West European Politics

ISSN: 0140-2382 (Print) 1743-9655 (Online) Journal homepage: www.tandfonline.com/journals/fwep20

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To cite this article: Sebastian Jungkunz & Paul Marx (21 Aug 2025): Pathways to politics: a sequence analysis of political apathy and involvement, West European Politics, DOI: 10.1080/01402382.2025.2543204

To link to this article: https://doi.org/10.1080/01402382.2025.2543204

WEST EUROPEAN POLITICS
https://doi.org/10.1080/01402382.2025.2543204

Pathways to politics: a sequence analysis of political apathy and involvement

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ABSTRACT

Understanding inequality in political involvement is a core goal of political science. Previous research has examined specific life-course influences, but there is limited knowledge about the diverse trajectories young citizens follow to become politically engaged or apathetic. This study employs sequence analysis to identify prevailing trajectories of political involvement from adolescence to young adulthood in Germany and the United Kingdom. For a surprisingly large share, their political future of either apathy or involvement is already determined by age 17, or even as early as age 11. Only about 19% develop involvement between age 17 and 25 and only 24% between age 11 and 15. Studying predictors of individual trajectories points to strong parental influences, while personal experiences can foster later involvement for a sizeable sub-group. These results show an under-appreciated diversity of political socialisation trajectories and point to an urgent need to study the interaction of parental and personal factors shaping them.

KEYWORDS Political involvement; apathy; socialisation; adolescence; sequence analysis; cross-national

Why do some citizens develop a cognitive and affective engagement with politics, while others remain apathetic? Understanding inequality in political involvement[1] has been a core research focus of political science for decades (Dalton 2017; Jahoda *et al.* 1971; Schlozman *et al.* 1979; Solt 2008; Verba *et al.* 1995). Recent research has revived an older literature (Alwin and Krosnick 1991; Easton and Dennis 1969; Jennings 1979) on how political involvement and inequality develop over the life course (Brady *et al.* 2015; García-Albacete 2014; Holbein *et al.* 2020; Jungkunz and Marx 2022; Neundorf *et al.* 2013; Ojeda 2018; Schäfer *et al.* 2020).

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Supplemental data for this article can be accessed online at https://doi.org/10.1080/01402382.2025.2543204.

This has produced growing evidence that political involvement or apathy are rooted in early experiences during youth and childhood (Abendschön and Tausendpfund 2017; Janmaat and Hoskins 2022; Prior 2019).

So far, the literature has focused on isolating the lasting effects of *specific* life-course influences on political orientations and behaviours (Akee *et al.* 2020; Fox 2024; Jungkunz and Marx 2024). An example is research on how unemployment lastingly impairs political socialisation among young adults (Azzollini 2023; Emmenegger *et al.* 2017). While the focus on this and other specific explanatory factors has been highly insightful, it risks losing sight of general patterns. After all, youth unemployment and many other explanations apply to only a relatively small segment of young potential voters. Consequently, we have a limited understanding of the variety of trajectories through which young citizens (fail to) build up political involvement – and how prevalent they are in the population.

In our view, this knowledge deficit potentially hampers academic progress and the policy-relevance of political behaviour research. For example, in many analyses, such as those examining materially deprived teenagers, it is not clear what constitutes a 'normal' trajectory towards political involvement. This makes it difficult to distinguish 'atypical' or potentially problematic trajectories that may warrant policy intervention – and to assess their prevalence. It should also go without saying that understanding the nature of a phenomenon as thoroughly and reliably as possible should generally serve as the foundation for developing causal explanations of the phenomenon (Gerring 2012; King *et al.* 1994; Lieberman 2020). Against this background, it is untenable that existing research has largely neglected the potential of panel data to generate rich descriptive insights into the development of political involvement. These insights are essential for establishing or revising the explanandum – and for guiding explanatory research on this basis.

In this article, we therefore take a step back. Instead of zooming in on specific groups, we aim to provide a comprehensive picture of pathways to political involvement. Our goal is to identify *typical* longitudinal patterns through which young citizens become politically apathetic or involved (conceptualized as becoming politically interested and/or developing attachments to a political party). Thus, our primary objective is to identify typical trajectories of developing political interest and party attachments between late adolescence and young adulthood; and how these clusters of trajectories are distributed among young citizens. To extract this descriptive information from panel data, we apply sequence analysis, a rarely used method in political science. Rather than examining a single state or the change between two states, sequence analyses considers longer series of states. This unearths information we otherwise would ignore, such as the stability or precariousness of involvement, the difference between short-term fluctuation and long-term results, the equifinality of seemingly different pathways, and

differential timing of developing political interests or party identification. For example, transitory episodes of apathy are qualitatively different from permanently dropping out of political involvement. Zooming in on short-term fluctuation can miss this difference (Fasang and Liao 2014).

In a second step, we use our longitudinal description as the basis for explanatory models and aim to explain how individuals sort into the identified trajectories of political interest and party attachments. Specifically, we treat the clusters identified in the sequence analysis as a categorical dependent variable, which is regressed in multinomial logistic regressions on standard predictors of political participation as well as life-course specific experiences.

Our analysis is based on panel data from Germany and the United Kingdom, which provide longitudinal information on young participants' political interest and party identification. We find that political involvement and apathy crystallise early in life. Differences in party identification and political interest are already pronounced towards the end of citizens' teenage years and remain surprisingly constant throughout their twenties. However, we find a substantial cluster of respondents that is characterised by late involvement, i.e. around age 22 or 23. To our knowledge, this phenomenon has received virtually no attention in existing scholarship, underscoring the merits of our descriptive approach.

Importantly, our data also allow us to take a glimpse into the development of political involvement among children between age eleven to 15. While most patterns are quite similar to those of older adolescents and young adults, we also find that around a fifth is characterised by 'teen apathy', i.e. a decline in political interest around ages 13–15 among previously engaged children. This nonlinearity challenges expectations of increasing independence, highlighting the need to understand its causes, consequences, and potential educational interventions to address this disengagement.

Echoing existing research, patterns of early political involvement and apathy are highly dependent upon parental characteristics, political interest in particular. Intriguingly, however, 'late involvement' into politics is shaped to a greater extent by individual life experiences, for instance undergoing vocational training. This is a previously overlooked pathway through which young citizens with unfavourable starting conditions might develop political involvement. Our results are strikingly similar in both countries, which points to potential generalisability across Western democracies.

In sum, we propose a novel and easy-to-implement approach to extracting more robust measures of political involvement from longitudinal data. Besides the methodological and substantive insights of this approach, it addresses policy-relevant questions. Most importantly, a more robust and meaningful measure of political apathy allows for distinguishing young

citizens that *occasionally* tune out of politics in the turbulent phase of young adulthood from those who are *durably* apathetic. This allows an estimate of the share of young citizens truly excluded from politics. It can also inform decisions about which groups to target with policy interventions in which situations.

Moreover, our perspective has implications for normative debates about the nature of political inequality and ways to overcome it. Many contributions in political science suggest that abstention, e.g. of the lower classes, results primarily from alienating experiences of political misrepresentation (Elsässer and Schäfer 2022; Evans and Hepplewhite 2022; Rennwald and Pontusson 2022; Solt 2008). We show that there is a sizable segment of young citizens that has never developed sufficient attention to politics to even perceive such misrepresentation. Without denying that misrepresentation can play a role in the (intergenerational) development of political apathy – and without claiming that the two perspectives are mutually exclusive – we point to an urgent need for scholars and policymakers to engage with the childhood foundations of political inequality and how to address them.

Conceptualising political involvement

As there is no agreed upon terminological convention in political behaviour scholarship, it is important to clarify our main concept and the underlying theoretical considerations. *Political involvement*, as we use it, is an overarching concept covering cognitive, emotional, or behavioural engagement with political affairs. This can be expressed in acts of voting, protesting, or news consumption, but also in attitudes and dispositions, such as political self-efficacy, or interest. *Apathy* is the absence of such engagement.

The challenge is to account for the multitude of forms through which involvement can be expressed. Several influential typologies capture, for example, citizens who are highly involved but mainly outside institutionalised political channels (Li and Marsh 2008; e.g. Milbrath and Goel 1977). Our goal of identifying broad patterns speaks against a focus on rarer, unconventional forms of political involvement (along with data limitations discussed below). In the context of the present paper, we require ways to capture political involvement in a parsimonious way that still allows for broad applicability across diverse citizens.[2]

A good starting point to identify involvement is political interest, as it reflects a foundational disposition to engage with politics at all (Prior 2019). Hence, even if we do not distinguish involved citizens who mainly *act* outside electoral politics, such citizens are likely to be characterised by general political interest. That said, involvement and apathy cannot be reduced to being (dis)interested in politics (Prior 2019: 3–10). We therefore follow the

influential framework by Dalton (1984, 2014), distinguish 'two general methods for integrating and mobilizing citizens into the political process: party mobilization and cognitive mobilization' (Dalton 1984: 265). The reason is that 'partisan identifiers, regardless of their party preference, are generally more involved in the political process than nonidentifiers.' Cognitive mobilisation is, measured by political interest, 'implies that citizens possess the skills and resources necessary to become politically engaged with little dependence on external cues.' (Dalton 1984: 267). Hence, while distinct, partisan and cognitive mobilisation both are processes fostering political involvement. Based on this notion, Dalton (1984) develops a four-fold typology distinguishing politically interested 'apartisans' from apathetic 'apoliticals' as well as 'cognitive' from 'ritual partisans' (for a more recent discussion, see Donovan 2017).

Classical work indeed sees party identification as the primary form through which voters are socialised into politics, not least because it motivates voting (Campbell *et al.* 1960). Although not as widespread as in the United States, party identification plays a similar role in many multiparty systems, such as Germany (Dalton 2014; Kroh and Selb 2009; Schickler and Green 1997). Importantly, identifying with a political party is a stable form of political involvement, even if it is not always undergirded by strong political interest (Dalton's 'ritual partisans'). At the same time, there are growing shares of 'cognitively mobilised' apartisans with strong political interest, particularly among younger cohorts.

In our view, the minimum level of complexity of a measure to track the development political involvement at a young age is to reflect both cognitive and partisan paths to involvement. In a slightly simplified version of Dalton's approach, we treat citizens as involved if they are politically interested, close to a party, or both (see Section 'Measuring political involvement'). As we discuss in the literature review below, both aspects have been shown to develop early in life and to be transmitted by parents, making them particularly suitable for our analysis.

The development of political involvement

Reviving classical perspectives in political sociology, life-course research on political involvement has grown in recent years. In principle, political attitudes and behaviours can and do evolve until old age (for an overview, see Serra and Smets 2022). But, following the foundational work of Mannheim (1952), most contributions emphasise a strong and lasting effect of experiences during the 'impressionable years' between late childhood and early adulthood (Akee *et al.* 2020; Dinas 2012; Easton and Dennis 1969; Janmaat and Hoskins 2022; Jennings *et al.* 2009; Jennings and Niemi 1981; Plutzer 2002; Prior 2019; Sears *et al.* 2023).

This means first and foremost parental influences. Parents with high levels of education and political interest are arguably the single most important factor facilitating political involvement. This has been shown for political interest (Janmaat and Hoskins 2022; Neundorf *et al.* 2013; Prior 2019; Shehata and Amnå 2019), voting (Gidengil *et al.* 2016; Jeannet 2022; Lahtinen *et al.* 2019) and other forms of participation (Bacovsky and Fitzgerald 2023; Quintelier 2015a), having a partisan identity (Bacovsky and Fitzgerald 2023; Brady *et al.* 2015), and – more rarely – political knowledge.

The literature is still vague and inconsistent about which life-stage matters most for the formation of political involvement, partly because many studies only include respondents at or close to voting age. As noted by Serra and Smets (2022: 546), 'a clear definition and operationalization of the impressionable years are lacking.' Some contributions do find evidence of significant political learning and the formation of political interest and knowledge already at primary school age (see Abendschön and Tausendpfund 2017; Bacovsky and Fitzgerald 2023). In the UK, it has been observed that political interest begins to markedly grow (and diverge) in adolescence, around age 13–15, with continued growth in early adulthood (Fraile and Sánchez-Vítores 2020; Janmaat and Hoskins 2022; Jungkunz and Marx 2024; Prior 2019). However, such insights are typically only included as background information in the form of averages plotted by age. Personal trajectories and individual variation in the timing of development are rarely studied. Focusing on averages risks overstating stability and portraying development as smoother than it actually is.

In addition, research has identified specific detrimental or facilitating influences on political socialisation. These include youth unemployment (Azzollini 2023; Emmenegger *et al.* 2017), exposure to gender roles (Fraile and Sánchez-Vítores 2020), political events (Grasso 2016), life events (Keskintürk 2024; Ojeda *et al.* 2024; Rapeli *et al.* 2023), peer groups (Quintelier 2015b; Shehata and Amnå 2019), workplace experiences (Österman and Brännlund 2024), volunteering (Fox 2024), teacher behaviour (Jungkunz and Weiss 2024), civic education (Hernández and Galais 2022), neighbourhood deprivation (Bonomi Bezzo and Jeannet 2023), or child poverty (Akee *et al.* 2020; Jungkunz and Marx 2024).

By implication, much of this research zooms in on subgroups of young citizens, e.g. those exposed to socio-economic hardship. The question of how a 'normal' or 'typical' socialisation trajectory looks like often treated only implicitly, if at all. Methodologically, the priority has been to isolate the effects of specific experiences. In panel data, causal effects are often approximated using fixed-effects regressions or similar statistical approaches (Azzollini 2023; e.g. Emmenegger *et al.* 2017; Holbein

et al. 2020; Österman and Brännlund 2024; Prior 2019). While highly useful, these marginal effects, by design, zero in on facets of the socialisation process.

Another common longitudinal method is growth-curve modelling. Growth curves have been used to extract 'average' developmental trajectories or differences in trajectories between specific groups (Janmaat and Hoskins 2022; Neundorf *et al.* 2013; e.g. Plutzer 2002; Quintelier 2015b). This comes at the expense of potentially important insights. Rather than doing justice to meaningful phenomena such as fluctuation, instability, or differential timing, growth-curve slopes extrapolate across such complexities. These models also require non-categorical data and assume a unidirectional development of phenomena – an assumption that is hardly tenable when considering the political involvement of adolescents and young adults during a time that is characterised by biological, emotional, and social changes that can challenge existing structures and identities (Hurrelmann and Quenzel 2019; National Academies of Sciences, Engineering, and Medicine 2019).

In sum, it is exceedingly rare to utilise the potential of panel data for rich longitudinal descriptions in representative samples. This is particularly true for trajectories that encompass the critical life-stages from adolescence to young adulthood. As a consequence of these substantive and methodological tendencies, recent life-course studies of political involvement do not yield a comprehensive picture, but rather a patchwork of (undoubtedly important) explanatory factors.

Studying pathways to politics with sequence analyses

In order to uncover patterns of developing political involvement, we use sequence analytical tools (Abbott 1995; Raab and Struffolino 2023; Ritschard and Studer 2018). Sequence analysis is rarely used in political science, but is more common in sociology (Casper and Wilson 2015). Conventional methods in political science typically investigate either singular states in cross-sectional data or changes between two states (e.g. in fixed-effects models). Sequence analysis, in contrast, allows for the study of patterns in longer series of states (Aisenbrey and Fasang 2010).

A key advantage of this approach is the ability to assess the overall stability or volatility of sequences (Liao *et al.* 2022). This can convey information, for example, about the precariousness of political involvement. Longer sequences also put short-term fluctuations in perspective, which reduces the risk of mischaracterising them as meaningful (Piccarreta and Studer 2019). Importantly, temporary periods of apathy, particularly at a young age, are not the same as permanent disengagement from politics. Focusing too narrowly on short-term fluctuations disguises this

difference (Fasang and Liao 2014). Finally, sequence analysis flexibly deals with differential timing of political trajectories, which can produce misleading conclusions in cross-sectional perspective. Not being politically involved at, say, age 22 is less problematic if it is part of a trajectory that ultimately leads to (delayed) involvement.

In short, sequence analysis is an ideal tool for making accessible longitudinal information about the variation in timing and stability of trajectories of political involvement. Crucially, it strikes a balance between giving justice to and reducing complexity. In a first step, dynamics in panel data are described in their full multifaceted nature. This provides an accurate image of the sometimes messy longitudinal patterns that other methods simply gloss over. However, not every idiosyncratic fluctuation is meaningful. In a second step, cluster analysis of sequences therefore allows for zooming out and identifying the trajectories that are *relevant* for describing the population (Piccarreta and Studer 2019). Data reduction through cluster analysis, in turn, makes it straightforward to use types of trajectories as dependent or explanatory variables (Liao *et al.* 2022). This is an under-utilized way of exploiting the rich information in panel data for explanatory analyses in political-behaviour research.

Datasets and samples

We study the development of political involvement early in the life-cycle using the German Socio-Economic Panel (SOEP, Goebel *et al.* 2023) and the British Household Panel Survey/UK Household Longitudinal Survey (BHPS/UKHLS, University of Essex, Institute for Social and Economic Research 2023). Both surveys are long-run panel studies with large samples that allow us to track political involvement from adolescence to early adulthood. To achieve large enough samples, we rely on as many waves as possible, so that we cover the time periods 1984–2021 in Germany and 2001–2020 in the UK.[3]

We focus on respondents between 17 and 25 years of age. While this is already towards the end of the relevant life stage, data restrictions do not permit an earlier starting age. Longer sequences would substantially decrease our samples because of censoring, attrition, and missing information. The chosen period covers the important experiences of first-time vote eligibility and transitioning into adulthood, during which political habits tend to crystallise (Franklin 2022; Ghitza *et al.* 2023; Grasso 2016; Plutzer 2002; Schäfer *et al.* 2020).

However, as much research points to crucial political developments already in childhood (Abendschön and Tausendpfund 2017; Bacovsky and Fitzgerald 2023; Jungkunz and Marx 2024; Sears *et al.* 2023), we include

an exploratory sequence analysis of younger adolescents spanning the age period 11–15 using the British youth questionnaires.

It is important to note right away that these two household panel data sets have limitations of their own even though they are the biggest and most established data sources for the study of (political) socialisation experiences. Political concepts are frequently less accessible than in studies carried out by political scientists, primarily because political views and involvement are not the primary focus of the study. Thus, aspects like political knowledge that may be useful to study political socialisation in different life stages, are not available (see Ferrín *et al.* 2019).

At the same time, we are studying young people who are not yet entitled to vote, and concentrating on voting would severely limit the dynamic analysis of political participation to snapshots taken every four years (see also Janmaat and Hoskins 2022).

Measuring political involvement

As explained, our conceptualisation includes political interest and having a party identification as foundational elements of political involvement. While we are not interested in fully disentangling the two routes to involvement, our indicator is designed to capture both of them. Fortunately, political interest and party identification also happen to be among the few variables regularly included on a yearly basis in household panel datasets (Jungkunz and Marx 2022). This is not true for voting, which occurs with larger intervals and only among voting-age respondents.[4] Again, it would be insightful, in principle, to distinguish apathy and involvement from *alienation*. However, this aspect is more difficult to measure. Suitable scales (e.g. populist attitudes scale, political trust, external efficacy) are not regularly included in household panels (Jungkunz and Marx 2022). It would also be useful to distinguish support for radical anti-system parties, but it is rare in the party systems and periods we study.

Concretely, we construct a categorical indicator with three states of political involvement. They are based on standard political-interest scales from 1–4 and dataset-specific questions about party identification.

1. *Apathetic* if the respondent does not identify with any party and has no or little interest in politics
2. *Independent* if the respondent does not identify with any party but has (strong) interest in politics (i.e. values three or four)
3. *Partisan* if the respondent identifies with any party

As it is plausible to consider partisans politically involved irrespective of interest, we refrain from distinguishing Dalton's (1984, 2014) 'cognitive'

and 'ritual' partisans (i.e. those with high or low interest). This would increase sequence complexity, while not being at the core of our research questions. However, we show sequences based on the fourfold categorisation in Online Supplementary Appendix B.5 and discuss additional insights in Footnote 7.

Missing values

Sequences analysis depends on fundamental choices, most notably the length of sequences and how to deal with missing waves. In our case, many respondents enter the panel after age 17, drop out before age 25, or have missing data within sequences. Although missing data and unbalanced sequence length can affect results, there is no agreed upon way to handle the problem (Liao *et al.* 2022). Listwise deletion of incomplete sequences or coding missing values as separate states are the most common approaches (Piccarreta and Studer 2019). An alternative is imputation from surrounding waves with valid data (Halpin 2016).

We address this issue in multiple steps. First, we impute missing states from the preceding or following wave (in that order). This strategy is appropriate, as we are interested in broad patterns, not the exact timing of changes. Second, we remove sequences with remaining missing values, mostly because of censored data at the beginning or the end. To address concerns about non-random missingness, we validate the representativity of our final sample in the Online Supplementary Appendix in Tables B.1 and C.1.[5]

Analytical procedures

The analysis proceeds in three steps. First, we present a descriptive analysis of longitudinal involvement patterns based on common visualisation tools in sequence analysis (Fasang and Liao 2014). They provide intuitive graphical information on when political involvement typically begins to develop (or not) and how complex and diverging individual patterns of political involvement are.

Second, we zoom out in order to identify common patterns. Although the aggregation in types implies information loss, it allows to abstract from idiosyncrasies that might cause minor deviations in sequences patterns (Piccarreta and Studer 2019). Concretely, our goal is to develop an empirically-informed typology of how young citizens develop political involvement.

To this end, we follow standard procedure and cluster sequences. Clustering techniques in sequence analysis are generally based on distance or dissimilarity measures reflecting timing, order of states, and duration

of trajectories (Studer and Ritschard 2016). For the main analyses, we use the most common optimal matching (OM) measure with a partitioning around medoids (PAM) algorithm to calculate distances between sequences and clustering typologies (Abbott and Forrest 1986; Abbott and Hrycak 1990). Intuitively, the idea behind OM is to quantify how many changes would be necessary for two sequences to become identical – and to group them on that basis. It is important to acknowledge that the choice of dissimilarity measures and clustering algorithms is contested in the methodological literature. We therefore validate our results with several common additional dissimilarity measures that refine aspects of OM: Dynamic Hamming distance (Lesnard 2010), Euclidean distance (Deville and Saporta 1983), and OM of transition sequences (Studer and Ritschard 2016). As none of them are an agreed-upon best practice, we present them in the Online Supplementary Appendix along with a detailed description of the sequencing and clustering process in Online Supplementary Appendix A.[6]

Sequence analysis has recently been facilitated by the development of encompassing statistical packages (Liao *et al.* 2022). We rely on the computationally efficient workhorse package *TraMineR* (Gabadinho *et al.* 2011) in *R* and complement it with the *ggseqplot* package (Raab 2022) for advanced visualisation. Common alternatives for *Stata* are the *SQ* (Brzinsky-Fay *et al.* 2006) and *SADI* (Halpin 2017) packages.

In a third step, we predict individual cluster membership in multinomial logistic regression with individual and parental variables (e.g. SES and labour market participation). This allows us to estimate characteristics that make types of political involvement trajectories more or less likely (Janmaat and Hoskins 2022; Jungkunz and Marx 2024; Lahtinen *et al.* 2019; Prior 2019). Parental variables include income, education and political interest. On the individual level, we include sex, education and vocational training, birth decade, migration background, years not in education or training (NEET), region, and civic engagement. The exact country-specific operationalizations are in online appendices B and C.

Developmental trajectories of political involvement

Figure 1 is a sequence index plot. Every line represents an individual's horizontally ordered succession of the three states by age (apathetic, independent, partisan). For an intuitive interpretation, individual sequences are vertically sorted. Beginning with age 17, sequences are ordered iteratively for every year by state and – if identical – by the succeeding state as a secondary criterion. To illustrate the interpretation, the respondent in the bottom row in Germany is characterised by being apathetic between

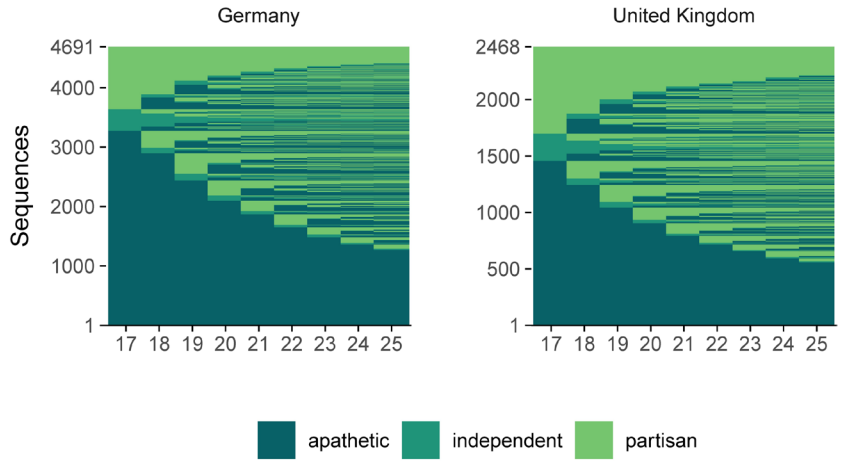

Figure 1. Sequence index plots of political involvement in Germany and the UK. *Note:* Individual sequences in Germany (1984–2021) and the UK (2001–2021) in age period 17–25. Ordered iteratively by states and subsequent states (in case of ties).

ages 17 and 25, whereas the respondent in the top row shows consistent partisanship. The respondent in row 3,000 is apathetic at age 17, becomes an independent at age 18, a partisan at age 19, and fluctuates between being independent and apathetic between ages 20 and 25.

The first observation is the striking similarity of the pictures in Germany and the UK. In both countries, the majority of respondents have neither political interest nor a party identification at age 17. Substantial shares of them remain apathetic throughout late adolescence and early adulthood (as indicated by the uninterrupted dark-green bar in the bottom). A smaller share already has a party identification at age 17 and maintains it throughout the period (always light green). The multi-coloured wedge between these groups indicates a large share of respondents changing between states. The majority moves from apathy to one form of inclusion with variable stability. A notable difference is the higher share of partisans in the late teenage years in the UK, which might be a consequence of its two-party system.

As indicators of the magnitude of change and stability, we show in Figure 2 the probabilities of year-to-year transitions between states (Panel A) and the entropy distribution (Panel B). Because the results are quite similar in Germany and the UK from here on, we only show the German results in the main text and provide all information about the UK in the Online Supplementary Appendix C. Panel A confirms that sequences are rather stable. The probability that apathetic and partisan respondents at time t remain in their states at $t+1$ is about 71–84%. Independence is less

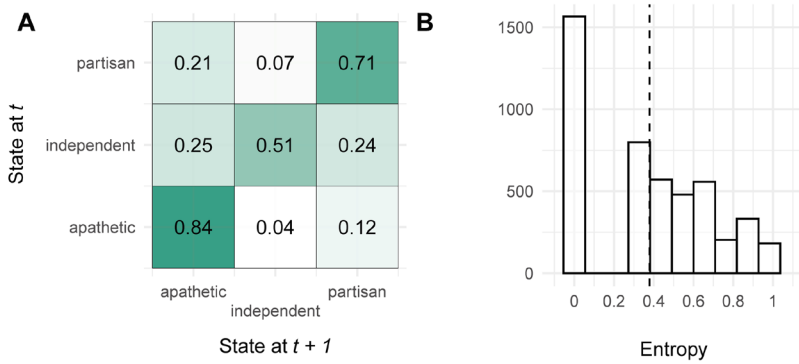

Figure 2. Transition plot and entropy of sequences (Germany). *Note:* Panel A displays the state transition plot of sequences, i.e. the probability to transition between two states in subsequent periods. Panel B shows the histogram for the distribution of the normalised entropy values of sequences. Higher values indicate greater change frequencies across the life-cycle. The dashed line indicates the mean value.

stable, with a 51% probability. For this group, the probabilities of becoming apathetic or partisan are 25 and 24%, respectively. Most other transition probabilities are fairly low.

Panel B displays the normalised Shannon entropy, which captures the uncertainty of predicting states in entire sequences. Higher values indicate sequences with greater change (e.g. a different state in every period), whereas zero indicates complete stability (i.e. the same state in every period). The bar on the very left shows that one third of all sequences do not exhibit change between two time points at all, which implies that political involvement has been cemented substantially already prior to the age of 17 (see also Jungkunz and Marx 2024).

Overall, we therefore have a picture of pronounced stability of apathy and partisanship, despite the young age of our respondents. The modal dynamic is one of not experiencing any change in states between ages 17 and 25. Independence, in comparison, is a much less stable state. Thus, while young adults may experience some sort of change throughout the years, political involvement seems to stabilise rather quickly.

Clustering trajectories

In a second step, we use cluster analysis to aggregate sequences into a few types. Because cluster analysis is an explorative technique, clustering should be based on the empirical quality of clusters and their theoretical validity (Piccarreta and Studer 2019). As we report in Online Supplementary Appendix A, Studer's (2021) approach based on Average Silhouette Width

and parametric bootstraps favours a four-cluster solution. Alternative clustering techniques confirm four clusters as fitting the data. As discussed below, each of the four clusters appears meaningful, which is why we adopt the four-fold typology.

Figure 3 shows (in the upper panels) the distributions of states in our four clusters by age. The bottom panels show, in addition, sequence frequency plots. To better characterise each cluster, they show the respective ten most frequent sequences. The varying share of these ten sequences in their cluster is indicated on the y-axis and the weight of individual sequences by height of the bars. For example, the ten most frequent sequences in the first cluster account for 75% of all its sequences, with the lion's share being constantly apathetic.

This first cluster, the largest of the four, is hence straightforwardly labelled 'Stable apathy' ($n = 2312$). It captures the previous observation that many young citizens enter and leave the period without once being political interested or close to a party.

The second-largest cluster is the mirror image and is labelled 'Stable involvement' ($n = 1149$). It consists of many respondents who acquired a party identification before entering our sample and who are consistently

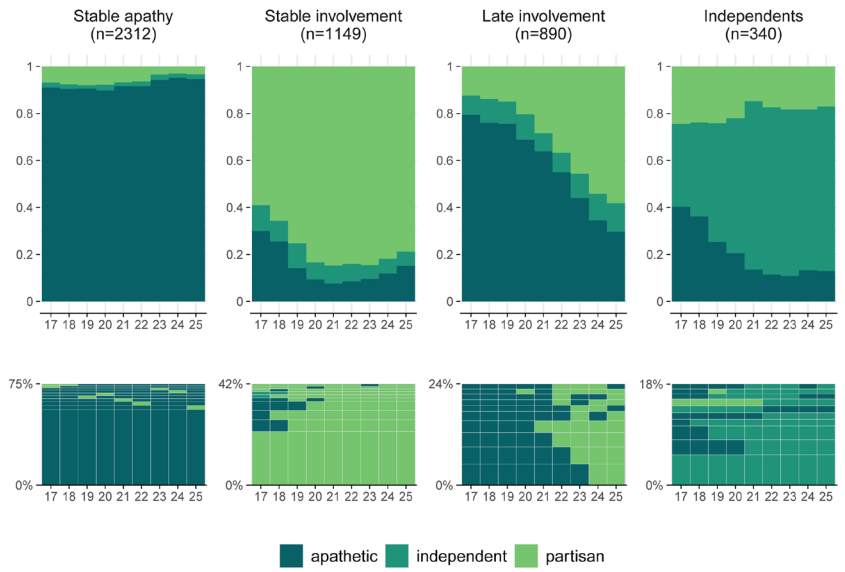

Figure 3. Sequence distribution and sequence frequency plot by cluster (Germany). *Note:* The bottom panels show the ten most frequent sequences of each cluster. The varying share of these ten sequences in the respective clusters is indicated on the y-axis. The height of the bars is weighted by the share *within* the most frequent sequences.

politically involved. Another frequent trajectory is early transition from apathy to subsequently stable partisanship.

Finally, we extract two clusters with less stability. The lower shares of the ten most frequent sequences also show that they are less easily characterised by a few typical trajectories. Particularly intriguing is the cluster we call 'Late involvement' ($n = 890$). A clear majority in it starts from apathy. Between ages 21 and 23, there is a rapid move into mostly partisanship. This pattern of late involvement is a good example of an observation that is easily missed by other methods, but is brought to the fore by sequence analysis.

The final cluster is relatively small ($n = 340$) and diverse in its trajectories. It is the only one dominated by paths into political independence. While a sizeable group shows this as a stable state, 'cognitive mobilisation' of initially apathetic teenagers is another frequent pattern. Interestingly, the biggest shifts seem to appear slightly earlier in the age span between 17 and 20. It is not entirely surprising that independents show more volatility compared to arguably more habitual states of apathy and partisanship.[7]

While a full discussion lies beyond the scope of the main text, Online Supplementary Appendix C documents a notable convergence in sequence types across national contexts. Cluster analyses conducted on the UK data replicate the theoretically and empirically meaningful four-cluster solution identified in the German case (Figures C.2 and C.3). Moreover, the relative distribution and frequency of sequence types across clusters are highly similar (Figure C.4). These results are robust to alternative clustering algorithms in both countries, as documented in Figures B.2–B.7 (Germany) and Figures C.4–C.9 (UK).

Parental and individual-level predictors of trajectory type

In a final step, we predict cluster membership based on several parental and individual-level variables using multinomial regression models. We describe the coding of all covariates in detail in Tables B.6 and C.7 and we present the full models in Tables B.2 and C.2 in the Online Supplementary Appendix.[8]

Figure 4 shows the predicted absolute probabilities of cluster membership by parental covariates (controlling for all individual-level variables). The gaps between coefficients for high and low values mean that parental income, education, and interest predict stable apathy and involvement quite well. This is in line with the previous literature. We find the strongest differences for parental interest, where individuals have a 67% probability to experience stable apathy if parental political interest is low, but only a 36% probability if interest is high. Conversely, respondents have a 13% likelihood to experience stable involvement if interest is low, but a

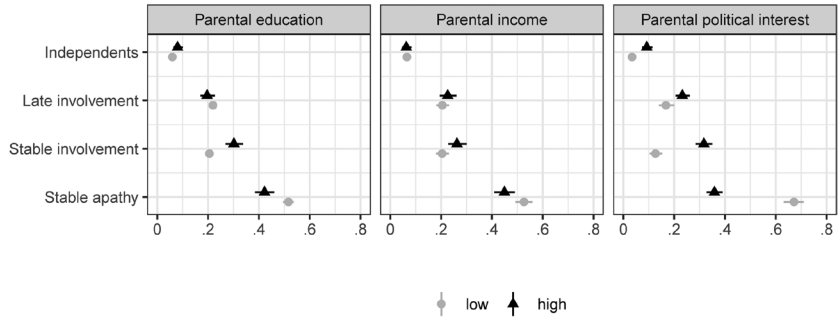

Figure 4. Predicted probabilities of cluster membership by parental covariates (Germany). *Note:* Predicted probabilities of cluster membership based on multinomial regression with 95% confidence intervals. Models include individual level control variables. Parental education is considered 'high' if one of both parents holds a degree that allows for university entrance. Income distinguishes between the first ('low') and the fifth ('high') income quintile. Political interest distinguishes between no ('low') and strong ('high') interest.

32% chance if interest is high. The gap for education and income is smaller, but still substantial (close to or above ten percentage points).

Interestingly, parents have less influence on late involvement and independence. High parental political interest makes it more likely to be in either cluster, but the differences to low interest are smaller (23–17% and 9–3%, respectively). Parental education and income have no effect on these clusters.

Since parental background has such a strong impact on either stable involvement or apathy, but only little effect on whether individuals experience involvement later in the life-course, we show the estimated absolute probabilities of late involvement by individual level covariates in Figure 5. The strongest predictor for late involvement is certainly education and vocational training.[9] Thus, the probability of experiencing late involvement increases from 18–24% if education is high. Even stronger though, is the impact if we combine vocational training and education. Here we find that the likelihood of late involvement is around 9% if respondents have neither vocational training nor a college degree. Vocational training alone is associated with a ten percentage points higher probability (19%), whereas holding a college degree is associated with a 24% chance. Having vocational training and college does, however, not significantly increase the likelihood of late involvement further (26%).

We find no significant correlates of late involvement for years in NEET, migration background, region, or sex. Only in one case do we find that respondents born in earlier decades are slightly more likely to experience late involvement. For independents, the pattern is quite similar with regard to education and vocational training. However, we also find that

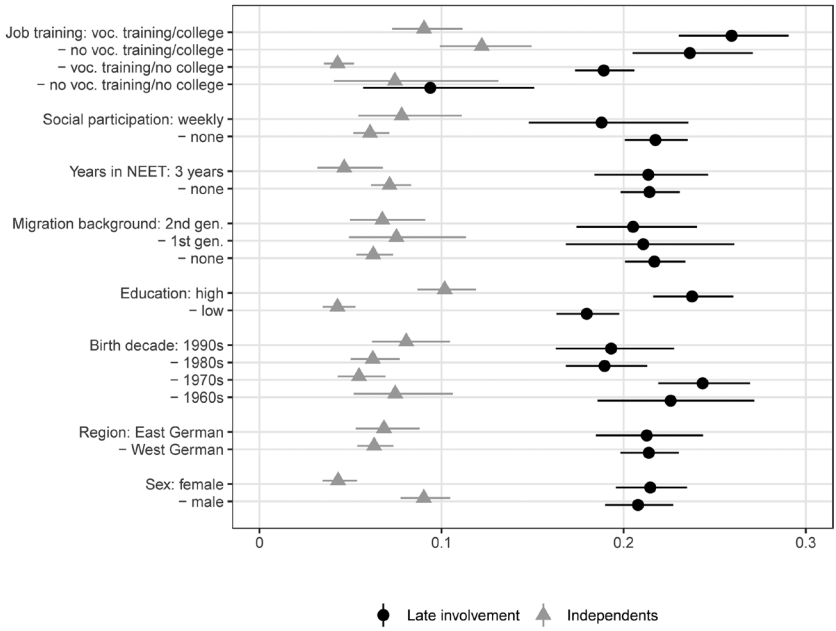

Figure 5. Estimated probabilities of late involvement and independents by individual level covariates (Germany). *Note:* Predicted probabilities of cluster membership based on multinomial regression with 95% confidence intervals. Models include parental level control variables. Education refers to highest level of education that respondent has ever acquired and is considered 'high' if respondent holds a degree that allows for university entrance.

men (9%) are more likely than women (4%) to be independents. In sum, this indicates that political involvement is fostered to a very large degree already in adolescence.[10]

Trajectories of involvement among teenagers

Our findings show that political apathy and involvement are largely stabilised in late adolescence onwards. This shifts the focus to involvement trajectories at an even earlier age. Unfortunately, this is subject to various data restrictions, e.g. in terms of availability of indicators or panel attrition of adolescents. That said, the youth questionnaires of the BHPS do allow for studying the development of political involvement of children between age eleven and 15 (Janmaat and Hoskins 2022; Jungkunz and Marx 2024). Comparability to the adult questionnaires is not perfect. Instead of party identification, we have to rely on a question asking which party children would vote for were they eligible. Similarly to the analysis of adults, we created a categorical indicator that separates children that are either 'apathetic,' 'independent,' or 'would vote for a party.' We describe

the data, coding, and procedure in greater detail in Online Supplementary Appendix C.

In general, we find that the pattern of political involvement trajectories is strikingly similar to older respondents, although sequences are unsurprisingly more turbulent (Figures C.15 and C.16 in the Online Supplementary Appendix). Similar to the older respondents, we find two clusters that are characterised by early apathy and early involvement at around age eleven (Figure 6). Together, they form a majority of respondents. This supports research arguing that political involvement and inequality have roots reaching into childhood. A third cluster captures 'emerging involvement' between age eleven and 15.[11] This prototypical socialisation trajectory from apathy to involvement can be observed only for about a fourth of the young respondents.

Most importantly, we find a fourth cluster, which we label 'teen apathy.' It is the smallest cluster, but still accounts for a fifth of respondents. It comprises children who were already politically involved at age 11–12, but seem to lose interest in politics and parties around the age of 13–15.[12] This nonlinear pattern shows that political involvement is not a one-way street, even when children are still in school. While a crowding-out of parents' party preferences through their own emerging political views

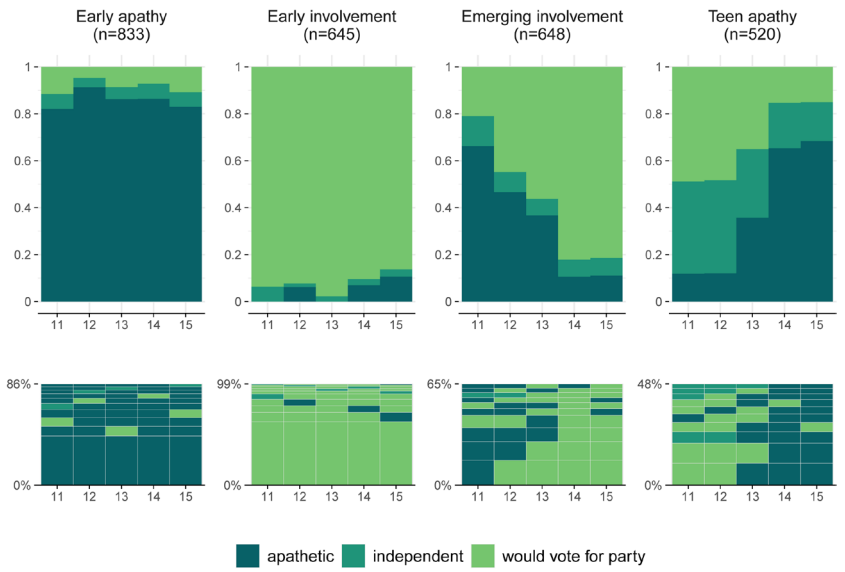

Figure 6. Sequence distribution and sequence frequency plot by cluster (UK, age 11–15). *Note:* Data based on youth questionnaire of the BHPS (age 11–15). The bottom panels show the ten most frequent sequences of each cluster. The varying share of these ten sequences in the respective clusters is indicated on the y-axis. The height of the bars is weighted by the share *within* the most frequent sequences.

could be expected, this should lead to more and not fewer independents. It is therefore crucial to know why some teenagers, at least temporarily, lose involvement in politics at that age and under what circumstances.

Conclusions

This article has aimed to contribute to the understanding of political involvement and apathy, from a life course perspective. Sequence analysis, a hitherto underexplored method in political science, allowed us to provide a comprehensive picture of the typical longitudinal patterns through which young citizens either become politically engaged or remain apathetic. This approach offers a more nuanced and robust measure of political apathy, distinguishing between young citizens who occasionally disengage from politics and those who are durably apathetic. This distinction is crucial for understanding the true extent of political exclusion among the youth.

Our findings underscore the importance of early experiences and parental influences in shaping political trajectories. A surprisingly large share of young citizens has its political future decided already at age 17 – or in many cases even at age 11. This is an urgent reminder of how important childhood is for the development of political integration and of how little political science still has to say about this life stage.

While these findings broadly align with existing accounts of the life course, our sequence analysis has unearthed novel insights. One such insight is the identification of a non-negligible cluster of late developers. Future research should aim to better understand the conditions that facilitate this developmental pattern. Understanding what facilitates political involvement in young adulthood despite unfavourable parental backgrounds could have important policy implications for measures to overcome apathy while it is still possible in the life course. An example is the positive effect of vocational training in Germany. Integrating teenagers from disadvantaged backgrounds at an early age in workplaces as sites for political socialisation might be a key advantage of the German training regime. However, we clearly need more causality-oriented research on this precise influence before formulating robust policy recommendations.

Another intriguing observation in the younger age group is the emergence of teenage apathy around 13 years of age. While it has already been noted that parental influences on party identification can weaken at this age (Sears et al. 2023), the emergence of apathy among previously involved children represents, to our knowledge, a previously underappreciated non-linearity in the life course. Understanding what leads to this pattern, its long-term consequences, and how the educational system might address it, is essential.

Additionally, a notable finding is the strong similarity in the clustering of political trajectories in two countries with rather different school systems, paths into the labour market, and party systems. This raises the key question of how generalisable these observed patterns are across mature democracies, and possibly even beyond.

In normative terms, our findings challenge (or at least complement) the notion that political disengagement, particularly among the lower classes, is predominantly a result of alienating experiences of misrepresentation. Solt (2008: 58) argues, for example, that policy outcomes in the form of income inequality lead relatively poor voters 'to conclude that politics is simply not a game worth playing.' A similar link between policy supply and disengagement is often implied in arguments about the descriptive or substantive misrepresentation of lower classes (Elsässer and Schäfer 2022; Rennwald and Pontusson 2022). As Evans and Hepplewhite (2022: 581) put it: 'If political parties are not providing the policies – or politicians – that working-class people want, then it is entirely rational for them to no longer incur the costs of voting and instead abstain.'

Our research indicates that a significant segment of young citizens has never developed sufficient political attention to be alienated in this way in the first place. We, hence, have doubts about members of early or stable apathy clusters being easily mobilised if mainstream parties were simply to supply the 'right' policies. While linking our clusters to voting behaviour is another fruitful avenue for future research, our observation, again, points to the urgent need for both scholars and policymakers to focus on the childhood foundations of political inequality. It is conceivable, for example, that perspectives on socialisation and representation have to be combined for a better understanding of political disengagement. This would be the case if experiences of (mis)representation influence children in their formative years or through their parents (Castanho Silva 2025; Firebaugh and Chen 1995; Ghitza *et al.* 2023).

Our findings also speak to the ongoing debate about the growing alienation from politics among younger generations (Foa *et al.* 2020; Wuttke *et al.* 2022). Although political apathy and alienation evidenced by dissatisfaction with democracy are different phenomena, both are certainly related. Adolescents growing up in apathy – or experiencing 'teen apathy' – can potentially become alienated, resulting in a higher likelihood of engaging in alternative forms of participation, such as support for populist movements or issue-based activism. Future research can therefore build on our findings to link political alienation among younger generations to political involvement trajectories in adolescence.

Besides providing substantive insights into the political life cycle, this article has highlighted the value of sequence analysis in political science. We believe it has the potential to yield deeper insights into the development of

political involvement and apathy also at later stages. Future research should continue to explore these possibilities. A straightforward starting point would be to study non-linearities in people's 20s and early 30s. This period has been described as a 'roller-coaster ride,' because turnout levels tend to drop in these turbulent years (Bhatti *et al.* 2012). Studying this period through sequence analysis can provide deeper insights into (individual variation in) this important phenomenon. For example, it can help identify whose engagement declines and subsequently recovers, and uncover the specific life events that might contribute to these changes (Highton and Wolfinger 2001; Ojeda *et al.* 2024; Stoker and Jennings 1995; Willeck and Mendelberg 2022). Similarly, sequence analysis could be applied to the marked drop of political involvement in old age (Serra and Smets 2022: 549).

The list of relevant research topics could be expanded further, including variations in trajectories based on gender, social class, or migration background. In all these cases, it seems imperative to us to harness the potential of panel datasets to obtain robust descriptive insights into the complexities of the life cycle. Providing such a description as a foundation for causal analyses, in our view, means putting the horse before the cart. This is a strength of sequence analysis from which political science could benefit enormously.

Notes

1. We use 'political involvement' as an overarching concept covering cognitive, emotional, or behavioural engagement with political affairs. 'Apathy' denotes low political involvement. A more detailed discussion will follow in the Sections 'Conceptualizing political involvement' and 'Measuring political involvement.' As explained there, the behavioural component (i.e. political participation) will not be part of our empirical analysis for two pragmatic reasons: we are dealing with young citizens, often not yet eligible to vote; and the study of voting severely restricts the dynamic examination of political involvement to snapshots every four years.
2. The orientation toward mainstream party politics points to another possible conceptual distinction, namely between apathy and *alienation*, i.e. political interest coupled with a rejection of mainstream politics. Likewise, identification with a party can lead to voting without much interest in political affairs ('ritual partisan'). Among some young voters, party identification transmitted through parents might precede political interest. In our sample of Germans and Brits, 12 and 13 percent indeed have a party identification but low or no political interest at the age of 18. Conversely, there are 'apartisans' deeply interested in politics. The share in our sample of (very) interested respondents without party identification is nine percent (Germany) and eight percent (UK). While our approach is well-suited to addressing this aspect, it is complex enough to warrant treatment in a separate paper.
3. The SOEP and the BHPS/UKHLS constitute the only two available panel data sets which allow us to analyse long trajectories of political involvement. Other panel data sets are usually very limited either in terms of the

available political concepts, the number of available panel waves, concepts being available in consecutive waves throughout the panel, or sample size/substantial panel attrition (see further Jungkunz and Marx 2022).

4. Empirically, our indicator of political involvement and actual political participation are strongly, but not perfectly correlated. In Germany, 49% of the apathetic voted, compared to 83% of partisans and roughly 70% of independents. In the UK, 38% of the apathetic voted, while 73% of partisans and approximately 64% of independents voted.
5. The overall pattern of the results without imputation are very similar to the findings reported in the main text below.
6. Technically, we set the substitution-cost matrix (sm) to the transition rate (for OM, OMstran, and DHD) and *indel* to *max(sm)/2*. For OMstran, we additionally set the origin-transition trade-off weight at 0.5.
7. Overall, the findings are similar when using the fourfold classification by Dalton (2014). The results in Online Supplementary Appendix B.5 also suggest a four-cluster solution comprised of respondents in stable apathy or involvement, late involvement, and independents. However, the finer-grained breakdown reveals that individuals characterized by stable involvement are largely cognitive partisans, i.e. partisans with high political interest. Conversely, individuals who experience late political involvement are largely ritual partisans, i.e. partisans with low political interest.
8. Although there is some correlation among predictors, multicollinearity is generally rather low (see Table B.3 in Online Supplementary Appendix B).
9. The results for education and job training indicators are from separate models due to strong multicollinearity of the nature of the indicators.
10. For reference, individual level factors also predict stable apathy and involvement. Thus, respondents with high education (32% vs. 16% with low education), those with weekly social participation (37% vs. 20% with no participation), respondents born in the 1960s (35% vs. 18–24% in younger cohorts), west Germans (25% vs. 17% east Germans), and men (28% vs. 18% women) are more likely to experience stable involvement trajectories (Figure B.9). In turn, low education (62% vs. 33% with high education), respondents born in the 1990s and 1980s (54% vs. 47% in the 1970s and 35% in the 1960s), east Germans (55% vs. 47% west Germans), and women (57% vs. 42% men) are more likely to experience stable apathy trajectories (Figure B.10). These patterns are largely similar for the UK (Figures C.13 and C.14). Taken together, both parental and individual-level factors are important predictors for stable trajectories. However, individual-level characteristics are relatively more important in the prediction of late involvement trajectories.
11. We adjusted the labels of the typologies, as we cannot speak of 'stable' patterns given the very young age and the shorter time horizon.
12. All clusters are consistent across different clustering algorithms (Figures C.17–C.24).

Acknowledgements

We thank Alice Barth, Florian Fastenrath, and the anonymous reviewers for their suggestions.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the Deutsche Forschungsgemeinschaft [DFG – Project no. 490987363 and 505158386]. This publication was supported by the Open Access Publication Fund of the University of Bonn.

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Data availability statement

Data can be accessed at the SOEP Research Data Centre (https://www.diw.de/en/diw_01.c.601584.en/data_access.html) and the UK Data Service (https://beta.ukdataservice.ac.uk/datacatalogue/doi/?id=6614#19). Replication code can be found in the corresponding author's Harvard Dataverse: https://dataverse.harvard.edu/dataverse/sjungkunz

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