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What drives the link between university study and attitudinal change?

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A B S T R A C T

What drives the link between university study and attitudinal change? While research shows that obtaining a degree tends to make students more socially liberal, little is known about what drives this effect. We address this 'how' question by testing the socialisation-based mechanisms through which university study may shift attitudes; combining individual-level panel data from the British Election Study Internet Panel with university- and constituency-level data about where respondents studied to estimate sub-group effects. Our results suggest that students tend to shift their attitudes subtly in a leftward and liberal direction whilst at university, but that this average effect is larger for: those who graduate younger, who study STEM and other non-HSS subjects (social attitudes only), who move away from home to study, who attend single campus institutions, and who live in 'university towns' and 'cosmopolitan London' while studying (all economic attitudes only). Overall, we find evidence to suggest that the socialisation experiences individuals are exposed to while studying have important shaping effects on their attitudes.

1. Introduction

Graduates and non-graduates think and vote differently (Ford and Jennings, 2020). What is the role played by universities in driving this attitudinal divide? Recent research has showed that the experience of university study *itself* does have a direct *causal* effect in shaping economic and social attitudes, though much of the educational divide in attitudes is indirect, attributable to events and experiences that occur before attending university (e.g., family background and parental socialisation) (McNeil and Simon, 2024; Scott, 2022; Simon, 2022a). The question that remains, then, is what is happening on university campuses that explains the direct effect university study exerts on attitudes?

There is a relative dearth of scholarly work which explores this question. Most studies focus on *the extent to which* university study shapes attitudes, rather than *how or why* it does so.[1] As such, we know little about the mechanisms through which the linkage of university study with attitudes operates (Stubager, 2008; Surridge, 2016). Are universities centres of indoctrination, where left-liberal professors socialise students into adopting their values, as some commentators on the right have claimed (see Prager, 2019)? Or could it be the learnings and peer socialisation that students are exposed to, or the sense of mastery over one's life that comes from obtaining a degree, that shapes their attitudes? Perhaps it is the kinds of places they live while studying? Whilst we know that university study matters for attitudinal formation, we do not know much about why this is.

This paper combines individual-, university- and constituency-level data from various sources, including the British Election Study Internet Panel (BESIP) (Fieldhouse et al. 2024), the 2021 Census (Office for National Statistics, 2021; 2022, 2023a, 2023b), and the House of Commons Library (2023). We provide a comprehensive test of socialisation mechanisms, in the British context; exploring whether the effect of university study differs among students who have had different kinds of university experiences (that is, in terms of what, how and where they have studied). Our central contribution is to advance understandings of *how and why* obtaining a degree shapes students' attitudes and to shed light on the role played by socialisation in processes of attitudinal formation and change. Given the fundamental role of education (and particularly, university-level education) in the development of 'new' societal cleavages (Sobolewska and Ford, 2020) and its growth as an identity that shapes political choice (Simon and Turnbull-Dugarte, 2025; Titelman, 2023), understanding the specific mechanisms underlying university-based attitudinal change is core to understanding the political development of knowledge-based societies.

2.1. Education and attitude formation

A substantial body of research suggests that the process of attitude formation occurs largely in our younger, 'formative' or 'impressionable', years with attitudes remaining relatively stable thereafter (Jennings and

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[1] For a notable exception, see Scott (2024).

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Niemi, 1981; Krosnick and Alwin, 1989). This pattern has been observed for a host of attitudes, including orientations toward populism (Schimpf et al., 2023), liberal-authoritarian values (Tilley, 2005), political trust (Devine and Valgarðsson, 2023), and national identity (Mader and Schoen, 2023). The factors that shape political attitudes in early life include: encounters with socialising agents such as families (Jennings et al., 2009), growing up in differing political and geographical contexts (Grasso et al. 2017; Neundorf et al., 2013), and the experience of important life-environmental changes, like entering the workforce or leaving home (Sears and Brown, 2013). Another important 'life change', which has become a pivotal moment for many in their formative years, is university attendance.

One of the most enduring findings in the social sciences is that individuals with higher levels of educational attainment, and particularly those with university degrees, tend to have more liberal social attitudes and more right-leaning economic attitudes than their less educated counterparts (Surridge, 2016). Even relatively early in the expansion of higher education (HE), scholars argued that the experience of university study played an important role in attitude formation, with aggregate generational changes in postmaterialist values linked to increasing education levels (de Graaf and Evans, 1996). It seems perfectly plausible that this would be the case. University study not only exposes individuals to new social circles, advances their knowledge and understanding, and brings about a cultural milieu that may be distinct from that experienced previously (Pascarella and Terenzini, 2005), but also leads to greater earning potential and access to professional occupations (van de Werfhorst and de Graaf, 2004), which are all factors that may alter students' outlooks.

2.2. The mechanisms linking higher education and political attitudes

While the correlation between HE and political attitudes is well-established, the mechanisms linking them are not (Stubager, 2008; Surridge, 2016). On the one hand, this relationship may be causal – the experience of studying at university itself may lead to a direct shift in students' attitudes. On the other hand, it may be spurious or indirect. University graduates are a highly selected group who tend to have different pre-adult characteristics and experiences, and to occupy different adult status environments, than non-graduates (McNeil and Simon, 2024), and it could be these factors, rather than any direct effect of HE study that drives the differences in attitudes observed between these groups. Recent United Kingdom (UK)-based studies using within-individual and within-sibling analyses have found that while a large portion of the university effect on attitudes is indeed indirect, attributable to pre-university selection effects and post-university 'allocation' effects, the experience of studying at university itself has a direct causal effect in shaping attitudes (McNeil and Simon, 2024; Scott, 2022; Simon, 2022a). The evidence suggests that HE tends to shift social attitudes subtly in a liberal direction, reducing authoritarianism and racial prejudice and increasing support for gender egalitarianism and European integration. Scott's (2022) study also finds that university study has a direct causal effect in shifting economic attitudes right-ward. What these studies do not tell us, though, is *how* and *why* obtaining a degree leads to attitudinal change.

We systematise the causal mechanisms that may underpin this relationship in Fig. 1. Existing scholarly work proposes three different possibilities: the 'psychodynamic', 'cognitive', and 'socialisation' models of educational effects (Phelan et al. 1995; Stubager, 2008; Surridge, 2016). The psychodynamic model argues that education improves our sense of mastery over our own lives, which makes us more tolerant of, and better able to deal with, experiences that differ from our own, and therefore makes us more tolerant of those who are unlike us, and ultimately, more socially liberal (McClosky and Brill, 1983). The cognitive model argues that education teaches us to organise information more efficiently, and to adopt more flexible and rational strategies of thinking (Nunn et al.1978), and that more educated individuals are therefore able to 'generalise the … principles of tolerance and equality [which underly the democratic culture of education]' more effectively to different groups, and thus are more understanding of the situations of others, and more socially liberal (Meeusen et al., 2013, 508). Both models imply a 'uniform' effect of HE on political attitudes, irrespective of how, what or where[2] individuals study.

Contrastingly, the socialisation model predicts differential university effects. It argues that 'through education, individuals are exposed to values which they internalise' (Stubager, 2008, 330). This may be through formal channels, for example, increased exposure to liberal values such as tolerance and equality within the university curriculum, or more informal ones, such as 1) interactions with faculty, who have been shown to be more liberal and left-leaning than both the wider population (Klein et al., 2005) and professionals in similar occupations (van de Werfhorst, 2020); 2) interactions with peers (since those who attend university are more liberal than those who do not, see Table 3) and; 3) exposure to new kinds of people and places (Woessner and Kelly-Woessner, 2020). If these types of socialisation mechanisms underpin the link between HE and political attitudes, we would expect heterogenous effects determined by university experiences – for example, studying different subjects and attending different kinds of institutions located in different kinds of places – as these will expose students to different kinds of values during their studies. This socialisation mechanism has been politicised in recent years, with assertions made by right-leaning commentators that academics are 'indoctrinating' students into left-liberal ideologies, especially in humanities and social science (HSS) faculties (see Prager, 2019), and is the one we focus on here.

We can develop more specific hypotheses about socialisation in university education, and its effects on attitudes. HSS courses not only teach students to understand 'the reasons for other people's motives for their behaviour … [and therefore to] … better … understand and appreciate other people's standpoints' (van de Werfhorst and de Graaf, 2004, 216), but to acknowledge the role the social structure plays in determining personal situations (Guimond et al., 1989), both of which could orient students in a more socially liberal or economically left-leaning direction. Conversely, students of business, economics and law are more often exposed to individualistic theories, which may push their attitudes in the opposite direction. Support for this subject socialisation hypothesis is found by Scott (2024), Stubager (2008), Surridge (2016) and van de Werfhorst and de Graaf (2004). Given that these studies all examine cohorts who graduated several decades ago,[3] and thus would have completed their studies prior to the advent of mass HE, in a time where less universities existed, and those which did would have been more selective, offered a smaller range of more 'traditional' courses and would likely have had a less diverse student body than many universities do now (Simon, 2022a), any subject socialisation effects observed today may therefore differ to those uncovered in these studies. In line with the findings of existing studies, however, we hypothesise that there is a subject socialisation effect.

H1. *(subject socialisation): The liberalising effect of university study on attitudes will be stronger for those who studied HSS than for those who studied other disciplines*

This is a relatively narrow, albeit important, test of the socialisation model. How, for example, does peer socialisation shape attitudes? Alongside new academic horizons, university study exposes students to

[2] There is some evidence that neighbourhood resources, urbanity and green space exposure are linked to cognition-based outcomes (Chen et al., 2022), so it is possible that the degree of cognitive sophistication developed at university could depend on the environment around the institution attended.

[3] Scott (2024) and Surridge (2016) both use British Cohort Study data to track individuals born in the 1970s from ages 16–30, meaning they largely capture the effect of university study in the pre-2000 period.

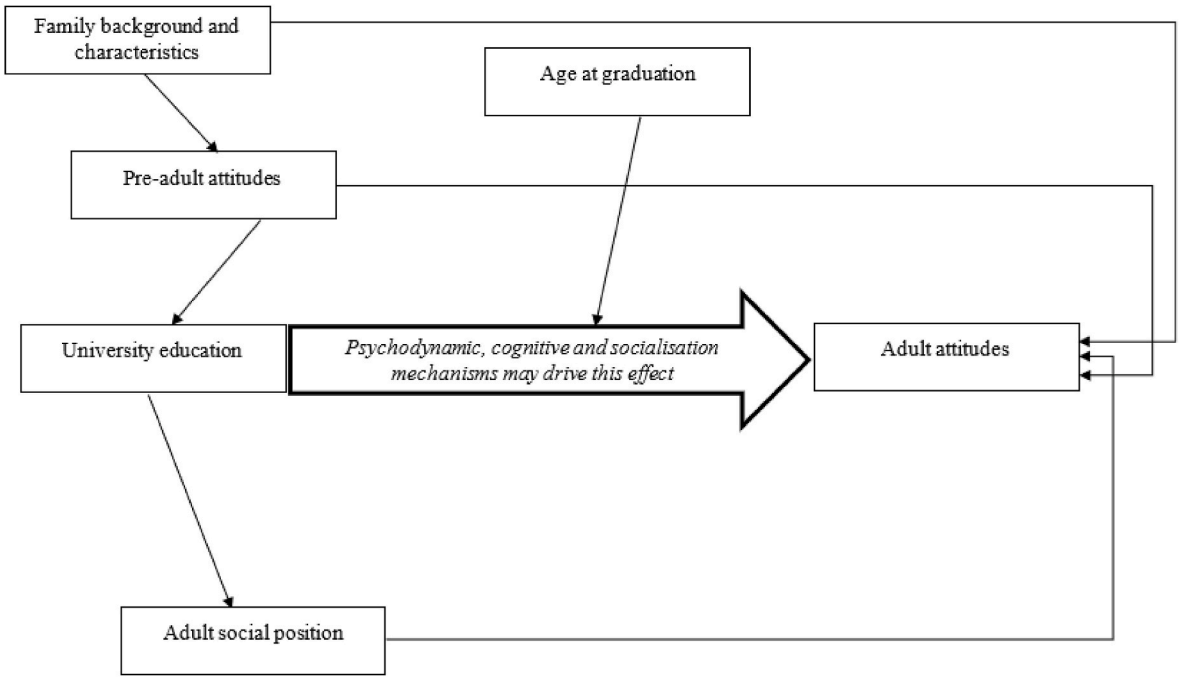

Fig. 1. The mechanisms linking university study and adult attitudes.

different, and often more diverse, peer networks, including students and staff from other countries and different parts of the UK. Research shows that experiences of 'positive' contact (Meleady et al., 2017), and forming friendships (Davies et al. 2011), with out-group members can liberalise inter-group attitudes, which are a core component of social liberalism. Exposure to socially and politically homogenous peer networks on university campuses has also been shown to influence attitudes. Mendelburg et al. (2017) find that even after controls for prior attitudes, affluent students who attend colleges with more affluent students become more economically right-leaning than those who attend colleges with less affluent students. Regardless of whether it is exposure to a diverse or homogenous peer-group on university campuses that drives the effect of informal socialisation on attitudes, it seems reasonable to expect that these effects will be stronger for those *who move away from home to study*, as these individuals will be less likely to regularly spend time with family and childhood friends, and thus are less likely to continue to be socialised into their values, than those *who do not move away from home to study*. It is also plausible that these peer socialisation effects might be stronger for those who attend *campus* universities (rather than those spread throughout a city). We therefore hypothesise the following informal socialisation effects.

H2a. *(informal socialisation): the effect of university study on attitudes will be larger for those who move away from home to study*

H2b. *(informal socialisation): the effect of university study on attitudes will vary according to whether the institution attended is campus or city-based and whether the institution has multiple campuses, or not*

The kinds of values that students are exposed to at university may also vary according to where they study (Scott, 2024). We know that the intake of 'selective' British HE institutions differs from the university average in important ways. For example, while state-educated students accounted for 90 per cent of all UK HE entrants in the 2020/2021 academic year (Higher Education Statistics Agency, 2022), they make up 77 per cent of the Russell Group intake (Major and Tompkins, 2021). Individuals who study at more selective universities can, then, expect to study alongside different (likely more privileged) kinds of people on a day-to-day basis than those who attend other institutions.

Processes of homophily lead people in close proximity to one another to adopt shared identities and values (Pattie and Johnston, 2000), even if they do not interact directly (Enos, 2017). For students who move away from home to study, which often means living in places with different kinds of socio-economic and political landscapes than those they have experienced before, there is an additional socialisation experience to contend with. Consider, for example, a student who has grown up in a rural Conservative-voting town in Southern England who moves to study in a large Northern city with a strong Labour tradition.[4] We expect that.

H3. *(place-based socialisation): the effect of university study on attitudes will vary according to the characteristics of the area studied in*

H4. *(university-based socialisation): the effect of university study on attitudes will vary according to the selectivity of the institution attended*

Table 1 presents a summary of the socialisation-based hypotheses that will be tested. We do not directly test the psychodynamic and cognitive models here, partly due to space, but also due to a lack of data availability. We can, however, make inferences about these from our results. These two mechanisms predict a 'uniform' effect of HE on attitudes, so, if we find few significant effects across H1-H4 this may suggest

Table 1
Mechanisms driving the effect of university study on political attitudes.

Mechanisms	Hypothesis tested
Subject socialisation	H1
Informal socialisation - interactions with faculty	No. No data available
Informal socialisation - interactions with peers	H2a and 2b
Place-based socialisation	H3
University-based socialisation	H4

[4] Place-based socialisation may not work as expected if students self-select into studying in places with populations that have values congruent with their own. We know this is true of the wider population where, when people move, they tend to re-locate to areas that have attitudes closer to their own (Gallego et al. 2016).

psychodynamic and/or cognitive processes are driving any university effects observed rather than socialisation-based ones.

3. Britain as a case

Britain presents an interesting case for studying the link between university study and political attitudes both because it has high levels of HE participation, relative to other Organisation for Economic Co-operation and Development (OECD) countries (see Fig. 2) (OECD, 2021), and because it is a context in which the importance of education in shaping the contours of public opinion is at the forefront of debate. A stark educational divide in voting has been observed at recent British elections and referenda, which can be explained by the differing political attitudes of graduates and non-graduates (Simon, 2022b).

Moreover, certain distinctive qualities of the British HE system allow more opportunity for observing how socialisation mechanisms operate in shaping student attitudes than other HE systems do. For example, the fact that while the majority of full-time students leave home to study in Britain, only a small minority do the same in Europe and America (Whyte ND).

4. Materials and methods

In this paper, we combine high-quality individual-level panel data, an original dataset which details the characteristics of every English and Welsh university, 2021 Census data, and data from the House of Commons Library. Our individual-level data comes from the nationally representative BESIP (Fieldhouse et al. 2024), which asks the same individuals questions about their highest level of education, socio-demographic characteristics and attitudes over 29 waves from 2014 to 2024. This allows us to track attitudinal change and degree attainment. The key strength of this data is that it enables us to identify which subject respondents studied at university, and, by using a combination of location- and tenure-based data and linking this with constituency-level data, to deduce which HE institution they are likely to have attended.

Before proceeding, we note one caveat on our use of this data. Education is a devolved issue: Scottish students who attend Scottish universities are eligible for free undergraduate study, whilst English and Welsh students are not. This means that students in Scotland will have more incentive to remain 'at home' to study, and thus, that their socio-demographic characteristics may differ from those of English and Welsh students. Those Scots who study elsewhere, rejecting the offer of a fully funded degree, may also be markedly different from those who do not. We therefore limit our analysis to English and Welsh respondents, and to those who have graduated from English and Welsh HE institutions (if they have obtained a degree), excluding all those who have ever reported living in Scotland, to ensure the unique Scottish educational context does not distort our conclusions.

4.2. Measuring attitudinal change and identifying graduates

There are two groups of interest to our analysis: those who have obtained a university degree in the duration of the BESIP and those who have not, either in this period or previously. We excluded 34,908 respondents who reported that they had obtained a degree *prior* to the start of the panel, leaving 6642 unique respondents who were classified as graduates (having obtained a first or higher degree in the panel period) and 77,175 who were not.[5]

We employ two attitudinal measures, capturing the 'first dimension' of politics using left-right (economic) values and the 'second dimension' using libertarian-authoritarian (social) values (Hooghe et al., 2002). Both are measured using well-validated 11-point (0–10) scales, which are derived by averaging respondent self-reports across several attitudinal items (see Appendix A for item details). Higher values represent more right-leaning and authoritarian attitudes respectively.

We record respondent attitudes at two time points, t0 and t1.[6] To measure the extent to which HE causes attitudinal change, it was essential that attitudes were recorded both before and after the completion of university study for those who obtained degrees during the panel. The t0 economic and social attitudes of those in the graduate group represent averages of all valid, non-missing attitudinal responses provided in the waves prior to them having reported graduating from university.[7] T1 attitudes are defined in the same way but represent average attitudes from the wave in which university graduation is first reported onwards. For the non-graduate group, t0 and t1 values report averages of all valid responses on economic and social attitudinal measures reported over the first (March 2014–March 2019) and second halves (June 2019–July 2024) of the panel duration, respectively.[8]

4.3. Individual-level variables

The individual-level variables used in our analyses are detailed in Table 2. To explore how subject socialisation shapes attitudes (H1), we split our graduate sample according to the main subject area of the degree they obtained: HSS versus *any other kind of degree*, including science, technology, engineering and medicine (STEM) courses.[9] This distinction reflects that existing research shows not only that HSS students are taught different kinds of material than those studying other kinds of degrees, but that this exposure alters their attitudes.

To test the effects of peer interaction (informal socialisation, H2a and H2b), we use information on the constituency respondents lived in before and during their time at university and on their living arrangements while studying. We identified the constituency respondents reported living in during the period at least three years prior to having graduated, and the one they lived in during the wave prior to graduating (or the last one they reported living in during the period three years prior to graduating, if this information was missing). Those who lived in

[5] Some respondents report having a degree and then report the opposite in subsequent waves. We created a more restrictive version of our degree obtained measure which excludes these individuals and re-run our analysis using this in Appendix B. Excluding these individuals makes little difference to our results.

[6] We could not use all valid attitudinal measures for each respondent as separate data points and model these as within-individual fixed-effects with wave dummies as it is not always clear at which wave attitudinal measures were collected. For example, the earliest measures were either recorded at waves 1, 2, 3, 4 or 5, and because of this uncertainty, it would be difficult to reconcile these measures with accurate wave (or other time) markers.

[7] We also created alternative t0 measures for graduates which average all valid, non-missing attitudinal responses provided in the periods at least 2 and 3 years prior to which they report graduating, respectively, and test the sensitivity of our results to using these in Appendix C. We find our results vary subtly across specifications, in the ways expected, but that findings are generally substantively similar regardless of which is used.

[8] We also create alternative measures for non-graduates which take the average of all valid attitudinal measures reported in the first and second halves of the panel period in which they participate. We do this by finding the 'average wave' in which responses are collected for each respondent, rounding this to the nearest whole number, and including all attitudes recorded pre-average wave as t0 responses and all attitudes recorded in the average wave, or later, as t1 responses. Appendix C shows that using this specification does little to alter results.

[9] HSS degrees are defined as those in the humanities and social sciences, as well as psychology and education degrees, in line with the BESIP classification of the main degree subject areas. The other degree category includes those with STEM degrees as well as those with law, economics and business degrees, among others.

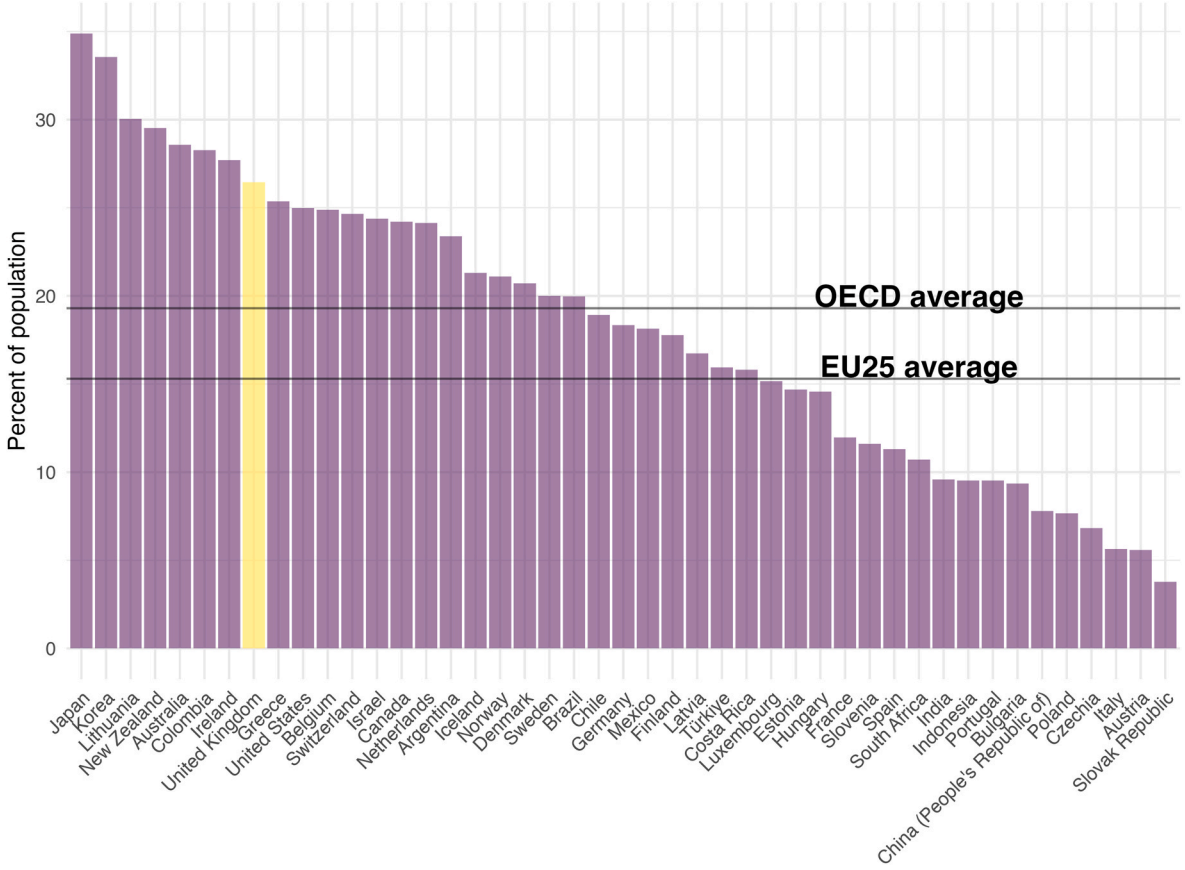

Fig. 2. Percent of working age population with degrees or equivalent, OECD countries.

different constituencies at these pre- and during-university periods were classified as having moved away to study.[10] We combined this information with details on the living arrangements of our graduate respondents whilst they studied,[11] capturing whether they reported renting, owning a property, or living with parents, family and friends and paying only partial rent. The assumption here is that those who attend their 'local' university, and particularly those who do so without living independently (i.e., continuing to live with their family and/or not paying full rent), will experience less exposure to peer effects than those who move away to study.

Finally, we include information on time-invariant socio-demographic characteristics for all respondents, regardless of whether they have obtained a degree in the panel or not, to control for any baseline differences in attitudes.

4.4. *University- and constituency-level variables*

We develop a novel dataset, using university- and constituency-level[12] variables, to test the role of informal socialisation mechanisms. We estimate which university respondents are likely to have attended by combining information on student population distributions from the 2021 Census (Office for National Statistics, 2023a), the constituency individuals reported living in immediately prior to graduation, and the geographic identification details of all universities in England and Wales, except the Open University (see Appendix E for details). In the analysis presented here, we calculate the 'likely location' our graduate respondents lived at within their reported constituency of residence based on the distribution of students across that area,[13] and assume they attended the university closest to this location. As our predictions about the university respondents attended will be more accurate in some cases (e.g., in a rural area where there is only one university) than others (e.g., in a city with many universities), we conduct sensitivity analyses using

[10] This 'three-year reporting rule' follows Simon's (2022a) approach and assumes obtaining a first degree typically requires three years of full-time study, and that most British students study full-time. This strategy is not perfect, as a small portion of those classified as having moved to attend university may have moved for unrelated reasons, but it represents the best measure that could be constructed with the available data, and the number of such cases is likely to be small enough to not concerningly bias results.

[11] Information recorded in the wave before respondents graduated, or if this was missing, the closest wave during the period three years pre-graduation.

[12] While we would ideally have used smaller spatial units, as it is generally agreed that the lowest spatial level is the most appropriate for studying contextual effects, because smaller areas are more commensurate in scale to the neighbourhoods within which we interact socially (Johnston et al. 2018), the only smaller level at which respondents were identified was the middle-layer super output area. This information is only available from BESIP wave 10 onwards, and even then, is missing for up to 60 % of respondents (Simon et al., 2024). Using this lower spatial level would have diminished our already rather sparse sample size and would likely have made our analysis untenable. Therefore, we chose to use constituencies instead. We acknowledge that using different spatial units would likely produce different results.

[13] This is the student population-weighted centroid (i.e. the 'average' latitude and longitude of where students live in any given constituency, calculated based on their distribution across output areas).

Table 2
Individual-level variables.

Variables			Mean and SD (continuous) N and percentage (categorical)
Dependent variables	Attitudinal change (t1-t0)	*Change in economic attitudes*	0.031 (1.177)
		Change in social attitudes	−0.151 (0.987)
Key independent variable	Educational attainment	*Degree obtained*	5748 (7.80 %)
		No degree	67,933 (92.20 %)
University experience variables, graduates only	Moved away for university?	*Moved away for university*	292 (21.53 %)
		Studied at 'home' university	1064 (78.47 %)
	Age graduated		39.14[a] (17.98)
	Degree subject	*Humanities or social sciences*	1046 (45.24 %)
		Other	1266 (54.76 %)
Controls	Gender	*Male*	32,746 (44.49 %)
		Female	40,859 (55.51 %)
	Ethnic background	*White British*	64,495 (88.55 %)
		Other	8339 (11.45 %)
	Country of residence[b]	*England*	68,017 (92.31 %)
		Wales	5664 (7.69 %)

[a] Our graduate sample tend to have graduated at older ages and to be less prone to move away to attend university than we would expect. This is unsurprising, firstly because we know that young people, renters and people who move frequently – all characteristics which describe many students – are less likely to respond to surveys, and more likely to attrite where they do initially respond (James, 2023), and secondly, because people who attend university at older ages will presumably be more likely to stay 'at home' to study, as they will be more likely to be homeowners and to have settled/built a life, which they do not want to uproot, than younger attendees. To ensure that this did not impact the conclusions drawn, we repeated our analyses for those who graduate at more typical ages (25 and under) and find results are substantively similar (see Appendix D).

[b] The first country respondents report living in.

different methods of classifying the institution graduates are likely to have attended (see Appendix F). Our overall conclusions are the same regardless of the method used.[14]

Having determined the university that our graduate respondents were likely to have attended, we matched this individual-level data to an original dataset of the characteristics of all English and Welsh universities (collated by the authors), which includes information on whether these are campus or city institutions,[15] whether they have multiple campuses,[16] and three proxies for prestige: 2024 Guardian and Times Higher Education rankings and Russell Group status. We use the first two to explore the possibility that the HE effect on attitudes varies according to whether students attend a campus or city institution, and whether this is a single-campus institution or not (H2b), and the last three as measures of 'selectivity', allowing a test of whether this effect varies according to institutional prestige, and the kinds of students that are likely to attend different institutions (H4).

To explore whether the effect of HE on attitudes varies according to the characteristics of the area studied in (H3), we combined socio-demographic, geographic and economic constituency-level variables, from the 2021 Census (Office for National Statistics, 2023a; Office for National Statistics, 2023b) and the House of Commons Library (2023), to create six distinctive 'clusters' of constituencies which had similar characteristics. See Appendix E for a full list of variables included, details of the clustering method adopted, and key features of the clusters generated.

Table 3
Mean attitudes and attitudinal change, by HE status.

Social attitudes	**Mean t0 value**		**Mean t1 value**		**Mean change**	
	Degree obtained	*No degree*	*Degree obtained*	*No degree*	*Degree obtained*	*No degree*
	5.45	7.03	5.27	6.89	−0.18	−0.14
Economic attitudes	**Mean t0 value**		**Mean t1 value**		**Mean change**	
	Degree obtained	*No degree*	*Degree obtained*	*No degree*	*Degree obtained*	*No degree*
	3.22	3.06	3.00	3.13	−0.22	0.07

4.5. Analytical strategy

We test our hypotheses using descriptive evidence and a series of linear regression models. Our dependent variables record the change observed in respondents' economic and social attitudes (t1-t0). Where relevant, we present estimates from both with and without controls versions of our models and detail where sample composition changes across models.

Though the conventional maximum threshold for statistical significance in the social sciences is the 5 % level, the 10 % level is used here, owing to concerns that the relatively small size of our 'treated' sample after listwise deletion reduces the statistical power of our analysis and makes it less likely that we will detect true effects where they exist. Results significant at the 10 % level are designed to highlight where we might expect to observe statistically significant relationships in an enhanced sample.

5. Results

We present average social and economic attitudes at t0 and t1 and change scores for graduates and non-graduates in Table 3. We find that while those who obtain degrees in the period are substantially more socially liberal than those who do not, even before attending university (at t0), they are slightly more economically right-leaning than non-graduates at this time point. Graduates already have very different social values to non-graduates before they start university, consistent with a self-selection effect whereby liberal individuals disproportionately choose to enrol at university.

Considering attitudinal change, we see those who have obtained degrees become slightly more socially liberal than non-graduates over the period, though both groups become more liberal. When it comes to economic issues, graduates become more left-leaning, on average, while non-graduates become subtly more right-leaning. This descriptive analysis suggests that HE *may* be an engine of attitudinal change; those who obtain degrees change their attitudes somewhat more than those who do not and tend to shift them in a more left-liberal direction, on average.

First, we investigated whether the university effect is stronger for those who graduate younger. We use predicted values from our regression models to visualise this relationship in Fig. 3 (see Appendix G for full regression tables). This graph evidences the face validity of our data, showing that, on average, those who graduate younger experience a greater degree of attitudinal change whilst at university than those who graduate later in life, as would be expected under the 'impressionable years' hypothesis (except for the very oldest individuals, when it comes to left-right attitudes). Though small, these age-at-graduation

[14] Clearly, then, any bias from coding respondents into the closest university within each constituency which may be seen in the original method does not alter the conclusions drawn.

[15] Following the convention adopted in The Student Room's University Guide (Taylor, 2023).

[16] Universities were classified as multicampus institutions if their webpages showed they had more than one UK campus when the following search terms were used: 'campus', 'campuses', 'locations'. Or, if their campus map indicated the site was split across multiple UK locations.

differences are highly statistically significant for both attitudinal outcomes ($p < 0.001$).

5.1. Subject socialisation

Do those who study different subjects have different attitudes? Table 4 presents the average attitudes of non-graduates and those who studied different kinds of degrees, and shows that even before completing their studies, those who will go on to obtain degrees are more socially liberal than those who will not (though this initial difference in social attitudes is much larger for HSS graduates and non-graduates than for graduates of other subjects and non-graduates). We also see that those who will later study HSS degrees have fairly similar economic attitudes to non-graduates, whilst those who will study other kinds of degrees are substantially more economically right-leaning than both other groups at t0. This suggests there is a subject-specific self-selection effect at play: socially liberal people not only disproportionately opt into HE, but also more often choose to study HSS. Those with right-leaning economic attitudes, on the other hand, seem particularly inclined to study degrees in STEM and other non-HSS subjects.

We now test H1 more formally by estimating regressions and presenting the coefficients obtained in Fig. 4 (see Appendix G for full results). Our baseline is those who studied STEM and other non-HSS degrees. We detect no field-of-study differences with regard to economic attitudes. Fig. 4 shows that while those who did not go to university in the period become statistically significantly more right-leaning than STEM and other non-HSS graduates, no subject-specific differences are observed between graduates. We can interpret this as evidence that those who obtained degrees in the period become slightly more left-leaning ($p < 0.001$) than non-graduates, on average, with this effect manifesting itself uniformly across graduates of *all subjects*.

We find something different for social attitudes, however. Here, we find not only that those who studied STEM and other non-HSS subjects at university become more liberal than non-graduates ($p < 0.01$) (or that those who did not go to university become less liberal than those who studied STEM/other non-HSS degrees), but also that they experience a larger degree of attitude liberalisation whilst at university than do their peers (or, conversely, that HSS students become subtly more authoritarian than STEM and other non-HSS students in the period). While this effect is relatively small, in practical terms, with the average STEM or other non-HSS student becoming approximately 0.1-points more socially liberal than the average HSS student in the period, this effect is nevertheless statistically significant ($p < 0.05$ with controls and $p < 0.1$ without). When it comes to social attitudes, then, we find evidence that subject-based socialisation drives attitudinal change on university campuses (H1). Regardless of the subject studied, obtaining a degree tends to shift student attitudes subtly in a leftwards direction, but only students of STEM and other non-HSS subjects tend to become *statistically*

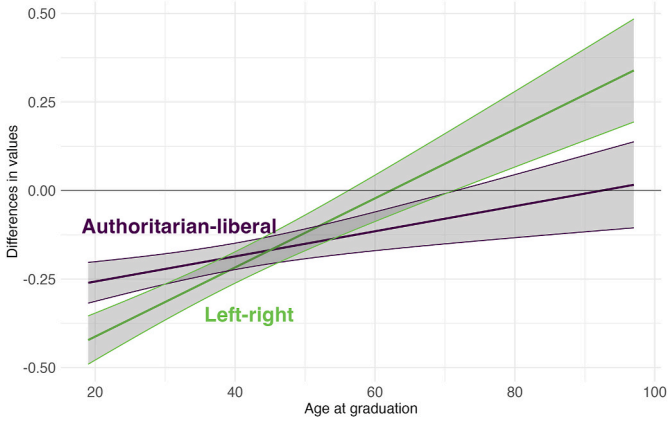

Fig. 3. Age at graduation and attitudinal change.

Table 4
Attitudes by subject studied at university.

	STEM/other		HSS		Did not go	
	Mean	SD	Mean	SD	Mean	SD
Social attitudes (t0)	6.0	2.1	4.9	2.1	7.0	1.8
Social attitudes (t1)	5.8	2.3	4.8	2.3	6.9	1.9
Social attitudes (difference)	**−0.3**	**1.0**	**−0.2**	**0.9**	**−0.1**	**1.0**
Economic attitudes (t0)	3.7	1.9	2.9	1.9	3.1	1.8
Economic attitudes (t1)	3.6	2.0	2.6	1.8	3.1	1.9
Economic attitudes (difference)	**−0.1**	**1.1**	**−0.3**	**1.2**	**0.1**	**1.1**

significantly more liberal whilst at university (Model 1 in Table A.8 shows that while HSS students become slightly more liberal in the period (−0.018), relative to those who did not go to university, this effect is not statistically significant, even at the least stringent 10 % level).

5.2. Informal and university-based socialisation

Is the university effect larger for those who move away from home to study, and are thus more likely to be exposed to new peers (H2a)? The results presented in Fig. 5 take those who did not move for HE study as the baseline and suggest the answer is yes, but only for economic attitudes.[17] Here, we again find that obtaining a degree tends to shift attitudes slightly in a leftward and liberal direction (those who did not obtain degrees in the period become statistically significantly more authoritarian and right-leaning than those who did and did not move away from home to do so, on average), but we also find that the 'HE effect' on economic attitudes is particularly pronounced for those who *move away from home* to study; with those who do so becoming statistically significantly more left-leaning while studying than those *who do not move away from home to study* ($p < 0.05$). No analogous effect is seen for social attitudes. Assuming that those who move away from home to study will be more embedded in university life, and spend more time socialising in new peer networks, these findings present evidence that informal socialisation may play a role in economic attitudes. It is possible that this overall effect could be masking the conflicting effects of living in different kinds of places while studying, however. This possibility is investigated in Section 5.3.

We now extend our test of informal socialisation mechanisms by considering whether the university effect on attitudes is conditional on institution-specific factors that shape student exposure to peer networks (H2b). In Figs. 6 and 7, we present the coefficients of regression models which incorporate various university characteristics as predictor variables (see Appendix G for full regression tables). We find little evidence here to suggest that it is informal socialisation which drives the effect of HE on political attitudes, except that those who attend single campus universities become more economically leftist than those studying at multi-campus institutions ($p < 0.1$).

The selectivity of the HE institution attended could also condition the university effect on attitudes, as this may shape the *types* of socialisation experiences that people have on campus (H4). However, we find that neither attending a highly-ranked university, according to the 2024 THE and Guardian league tables, nor attending a prestigious Russell Group university, has a statistically significant effect on social or economic attitudes.

5.3. Place-based socialisation

Finally, we turn to place-based socialisation mechanisms, exploring

[17] In Appendix G we report analyses using a more fine-grained tenure status variable.

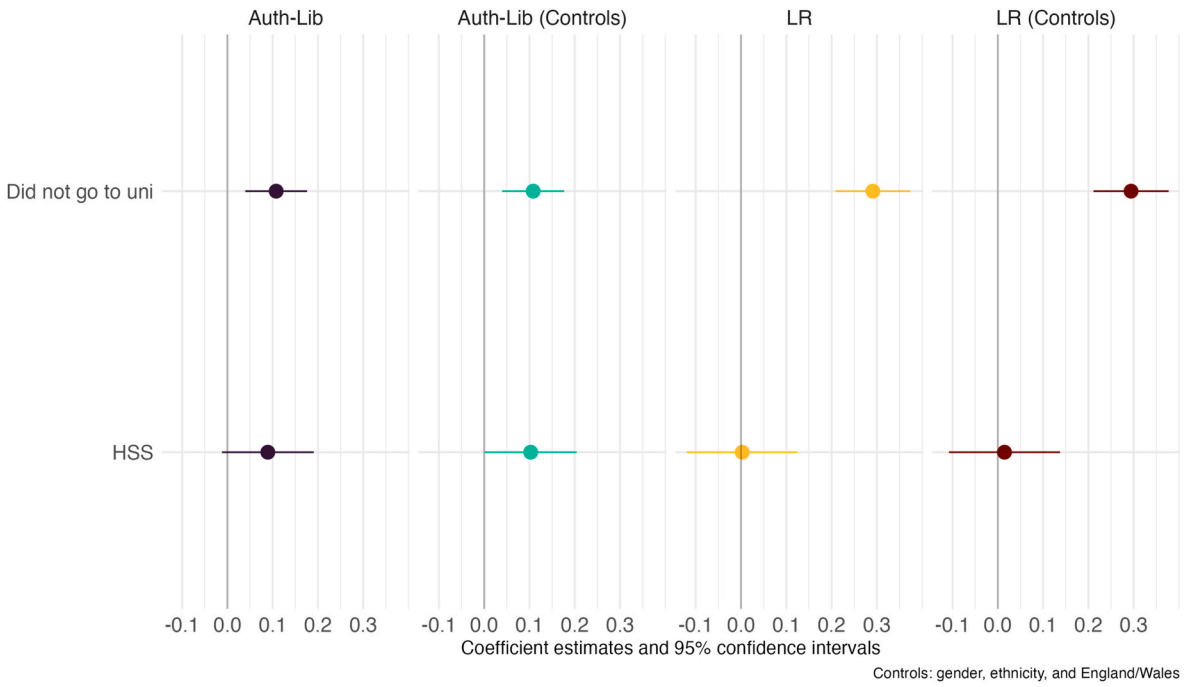

Fig. 4. The relationship between subject studied at university and political attitudes.

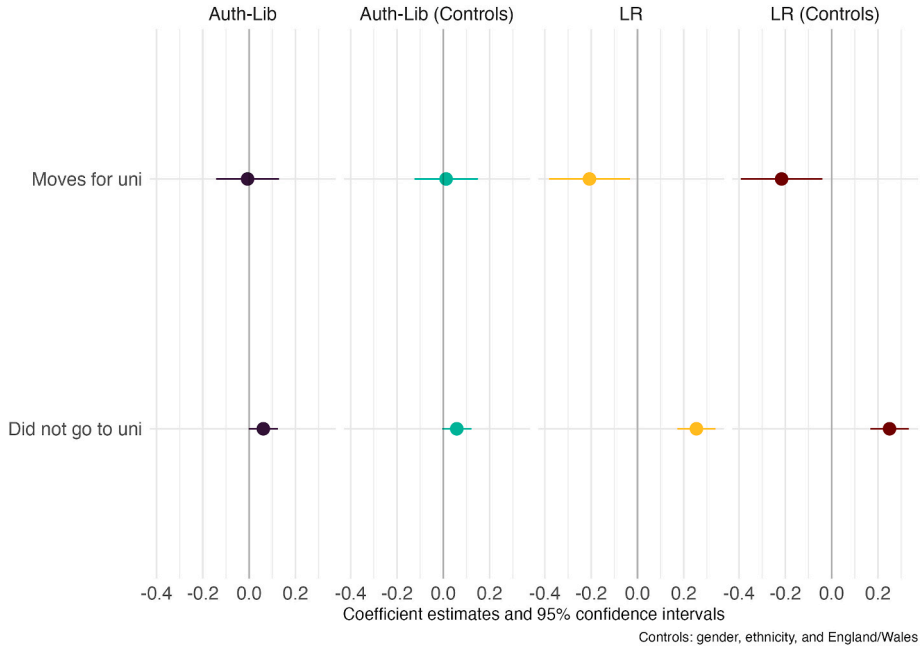

Fig. 5. The relationship between moving for university study and political attitudes.

whether the university effect on attitudes is conditional on *where* individuals study (H3).[18] In Fig. 8, we show the average attitudinal change experienced by graduates in the panel period, according to the type of constituency in which they studied.

Regardless of the university constituency type, we find that obtaining a degree tends to shift attitudes in a leftward and liberal direction. The effect of HE on economic attitudes, however, appears to be larger for those who study in 'university towns' and in 'cosmopolitan London'. Compared to those who study in 'commuting and comfortable' constituencies, those who study in 'cosmopolitan London' become significantly ($p < 0.1$) more economically left-wing. In fact, the leftward shift in economic attitudes is more than four times larger for those who study in 'university towns' and 'cosmopolitan London' than it is for those who study in 'post-industrial towns'. While we find some evidence to suggest that 'university location' moderates the degree of economic attitudinal change experienced while studying, we also find that similar patterns of attitudinal change are observed among graduates and non-graduates who live in the same kinds of places over the study period (see Appendix H). It should be noted, then, that although attending university tends to engender a larger-than-average leftward shift in economic attitudes

[18] We also consider whether this effect varies according to students' 'home' constituencies. See Appendix G.

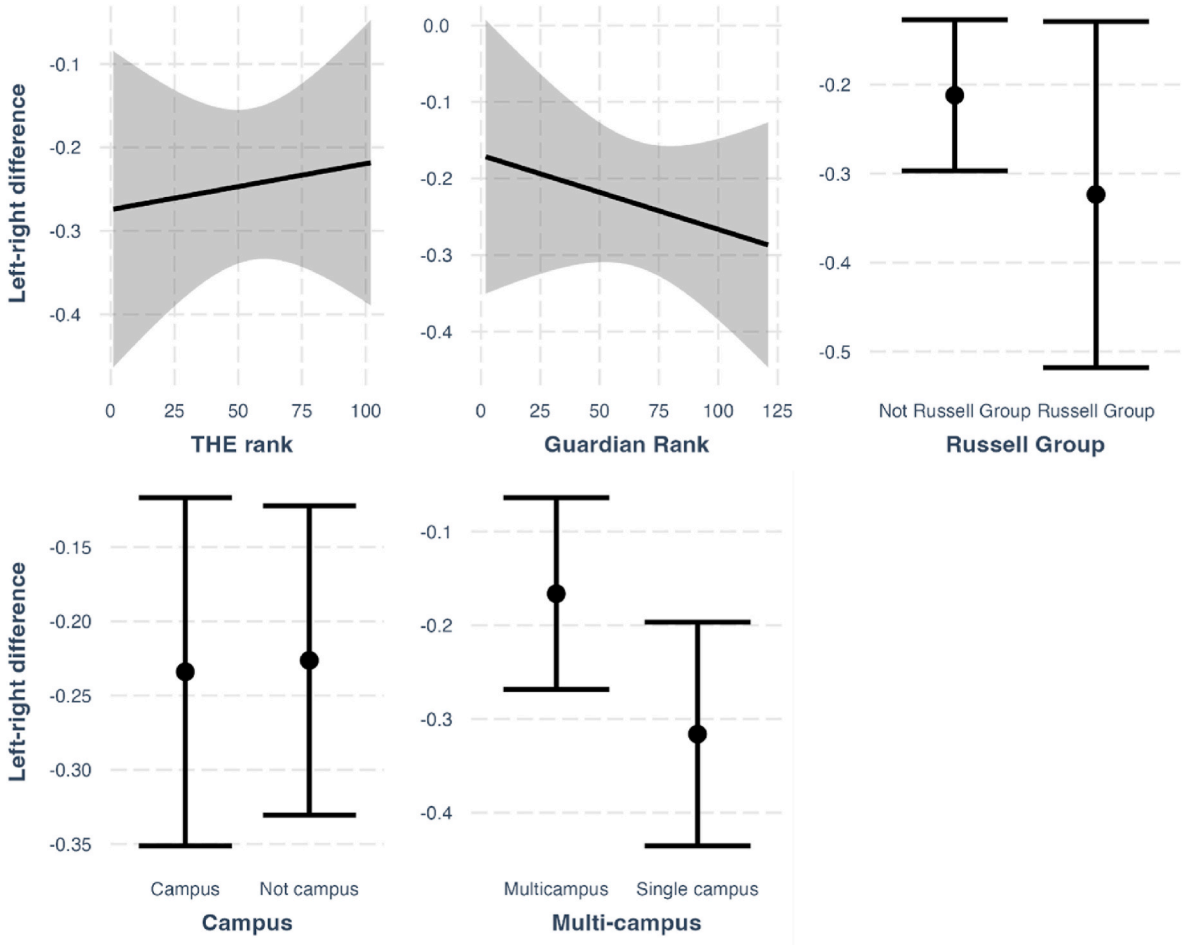

Fig. 6. The relationship between university characteristics and economic attitudes.

for those who study in 'university towns' and in 'cosmopolitan London', this place-based socialisation effect is not only felt by those in HE, with non-graduates who live in these places also tending to shift their economic attitudes further to the left than average over the study period.

6. Discussion

This paper makes an important contribution to advancing our understanding of the mechanisms that drive the linkage of HE and political values by demonstrating that socialisation processes play a role in driving attitudinal change among university attendees, in the modern British context. Our findings hold irrespective of the method used to assign students to the university they are likely to have attended (see Appendix F) and show that while most students tend to shift their attitudes subtly in a leftwards and liberal direction whilst at university, regardless of *what, how and where* they have studied, those who are exposed to certain kinds of socialisation experiences during their studies experience heightened attitudinal effects. The average 'university effect' on attitudes is larger for: those who graduate younger, those who study STEM and other non-HSS subjects (social attitudes only) and those who move away from home to study, those who attend single campus institutions, and who live in 'university towns' and 'cosmopolitan London' while studying (all economic attitudes only).

In providing evidence to suggest that HE study has only a modest direct *causal* liberalising effect on English and Welsh graduates' social attitudes, on average, and that there is a sizeable self-selection effect of socially liberal individuals into universities, we largely corroborate the findings of existing studies that use UK panel data to explore the university effect on attitudes. Interestingly though, we find that obtaining a degree shifts students' economic attitudes in a left-leaning direction, while Scott (2022) finds evidence of movement in the opposite direction and Simon (2022a) finds no effect of HE on economic attitudes. These differences in conclusions are unlikely to be caused by measurement issues, given all these studies use near identical attitudinal measures. However, they may relate to the differing time periods of analysis. It could be that the influence of HE on economic attitudes has changed over time, shifting from one that makes individuals more right-leaning, observed in Scott's (2022) study of pre-2000 graduates, to a neutral effect on graduates between 1994 and 2022 (Simon, 2022a), to one that makes them more left-wing, observed in this study between 2014 and 2024. This seems plausible given we know that the social make-up of university students and staff – the people that students are likely to interact with on campus – has shifted considerably over time, and become much more diverse since the period of UK HE expansion that occurred in the late 20th century (Gallagher, 2018). Exploring this possibility is an important agenda for future research.

Our findings do not corroborate those of existing research when it comes to subject-specific socialisation (H1), however. Unlike Scott (2024), Stubager (2008), Surridge (2016) and van de Werfhorst and de Graaf (2004) who find that those who study HSS at university are (or become) more socially liberal relative to those who study other subjects, we find the opposite; showing that those who study STEM and other non-HSS subjects become slightly more liberal relative to HSS students whilst at university, on average. Though this finding was unexpected – given we know that HSS students tend to be more exposed to liberal social values (van de Werfhorst, 2020) and learnings which encourage the development of these (Guimond et al., 1989; van de Werfhorst and de Graaf, 2004) on university campuses than students of other

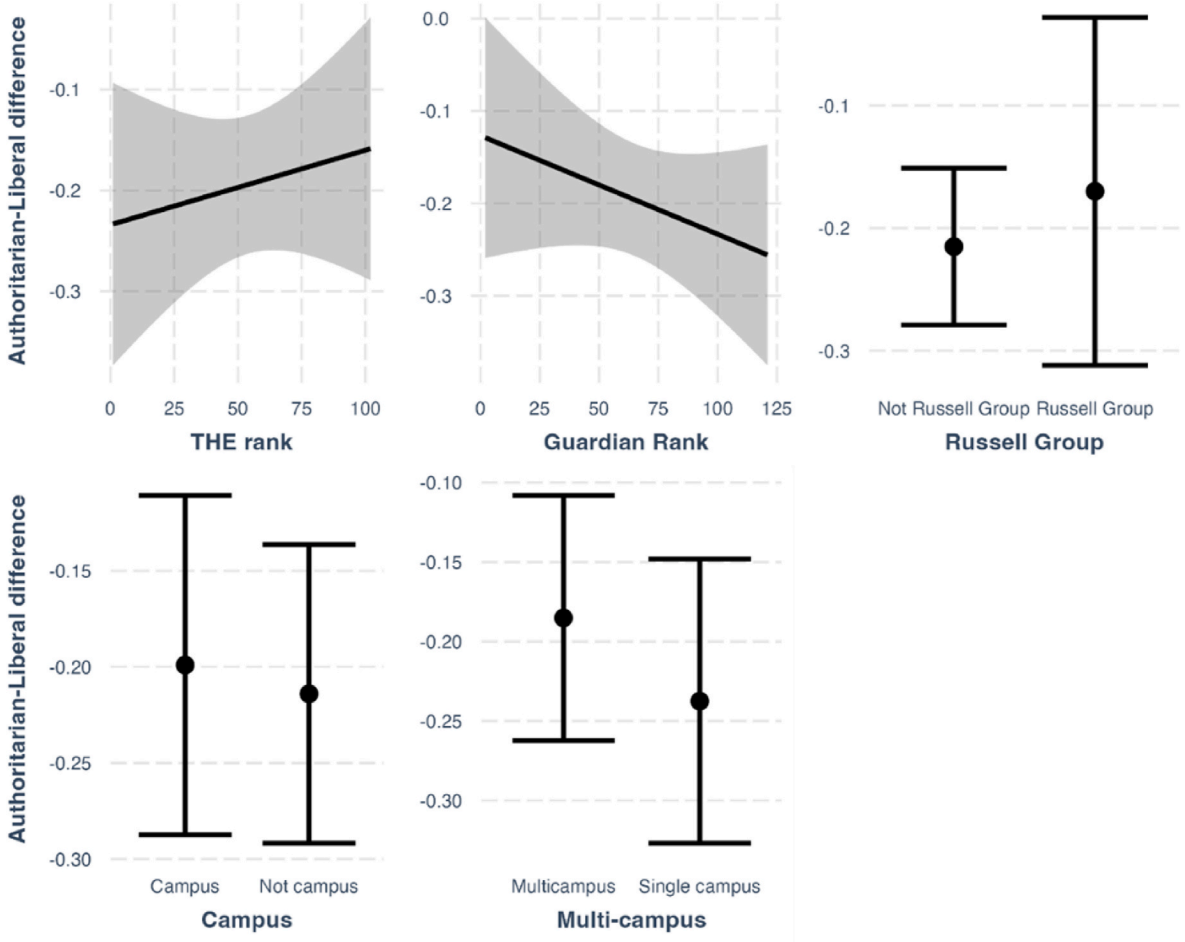

Fig. 7. The relationship between university characteristics and social attitudes.

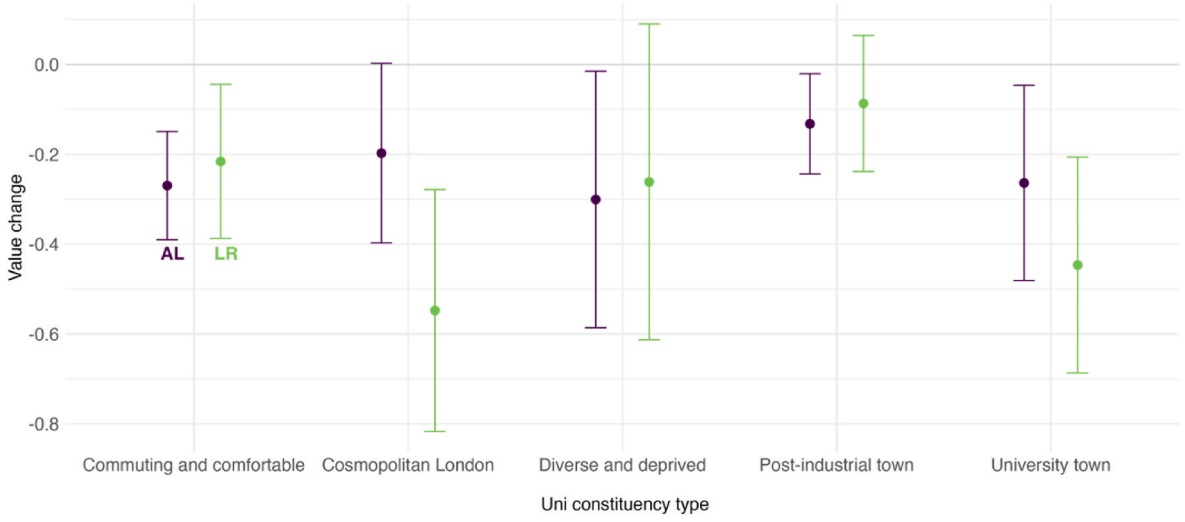

Fig. 8. Economic and social attitudinal change by university constituency type.

disciplines – we argue that this finding can be contextualised by the non-trivial subject-specific self-selection effects uncovered here. Given that those who will go on to study for HSS degrees are much more socially liberal prior to commencing their studies than those who will later study STEM and other non-HSS degrees (see Table 4), we believe that our findings likely reflect a 'ceiling effect' for HSS students. While all students tend to shift their social attitudes subtly in a liberal direction whilst studying at university (though HSS students do not do so statistically significantly more so than those who do not obtain degrees in the period), STEM and non-HSS students tend to experience a greater degree of attitude liberalisation than do HSS students, as their social attitudes are considerably less liberal to begin with, and so there is more scope for change in these.

This finding appears to underscore the importance of informal

socialisation in driving attitudinal change on university campuses. While it seems unlikely that those studying STEM and other non-HSS subjects at university would become more socially liberal *relative* to HSS students because of the influence of the educational content of their degree courses (formal classroom-based socialisation) – in fact, we would expect the opposite effect, if any – it seems plausible that they could become so through informal channels. It might be that as (typically less socially liberal) STEM and other non-HSS students interact with (typically more liberal) faculty and HSS students on university campuses, in accommodation halls, student society meetings and classrooms, among other spaces, their social attitudes liberalise – and that while HSS students are subject to the same interactions, their attitudes liberalise less owing to these encounters because they tend to be more liberal to begin with. What we cannot determine from our analysis, however, is precisely how these informal socialisation effects operate. How much do HSS students interact with STEM and non-HSS students, for example? And is it peer or faculty interactions that matter more? Only with more detailed data on the socialisation experiences that individuals are exposed to at university – including the attitudes of the peers and tutors they interact with, the 'political norms' of their university and how much time they spend (socialising) on campus – can we hope to provide a definitive answer to these important and timely questions, and gain a better understanding of *how* on-campus socialisation shapes student attitudes. Unfortunately, these kinds of data are not available in any recent UK longitudinal study that also contains repeated measures of attitudes, to our knowledge. Future studies in this area must, therefore, look for creative solutions to resolve these data deficiencies – as we have tried to here.

The role of informal socialisation-based mechanisms in driving the link between HE and political values in Britain is further highlighted by the fact we find considerable evidence to suggest that this association is moderated by *where and how* individuals have studied. Not only is the average 'university effect', which shifts attitudes subtly in a leftward and liberal direction, larger for those who study STEM and non-HSS subjects (when it comes to social attitudes). But it is also larger, when it comes to economic attitudes, for those who move away from home to study and those who attend single campus institutions – who are likely to be more embedded in campus life and culture – and for those who live in 'university towns' and 'cosmopolitan London' while studying – both places which are likely to have more left-leaning economic attitudinal profiles than average. This clearly suggests that the people individuals meet, and interact with, while studying, and the values they are likely exposed to in these informal socialisation encounters, help to shape their attitudes.

Though our findings indicate that (informal) socialisation mechanisms are an important part of the puzzle when it comes to understanding why attitudes change on university campuses, they do not rule out the operation of psychodynamic and cognitive mechanisms in this process. We do not find full support for our socialisation-based hypotheses, across all attitudinal outcomes.[19] In fact, in many of the tests performed we find null or homogenous effects, whereby all students tend to shift their attitudes subtly in a leftwards and liberal direction whilst at university, regardless of *what, how and where* they have studied. Given that we do not, and cannot, directly test these alternative models of university effects, which imply more uniform effects of HE on attitudes than the socialisation model (Surridge, 2016), in our analysis, it would be inappropriate to rule out the possibility that these influence attitudinal change on university campuses. Future studies should attempt to isolate, and discriminate between, these alternative mechanisms; although doing so will not be easy, given the data deficiencies identified earlier in this section.

To conclude, this study goes beyond existing work on the causal effect of HE by examining whether the average effect of university study on political attitudes varies according to *what, how and where* individuals have studied. We find considerable evidence to suggest that (informal) socialisation plays an important role in driving attitudinal change among university attendees, showing that the average 'university effect' is heightened for those who study STEM and non-HSS subjects (social attitudes only) and for those who move away to study, those who attend single campus institutions, and who live in 'university towns' and 'cosmopolitan London' while studying (all economic attitudes only). What does this mean for contemporary debates about the role of universities in shaping attitudes? We find that, at least in the British context, there is little evidence to sustain the idea, often floated by right-leaning commentators, that universities, and HSS faculties in particular, are hotbeds of left-liberal indoctrination. It is true that, on average, obtaining a degree shifts attitudes in a leftward and liberal direction, but these effects are subtle, and they are no larger for HSS students than for those studying other disciplines; in fact, the opposite is true when it comes to social attitudes. Given that even the largest 'university effect' detected here sees graduates shift their economic attitudes only around half a point to the left, on average, over an 11-point scale, we argue that while these effects are significant in the *statistical* sense, they are small in a *practical* sense and are dwarfed by the effects of self-selection into HE. Rather than universities fundamentally transforming the attitudes of those who attend, we find that socially liberal people more often opt into university studies and that they tend to become slightly more so, and slightly more economically left-leaning, over the course of their studies, on average.

CRediT authorship contribution statement

Elizabeth Simon: Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Conceptualization. **Daniel Devine:** Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Conceptualization. **Jamie Furlong:** Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Conceptualization.

Data statement

The British Election Study Internet Panel data are available for registered users at DOI: 10.5255/UKDA-SN-8202-2. The 2021 Census, and House of Commons data, is openly available from various sources, see the following references for details: Office for National Statistics (2021; 2022, 2023a; 2023b) and House of Commons Library (2023). The dataset containing characteristics of all English and Welsh universities is available from the corresponding author, upon request.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.electstud.2025.102930.

[19] This could, in part, be a product of the data limitations associated with our analysis. We had to rely on proxies for the types of people students were likely to socialise with while studying (e.g., the selectivity of the institution and constituency context variables), rather than using more direct measures, and it is possible that having access to such measures would have yielded different results.

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