (Strongest opposition for redistribution);…; 7 (Strongest support for redistribution)

To make subsequent analysis more intuitive, the response scale has been reversed so that a score of 7 reflects the strongest support for redistribution, and a score of 1 reflects the strongest opposition. Across the seven waves of GSS data analyzed, the number of valid observations containing responses to this survey question totals 11,134. After incorporating

control variables—outlined later in this section—and removing cases with missing responses on key covariates, the effective sample size available for analysis is 2,025. Among the respondents, 1,359 report not having obtained a college degree, while 666 hold a degree. Of the degree-holders, 233 majored in Natural Sciences, 186 in Applied Social Sciences, 138 in Normative Social Sciences, 70 in Humanities, and 25 in Creative Arts (for a detailed overview of how specific majors are categorized into each field, refer to Appendix II). An additional 13 individuals hold degrees that could not be classified within the GSS dataset.

Figure 1: Distribution of Redistributive Attitudes by Field of Study

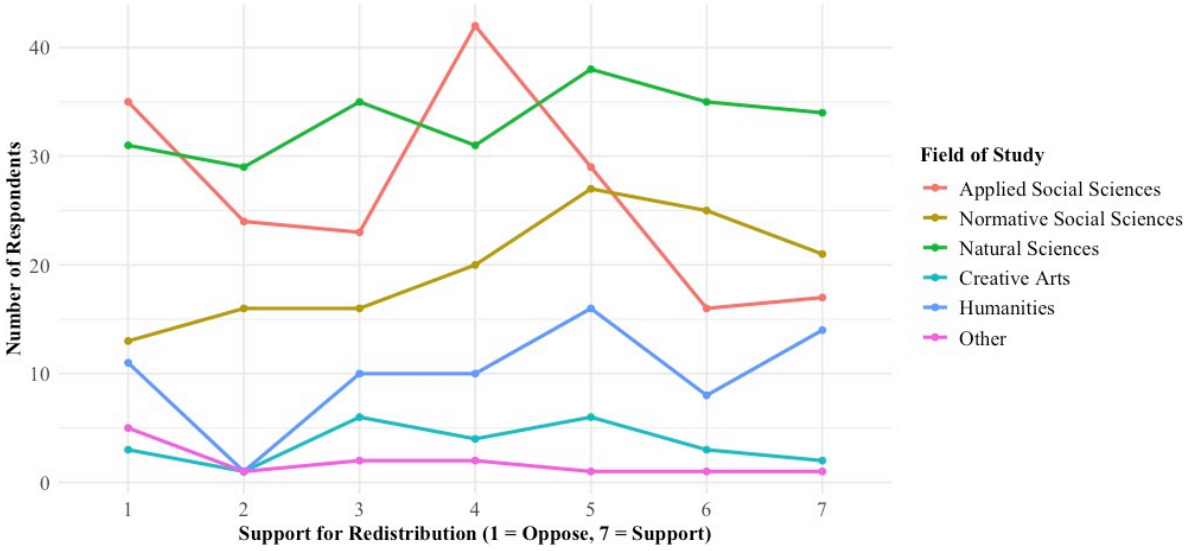
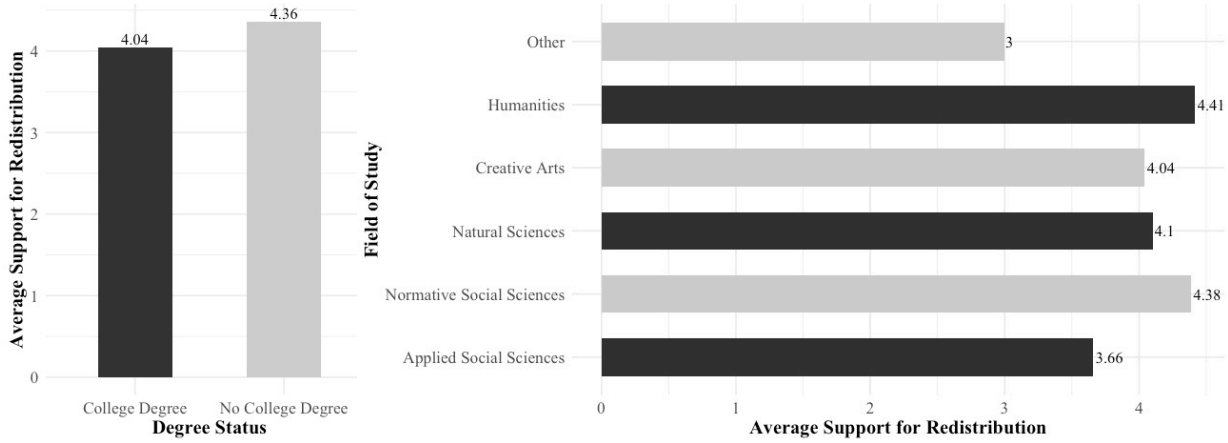


Figure 1 shows the distribution of redistributive attitudes among the degree-holders based on their fields of study. Respondents who majored in the Natural Sciences exhibit a relatively even distribution of attitudes across the response scale, suggesting a more heterogeneous stance on redistribution. In contrast, those in applied social sciences display a notable peak at the midpoint (4) and a higher concentration at the lower end of the scale, indicating a general tendency toward opposition to redistributive policies. Conversely, respondents from normative social science fields show a clear concentration at the higher end of the scale (5–7), reflecting comparatively stronger support for redistribution within this

subgroup. Figure 2 displays the average level of support for redistribution, disaggregated by college degree attainment and by field of study among degree holders. Respondents without a college degree exhibit slightly higher average support for redistribution compared to those with a degree. Among degree holders, individuals who studied Humanities and Normative Social Sciences show the highest mean levels of support, whereas those with degrees in Applied Social Sciences express comparatively much lower support.

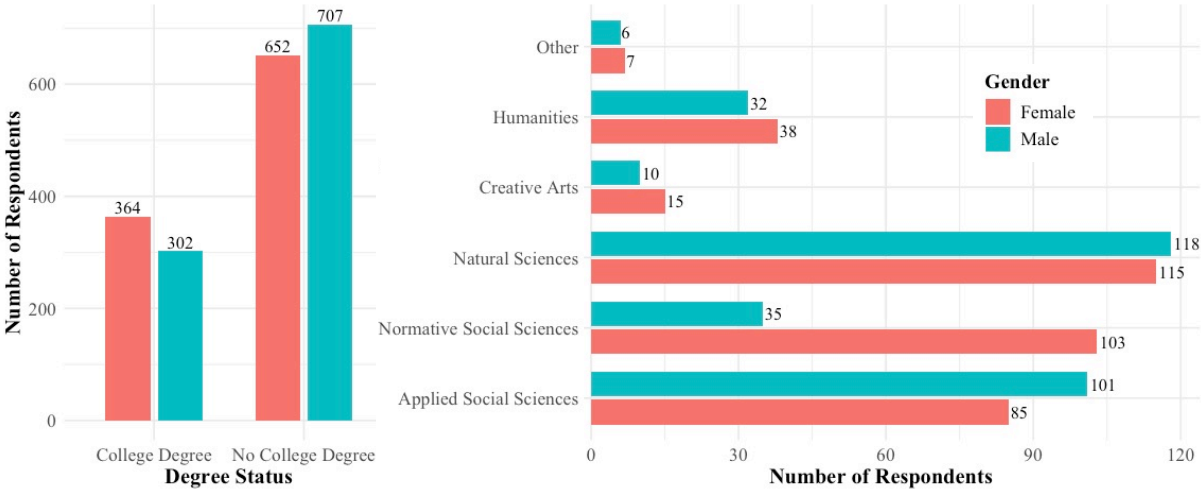
Figure 2: Average Support for Redistribution by Degree Status and Field of Study



The analysis will also include a number of control variables that can be classed into three categories: demographics, civic and political engagement, and financial status, which are outlined in the following paragraphs (for full question wording and item construction, see Appendix I).

Demographics. The core demographic variables controlled for in the analysis include respondents' age, gender, and racial identity, as these characteristics are closely associated with ideological orientation, political attitudes, behaviors, and educational choices. All of the GSS surveyed respondents' ages range from 18 to 89 and older, and are recoded into seven ten-year age groups to facilitate clearer analysis and interpretation. Gender and racial identity are both operationalized as dichotomous variables, with gender coded as male or female, and

Figure 3: Gender Composition by Degree Status and Field of Study

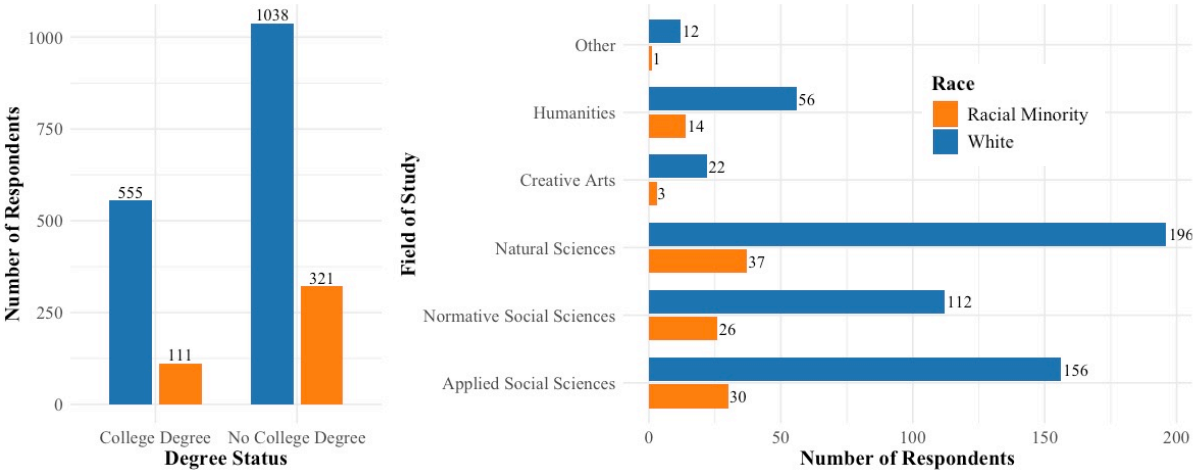


racial identity coded as white or non-white. Figure 3 presents the gender composition of respondents, disaggregated by degree status and field of study. As shown, the distribution of men and women is roughly balanced among both college degree holders and non-holders. In other words, men and women are more or less equally represented among those who pursued higher education, as well as among those who did not. In contrast, the gender composition across fields of study reveals notable discrepancies. While men and women are roughly equally represented in the Humanities, Creative Arts, and Natural Sciences, women appear to be disproportionately over-represented in Normative Social Sciences. On the other hand, men are slightly over-represented in Applied Social Sciences. With respect to racial representation, white respondents are significantly overrepresented across both degree statuses and fields of study, as shown in Figure 4. Among degree holders, white respondents outnumber minority respondents by approximately a five-to-one ratio. This imbalance is broadly reflected across all fields of study, with no single field standing out as particularly diverse or homogeneous after accounting for the overall racial distribution.

Given that a significant portion of individuals' selection into various forms of tertiary education is shaped by within-family transmission of norms and aspirations (e.g., Holmlund

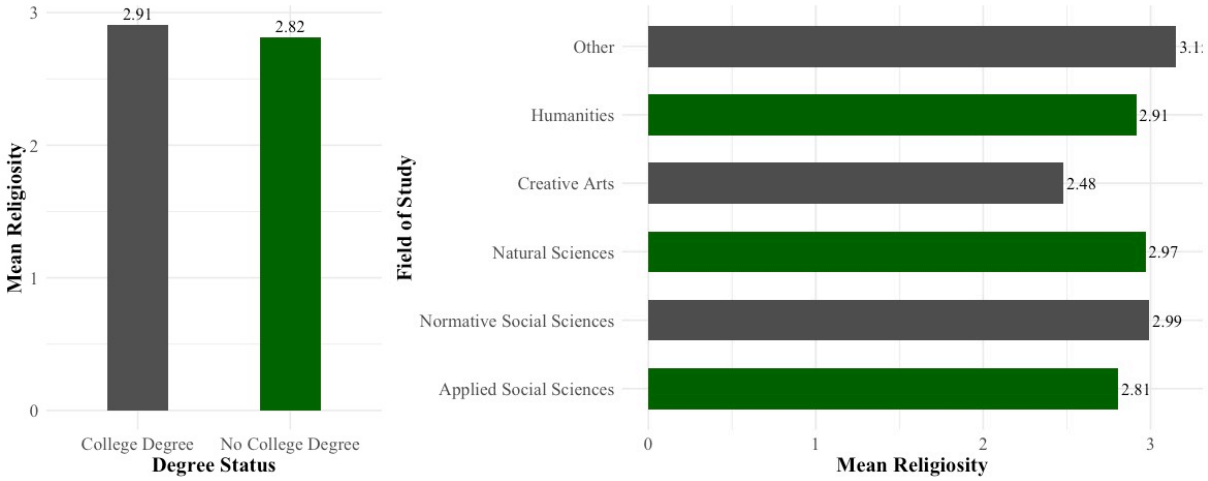
et al. 2011; Jennings et al. 2009), the educational attainment of both parents is also included as a control variable. In the original GSS dataset, parental education is measured in years of schooling. For analytical purposes, these variables are recoded into binary indicators, with the cutoff point set at the completion of high school.

Figure 4: Racial Composition by Degree Status and Field of Study



Civic and political engagement. The model also includes controls for two variables that capture respondents' civic and political engagement, given their relevance to both political attitudes and educational preferences. The first variable is political interest, measured by respondents' self-reported frequency of newspaper readership, which serves as a proxy for general political awareness and engagement. The second variable is respondents' self-reported religiosity, measured on a four-point scale ranging from 1 (least religious) to 4 (most religious). Figure 5 displays the mean religiosity scores by degree status, as well as by field of study among degree holders. There is no substantial difference in religiosity between individuals with and without a college degree. Similarly, religiosity appears relatively consistent across fields of study, with the exception of Creative Arts degree holders, who report slightly lower average levels of religiosity.

Figure 5: Mean Religiosity by Degree Status and Field of Study

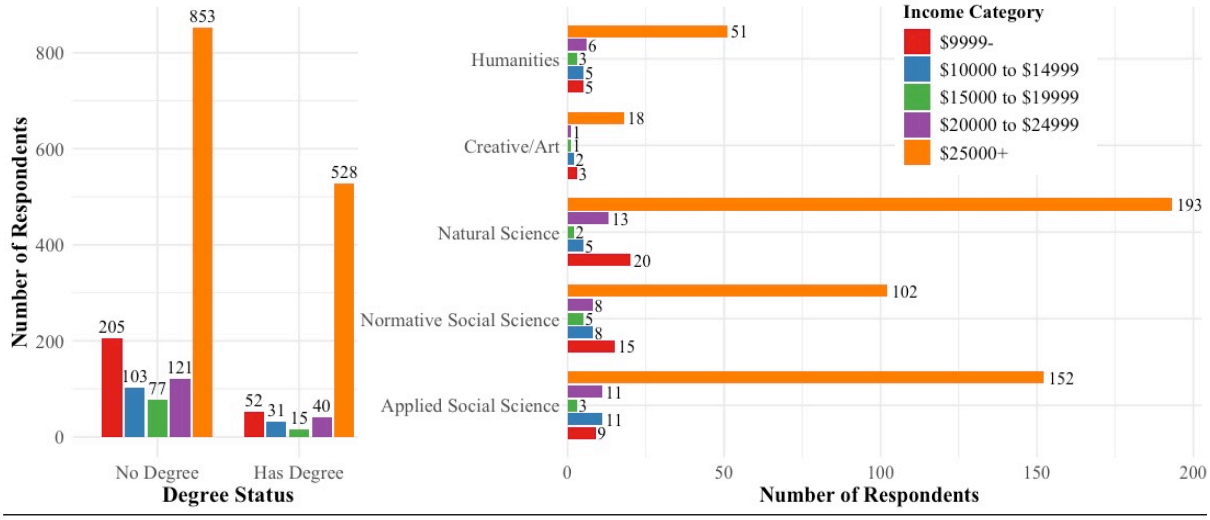


Importantly, respondents' partisanship is not included as a control variable in the model. A substantial body of research has demonstrated that partisanship is perhaps the strongest and most consistent predictor of support for redistribution (e.g., Iversen and Soskice 2006; Lupu and Pontusson 2011). Indeed, much of the contemporary ideological divide between left- and right-leaning parties is structured around attitudes toward redistribution and related policy domains. Given this close conceptual entanglement, including partisanship as a separate control variable risks obscuring rather than clarifying the mechanisms of interest, as it may absorb much of the variation that this analysis seeks to explain. Critics may contend that important heterogeneity still exists among co-partisans in their support for specific redistributive policies (e.g., Tolbert et al. 2019), and thus warrants examining redistributive attitudes net of respondents' partisan identification. While this concern is valid in the context of analyzing vote choice or policy-specific preferences, such intra-party variation is far less consequential when the focus is on ideological-level support for the general principle of taxation and redistribution. At this level of abstraction, partisan affiliation tends to be strongly aligned with broader redistributive orientations, rendering the inclusion of partisanship as a control both conceptually problematic and analytically redundant.

Financial status. Research seeking to isolate the independent effect of education, separate from the influence of income or material self-interest, must carefully account for individuals' economic backgrounds and perceived financial risks. Prior research has demonstrated that political attitudes are shaped not only by personal and familial income, but also by individuals' exposure to labor market risk (e.g., Moene and Wallerstein 2003; Iversen and Soskice 2001; Rueda 2005). Ideally, such risk would be measured using detailed information on employment contracts or the duration of unemployment. However, the GSS does not include this type of data. In light of this limitation, I approximate labor market risk using respondents' self-reported probability of experiencing job loss within the next year.

To better isolate the effect of personal wealth, the analysis also controls for an objective measure of current personal income. Figure 6 presents the distribution of respondents' personal annual income by both their degree status and field of study. Remember that in the effective sample, individuals having no degree outnumber those who do by approximately two to one. Despite this, the graph clearly shows that college graduates account for significantly more respondents in the highest income segment than their overall share of the sample—roughly a third—would predict. Conversely, respondents without a

Figure 6: Distribution of Personal Income by Degree Status and Field of Study



college degree are disproportionately represented across all lower income brackets. The right-hand side of figure 6 displays the distribution of annual income by respondents' field of study. Respondents with degrees in the Natural Sciences—followed by those in Applied Social Sciences and Normative Social Sciences—make up the largest shares of the highest income segment. However, given the variation in respondent numbers across academic fields, these patterns should not be taken as evidence of correlations between specific disciplines and income levels. Rather, the figure only offers a preliminary illustration of income distribution by field of study. A more rigorous analysis of this relationship is undertaken in the sections that follow. Last but not least, this analysis also controls for a subjective measure of self-assessed household income at age 16. Controlling for household income during adolescence, rather than relying solely on respondents' current household income, provides a conceptually more accurate approxi-mation of the family's financial background during formative years, which is more closely aligned with the underlying construct of interest—namely, the socioeconomic conditions under which a person grew up that shape educational trajectories and political attitudes.

3.1.3 Estimation strategy

Denote individual i's support for redistribution measured in ordinal outcomes with $J = 7$ ordered categories, as shown above, using Y_i, the following proportional odds logistic regression is estimated:

$$\log\left(\frac{P(Y_i \leq j)}{P(Y_i > j)}\right) = \alpha_j + \beta x_i + \theta Z_i + \epsilon_i$$

Where α_j denotes the constant intercept for each category. As intercepts in proportional odds logistic regression models are generally not of substantive interest, they are omitted from the results tables presented in the following sections. The value of $x_i \in \{0,1\}$ equals 1 if the respondent's major of study in college correspond to the specified field of study, and 0 otherwise. Therefore, β captures the effect of educational attainment. Due to the substantive ambiguity associated with the "other" category in the GSS major classification, all 13 observations labeled as such have been excluded from the analysis. Given that the unrestricted overall model retains a sample size exceeding 2,000 observations, the exclusion of these cases is unlikely to affect the validity or robustness of the findings. Z_i represents all control variables that are accounted for in order to isolate individual-level characteristics, which are detailed in the previous section. Finally, ϵ_i is the error term.

3.1.4 Results and discussion

Table 1 presents the results from the estimated proportional odds logistic regression (POLR) models examining the relationship between respondents' fields of study and their attitudes toward income redistribution. The left-hand column reports the odds ratios calculated from the coefficients of the model comparing individuals with degrees in specific academic disciplines to those without any college degree. The middle column displays the odds ratios from a different model specification, limited to respondents who hold a college degree. In this model, individuals categorized as having studied Creative Arts serve as the reference group. Lastly, the right-hand column presents the odds ratios from a more narrowly defined subsample, restricted to respondents holding degrees in Applied Social Sciences, Normative Social Sciences, and Natural Sciences. All other much less populated degree

Table 1: Effect of Education on Support for Redistribution

	Support for Redistribution		
	All Respondents	College Graduates	Focused Graduate Subsample
APPLIED SOCIAL SCIENCES	0.586***	0.887	0.627***
NORMATIVE SOCIAL SCIENCES	1.083	1.529	1.079
NATURAL SCIENCES	0.892	1.423	-
HUMANITIES	1.169	1.731	-
CREATIVE ARTS	0.750	-	-
Labor market risk	1.281*	1.285	1.623
Interest in politics	1.049*	1.085*	1.0739
Maternal education	1.015	1.316*	1.269
Paternal education	0.913	0.889	0.905
Age	0.921***	0.884**	0.907
Religiousness	0.839***	0.828***	0.858**
Racial identity	1.618***	2.15***	2.201***
Personal income	0.968**	0.931**	0.951
Household income	0.901**	1.003	1.010
Gender identity	1.145*	1.368**	1.363*
Sample Size (N)	2012	653	557
R-squared[1]	0.014	0.024	0.021

Odds ratios estimated by proportional odds logistic regression, significance levels indicated by: *=p<0.1; **=p<0.05; ***=p<0.01.

[1] Calculated using McFadden's pseudo R^2. Although not directly comparable to R^2 values from linear models (McFadden's are typically lower) it offers a general indication of model fit.

categories are excluded from this analysis, and graduates of Natural Sciences serve as the baseline for comparison. The reported odds ratios represent the odds of being in a higher category of support for redistribution for a one-unit increase in each independent variable—that is, moving from not having completed a major in the specified field to having completed it—or a one-unit change in a control variable. The dependent variable originally ranges from

1 to 7, with higher values indicating stronger opposition to redistribution. For interpretive clarity, the scale has been reversed so that higher values now reflect stronger support for redistribution. Consequently, an odds ratio greater than 1 indicates a more liberalizing effect on preferences for economic redistribution, whereas an odds ratio smaller than 1 signals a conservatizing effect or an increased market-oriented position.

According to table 1, respondents with degrees in Applied Social Sciences—such as economics, finance, and business administration—exhibit stronger and statistically significant opposition to redistribution relative to all other respondents who do not have a college degree. On average, respondents with a degree in Applied Social Sciences have odds of expressing greater support for redistribution that are 42% lower than those without a college degree, holding other variables constant. Meanwhile, respondents with degrees in Natural Sciences and Creative Arts also exhibit lower odds of expressing greater support for redistribution relative to non-degree holders, whereas those with backgrounds in Normative Social Sciences and Humanities show higher odds of support. However, the odds ratios for these four fields are not statistically significant in the specification that includes all respondents. This finding is largely consistent with theoretical expectations outlined in section 2.3a, as disciplines such as Creative Arts, Natural Sciences, and Humanities typically place less emphasis on socio-political and socio-economic content in their curricula compared to those within the Social Sciences. In the absence of such pedagogical exposure, students in these fields may be far less likely to frequently engage critically with issues of inequality or distributive justice. As such, it is reasonable to observe that, after controlling for material self-interest, these degree types do not exert a systematic influence on individuals' ideological orientations or their attitudes toward redistribution.

The results of the model that analyzes only those with college degrees (the middle column of Table 1) are largely consistent with the all-respondents specification. It is important to acknowledge that these estimated odds ratios require an additional layer of interpretive caution. In the full-sample model, where degree holders are compared to respondents without a college degree, the coefficients more closely align with our theoretical intuition, which is to assess how studying different fields may shape redistributive attitudes relative to pre-college baselines. In this context, an odds ratio greater than 1 reflects greater support for redistributive policies, while an odds ratio smaller than 1 indicates more anti-redistributive attitudes. By contrast, in the college-graduate-only model, the reference category consists of individuals classified under Creative Arts category in the GSS major variable. Among all fields, Creative Arts is expected to contain the least amount of informational content and ideological messaging that is redistributively—or more broadly, socio-economically—relevant, thereby making it the most appropriate baseline for comparison. What can be observed based on the results of this model is that degrees in Normative Social Sciences, Natural Sciences, and Humanities are associated with higher odds of being at higher levels of support for redistribution relative compared to those who studied Creative Arts, while degrees in Applied Social Sciences are associated with lower odds. This comparison offers a useful internal benchmark among degree holders; however, the result is not particularly surprising, as it lacks statistical significance and broadly mirrors the patterns observed in the estimates from the all-respondent model. Moreover, the small number of respondents classified under the Creative Arts category limits the statistical power of comparisons, as it increases the likelihood of Type II errors and constrains the substantive interpretability of the results due to greater sampling variability as well as reduced representativeness.

To facilitate more substantively meaningful comparisons among degree holders, the graduate subsample model excludes individuals with degrees in the Humanities and Creative Arts due to the limited number of observations in these groups and the lack of enough observations associated with these categories. In the focused graduate subsample specification, the attitudes of degree holders in Applied Social Sciences and Normative Social Sciences are compared against those in Natural Sciences, and the results are presented in the right-hand column of table 1. Consistent with the findings from the all-respondents model, individuals with a degree in Applied Social Sciences exhibit significantly lower odds of supporting redistribution compared to those with degrees in Natural Sciences. Specifically, the odds of expressing stronger pro-redistributive attitudes among Applied Social Science degree holders are approximately 37% lower (odds ratio = 0.627), holding other factors constant. In contrast, the odds ratio for Normative Social Sciences is 1.079, indicating a modest and statistically insignificant difference in redistributive attitudes relative to Natural Science graduates.

Because the baseline group in this specification is of clear substantive interest, the focused graduate subsample model offers valuable analytical leverage for evaluating hypotheses H2a and H2b. Previous research outlined in section 2.3b provides many theoretical reasons to expect that Applied Social Sciences and Natural Sciences share important similarities in the types of cognitive development they promote—whether implicitly through commonly used analytical frameworks or explicitly through the skills required to succeed in standardized assessments. These cognitive demands are thought to have a conservatizing effect, as they may frame redistribution simply as a challenge to the perceived fairness of merit-based rewards, thereby discouraging support for economic solidarity. In contrast to these two fields of study, Normative Social Sciences are thought to

cultivate more critical and holistic modes of thinking and to encourage students to become cognitively at ease with the complex and multifactorial nature of social issues. However, results from the focused graduate subsample model reveal a clear attitudinal divergence between degree holders in Applied Social Sciences and those in Natural Sciences, whereas no such divergence is observed between Normative Social Sciences and the latter. These findings undermine hypothesis H2b, which posits that field-specific cognitive sophistication is partially responsible for the variation in redistributive attitudes. If cognitive demands contribute to field-specific effects on redistributive attitudes, then it is puzzling that Applied Social Sciences differ markedly from both Natural Sciences and Normative Social Sciences, while the latter two demonstrating no meaningful difference despite emphasizing cognitive orientations that are theoretically in direct contrast. What is perhaps more likely at play here is the transmission of market-oriented ideologies and the inherently conservative economic knowledge—commonly associating state intervention with reduced aggregate welfare—that is prevalent in Applied Social Sciences but generally absent in Natural Sciences. Meanwhile, the content related to social inequality and structural deficiencies typically emphasized in Normative Social Sciences—often linked to pro-redistributive attitudes—is likely absent from Natural Sciences curricula as well. Using Natural Sciences as a baseline, given its relative lack of socio-economic content that could shape redistributive preferences, the observed cleavages with Applied Social Sciences becomes clearer to interpret: while Normative Social Sciences may promote pro-redistributive attitudes through their unique instructional contents, the influence of such content may be comparatively much weaker than the anti-redistributive influence associated with the economic teachings in Applied Social Sciences. At the very least, if cognitive training were a key explanatory factor, we would expect the strongest anti-redistributive effect among graduates of Applied Social Sciences,

followed by those in Natural Sciences, as both fields are thought to promote similar cognitive orientations, though the latter lacks an informational aspect. Normative Social Sciences, by contrast, should be associated with more pro-redistributive attitudes due to their distinct cognitive orientation and exposure to content focused on social inequality and structural critique. However, this pattern is not supported by the empirical findings, suggesting that the informational effect—outlined in Hypothesis H2a—is the more plausible explanation.

Several noteworthy patterns among the control variables also warrant brief discussion. Both racial identity and gender identity prove to be strong predictors of redistributive preferences across all three model specifications, with identification as a racial or gender minority significantly associated with higher levels of support for redistribution. Somewhat unexpectedly, neither paternal nor maternal education show statistically significant relationships with attitudes toward redistribution. Many studies suggest that the family transmission of values, at least through the maternal side, plays a significant role in shaping an individual's ideological orientation. This influence may occur through more direct mechanisms, such as authoritarian parenting styles (Scott 2022), or more indirect pathways, including early maternal employment, which has been linked to children's cognitive development (Waldfogel et al. 2002). Given this, the absence of a statistically significant correlation between maternal college attainment—which likely correlates with both parenting style and labor force participation—is somewhat unexpected. In contrast, being a church-goer demonstrates a significant association, with higher levels of self-reported religiousness linked to stronger opposition for redistribution. This finding is consistent with prior research on support for welfare state expansion in Europe (e.g., VanHeuvelen 2014; Doblytė and Tejero 2023), which suggests that in some religious traditions, teachings emphasizing communal solidarity and collective responsibility within the church may reduce worshippers'

willingness to outsource such functions to the state. Last but not least, the estimated coefficients suggest that higher personal income is associated with stronger opposition to redistribution; however, statistically significant effects are observed only in the all-respondent model and the college graduate model, not in the focused graduate subsample model. A similar pattern emerges for family affluence: self-reported family income at age 16 is significantly associated with opposition to redistribution in the first two models, but this relationship does not hold in the model restricted to graduates of Applied Social Sciences, Normative Social Sciences, and Natural Sciences. A more in-depth analysis of the role of material self-interest, as it relates to Hypothesis H1, is presented in Section 3.1.6.

3.1.5 Wald-tests for significance of differences

The results in Table 1 indicate that, in both the full sample model and the focused graduate subsample model, the attitudinal effect associated with Applied Social Sciences is not only significantly anti-redistributive but also markedly different from that of other fields of study. However, to ensure empirical robustness, it is necessary to statistically test whether the effects of Applied Social Sciences are indeed significantly different from the effects of other fields of study. A Wald test is conducted to assess exactly that, and the results are presented in Table 2. Since the analysis is based on the coefficients (instead of the odds ratios) estimated from a proportional odds logistic regression model rather than raw group means, the Wald-test provides the most appropriate method for assessing the significance of differences between coefficients (Kemp 2000). The test statistic is calculated by dividing the difference between coefficients by the standard error of the difference, and the p-value can be found using the chi-square distribution:

$$W = \left(\frac{\hat{\beta}_1 - \hat{\beta}_2}{\sqrt{SE_1^2 + SE_2^2}} \right)^2 \qquad p\text{-value} = 1 - F_{\chi^2}(W, \text{df} = 1)$$

A p-value below 0.05 indicates rejection of the null hypothesis of no difference between the coefficient for Applied Social Sciences and those of the other four fields, at the 95% confidence level. In other words, the coefficients for Normative Social Sciences, Natural Sciences, Creative Arts, and Humanities are each tested against that of Applied Social Sciences to assess whether the differences are statistically significant. The results indicate that, in the model comparing degree holders to non-degree holders, the coefficient for Applied Social Sciences is indeed significantly different from that of Normative Social Sciences, Natural Sciences, and Humanities. Similarly, in the focused graduate subsample model comparing graduates of Applied Social Sciences and Normative Social Sciences to those of Natural Sciences, the coefficient for Normative Social Sciences is also found to differ significantly from that of Applied Social Sciences. Put simply, studying Applied Social Sciences appears to make individuals more anti-redistributive compared to studying other majors, and that effect is unique. This reinforces the interpretations of the results presented in Table 1, as discussed in the previous section. While degrees in the other fields do not emerge

Table 2: Wald-test Results for Differences in Support for Redistribution by Field of Study

	Applied Social Sciences Compared Against[1]		
	All Respondents	College Graduates	Focused Graduate Subsample
Normative Social Sciences	0.004***	0.446	0.042**
Natural Sciences	0.026**	0.506	-
Humanities	0.008***	0.356	-
Creative Arts	0.499	-	-

[1] P-values estimated by Wald Test, with significance levels indicated by: *=p<0.1; **=p<0.05; ***=p<0.01.

as strong predictors of support for redistribution on their own, the likelihood that they would exert an effect as distinctly negative as that of Applied Social Sciences purely by chance is statistically negligible. While the coefficient for Creative Arts degree holders is not found to be significantly different from that of Applied Social Sciences, the similarly small number of respondents in the Creative Arts category warrants caution. The lack of statistical significance in this case may reflect poor model fit due to limited sample size rather than the absence of a meaningful difference in their effect on attitudes toward redistribution. The p-values associated with coefficient differences in the college graduate model are notably larger, which may be attributed to similar statistical limitations. As previously discussed, the "Other" category—used as the reference group in this specification—is theoretically ambiguous and functions primarily as a statistical placeholder rather than a substantively meaningful baseline. Moreover, this category includes very few observations, even fewer than those in Creative Arts, increasing the likelihood of poor model fit. As such, the Wald-test results for the college graduate model should not be directly interpreted as contradicting the results from the other two models.

In conclusion, the Wald-tests show, with considerable consistency, that studying Applied Social Sciences is uniquely associated with stronger opposition to redistribution, distinguishing it from all other major fields. While degrees in other disciplines do not strongly predict redistributive attitudes, the distinct and statistically robust effect linked to Applied Social Sciences is unlikely to be a product of chance. These findings enhances the robustness of the interpretations presented in the previous section, suggesting that—at least within the framework of this three-stage analysis—the distinct economic content taught in Applied Social Sciences is a likely driver of anti-redistributive attitudes among its graduates.

3.1.6 Material self-interest analysis

As a wealth of pioneering research has consistently demonstrated, material self-interest plays a crucial role in shaping individuals' attention to inequality and their perceptions of state intervention in addressing it. In general, high-income earners tend to oppose redistribution due to the widely held and salient belief that they are likely to be on the financially losing end of such policies—at least in the short term. The same Meltzer-Richard logic that formalizes such correlation between wealth and anti-redistributive sentiment (Meltzer and Richard 1981), as discussed in section 2.2 of this paper, should also imply that higher education fosters more anti-redistributive attitudes by virtue of the material advantages it confers upon its recipients. While many scholars have found empirical support for this theoretical expectation (e.g., Alesina and Glaeser 2004; Brooks and Manza 2007; Page and Shapiro 1982), they have generally treated higher education as a homogeneous experience, overlooking potential variation in field-specific income effects. Such variation, however, is theoretically plausible, given that disciplines like finance and business administration are well known for helping individuals access some of the highest-paying sectors globally. It is within this context that this paper introduced Hypothesis H1 in section 2.2, which posits that certain fields of study, by significantly enhancing graduates' earning potential, exert a stronger anti-redistributive effect than others.

Although personal income was included as a control variable in the previous models, a more targeted analysis is necessary to provide greater analytical leverage for addressing hypothesis H1 and to assess whether a field-specific income effect is indeed present. A new set of proportional odds logistic regressions is estimated using GSS data, this time with respondents' personal income as the dependent variable and field of study as the key independent variable. All control variables from the previous models are retained, except for

personal income, which is now the outcome of interest. The results are organized by model specification as before: coefficients from the all-respondent model are reported in the left-hand column of table 3, the college graduate model in the middle column, and the focused graduate subsample model—restricted to Applied Social Sciences, Normative Social Sciences, and Natural Sciences—in the right-hand column. A Wald test for significance of difference is also conducted and results reported in table 4.

Table 3: Effect of Education on Personal Income

	Personal Income		
	All Respondents	College Graduates	Focused Graduate Subsample
APPLIED SOCIAL SCIENCES	2.319***	1.715	0.887
NORMATIVE SOCIAL SCIENCES	1.710***	1.179	0.605*
NATURAL SCIENCES	2.631***	1.932	-
HUMANITIES	1.514	1.106	-
CREATIVE ARTS	1.356	-	-
Control Variables[1]	-	-	-
Sample Size (N)	2012	666	557
R-squared[2]	0.346	0.527	0.542

Odds ratios estimated by proportional odds logistic regression, significance levels indicated by: *=p<0.1; **=p<0.05; ***=p<0.01.

[1] Includes the same set of control variables as in the support for redistribution model except for personal income, which is used as the dependent variable.

[2] Calculated using McFadden's pseudo R^2. Although not directly comparable to R^2 values from linear models (McFadden's are typically lower) it offers a general indication of model fit.

According to Table 3, a clear income effect is observed for obtaining at least some form of college education when compared to individuals without a college degree. In particular, degrees in Applied Social Sciences, Normative Social Sciences, and Natural Sciences are all significantly associated with higher income levels relative to non-degree holders, with Natural Sciences and Applied Social Sciences appearing to be the most

financially enriching fields. When comparisons are made among degree earners using those in the Creative Arts as the baseline category, the findings suggest that all other fields are associated with lower odds of being in higher personal income categories. However, none of the estimated odds ratios reach statistical significance, and the small sample size within the Creative Arts category further limits the interpretive value of this result. In contrast, the focused graduate subsample model offers more meaningful comparisons. Here, graduates of Normative Social Sciences have approximately 39.5% lower odds of being in a higher income category compared to those with degrees in Natural Sciences (odds ratio = 0.605), controlling for other factors. However, this difference is statistically significant only at the 90% confidence level, falling short of the conventional 95% threshold. Graduates of Applied Social Sciences, on the other hand, have odds of being in a higher income category that are approximately 11% lower than those of Natural Science graduates (odds ratio = 0.887). This difference is modest and statistically insignificant, aligning with the pattern observed in the all-respondents model.

While college graduates—regardless of their field of study—seem to earn more than non-degree holders, the Wald test results provide a clearer assessment of whether field-specific income effects exist; that is, whether certain fields truly distinguish themselves by significantly enhancing their graduates' earning potential. The short answer is no. Across all

Table 4: Wald-test Results for Differences in Personal Income by Field of Study

	Applied Social Science Compared Against[1]		
	All Respondents	College Graduates	Focused Graduate Subsample
Normative Social Science	0.292	0.588	0.309
Natural Science	0.646	0.862	-
Humanities	0.213	0.538	-
Creative Arts	0.284	-	-

[1] P-values estimated by Wald Test, with significance levels indicated by: *=p<0.1; **=p<0.05; ***=p<0.01.

model specifications, no field of study is found to be statistically significantly different from others in its effect on graduates' income. Even within the focused graduate subsample, graduates of Normative Social Sciences do not earn significantly less than their counterparts in Applied Social Sciences. In an ideal scenario, testing whether income expectations formed through field-specific educational experiences influence redistributive attitudes, as outlined in H1, would require a measure of respondents' optimism about their employment prospects at the point of graduation. While it is admittedly unfortunate that the GSS does not provide such data, the evidence we do have remains valuable and offers meaningful leverage to challenge hypothesis H1. The job market is complex, and employment prospects are rarely straightforward—even for graduates in fields commonly associated with high-paying careers. For instance, Robst (2007) demonstrates that, depending on individuals' demographic characteristics and fields of study, the likelihood of a mismatch between one's college major and the skills required in their job can reach as high as 45 percent. The findings of this paper reveal that there is no evidence, across any of the three model specifications or for any individual field, to support the existence of a clear field-specific income effect that is statistically valid at a 95% confidence level. Moreover, earlier analyses that included personal income as a control variable still showed persistent field-specific differences in redistributive attitudes. In other words, whatever expectations students may have held about their future earnings—whether realistic or otherwise—would likely fade away once they enter the labor market. At least based on the GSS data, there is no evidence of field-specific income effects, making it unlikely that such effects explain the attitudinal differences observed across academic disciplines in the earlier analyses.

3.1.7 Socialization analysis

The final hypothesis of this paper, H3, posits that differences in field-specific socialization experiences may also contribute to the cross-disciplinary variation in university education's effects on redistributive attitudes. Net of the effects of field-specific ideological transmission, cognitive demands, and disciplinary knowledge attained through formal curricula, individuals may also pick up distinct values and preferences through peer socialization that happens outside the classroom.

To examine whether field-specific socialization experiences significantly influence students' redistributive preferences, the ideal scenario would involve access to data on individuals' sociability during college and the context in which social interactions occurred. Prime examples include membership in socioeconomically oriented student organizations or the frequency of political dialogue with peers from the same field of study. Unfortunately, the GSS either does not include this type of data or has only asked a very limited number of relevant questions in a few survey waves, which, when combined with other variables, fail to yield a sufficiently large sample for a meaningful analysis. To address this problem, this analysis produces a comprehensive sociability indicator by combining four variables in the GSS that capture the frequency of individuals' participation in social events (see Appendix I for details on indicator construction). While there exists an ongoing debate in the sociology and psychology literature regarding the stability of personality across a person's lifespan, a considerable amount of evidence stands in support of the notion that extraversion, a key facet of the Big Five personality traits, tends to remain relatively stable as individuals enter tertiary education and subsequently transition into older adulthood. For example, Damian et al. (2019), in their longitudinal study spanning over five decades, found that although personality traits may undergo change over time, extraversion exhibited notable rank-order

stability. This suggests that individuals who were sociable in their youth generally remained outgoing into their 50s and 60s. Atherton et al. (2020) also reported comparable findings in their 20-year study, demonstrating that extraversion also exhibits a high degree of rank-order stability over time. Elkins et al. (2017), Vecchione et al. (2016), and Terracciano et al. (2010), among others, have shown similar results. Therefore, although it does not directly capture socializing experiences in a strictly political context, the sociability indicator nonetheless serves as a useful proxy. It represents the closest available approximation given the current GSS data, while still offering at least some indication of the extent to which individuals may have been socialized within their field-specific collegiate environments.

To better isolate the role of field-specific socialization, independent of the effects of knowledge transmission and cognitive development, three separate models are estimated—each limited to respondents who studied Applied Social Sciences, Normative Social Sciences, or Natural Sciences. By holding the field of study constant within each model, it is reasonable to assume that exposure to disciplinary content, cognitive demands, and income-related factors are broadly comparable, allowing variation in sociability to serve as a more focused proxy for peer-driven socialization effects. Lastly, the same set of control variables is retained, and the results of the three models are presented in Table 5.

According to the model results, increased intensity of socialization within Applied Social Sciences and Normative Social Sciences is associated with slightly lower odds of support for redistribution. Increased socialization within the field of Natural Sciences, on the other hand, contribute slightly to a more liberal attitude outcome. However, none of the estimated results are statistically significant. In other words, when holding the field of study constant—thereby controlling for variation in educational content and material self-interest—differences in sociability do not appear to meaningfully influence individuals' redistributive

Table 5: Effect of Socialization on Support for Redistribution by Field of Study

	Support for Redistribution		
	Applied Social Science	Normative Social Science	Natural Science
SOCIABILITY[1]	0.985	0.944	1.036
Interest in politics	0.913	1.345***	1.022
Maternal education	2.15***	1.149	0.832
Paternal education	1.24	0.971	0.949
Age	0.894	0.783**	0.965
Religiousness	0.953	0.717**	0.832*
Racial identity	2.09**	2.07*	1.98**
Personal income	0.918	1.021	0.968
Household income	0.939	0.938	1.033
Gender identity	1.06	2.200**	1.282
Brant Test (Overall)	0.12	0.12	0.13
Sample Size (N)	208	150	266
R-squared[2]	0.061	0.051	0.028

Odds ratios estimated by proportional odds logistic regression, significance levels indicated by: *=p<0.1; **=p<0.05; ***=p<0.01.

[1] Higher sociability sore indicates greater extroversion. See Appendix I for details on indicator construction.

[2] Calculated using McFadden's pseudo R^2. Although not directly comparable to R^2 values from linear models (McFadden's are typically lower) it offers a general indication of model fit.

preferences. This result, however, must be taken with a grain of salt. Aside from the previously noted limitation that the sociability indicator is a less-than-ideal proxy for college-era socialization, the restricted number of available observations also results in relatively low sample sizes across all model specifications, which likely further limits the robustness of the findings. This may also explain why the coefficients for the control variables do not exhibit any consistent or interpretable patterns. Low sample sizes in proportional odds logistic regressions are known to produce unstable coefficient estimates and issues such as quasi-separation (Mansournia et al. 2018). The unusually large and statistically significant

coefficient for interest in politics in the Natural Sciences model, for example, appears likely to be the victim of this. Although the Brant tests for all three models do not indicate violations of the parallel lines assumption, the limitations of the data structure mean that the most we can conclude is that, based on the GSS data, there is no evidence supporting a clear field-specific socialization effect on attitudes toward redistribution.

Beyond these statistical technicalities, the more fundamental challenge in testing the socialization hypothesis may be theoretical rather than empirical. A person does not enter a particular field of study by accident; rather, they choose disciplines that are often already populated with people reflecting their ideological and intellectual inclinations. To put it differently, students tend to gravitate toward academic environments—shaped by both faculty and peers—that align with their preexisting orientations. As a result, experts and emerging scholars in the field continually reinforce a relatively consistent set of ideological and conceptual messages, both inside and outside the classroom. In this context, it becomes clearer why increased socialization within a given field may have a limited effect on redistributive attitudes—students may already be predisposed to a shared ideological message promoted by the field, making their attitudes relatively stable regardless of how intensively they engage with coursework, participate in related extracurriculars, or interact with peers and faculty. Additionally, it is also inherently difficult to clearly map out the boundaries of the socialization effect. College education represents a prolonged period of complex ideational exchange, during which the effects of disciplinary knowledge, cognitive development, and socialization are deeply intertwined and challenging to disentangle. Is participation in a student organization with peers from the same field, taught by the same professors and exposed to similar ideas, primarily a process of socialization—or is it more appropriately understood as primarily an informational exchange? Conversely, can we confidently assert

that everything internalized by students in, for example, small discussion-based seminars is purely informational or cognitive, rather than equally shaped by socializing dynamics? While there exist concrete theoretical reasons to expect that socialization experiences vary across fields of study (e.g., Mendelberg et al. 2017; Bowman 2010), and therefore may influence attitudes differently, empirically isolating their effects is likely to remain a highly challenging task.

3.1.8 Brant tests

A key requirement for using proportional odds logistic regression is the parallel lines assumption, which requires that estimated effects of the independent variables to stay consistent across all ordered categories in the outcome variable. The Brant Test is a typical tool for assessing this assumption. The outputs of the Brant Test are p-values, and a value below the conventional 0.05 threshold indicates a violation. Results of the Brant Test for the all-respondents, graduate only, and focused graduate subsample models, the three specifications outlined in section 3.1.4, are presented in Table 6.

According to the results, the overall (omnibus) Brant Tests for all three models successfully reject the null hypothesis of no violation, indicating that the parallel lines assumption has not been met in general. However, further examination of the individual variable-level results indicates that the overall violation of the assumption is driven only by two variables: racial and gender identity. This means that the effect of being a male respondent versus a female respondent, or being white versus non-white, on redistribution preferences is not consistent across all levels of agreement. For example, being a member of the racial minority might strongly increase the odds of moving from “strongly disagree” to “disagree,” but not increase the odds as much when moving from “agree” to “strongly agree.”

Table 6: Brant Test Results for POLR Model Estimates, Support for Redistribution as DV

	P-value		
	All Respondents	College Graduates	Focused Graduate Subsample
OVERALL(OMNIBUS)	0***	0***	0.02*
APPLIED SOCIAL SCIENCES	0.18	0.64	0.16
NORMATIVE SOCIAL SCIENCES	0.11	0.73	0.57
NATURAL SCIENCES	0.16	0.81	-
HUMANITIES	0.19	0.64	-
CREATIVE ARTS	0.79	-	-
Labor market risk	0.84	0.86	0.68
Interest in politics	0.16	0.24	0.1
Maternal education	0.79	0.71	0.76
Paternal education	0.06	0.18	0.27
Age	0.14	0.65	0.65
Religiousness	0.06	0.76	0.84
Racial identity	0***	0.01**	0.03*
Personal income	0.1	0.06	0.06
Household income	0.46	0.99	0.78
Gender identity	0.02**	0.01**	0.01**

Note: p-values below 0.05 indicate violation of the parallel regression assumption. Significance levels indicated by: *=p<0.05; **=p<0.01; ***=p<0.001.

Similarly, the attitudinal gap between male and female groups may be large in moderate opinions but smaller at the extremes—or vice versa. All other variable-specific tests, aside from those for race and gender, suggest that the assumption holds—especially for the main independent variable of interest, field of study. Therefore, the findings related to the attitudinal effects of field of study at least appear to be statistically robust, and the core substantive inferences are likely valid within the proportional odds framework.

While the rejection of the null hypothesis of the overall model appears to be driven by the two control variables for gender and racial identity, the fact that several other variable-specific tests, such as those for personal material well-being, border the threshold of significance across model specifications suggests some instability. As discussed in previous sections regarding methodological challenges, this directly points to the limitations of relying solely on cross-sectional, regression-based approaches to estimate the effect of field of study on redistributive attitudes. In particular, efforts to address endogeneity by controlling for measured background variables often fall short when the influence of these factors varies non-linearly across the attitudinal scale, or when they are poorly or incompletely measured, causing their effects to appear non-linear. To alleviate such problems, the next section turns to longitudinal data to examine within-individual change in redistributive attitudes over time.

3.2 Longitudinal analysis

Using panel data to achieve empirically more robust controls for personal background, thereby gaining much greater statistical power to address the issue of selection in higher education attainment compared to cross-sectional modeling, has been an avenue of growing popularity in recent research (e.g., Scott 2022; Simon 2022). At its core, selection bias makes it difficult for researchers to ensure comparability among individuals educated in different fields, schools, and educational systems. The same set of background characteristics that lead a person to one field of study over another are also likely to steer them toward one side of the political spectrum over the other. In the absence of empirical prowess against the issue of selection, robust causal claims regarding the attitudinal effects of education are unlikely to arise.

Longitudinal datasets offer a solution to this problem. They eliminate the need to control for individual background characteristics using measured variables, as is required when using cross-sectional data. Many time-invariant personal backgrounds that are crucial to both educational attainment and attitude outcomes—such as the level of family affluence a person grew up in and the extent of parental transmission of values and aspirations—can be tricky to control for, as the ways in which they are measured in cross-sectional datasets are often incomplete and inaccurate, both theoretically and empirically. Panel data–driven analyses, on the other hand, automatically control for time-invariant background variables by obtaining attitudinal measures from the same individual across multiple waves of survey. In principle, with the correct model setup, changes in attitudes observed longitudinally can be more credibly attributed to educational experiences rather than pre-existing individual differences.

3.2.1 Data and variables

The longitudinal analysis section of this paper will use the German Socio-Economic Panel (SOEP) dataset. The SOEP is a longitudinal dataset created and maintained by the German Institute for Economic Research (DIW Berlin) since 1984. It collects comprehensive data on both individuals and households that are central to socio-economic and socio-political research, such as information on income, education, core values, and political preferences. By conducting the survey annually and following the same individuals over time, the SOEP allows researchers to study long-term developments in individual characteristics of interest and has therefore become one of the most popular and respected longitudinal datasets in academia globally.

The most important variable for the purposes of this study—while also perhaps the most data-demanding—is respondents' field of study. From 1985 to 2009, the SOEP dataset collected information on individuals' time of entry into college education and subsequent completion, as well as their self-reported major. This resulted in a list of 62 major options that can be further classified into the five fields of study this research is theoretically interested in testing the attitudinal effects of. These five fields of study—Applied Social Sciences, Normative Social Sciences, Natural Sciences, Creative Arts, and Humanities—are classified according to the same criteria used in the GSS analysis, allowing for conceptually comparable inferences. For a complete list of major classifications, see Appendix III.

The outcome of interest, support for redistribution, is measured based on the survey results of respondents' attitudes regarding the extent to which the government should be responsible for job creation. This question represents the attitudinal measure most conceptually aligned with redistributive demand, and using it follows the practice of previous research in other contexts, such as Ansell (2014), who used the British Household Panel Study dataset, and Ashok et al. (2015), who used the American National Election Studies dataset. Both studies used responses to similar questions regarding the role of government in the labor market as measures of support for redistribution. Specifically, the question asks:

"What is your opinion on who should be responsible for the following areas?"

[Job Creation Schemes]

1 = Only the State;

2 = Primarily the state;

3 = State as well as private entities;

4 = Primarily private entities;

5 = Only private entities;

Respondents who answer "only the state (1)" are treated as having the most pro-redistribution attitudes, whereas those who answer "only private entities (5)" are treated as having the most anti-redistribution attitudes. For interpretive clarity, the scale has been reversed in the actual modeling to allow higher numerical designations to reflect greater support for redistribution.

3.2.2 Estimation strategy

The longitudinal analysis will begin with a difference-in-means test comparing the expected change in redistributive preferences among individuals who obtained a college degree in one of the five fields of study. Specifically, the difference between the two attitudinal measures of the same respondent—one taken pre-college and another taken post-college—will be observed. The question that is used to construct the dependent variable was part of the SOEP surveys in only three waves: the 1997 wave, the 2002 wave, and the 2017 wave. All respondents who participated in SOEP interviews in these three years had their answers recorded as one of the five options listed above, and in other years when the question was not part of the surveys, all responses were marked as not applicable. Therefore, a SOEP participant can have, at most, three valid responses for this research to analyze. In the event that a person has three valid attitudinal measures, the two taken in closest temporal proximity to the individual's college entry and exit years will be used.

Let Y_{it} denote the level of support for redistribution for individual i at time t, and define the individual-level change in attitude as $\Delta Y_i = Y_{i,t_1} - Y_{i,t_2}$. Here, t_1 and t_2 correspond to the two timepoints at which the individual's pre-college and post-college attitudinal

measures were recorded. Since this design relies only on two observations of the dependent variable per individual, no third time point t_3 is considered. Finally, let G_i be a categorical indicator of individual *i*'s field of study.

Then, the field-specific expected change in attitude for graduates of field *g* is:

$$\bar{\Delta Y}_g = \frac{1}{N_g} \sum_{i \in G_i = g} \Delta Y_i$$

To compare any two fields *g* and *h*, compute:

$$\hat{\tau}_{g,h} = \bar{\Delta Y}_g - \bar{\Delta Y}_h$$

To test whether $\hat{\tau}_{g,h}$ is statistically significantly different from zero, a two-sample t-test will also be conducted, where s_g^2 and s_h^2 are the sample variances of the two field-specific expected change in redistributive demand:

$$t_{g,h} = \frac{\hat{\tau}_{g,h}}{\sqrt{\frac{s_g^2}{N_g} + \frac{s_h^2}{N_h}}}$$

Due to the theoretical requirements of this particular research and the survey design, the effective sample size containing the core information necessary for carrying out the estimation ends up very limited. For any meaningful comparisons of within-individual changes in attitudes across fields of study to be made, respondents must, at a minimum, possess a college degree, have their attitudes measured at least twice, and, more importantly, have completed their college education between the two time points at which their attitudes were recorded. As mentioned before, the question on individuals' attitudes toward the government's responsibility in job creation schemes was only asked in three waves: 1997, 2002, and 2017. These time gaps are substantial. Therefore, a wealth of information on

individuals who hold a college degree but either do not appear in both waves of the attitude survey, have only one recorded attitude response, or have two responses both collected before or after completing their degree, do not satisfy the modeling requirements of this study.

Even for individuals whose college entry and exit timeframes fall between two of the three waves of attitude measurement, caution must be exercised in the empirical construction. It would be empirically ideal for each individual's attitudes to be measured in the exact year they enter college and again in the exact year they graduate. This would allow any observed within-individual change in redistributive support to be more confidently attributed to the college experience itself and nothing else. However, because the question used to measure redistributive support was repeated in only three waves, and with somewhat arbitrary intervals between each wave, it is highly unlikely that a respondent's college entry and exit years align precisely with two of the years in which the question was asked. To address this issue and achieve a usable sample size that includes respondents from all five fields of study, while avoiding significant compromises to the theoretical validity of the design, the temporal requirement for the pre-college attitudinal measurement is relaxed to include individuals whose attitudes were measured either before college enrollment or within one year of enrollment. Respondents whose first attitudinal measure falls outside of this window are excluded from the sample. For the second attitudinal measurement, no specific timing constraints are imposed, apart from the requirement that it must be the first observation recorded after college graduation.

This filtering process yields a final sample of 151 respondents, with 57 in Applied Social Sciences, 20 in Normative Social Sciences, 59 in Natural Sciences, 5 in Creative Arts, and 10 in the Humanities. The mean temporal difference between respondents' college entry year and the year in which their pre-college attitude is measured is less than one year. This

means that all individuals in the sample are expected to have their baseline attitudes recorded within a year prior to entering college. On the other hand, the mean temporal difference between respondents' college exit year and the year when their post-college attitude is measured is just over five and a half years. While this level of proximity is not perfect, and it certainly falls short of an ideal design in which attitudes are measured precisely at the start and end of college, it nonetheless exceeds initial expectations. Later sections will address some potential concerns arising from the college-survey temporal discrepancy, particularly those related to the larger gap between respondents' exit year and the timing of their post-college attitude measurement. That said, the structure of the current sample offers a reasonably strong empirical foundation, and the results derived from this sample should carry meaningful analytical weight.

3.2.3 Results

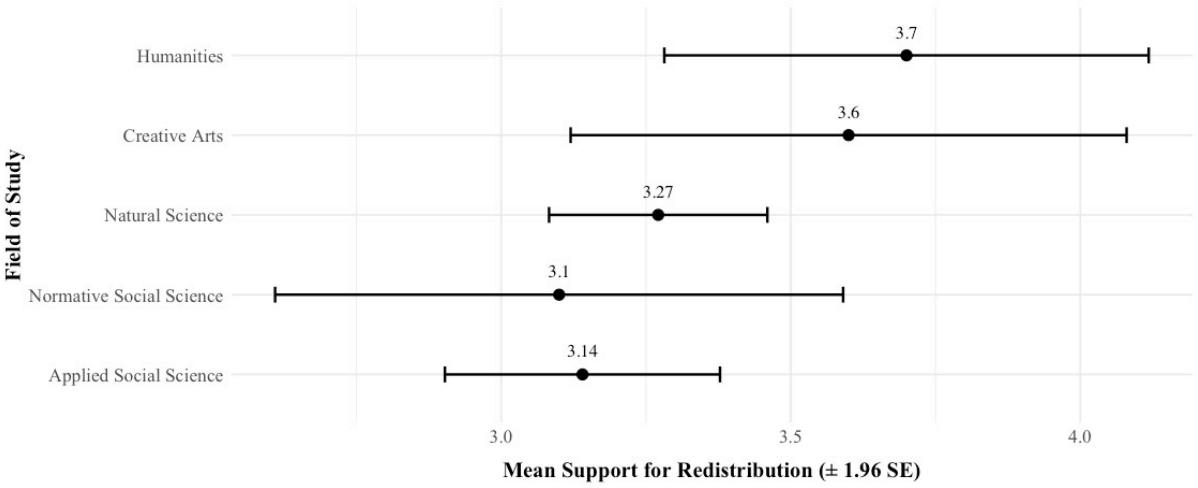
Table 7 presents the average beginning-of-college support for redistribution among respondents from the five fields of study. This captures the field-specific average support for redistribution among respondents prior to their exposure to college curricula or before spending a considerable period of time in college—at a stage when they are unlikely to have had their attitudes significantly reshaped by their higher education experience yet. Examining this not only provides insight into whether potential ceiling or floor effects may complicate the analysis of field-specific within-individual attitudinal change later on, but also sheds light on the presence of a sorting phenomenon—that is, whether a particular field of study disproportionately attracts college freshmen who share predispositions that differ significantly from those of students in other fields.

Table 7: Average Beginning-of-College Support for Redistribution by Field of Study

	Field of Study				
	Applied Social Sciences	Normative Social Sciences	Natural Sciences	Creative Arts	Humanities
Mean	3.140	3.100	3.271	3.600	3.700
Standard Error	0.121	0.250	0.096	0.245	0.213
Sample Size (N)	57	20	59	5	10

According to Table 7, incoming college students who eventually graduated in Applied Social Sciences and Normative Social Sciences exhibit the lowest average support for redistribution, with both groups displaying similarly anti-redistributive attitudes. They are followed by students in the Natural Sciences. In contrast, those who later pursued degrees in Creative Arts and Humanities show the highest mean support for redistribution at the time of enrollment. However, pairwise t-tests (results not listed here for brevity) reveal that none of the differences in mean support for redistribution across the five fields are statistically significant at the conventional 95% threshold. Figure 7 presents a mean-and-error plot of the estimated average beginning-of-college support for redistribution by field of study, providing a clearer sense of the degree of overlap among the estimates.

Figure 7: Average Beginning-of-College Support for Redistribution by Field of Study



Therefore, the results of the beginning-of-college mean redistributive support test suggest that there is no observable sorting effect across the five fields of study. That is, when students are grouped by their eventual field of study, their initial attitudes toward redistribution appear broadly comparable. This finding helps mitigate concerns that the within-individual attitudinal changes observed later in the analysis are primarily driven by lingering pre-existing ideological dispositions. In other words, the field-specific attitudinal shifts observed later in the analysis are less likely to be artifacts of students having already been predisposed to certain views before engaging with the substance of their academic programs. Moreover, there appears to be no indication of potential ceiling or floor effects as well, as the mean beginning-of-college support for redistribution among students in the five fields is clustered around the midpoint of the 5-point scale. This pattern is analytically significant: it suggests that students were not entering college with attitudes already so extreme—either strongly in favor of or against redistribution—that meaningful change would be statistically constrained. Instead, there remains considerable room for movement in either direction, strengthening the interpretability of any observed within-individual attitudinal shifts over time. With this established, we can now turn to the results of the field-specific within-individual change estimates.

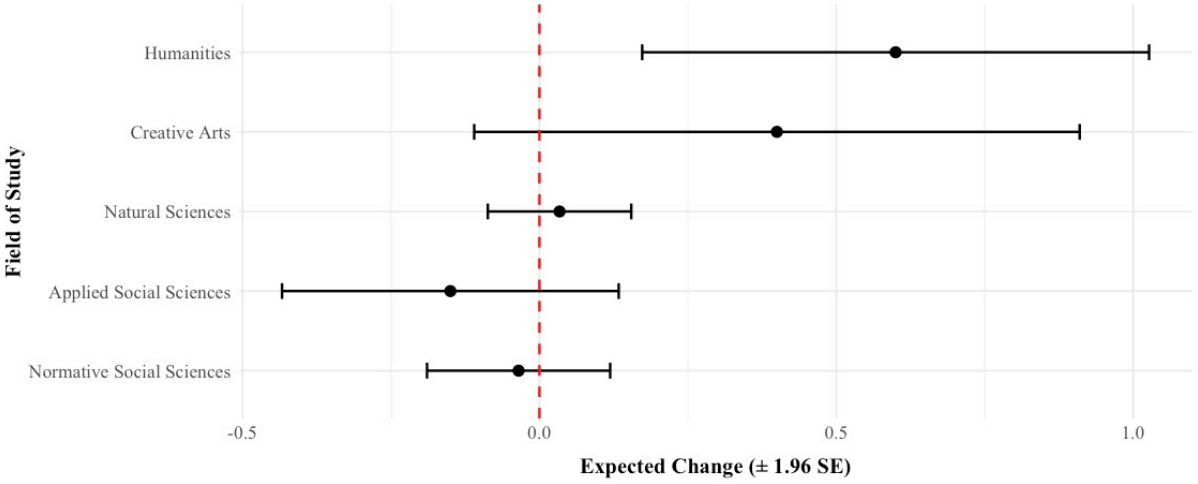
Table 8 presents the expected change in support for redistribution among individuals in each of the five fields of study, while Figure 8 displays the corresponding point estimates and standard errors in a mean-and-error plot. For visual clarity, a red dashed line is included at the zero baseline to indicate the threshold of no attitudinal change. According to the results, degrees in Applied Social Sciences are associated with the largest decrease in support for redistribution among graduates. This corroborates with the findings from the earlier analysis using GSS data, which also identified an anti-redistributive effect of Applied Social Science

Table 8: Expected Change in Support for Redistribution by Field of Study

	Field of Study				
	Applied Social Sciences	Normative Social Sciences	Natural Sciences	Creative Arts	Humanities
Expected Change[1]	-0.150	-0.035	0.034	0.400	0.600
Standard Error	0.145	0.079	0.062	0.259	0.217
Sample Size (N)	57	20	59	5	10

[1] Expected change estimated by the unconditional mean shift in support for redistribution among individuals by field of study.

Figure 8: Expected Change in Support for Redistribution by Field of Study



disciplines. However, the 95% confidence intervals for both fields comfortably overlap with the zero baseline, indicating that these observed changes are not significantly different from zero. Degrees in Normative Social Sciences and Natural Sciences follow a similar pattern, with respective point estimates essentially indistinguishable from zero and confidence intervals overlapping the null value. By contrast, degrees in the Humanities are associated with the largest estimated increase in support for redistribution, followed by degrees in Creative Arts. However, both fields also exhibit the widest confidence intervals, likely owing to their very small sample sizes.

Table 9 presents the pairwise t-test results that assess whether the expected change in attitudes associated with the five fields are statistically significantly different. According to

the results, while the expected change in support for redistribution associated with Normative Social Sciences, Applied Social Sciences, and Natural Sciences are not significantly different from zero, they are nonetheless significantly smaller than that of Humanities. Given the absence of observable field-specific sorting effects, as well as the ability of longitudinal analysis to better account for personal background characteristics, the significant differences in expected within-individual attitude change can be credibly attributed to field-specific college experience. No other pairwise comparison, including those among Normative Social Sciences, Applied Social Sciences, and Natural Sciences, yields a statistically significant result.

Table 9: Pairwise T-Test Results for Differences in Expected Change in Attitudes by Field of Study

	Applied Social Sciences	Normative Social Sciences	Natural Sciences	Creative Arts	Humanities
Applied Social Sciences		0.488	0.246	0.067	0.005**
Normative Social Sciences			0.494	0.111	0.007**
Natural Sciences				0.172	0.014*
Creative Arts					0.555

Results shown are two-tailed p-values derived using the standard normal approximation; significance levels indicated by: *=p<0.05; **=p<0.01; ***=p<0.001.

While yielding some noteworthy results, the current model specification faces one primary challenge. The temporal discrepancies between the years of college entry and exit and the timing of attitudinal measurements likely introduce noise into the estimation of the educational effect. As previously mentioned, while the mean temporal difference between sampled respondents' college entry and the timing of their pre-college attitude measurement is less than a year, which is comparatively much more acceptable, the mean gap between college exit and the post-college attitude measurement exceeds five and a half years. A span

of this length, during which individuals are likely to have entered the labor market, may introduce substantial shifts in attitudes that are not solely attributable to the college experience. Some previous studies have raised concerns in exactly the same area, such as Stubager (2008), who analyzed Danish survey data and found that education's effect on individuals' liberal-conservative ideology primarily operates through helping graduates sort into employment environments that align with the skills they acquired in school. These job positions, then, provide the foundation for political socialization that contributes to individuals' long-term ideological shifts.

3.2.4 Partisan affiliation as proxy

To help mitigate the issue mentioned above, it is necessary to ensure that the pre-college and post-college attitudinal measures are taken as close as possible to respondents' college entry and exit years. This would allow the observed within-individual attitudinal change to more accurately reflect the effects of the college experience within a more constrained timeframe. In order to achieve this, this analysis moves to use respondents' self-reported partisanship and strength of partisan affiliation as a proxy for redistributive preferences. As in the previous cross-sectional analysis using GSS data, this paper continues to hold that economic preferences are a central component of left-right ideology and, by extension, partisan affiliation. Using partisanship as an indicator of support for redistribution is also conceptually consistent with existing scholarly work (e.g., Rueda and Stegmueller 2019) that employs the same panel dataset. While some degree of measurement error is inevitable, since partisan identity is, after all, not a direct equivalent for support for redistribution, using it as a proxy offers substantial empirical advantages that outweigh the potential conceptual sacrifices. Unlike the question measuring attitudes toward the

government's responsibility in expanding employment, questions regarding political party preference are asked more frequently and have a comparatively much higher response rate. As a result, using partisanship as a proxy makes it possible to eliminate the temporal gap between attitudinal measurement and college attendance while still maintaining a useable sample size. Therefore, a more focused analysis that examines attitudinal change exclusively from the beginning to the end of college, without including any pre-college or post-graduation employment periods, can be achieved.

From waves 1984 to 2022, the SOEP surveyed respondents regarding the political party they most identify themselves with and the strength of that identification. The political parties respondents can choose from include the Social Democratic Party (SPD), the Green Party (Die Grünen), and the umbrella Democratic Socialist party (Die Linke) on the ideologically leftist side, and the Christian Democratic Union (CDU), Christian Social Union (CSU), Free Democratic Party (FDP), and Alternative for Germany (AfD) on the rightist side. Respondents are also asked to rate their level of affiliation with their specified party of support on a scale from 1 to 5, with 1 indicating the strongest level of support and 5 the weakest. To ensure that respondents' identification with their respective party choices is comparable on the same scale, an indicator variable for support for redistribution is constructed based on combining their responses to the two questions above. The following sections provide a brief review of the current literature on the welfare positions of major German political parties and explain how support for each party is translated into an indicator score for support for redistribution.

Pro-redistribution parties. Parties traditionally situated on the left of the German political spectrum—the SPD, the Green Party, and the Democratic Socialists—have long been associated with an emphasis on economic solidarity and an expansion of welfare

provision. Reinl and Wallaschek's (2024) recent study on German political parties' positions toward economic solidarity within the European Union offers particularly compelling evidence on this point. The authors show that the SPD, the Greens, and the Democratic Socialists express considerably stronger support for greater national contributions to the EU budget, efforts to reduce economic inequality among member states, and the establishment of an EU-wide system of social assistance compared to right-wing parties. Similarly, Whitley et al. (2023), in their focused analysis of the Green Party's performance in the 2019 European Parliamentary elections, find that pro-redistribution sentiment among voters was a significant predictor of Green Party support. The SPD, in particular, has historically framed the welfare state as fundamental to the functioning of modern democratic societies and identified itself as the party for social protection and redistribution since Brandt's Chancellorship in the early 1970s (Radice and Radice 1986). In its 2024 election manifesto, the SPD proposed a €100 billion government expenditure plan to stimulate economic growth and expand social protections, including extended paid parental leave and protection for renters' rights (Pitel and Chassany 2024). Last but not least, the Democratic Socialists also appear to have strongly appealed to voters' preferences for economic solidarity. In their analysis of the 2005 and 2009 German federal elections, Vail and Bowyer (2012) demonstrate that the Democratic Socialists were particularly successful in gaining vote share in traditional SPD strongholds and in districts that had experienced significant economic decline.

Anti-redistribution parties. Two of the parties traditionally considered right-wing are classified as anti-redistribution parties in this part of the analysis: the AfD and the FDP. Apart from being the least supportive of economic solidarity within the EU (Reinl and Wallaschek 2024), the AfD also promotes a clear anti-redistribution agenda in its domestic policy platform. According to a study of the AfD's economic positions and its corresponding rise in

popularity between 2013 and 2017, Diermeier (2020) shows that even the least affluent AfD supporters are expected to hold stronger anti-redistribution preferences than the wealthiest non-AfD supporters. On the other hand, the FDP has long been considered the pro-market party that is for the economically liberal constituency (e.g., Rixen 2014). Therefore, both the AfD and the FDP are considered anti-redistributive parties for the purposes of this analysis.

Baseline parties. Unlike the three progressive left-wing parties and the economically liberal AfD and FDP, the CDU and CSU occupy a more neutral policy middle ground. Their stance on social welfare provision is strongly informed by traditional Christian values, emphasizing support for the family unit while maintaining a market-oriented expectation that individuals must demonstrate effort and work in order to receive assistance.For example, beyond expressing commitment to maintaining certain forms of welfare provisions that most align with traditional Christian values, such as earnings-related parental leave benefit and old-age pensions, the two parties also proposed a "new basic insurance" scheme in recent political developments that cuts taxes and tightens conditions for welfare recipients, denying benefit to those who, for example, refuse to take on offers of employment (Fleckenstein 2011; Oude Nijhuis 2023; Chazan 2024). Therefore, it is conceptually difficult to classify the CDU and CSU as either pro-redistribution or anti-redistribution. For this reason, the two parties are designated as the baseline category for comparison.

Given the above classifications, the construction of the indicator variable for support for redistribution proceeds as follows. Respondents who identify with the SPD, the Green Party, or the Democratic Socialists will have their strength of affiliation mapped onto positive support for redistribution: strong affiliation will correspond to strong support, and weak affiliation to weak support. For respondents who identify with the AfD or the FDP, strong affiliation will correspond to strong opposition to redistribution, and weak affiliation to weak

opposition. Finally, for those identifying with the CDU or CSU, all respondents, regardless of strength of affiliation, will be assigned a neutral baseline score of zero. This approach translates ideological affiliation into support for redistribution on a single continuous scale, where the sign reflects ideological orientation and the magnitude reflects affiliation strength. By comparing within-individual changes in the indicator score, we can observe shifts in respondents' left-right ideological positioning and, by extension, their attitudes toward redistribution. Regardless of initial partisan affiliation—whether with a left- or right-wing party—a positive change in score consistently reflects movement toward the left, indicating increased economic liberalism. A visual representation is provided in Table 10:

Table 10: Re-coding of Partisanship and Strength of Affiliation

Partisan Affiliation	**Strength of Affiliation**		**Indicator Score:** Support for Redistribution
SPD, The Green Party, Democratic Socialist Party	1 (strongest affiliation)		5 (most supportive)
	…	→	…
	5 (weakest affiliation)		1 (least supportive)
CDU, CSU	1 (strongest affiliation)		0 (neutral baseline)
	…	→	
	5 (weakest affiliation)		
FDP, AfD	1 (strongest affiliation)		-5 (least supportive)
	…	→	…
	5 (weakest affiliation)		-1 (most supportive)

It must be acknowledged that this approach may obscure certain forms of ideological change. For instance, an individual shifting from strong support for the SPD to strong support for the more radical-left Green Party may receive the same indicator score at both time points, thus appearing ideologically steady despite undergoing a potentially meaningful

transformation. Nonetheless, the benefit of this indicator outweighs the drawback: it allows such cases to remain in the analysis rather than being excluded, as their attitudes remain comparable within the structure of the scale. Moreover, such cases are rare in the data anyways: among the effective sample, only 13 respondents reported a change in party affiliation within the same ideological camp, and none reported switching from a left-wing to a right-wing party. Therefore, this issue is unlikely to pose a significant concern for the purposes of the present analysis.

3.2.5 Proxy model results

Table 11 reports the expected change in the indicator score for respondents' support for redistribution, constructed using partisanship as a proxy. To complement this, Figure 9 presents a dot-and-whisker plot that visualizes the variation in sub-sample estimates across fields of study. In this model, attitudinal change is calculated by comparing the difference in indicator scores between *exactly* the year respondents report entering college and the year they report exiting. This represents a significant conceptual improvement over the previous model, in which external influences—particularly those stemming from post-graduation labor market experiences—may have confounded the results. Because the indicator score is

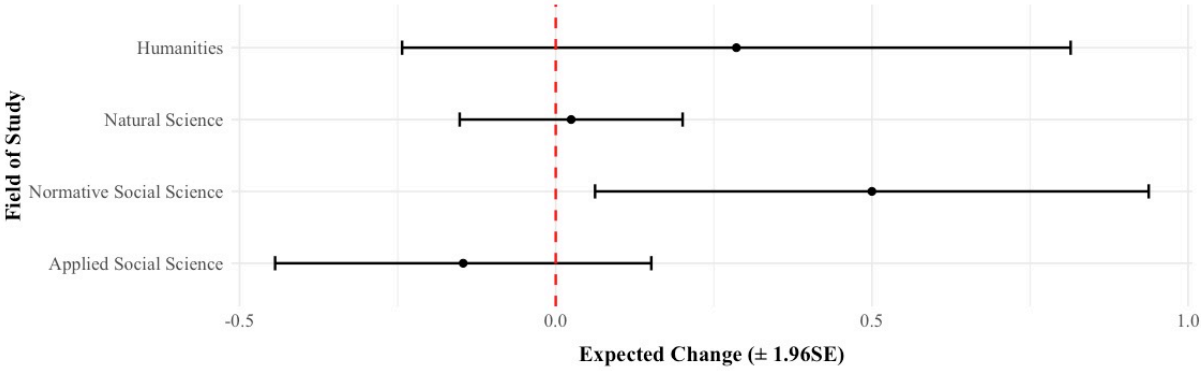
Table 11: Expected Change in Support for Redistribution by Field of Study, Partisanship as Proxy

	Field of Study			
	Applied Social Sciences	Normative Social Sciences	Natural Sciences	Humanities
Expected Change[1]	-0.146	0.501	0.024	0.286
Standard Error	0.152	0.223	0.089	0.269
Sample Size (N)	41	16	41	14

[1] Expected change estimated by the unconditional mean shift in support for redistribution among individuals by field of study.

constructed such that a higher score reflects greater support for redistribution, a negative change in the score indicates a shift toward anti-redistribution sentiment, while a positive change reflects increasing support for redistribution. Finally, since only two respondents report holding a degree in Creative Arts, the results for this group are not analytically meaningful and are therefore omitted from the analysis.

Figure 9: Expected Change in Support for Redistribution by Field of Study, Partisanship as Proxy



According to the results, obtaining a degree in Applied Social Sciences is associated with a negative change in support for redistribution during the college years. This result is consistent with the findings of the cross-sectional analysis of the GSS data, as well as with theoretical expectations regarding the potentially anti-redistributive content, ideological orientation, and socialization environment within Applied Social Sciences. Because this decrease in support for redistribution, proxied through partisan affiliation, is observed by comparing within-individual change exclusively over the duration of the college experience, it should be interpreted primarily as the effect of college education itself. Moreover, given the stronger empirical control for personal background characteristics and the exclusion of post-college employment influences, the result is likely to be largely net of an income effect. Among the three other fields, Natural Sciences correspond to the smallest positive change in support for redistribution, a change that is essentially indistinguishable from zero, whereas

Normative Social Sciences correspond to the largest positive change. Most importantly, the dot-and-whisker plot clearly shows that the expected positive change in mean support for redistribution among graduates of Normative Social Sciences is statistically significantly different from zero. Although a two-sample t-test comparing the estimates for Applied Social Sciences and Normative Social Sciences narrowly fails to reject the null hypothesis of no difference at the traditional 95% confidence threshold, the results remain quite striking. The contrasting attitudinal shifts observed through within-college and within-individual change estimation provide reasonably strong empirical support for hypotheses 2a and 2b. By virtue of their field-specific curricula, Normative Social Sciences are associated with a statistically significant increase in pro-redistributive attitudes, in direct contrast to the anti-redistributive attitudinal change associated with Applied Social Sciences, despite the fact that both fields likely exert similar socialization effects through a shared concentration of family affluence among their cohorts, as suggested by previous research on campus socialization. At the very least, the attitudinal effects observed should be attributed primarily to field-specific educational experiences, rather than to other factors such as post-graduation job sorting or the accumulation of personal affluence.

While the results are promising and offer meaningful insights into the hypotheses, several important limitations remain, primarily concerning sample size and the construction of the partisanship-as-proxy indicator. Small sample sizes in longitudinal analysis generally lead to larger standard errors, reduce statistical power, limit the feasibility of employing more sophisticated statistical models, and increase vulnerability to sample-specific biases. In the case of this analysis, the unusually large error bars for Humanities are likely a consequence of the limited number of respondents in that category. The cause of this is primarily sample attrition. In order to ensure that individuals' partisan affiliation—and by extension, their

support for redistribution—is compared exactly at the year of matriculation and the year of graduation, many respondents who provided only partial survey responses at those critical points had to be excluded, resulting in a less-than-ideal sample. Furthermore, the mapping of partisanship to support for redistribution is based only on a generalized analysis of party positions drawn from existing studies, and the use of partisanship as a proxy for redistributive support likely masks finer-grained ideological differences both within and across parties. These are all valid reasons to interpret the results with caution, and they represent challenges that, due to the time and resource constraints of this research, are unfortunately very difficult to fully address here. Future research employing the same dataset would be methodologically better served by employing more elaborate approaches to translate partisan support into measures of redistributive preferences. For example, using text analysis to derive election-period-specific partisan positions on welfare provision from party manifestos, and interacting these positions with respondents' reported strength of affiliation, could generate a more detailed and accurate proxy for individual support for redistribution. We may also attempt to impute respondents' partisanship based on their responses to other issue areas, in order to re-include individuals who were dropped due to incomplete answers to critical questions. Similar techniques are sometimes used to address sparse polling data with low response rates or irregular polling intervals (Cantú and Carreras 2023), which presents challenges comparable to those encountered in this analysis.

4. Conclusion and Discussion

This research has presented a novel analysis of the relationship between different fields of higher education and redistributive values, finding that individuals tend to become more opposed to government redistribution if they obtain a degree in Applied Social Sciences, such as management, finance, and economics. Conversely, some evidence suggests that attaining a degree in Normative Social Sciences, such as political science and sociology, is associated with increased support for redistributive policies. Result patterns of the cross-sectional model suggest that field-specific informational content may be the predominant driver of differences in redistributive support, and findings from the longitudinal analysis indicate that this divergence remains observable even after carefully controlling for material self-interest and excluding potential confounding effects of post-graduation employment experiences. The redistributive effects of other fields of study, namely Natural Sciences, Creative Arts, and Humanities, are not found to be significant based on the results of the current analysis.

This paper makes two main contributions. First, it develops a novel theoretical framework that illustrates the channels through which variations in field-specific college education may lead to divergent redistributive support, thereby outlining directions for future research aimed at more precisely disentangling the attitudinal effects of attending college. Much of the existing research has either focused on the marginal effects of additional years of secondary education—mainly due to the larger available samples of high school graduates and the opportunities for natural experimental designs created by exogenous variations in compulsory schooling laws—or has examined the effects of college education as a whole without distinguishing between different fields of study. This paper integrates insights from areas such as theories of material self-interest, socialization processes, socio-political

information transmission, and educational psychology, and provides a clear theoretical foundation for further research on field-specific attitudinal effects. This contribution is particularly valuable at a time when the educational divide between the educated elite and the grassroots working class is becoming increasingly consequential in electoral politics.

Second, this paper utilizes a varied array of empirical evidence, encompassing both cross-sectional and longitudinal data, to demonstrate the relationship between academic disciplines and redistributive sentiments. It investigates attitudinal outcomes through the General Social Survey in the United States and analyzes within-individual attitudinal changes using the Socio-Economic Panel in Germany, yielding largely consistent results that conform to theoretical predictions. Although the analysis faces limitations stemming from data availability, as well as those from resource and time constraints, this study achieves a level of methodological and empirical sophistication that goes somewhat beyond the norm in existing research on the effects of education and offers a more nuanced perspective than is typically found in the current literature.

There are, however, some avenues for improvement in future research. Besides theoretical inferences derived from existing research, the current model construction does not offer an empirically robust way to disentangle the effects of informational content, ideological transmission, and socialization, despite the intrinsic interconnection and inherent complexity of these processes. With more fine-grained data and, potentially, the complement of interviews with students, future research may be better positioned to distinguish among these mechanisms empirically. More detailed data are also critical for isolating the effects of regional context or institution-specific characteristics. There are also broader issues related to sample size and overall data quality, the lack of which could bias results in unknowable ways. Some previous studies using longitudinal datasets such as the British Cohort Study have

achieved larger effective sample sizes, but these datasets often lack crucial information on college major. Datasets that do collect information on college major, however, often suffer from a lack of valid responses, in part because the proportion of respondents who attended college is relatively small to begin with. High-quality data remain essential for advancing research in the social sciences, and this study is no exception. Finally, as with any study on the effects of education, selection bias remains an ever-present concern. Selectivity, by definition, entails inequality, as it necessarily means that not everyone has an equal chance of being accepted. Therefore, ensuring that those who are accepted are comparable either to those who are not accepted or among those who are similarly accepted remains the mountain that all future research must strive to climb and conquer. This research has employed a carefully considered set of control variables in the cross-sectional analysis and attempted to further account for unobserved and unmeasured personal characteristics by fixing the individual in the longitudinal analysis. In future work, I will aim to apply more robust identification strategies, such as exploiting pseudo-random variation in college major admissions processes, to better isolate selection effects and arrive at stronger causal claims.

Since Donald Trump's re-election as only the second president in U.S. history to hold the office non-consecutively, he has been in full-throttle mode, leading what could become the largest purge of the American higher education system in history. Unwarranted fears rooted in racism, sexism, and xenophobia are increasingly used as justification to target specific ethnic groups and students of particular disciplines. These developments further point to the importance of understanding the political consequences of higher education. As the role of higher education becomes more contested and as the educational divide among the population grows more salient, the attitudinal cleavages that education helps shape will only become more deeply consequential for political behavior.

Appendix I: Survey Question Wording, GSS

This appendix presents the exact wording of the General Social Survey (GSS) items used to construct the dependent variable and control variables analyzed in the preliminary models, with the actual variable name in parentheses. For the wording used to construct the independent variable—field of study—refer to Appendix II.

Dependent variable (used in all models)

- **Support for redistribution** *(eqwlth)*

  Questions associated with this variable:

  "Some people think that the government in Washington ought to reduce the income differences between the rich and the poor, perhaps by raising the taxes of wealthy families or by giving income assistance to the poor. Others think that the government should not concern itself with reducing this income difference between the rich and the poor. Here is a card with a scale from 1 to 7. Think of a score of 1 as meaning that the government ought to reduce the income differences between rich and poor, and a score of 7 meaning that the government should not concern itself with reducing income differences. What score between 1 and 7 comes closest to the way you feel?"

  - 1 = Government should reduce income differences (strongest support);

    …

  - 7 = Government should not concern itself with reducing income differences (strongest opposition);

  Note: Scale was reversed in analysis to reflect strongest support = 7.

Control variables

- **Labor market risk** *(joblose)*

  Questions associated with this variable:

  "Thinking about the next 12 months, how likely do you think it is that you will lose your job or be laid off—very likely, fairly likely, not too likely, or not at all likely?"

  - 1 = very likely (highest labor market risk);

    …

  - 4 = not likely (lowest labor market risk);

  Note: A dichotomous variable was constructed, coding responses 1 (very likely) and 2 (fairly likely) as high labor market risk (1), and responses 3 (not too likely) and 4 (not likely) as low labor market risk (0).

- **Interest in politics** *(news)*

  Questions associated with this variable:

  "How often do you read the newspaper—every day, a few times a week, once a week, less than once a week, or never?"

  • 1 = every day (highest interest);

  …

  • 5 = never (lowest interest);

  Note: Scale was reversed in analysis to reflect highest interest = 5.

- **Maternal education** *(maeduc)*

  Questions associate with this variable:

  "RESPONDENT'S MOTHER'S (SUBSTITUTE MOTHER'S) EDUCATION:"

  • 0 = no formal schooling;

  • 1 = 1st grade;

  • 2 = 2nd grade;

  …

  • 19 = 7 years of college;

  • 20 = 8 or more years of college;

  Note: A dichotomous variable was constructed, coding responses 0 (no formal schooling) to 12 (12th grade) as no college (0), and responses 13 (1 year of college) to 20 (8 or more years of college) as some college (1).

- **Paternal education** *(paeduc)*

  Questions associate with this variable:

  "RESPONDENT'S FATHER'S (SUBSTITUTE FATHER'S) EDUCATION:"

  • 0 = no formal schooling;

  • 1 = 1st grade;

  • 2 = 2nd grade;

  …

  • 19 = 7 years of college;

  • 20 = 8 or more years of college;

Note: A dichotomous variable was constructed, coding responses 0 (no formal schooling) to 12 (12th grade) as no college (0), and responses 13 (1 year of college) to 20 (8 or more years of college) as some college (1).

- **Age** *(age)*

  Questions associate with this variable:

  "RESPONDENT'S AGE:"

  - 18;
  - 19;

    …
  - 88;
  - 89 or older;

  Note: A new categorical variable was constructed by grouping age into ten-year intervals, with ages 18–25 coded as 0, 26–35 as 1, 36–45 as 2, and so forth. Ages 86 and above were coded as 7.

- **Religiousness** *(reliten)*

  Questions associated with this variable:

  "Would you call yourself a strong (PREFERENCE NAMED IN RELIG) or a not very strong (PREFERENCE NAMED IN RELIG)?"

  - 0 = strong;

    …
  - 4 = no religion;

  Note: Scale was reversed in analysis to reflect strongest religiousness = 4.

- **Racial identity** *(race)*

  Questions associated with this variable:

  " What race do you consider yourself?"

  - 1 = white
  - 2 = black
  - 3 = other

  Note: A new dichotomous variable was constructed, coding white respondents (1) as 0, and Black (2) and Other (3) respondents as racial minorities, coded as 1.

- **Personal income** *(rincome)*

  Questions associated with this variable:

  "Did you earn any income from (OCCUPATION DESCRIBED IN OCC-INDUSTRY) in [the previous year]?

  Yes ..... (ASK RINCOME)

  No ..... [See REMARKS]

  IF YES: In which of these groups did your earnings from (OCCUPATION IN OCC) for last year--[the previous year]--fall? That is, before taxes or other deductions."

  - 1 = lower than $1000 (lowest personal income);
  - 2 = $1000 to $2999;

    …

  - 12 = $25000 or more (highest personal income);

- **Family income** *(incom16)*

  Questions associated with this variable:

  "Thinking about the time when you were 16 years old, compared with American families in general then, would you say your family income was—far below average, below average, average, above average, or far above average?"

  - 1 = far below average (lowest family income);
  - 2 = below average;

    …

  - 5 = far above average (highest family income);
  - 7 = lived in institution (inapplicable);

  Note: Response category 7 is excluded from the analysis, as it does not meaningfully capture family affluence. Since the 1974 GSS wave, no respondents have selected this category, making its exclusion inconsequential.

- **Gender** *(sex)*

  Questions associated with this variable:

  "CODE RESPONDENT'S SEX"

  - 1 = male;
  - 2 = female;

- **Respondent education** *(educ)*

  Questions associated with this variable:

  "What is the highest grade in elementary school or high school that (you…) finished and got credit for? CODE EXACT GRADE."

  - 0 = no formal schooling;
  - 1 = 1st grade;
  - 2 = 2nd grade;

    …

  - 19 = 7 years of college;
  - 20 = 8 or more years of college;

- **Sociability**

  The sociability indicator is constructed by combining four variables (listed below) that measure respondents' self-reported participation in social events.

  Variable 1: Frequency of going to a bar or tavern *(socbar)*

  Questions associated with this variable:

  "Would you use this card and tell me which answer comes closest to how often you do the following things… 'Go to a bar or tavern?'"

  - 1 = Almost daily;
  - 2 = Several times a week;
  - 3 = Several times a month;
  - 4 = Once a month;
  - 5 = Several times a year;
  - 6 = Once a year;
  - 7 = Never;

  Note: Scale was reversed in analysis to reflect highest sociability = 7.

  Variable 2: Frequency of spending evening with friends *(socfrend)*

  "Would you use this card and tell me which answer comes closest to how often you do the following things… 'Spend a social evening with friends who live outside the neighborhood?'"

  - 1 = Almost daily;

    …

- 7 = Never;

Note: Scale was reversed in analysis to reflect highest sociability = 7.

Variable 3: Frequency of spending evening with neighbor *(socommun)*

"Would you use this card and tell me which answer comes closest to how often you do the following things… 'Spend a social evening with someone who lives in your neighborhood?'"

- 1 = Almost daily;

  …

- 7 = Never;

Note: Scale was reversed in analysis to reflect highest sociability = 7.

Variable 4: Frequency of spending evening with relatives *(socrel)*

"Would you use this card and tell me which answer comes closest to how often you do the following things… 'Spend a social evening with relatives?'"

- 1 = Almost daily;

  …

- 7 = Never;

Note: Scale was reversed in analysis to reflect highest sociability = 7.

The sociability indicator, derived by combining the four variables, yields a score ranging from 1 to 28, where 1 indicates the least sociable personality and 28 the most sociable.

Appendix II: Field of Study Categorization, GSS

This appendix presents the original GSS survey item used to construct the independent variable of college major, along with the scheme used to classify reported majors into the five disciplinary fields analyzed in the cross-sectional analysis section.

- **The field of degree the respondent earned** *(majorcol)*

  Questions associated with this variable:

  "In what field was the degree you earned in college?"

  - 1 = Accounting;
  - 2 = Advertising;

    …
  - 14 = Computer Science;

    …
  - 39 = Philosophy;

    …
  - 63 = Fine Arts;

    …
  - 82 = Counseling;

These majors are subsequently categorized into five broad disciplinary groups: Applied Social Sciences, Normative Social Sciences, Natural Sciences, Creative Arts, and Humanities. The table below indicates the category to which each major is assigned.

Applied Social Science	Accounting; Business Administration; Economics; Finance; Home Economics; Law; Law Enforcement; Marketing; Industrial Relations; Criminology; Public Administration; Urban and Regional Planning; Public Relations
Normative Social Science	Education; Library Science; Psychology; Political Science; Sociology; Special Education; Social Work; Social Sciences; Human Services; Ethnic Studies; Educational Administration; Counseling
Natural Science	Agriculture; Allied Health; Architecture; Biology; Chemistry; Computer Science; Dentistry; Engineering; Forestry; Geography; Geology; Industry & Technology; Mathematics; Medicine; Nursing; Pharmacy; Physical Education; Physics; Veterinary Medicine; General Sciences; Other Vocational; Health; Child Development; Nutrition/ Food Science; Environmental Studies; Aviation and Aeronautics; Statistics; Electronics; Mechanics; Textiles; Information Technology
Creative Arts	Art; Music; Theater Arts; Visual Arts/Graphics Design; Fine Arts; Dance; Fashion
Humanities	Advertising; Anthropology; Communications; English; Foreign Language; History; Journalism; Philosophy; Theology; Liberal Arts; General Studies
Other	Other

Appendix III: Field of Study Categorization, SOEP

This appendix presents the original SOEP survey item used to construct the independent variable of college major, along with the scheme used to classify reported majors into the five disciplinary fields analyzed in the longitudinal analysis section.

- **Completed education and training; Field of Study** *(p_field)*
  - 1 = Language and Cultural Sciences;
  - 2 = Sport;

    …
  - 14 = History;

    …
  - 39 = Geosciences;

    …
  - 58 = Fine Arts;

    …
  - 61 = Music;

These majors are subsequently categorized into five broad disciplinary groups: Applied Social Sciences, Normative Social Sciences, Natural Sciences, Creative Arts, and Humanities. The table below indicates the category to which each major is assigned.

Applied Social Science	Economic and Social Sciences; Public Administration; Economics; Home Economics; Urban Planning; Law
Normative Social Science	Psychology; Education; Political and Social Sciences; Social Work
Natural Science	Math-Nature; Human Medicine; Veterinary Medicine; Agriculture-Nutrition; Engineers; Industrial Engineering; Mathematics and General Natural Sciences; Mathematics; Computer Science; Physics and Astronomy; Chemistry; Pharmacy; Biology; Geosciences; Geography; Dental Medicine; Veterinary Medicine; Agricultural Science; Horticulture; Forest Sciences; General Engineering; Mining and Metallurgy; Mechanical Engineering; Marine Engineering; Architecture; Civil Engineering; Geodesy
Creative Arts	Art; General Art Studies; Fine Arts; Creative Design; Theatre; Music
Humanities	Language and Cultural Sciences; Sport; Theology; Philosophy; History; Journalism; Literature; Classical Philosophy; German Studies; American Studies; Romance Studies; Slavic Studies; Non-European Studies;

References

Achen, Christopher H. 1986. *The Statistical Analysis of Quasi-Experiments*. Berkeley, LA: University of California Press.

Alesina, A., and Glaeser, E. 2004. *Fighting Poverty in the US and Europe: A World of Difference.* Oxford, UK: Oxford University Press.

Alesina, A., and Giuliano, P. 2009. "Preferences for Redistribution." *NBER Working Paper* No. 14825. Cambridge, MA.

Alesina, A., and La Ferrara, E. 2005. "Preferences for Redistribution in the Land of Opportunities." *Journal of Public Economics* 89(5):897-931.

Ansell, Ben. 2014. "The Political Economy of Ownership: Housing Markets and the Welfare State." *American Political Science Review*108(2): 383–402.

Ashok, V., Kuziemko, I., and Washington, E. 2015. "Support for Redistribution in an Age of Rising Inequality: New Stylized Facts and Some Tentative Explanations." *Brookings Papers on Economic Activity* 2015(1): 367–433.

Atherton, O. E., Grijalva, E., Roberts, B. W., and Robins, R. W. 2020. "Stability and Change in Personality Traits and Major Life Goals From College to Midlife." *Personality and Social Psychology Bulletin* 47(5): 841-58.

Autor, David. 2014. "Skills, Education, and the Rise of Earnings Inequality among the 'Other 99 Percent.'" Science 344(6186): 843-51.

Bowman, Nicholas A. 2010. "College Diversity Experiences and Cognitive Development: A Meta-Analysis." *Review of Educational Research* 80(1): 4-33.

Brooks, C., and Manza, J. 2007. *Why Welfare States Persist: The Importance of Public Opinion in Democracies*. Chicago, IL: University of Chicago Press.

Bullock, John.G. 2021. "Education and Attitudes Toward Redistribution in the United States.

British Journal of Political Science 51: 1230–50.

Campbell, C., & Horowitz, J. 2016. “Does College Influence Sociopolitical Attitudes?” *Sociology of Education* 89(1), 40–58.

Cantú, F., and Carreras, M. 2023. “Presidential Debates and Electoral Preferences in Weakly Institutionalized Democracies: Evidence From 32 Latin American Elections.” *Journal of Politics in Latin America* 15(3): 239-61.

Cavaille, C., and Marshall, J. 2019. “Education and Anti-Immigration Attitudes: Evidence from Compulsory Schooling Reforms Across Western Europe.” *American Political Science Review* 113(1): 254–263.

Cavaillé, C., and Trump, K. 2015. “The Two Facets of Social Policy Preferences”. *The Journal of Politics* 77(1): 146–60.

de Koster, W., Achterberg, P., and Van der Waal, J. 2012. “The New Right and the Welfare State: the Electoral Relevance of Welfare Chauvinism and Welfare Populism in The Netherlands.” *International Political Science Review* 34 (1): 3–20.

Chazan, Guy. 2024. “Germany’s CDU to Offer Voters Tax Cuts and Immigration Controls.” *Financial Times*. https://www.ft.com/content/a4d21de5-7039-482b-be38-90b91ca28a15?

Coverdill, J. E., López, C. A., and Petrie, M. A. 2011. “Race, Ethnicity and the Quality of Life in America, 1972-2008.” *Social Forces* 89(3): 783-805.

Damian, R. I., Spengler, M., Sutu, A., and Roberts, B. W. 2019. “Sixteen Going on Sixty-Six: A Longitudinal Study of Personality Stability and Change Across 50 Years.” *Journal of Personality and Social Psychology* 117(3): 674-95.

Davern, M., Bautista, R., Freese, J., Herd, P., and Morgan, Stephen L. 1972-2024. *General Social Survey*. [Machine-readable data file]. Principal Investigator, Michael Davern;

Co-Principal Investigators, Rene Bautista, Jeremy Freese, Pamela Herd, and Stephen L. Morgan. Sponsored by National Science Foundation. NORC ed. Chicago: NORC, 2024: NORC at the University of Chicago [producer and distributor]. Data accessed from the GSS Data Explorer website at gssdataexplorer.norc.org.

Dee, Thomas S. 2004. "Are There Civic Returns to Education?" *Journal of Public Economics* 88(9): 1697–720.

Dinan, Stephan. 2020. "Donald Trump Still King of the 'Poorly Educated.'" *The Washington Times*. https://www.washingtontimes.com/news/2020/sep/29/donald-trump-still-king-poorly-educated/

Doblytė, S., and Tejero, A. 2023. "Class or Individual Habitus? Willingness to Spend More on Reconciliation Policies in Europe." *The International Journal of Sociology and Social Policy* 43(5): 436-53.

Doerr K., Riegle-Crumb C., Russo-Tait T., Takasaki K., Sassler S., abd Levitte Y. 2021. "Making Merit Work at the Entrance to the Engineering Workforce: Examining Women's Experiences and Variations by Race/Ethnicity." *Sex Roles* 85: 422-39.

Elkins, R. K., Kassenboehmer, S. C., Schurer, S. 2017. "The Stability of Personality Traits in Adolescence and Young Adulthood." *Journal of Economic Psychology* 60: 37-52.

Erikson, Robert S. and Tedin, Kent L. 2015. "Party Identification and the Organization of Political Opinions." In *American Public Opinion*. New York, NW: Routledge.

Evans, G., and Neundorf, A. 2020. "Core Political Values and the Long-Term Shaping of Partisanship." *British Journal of Political Science* 50(4): 1263–81.

Fleckenstein, Timo. 2011. "The Politics of Ideas in Welfare State Transformation: Christian Democracy and the Reform of Family Policy in Germany." *Social Politics* 18(4): 543–71.

Garoutte, Lisa, and Bobbitt-Zeher, Donna. 2011. “Changing Students’ Perceptions of Inequality? Combining Traditional Methods and a Budget Exercise to Facilitate a Sociological Perspective.” *Teaching Sociology* 39(3): 227-43.

Gelepithis, M., and Giani, M. 2022. “Inclusion without Solidarity: Education, Economic Security, and Attitudes toward Redistribution.” Political Studies 70(1): 45-61.

Gerber, T., and Chung, S. 2008. “Horizontal Stratification in Postsecondary Education: Forms, Explanations, and Implications.” *Annual Review of Sociology* 34: 299-318.

Gopal, A., Premarajan, KC, and Lakshminarayanan, S. 2014. “Knowledge and Attitude Regarding Reproductive Health Issues and Family Formation Among Adolescent Girls of Puducherry.” *Online Journal of Health and Allied Sciences* 13(4): 1-4.

Gross, N., and Fosse, E. 2012. “Why Are Professors Liberal?” *Theory and Society* 41(2): 127–68.

Hagendoorn, Louk. 2018. *Education and Racism: A Cross National Inventory of Positive Effects of Education on Ethnic Tolerance*. New York: Routledge.

Harris, Adam. 2018. “America is Divided by Education”. https://www.theatlantic.com/education/archive/2018/11/education-gap-explainsamerican-politics/575113/

Holmlund, H., Lindahl, M., and Plug, E. 2011. “The Causal Effect of Parents’ Schooling on Children’s Schooling: A Comparison of Estimation Methods.” *Journal of Economic Literature* 49(3): 615–51.

Iversen, T., and Soskice, D. 2001. “An Asset Theory of Social Policy Preferences.” *American Political Science Review* 95(4): 875–93.

Iversen, T., and Soskice, D. 2006. “Electoral Institutions and the Politics of Coalitions: Why Some Democracies Redistribute More Than Others.” *American Political Science Review* 100(2): 165-81.

Jacobsen, Dag I. 2001. “Higher Education as an Arena for Political Socialization: Myth or Reality?” Scandinavian Political Studies 24(4): 351-68.

Jennings, M., Stoker, L., and Bowers, J. 2009. “Politics across Generations: Family Transmission Reexamined.” *The Journal of Politics* 71(3): 782–99.

Jones, B., and Martin, D. J. 2017. “Path-to-Citizenship or Deportation? How Elite Cues Shaped Opinion on Immigration in the 2010 U.S. House Elections.” *Political Behavior* 39(1): 177-204.

Jugl, Irina. 2022. “Breaking up the Bubble: Improving Critical Thinking Skills and Tolerance of Ambiguity in De-radicalization Mentoring.” *Journal for De-radicalization* 30: 45-80.

Kam, C. D., and Palmer, C. L. 2008. “Reconsidering the Effects of Education on Political Participation.” *The Journal of Politics* 70(3), 612–31.

Kemp, Gordon C. R. 2000. *Invariance and the Wald Test.* Colchester, UK: Department of Economics, University of Essex.

Kiley, K., & Vaisey, S. 2020. “Measuring Stability and Change in Personal Culture Using Panel Data.” *American Sociological Review* 85(3): 477-506.

Kingston, P., Hubbard, R., Lapp, B., Schroeder, P., and Wilson, J. 2003. “Why Education Matters.” *Sociology of Education* 76(1): 53–70.

Lupu, N., and Pontusson, J. 2011. “The Structure of Inequality and the Politics of Redistribution.” *American Political Science Review* 105(2): 316-36.

Mansournia, M. A., Geroldinger, A., Greenland, S., and Heinze, G. 2018. “Separation in Logistic Regression: Causes, Consequences, and Control.” *American Journal of Epidemiology* 187(4): 864-70.

Marshall, John. 2016. “Education and Voting Conservative: Evidence from a Major

Schooling Reform in Great Britain." *The Journal of Politics* 78(2): 382-95.

Martin, Cathie J. 2018. "Imagine All The People: Literature, Society, and Cross-National Variation in Education Systems." *World Politics* 70(3): 398-442.

Meltzer, A. H., and Richard, S. F. 1981.A Rational Theory of the Size of Government." *Journal of Political Economy* 89(5): 914–27.

Mendelberg, T., McCabe, Katherine T., and Thal, A. 2017. "College Socialization and the Economic Views of Affluent Americans." *American Journal of Political Science* 61(3): 606-23.

Milligan, K., Moretti, E., and Oreopoulos, P. 2004. "Does Education Improve Citizenship? Evidence from the United States and the United Kingdom." *Journal of Public Economics* 88 (9–10):1667–95.

Moene, K. O. and Wallerstein, M. 2003. "Earnings Inequality and Welfare Spending: A Disaggregated Analysis." *World Politics* 55(4): 485–516.

Newman, Benjamin T., Johnston, Christopher D., and Lown, Patrick L. 2015. "False Consciousness or Class Awareness? Local Income Inequality, Personal Economic Position, and Belief in American Meritocracy." *American Journal of Political Science* 59(2): 326-40.

Noor, Z., and Moore, P. L. 2025. "Kind Enough to Vax? Decoding the Relationship Between Pro-sociality and COVID-19 Vaccination Intent in American Adults." *Journal of Health and Human Services Administration* 48(1-2): 50-64.

Norris, P., and Inglehart, R. 2019. *Cultural Backlash: Trump, Brexit, and Authoritarian Populism*. Cambridge, MA: Cambridge University Press.

Nunn, C., Crockett, H., and Williams, J. 1978. *Tolerance for Nonconformity*. San Francisco, LA: Jossey-Bass Publishers.

O'Connell, Ann A. 2006. *Logistic Regression Models for Ordinal Response Variables*. Los Angeles, CA: SAGE.

Oreopoulos, P., and Petronijevic, U. 2013. "Making College Worth It: A Review of the Returns to Higher Education." *Future of Children* 23(1): 41-65.

Oude Nijhuis, Dennie. 2023. "Christian Democracy, Labor, and the Postwar Politics of Old-Age Pension Reform." *Journal of Policy History* 35(3): 387–413.

Page, B.I., and Shapiro, R.Y. 1982. "Effects of Public Opinion on Policy". *American Political Science Review* 77(1): 175–90.

Pascarella, E., and Terenzini, P. 1991. *How College Affects Students: Findings and Insights from Twenty Years of Research.* San Francisco, CA: Jossey-Bass.

Persson, Mikael. 2013. "Testing the Relationship Between Education and Political Participation Using the 1970 British Cohort Study." *Political Behavior* 36(4), 877–97.

Phelan, J., Link, B., Stueve, A., and Moore, R. 1995. "Education, Social Liberalism, and Economic Conservatism: Attitudes Toward Homeless People." *American Sociological Review* 60(1): 126-40.

Pitel, Laura, and Chassany, Anne-Sylvaine. 2024. "German Frontrunner Friedrich Merz Faces Row Over Unfunded Tax Cuts." *Financial Times*. https://www.ft.com/content/cdc57805-ec42-4a3d-905c-cab965dcdcf2?

Plutzer, E., and Berkman, M. 2018. "Americans Not Only Divided, but Baffled by What Motivates their Opponents". https:// democracy.psu.edu/poll-report-archive/americans-not-only-divided-butbaffled-by-what-motivates-their-opponents/

Radice, Giles, and Radice, Lisanne. 1986. *Socialists in the Recession: The Search for Solidarity*. Basingstoke, UK: MacMillan.

Rehm, Philipp. 2009. "Risks and Redistribution: An Individual-Level Analysis."

Comparative Political Studies 42(7): 855-81.

2011. "Risk Inequality and the Polarized American Electorate." *British Journal of Political Science* 41(2): 363-87.

2016. *Risk Inequality and Welfare States: Social Policy Preferences, Development, and Dynamics.* Cambridge, UK: Cambridge University Press.

Reinl, Ann-Katherine, and Wallascheck, Stefan. 2024. "All for One, and One for All? Analyzing Party Positions on EU Solidarity in Germany in Challenging Times." *Government and Opposition* 59: 73-90.

Robst, John. 2007. "Education and Job Match: The Relatedness of College Major and Work." *Economics of Education Review* 26: 397-407.

Roemer, J., Lee, W., and Van der Straeten, K. 2007. *Racism, Xenophobia, and Distribution: Multi-Issue Politics in Advanced Democracies.* New York: Russell Sage.

Romer, Thomas. 1975. "Individual Welfare, Majority Voting, and the Properties of a Linear Income Tax." *Journal of Public Economics* 4(2): 163-85.

Rothman, S., Lichter, R., and Nevitte, N. 2005. "Politics and Professional Advancement Among College Faculty." *The Forum* 3(1): 1-16.

Rueda, David. 2005. "Insider-Outsider Politics in Industrialized Democracies: The Challenge to Social Democratic Parties." *American Political Science Review* 99(1): 61–74.

Rueda, D., and Stegmueller, D. 2019. "Who Wants What? Redistribution Preferences in Comparative Perspective." Cambridge, UK: Cambridge University Press.

Schleifer, D., Friedman, W., and McNally, E. 2022. "America's Hidden Common Ground on Public Higher Education: What's Wrong and How to Fix It." *Public Agenda* 1-32.

Scott, Ralph. 2022. "Does University Make You More Liberal? Estimating the Within-Individual Effects of Higher Education on Political Values." *Electoral Studies* 77:

102471.

Sieben, I., & De Graaf, P. M. 2004. “Schooling or Social Origin? The Bias in the Effect of Educational Attainment on Social Orientations.” *European Sociological Review* 20(2), 107–22.

Simon, Elizabeth. 2022. “Demystifying the Link Between Higher Education and Liberal Values: A Within-Sibship Analysis of British Individuals’ Attitudes from 1994-2020.” *British Journal of Sociology* 73: 967-84.

Sinn, Hans-Werner. 1995. “A Theory of the Welfare State.” *Scandinavian Journal of Economics* 97(4): 495-526.

Song, C., and Glick, J. 2004. “College Attendance and Choice of College Majors among Asian-American Students.” *Social Science Quarterly* 85(5): 1401-21.

Spruyt, Bram. 2014. “An Asymmetric Group Relation? An Investigation into Public Perceptions of Education-Based Groups and the Support for Populism.” *Acta Politica* 49 (2): 123–43.

Stephens, W. N., and Long, C.S. 1970. “Education and Political Behavior.” *Political Science Annual* 2: 3-33.

Stevens, R., Amos, Daniel M., Garrison, L., and Jocuns, A. 2007. “Engineering as Lifestyle and a Meritocracy of Difficulty: Two Pervasive Beliefs Among Engineering Students and Their Possible Effects.” *Paper presented at the 2007 American Society for Engineering Education Conference*.

Stoker, L., and Jennings, K. 2008. “Of Time and the Development of Partisan Polarization.” *American Journal of Political Science* 52(3): 619-35.

Stubager, Rune. 2008. “Education Effects on Authoritarian-Libertarian Values: A Question of Socialization.” *British Journal of Sociology* 59(2): 327-50.

Surridge, Paula. 2016. “Education and Liberalism: Pursuing the Link.” *Oxford Review of Education* 42(2): 146-64.

Terracciano, A., McCrae, R. R., and Costa, Paul T. 2010. “Intra-individual Change in Personality Stability and Age.” *Journal of Research in Personality* 44(1): 31-37.

Thomas, Scott L. 2000. “Deferred Costs and Economic Returns to College Major, Quality and Performance.” *Research in Higher Education* 41(3): 281-313.

Tolbert, C. J., Witko, C., and Wolbers, C. 2019. “Public Support for Higher Taxes on the Wealthy: California’s Proposition 30.” *Politics and Governance* 7(2): 351-64.

Tse-hsin, Chen. 2024. “The Trend and Factors of Public Trust in the Military in Taiwan.” *Japanese Journal of Political Science* 25(3): 162-87.

Vail, M. I., and Bowyer, B. T. 2012. “Poverty and Partisanship: Social and Economic Sources of Support for the Far Left in Contemporary Germany.” *Comparative European Politics* 10(4): 505-24.

Van de Werfhorst, H., and de Graaf, N. 2004. “The Sources of Political Orientations in Post-Industrial Society: Social Class and Education Revisited.” *The British Journal of Sociology* 55(2): 211–35.

VanHeuvelen, Tom. 2014. “The Religious Context of Welfare Attitudes.” *Journal for the Scientific Study of Religion* 53(2): 268–95.

Vecchione, M., Schwartz, S., Alessandri, G., Döring, A. K., Castellani, V., and Caprara, M. G. 2016. “Stability and Change of Basic Personal Values in Early Adulthood: An 8-year Longitudinal Study.” *Journal of Research in Personality* 63: 111-122.

Weakliem, David L. 2002. “The Effects of Education on Political Opinions: An International Study.” *International Journal of Public Opinion Research* 13(2): 141-57.

Westlake, G., Coall, D., and Grueter, Cyril C. 2019. “Educational Attainment is Associated

with Unconditional Helping Behavior." *Evolutionary Human Sciences* 1:e15.

Waldfogel, H. B., Sheehy-Skeffington, J., Hauser, O. P., Ho, A. K., and Kteily, N. S. 2021. "Ideology Selectively Shapes Attention to Inequality." *Proc. Natl. Acad. Sci. U.S.A.* 118 (14): e2023985118

Waldfogel, J., Wen-Jui Han, and Brooks-Gunn, J. 2002. "The Effects of Early Maternal Employment on Child Cognitive Development." *Demography* 39(2): 369-92.

Whitley, Samantha G., Nelsen, Brent F., and Guth, James L. 2023. "Explaining Green Party Support in the 2019 European Parliamentary Elections: A Test of Four Hypotheses." *Society* 60: 413-25.