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The effect of generation and age on turnout to the European Parliament – How turnout will continue to decline in the future

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ABSTRACT

Electoral turnout has been declining at national elections in almost all Western democracies. European Parliament (EP) elections have followed the same trend. We utilize a previously suggested method for separating the effect of generation, age and period and show that a major part of the decline can be attributed to the difference in turnout between pre- and post-baby-boomer generations though there are substantial differences across countries. Age has a curvilinear effect on turnout even when generation is taken into account, but the age composition has remained relatively stable over time. We utilize the estimated coefficients to predict future changes in turnout as a result of the expected shifts in the generational and age compositions over the next 30 years. The results point to a continued decline in turnout to EP elections – especially between the years of 2020 and 2040.

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1. Introduction

Electoral turnout is often regarded as a central indicator of democratic health (Beetham, 1995; Lijphart, 1997). At elections, citizens can influence politicians by punishing or rewarding them and thereby guide public policy. Equally important, elections are a central premise for the legitimacy of the political system as such. If turnout decreases, the role of the legislators as the representatives of the people may be weakened (Franklin, 1999; Key, 1961).

Political scientists have justly been concerned that turnout the last couple of decades has been declining in almost every Western country (e.g. Blais et al., 2004; Cassel and Luskin, 1988; Gallego, 2009). Elections to the European Parliament (EP) are no exception (van der Eijk & van Egmond, 2007; Flickinger and Studlar, 2007; Franklin, 2001; Mattila, 2003). Since the first direct elections in 1979, turnout has declined to a level where it is regarded a serious threat to the legitimacy of the European polity. In 1979 the average turnout was 66 percent whereas it was 46 percent in 2009. Even when we take into account that the composition of countries has changed over time, there has been a substantial decline (6–7 percentage points). Thus, there is a need for understanding the causes of this decline and projecting its consequences for future turnout (see also Konzelmann et al., 2012).

First, we investigate the causes of turnout decline. We follow the lead of Blais et al. (2004) and focus on the total effects of generations, age and period. A (social) generation – sometimes labelled a cohort – is a group of individuals born in a certain period of time and therefore possibly sharing common social-historical socializing experiences which may affect their political values and their turnout at elections (Walczak et al., 2012; Franklin, 2004; Inglehart, 1989; Mannheim, 1952; Putnam, 2000; see Goerres, 2009 for a detailed discussion). If generations have different tendencies to vote, overall turnout at elections could potentially be strongly affected by the composition of the groups in the electorate. Yet, as Franklin (2004: 59) note, the role of generational replacement in explaining turnout has not been extensively explored in the literature.

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Whereas previous generational studies on turnout mainly investigate national elections in individual or a limited number of countries (Blais et al., 2004; Gallego, 2009; Strate et al., 1989; Wass, 2007a, 2007b)[1] we look at EP elections in 11 countries, across all election years from 1979 to 2009. This allows us to detect common patterns and differences between countries. We focus on EP elections which may differ from national elections since they are second order elections (Reif and Schmitt, 1980). If generational effects even exist in this context, it adds to the general importance of these types of effects across election types.

Second, we investigate what the past decline implies for future levels of turnout. Thus, whereas previous studies mainly use the effects of age and turnout to elaborate on the causes of the turnout decline (Blais et al., 2004; Gallego, 2009; Wass, 2007a, 2007b), we also use the results to simulate future changes (Konzelmann et al., 2012). If there are indeed – as previously suggested – great generational differences between the pre- and post-baby-boomer generations, this is likely to affect turnout further in the future, since replacement of the pre-baby-boomer generations will continue in the years to come. Additionally, we consider the potential influence of age per se (Van der Brug and Kritzinger, 2012). The Western population is ageing, which may also contribute to a future turnout decline if there is a curvilinear relationship between age and turnout, as some of the turnout literature suggests (e.g. Wolfinger and Rosenstone, 1980).

The article is structured follows. After this introduction, we discuss the turnout at EP elections and identify the decline, separating the structural decline from the change in composition of member states. Next, we discuss the relevant literature and our theoretical expectations. We then discuss the dataset and research design. The results section is divided in three parts – a descriptive one, one focusing on the causes of turnout and one projecting future consequences of changing compositions. The article concludes with a discussion of the implications of our results.

2. Turnout at EP elections

There are remarkable differences in the electoral turnout to EP elections across member states and over time (Table 1). Participation in the election in 2009, for instance, varies from less than 20 percent in Slovakia to more than 90 percent in Belgium and Luxemburg. The previous scholarly literature has pointed to factors such as compulsory voting in explaining the cross-national differences (Franklin, 2001, 2007). Similarly, part of the differences can be explained by the Nordic countries' more participatory political culture than the average EU-member (Goul Andersen and Hoff, 2001).

In addition to the consistent differences in the absolute level of turnout between countries, we see substantial variation across time. The overall trend is a decline over the last 30 years since the first elections in 1979. When we look at all member states, turnout has declined about 20 percentage points. Part of this development is due to changes in the composition of EU countries – the new member states have a substantially lower turnout than the founding members. Nevertheless, even if we only look at the EU-12 countries (minus Germany), there is a considerable drop, 6–7 percentage points, and the decline occurs in most countries except the compulsory voting countries (in Italy, abolishing of mandatory voting can have had an influence on the decline). The 7 percentage points drop for the EU-12 countries occurs from 1989 to 1999.

Part of the fluctuations in turnout can be explained by some contextual variables proposed by Franklin (2001, 2007): electoral saliency and first time election boost. For instance, we see that turnout has increased substantially at the most recent election in Latvia and Denmark which were held simultaneously to a national referendum. In Sweden and Estonia, the EP election was held shortly before a national election which may account for the increase. There are also some possible examples of the "first-time-boost" to turnout – i.e. in the first EP election a new member state usually has higher turnout than the following (Franklin, 2001). This can partly explain the decline for the new member states in the most recent election.

Table 1
Turnout at EP elections (percent).

	1979	1984	1989	1994	1999	2004	2009
Belgium	91.4	92.1	90.7	90.7	91.1	90.8	90.4
UK	32.4	32.6	36.4	36.4	24.0	38.5	34.7
Denmark	47.8	52.4	46.2	52.9	50.5	47.9	59.5
France	60.7	56.7	48.8	52.7	46.8	42.8	40.6
Germany	65.7	56.8	62.3	60.0	45.2	43.0	43.3
Ireland	63.6	47.6	68.3	44.0	50.2	58.6	58.6
Italy	85.7	82.5	81.1	73.6	69.8	71.7	65.1
Luxemburg	88.9	88.8	87.4	88.6	87.3	91.4	90.8
Netherlands	58.1	50.9	47.5	35.7	30.0	39.3	36.8
Greece	–	80.6	80.0	73.2	70.3	63.2	52.6
Spain	–	–	54.7	59.1	63.1	45.1	44.9
Portugal	–	–	51.1	35.5	39.9	38.6	36.8
Sweden	–	–	–	–	38.8	37.9	45.5
Austria	–	–	–	–	49.4	42.4	46.0
Finland	–	–	–	–	30.1	39.4	40.3
Czech Republic	–	–	–	–	–	28.3	28.2
Estonia	–	–	–	–	–	26.8	43.9
Cyprus	–	–	–	–	–	72.5	59.4
Lithaunia	–	–	–	–	–	48.4	21.0
Latvia	–	–	–	–	–	41.3	53.7
Hungary	–	–	–	–	–	38.5	36.3
Malta	–	–	–	–	–	82.4	78.8
Poland	–	–	–	–	–	20.9	24.5
Slovenia	–	–	–	–	–	28.4	28.3
Slovakia	–	–	–	–	–	17.0	19.6
Bulgaria	–	–	–	–	–	–	39.0
Romania	–	–	–	–	–	–	27.7
Mean EU-9	66.1	63.0	63.3	59.3	56.2	60.1	59.6
Mean EU-12	66.1	64.9	62.9	58.4	56.6	57.1	55.5
Mean all countries	66.0	64.1	62.9	58.5	52.4	47.8	46.2

European Parliament (2010). The reported means in the bottom of the table are unweighted averages of the country level turnout. In the EU-9 and EU-12 means, Germany has been excluded from the averages due to the reunification. The blanks in the table are due to countries not being members at the election in question. Note that new members often have a first election outside the common election years. The turnouts in these elections are: Greece 1981–81.5, Spain 1987–68.5, Portugal 1987–72.4, Sweden 1995–41.6, Austria 1996–67.7, Finland 1996–57.6, Bulgaria 2007–29.2, and Romania 2007–29.5.

[1] A couple of notable exceptions are Franklin (2004); Franklin et al. (2004) and Smets (2010).

Nevertheless the general decline in turnout for the EU-12 since 1989 is less obvious in terms of the distribution of election level predictors, since these distributions do not change that much over time. The decline in turnout thus appears to be more than just structural in character. In the remainder of this article, we seek to understand the general decline in turnout from the composition of generation and age and from period effects – and to examine what the results implies for future turnout. Yet, we will control for the variables proposed by Franklin (2001, 2007).

3. Age, generation and period – the existing literature

The possible causes behind the turnout decline for national elections have attracted the attention of political scientists for decades (e.g. Blais et al., 2004; Cassel and Luskin, 1988). Scholars have been particularly attentive to the influence of age, generations and period on the development in aggregate turnout across time (Blais et al., 2004; Franklin, 2004; Gallego, 2009; Konzelmann et al., 2012; Wass, 2007a, 2007b). The purpose of this study is to estimate the magnitude of the effects of the three factors in order to explain the turnout decline and to inquire into future changes. The purpose is not to delve deeper into the causal mechanisms that drive each of the separate effects. Still, it is important that we consider in which way generations, age and period would affect turnout.[2]

First, different generations may have different turnout rates. Following the sociology of generations, individuals born in the same period of time may share exposure to certain socio-historical events that shape their political socialization (Franklin, 2004; Inglehart, 1989; Mannheim, 1952; Putnam, 2000). It is often thought that individuals are more open to external stimuli during their "impressionable years" in late adolescence and early adulthood (Hyman, 1959; Dawson and Prewitt, 1969; Easton and Dennis, 1969; Goerres, 2009: 29). These socializing experiences can in some cases be common across several countries (for instance the 60s movement affecting the cohort born just after the end of WWII) and in some cases country specific (for instance the democratic transitions in Southern Europe). If a generation is being mobilized during its "impressionable years", the early socializing experiences can have a lasting impact during its life-cycle compared to other generations (Plutzer, 2002; Franklin, 2004; van der Brug and Kritzinger, 2012). Therefore a generation or cohort effect is often seen as something that is constant over the life course (Franklin, 2004; Wass, 2007b).[3] Most previous studies at national elections show that younger generations have lower turnout than the older ones, which depresses turnout as the young generations comprise an increasingly large share of the electorate (Blais et al., 2004; Gallego, 2009; Wass, 2007a, 2007b).

Second, many studies find a cross-sectional curvilinear relationship between age and turnout (Fieldhouse et al., 2007; Wass, 2007b; Wolfinger and Rosenstone, 1980).[4] This is a so-called age effect or life-cycle effect. The young vote less than the middle-aged because they are in a transition phase in life moving away from home, establishing families and careers etc. and yet having to acquire their adult roles (Abramson et al., 1998; Highton and Wolfinger, 2001; Smets, 2010). The elderly, on the one hand, may gradually retire from the civic duty of voting as their social network deteriorates and they become less engaged in societal matters (Cumming and Henry, 1961; Wolfinger and Rosenstone, 1980). On the other hand, accumulation of resources and political experiences, fewer time constrains and the strong habitual aspects of voting may in fact lead older individuals to vote in higher numbers than the middle-aged (Franklin, 2004; Glenn and Grimes, 1968; Goerres, 2007b; Goerres, 2009: 11; Konzelmann et al., 2012; Plutzer, 2002; Strate et al., 1989). If the relationship between age and turnout is causal (regardless of its precise shape), turnout may be affected if the age composition of the electorate changes over time.

It should be noted that if generational differences indeed exist, they may explain the apparent curvilinear relationship between age and turnout (van der Brug and Kritzinger, 2012). For instance, the middle-aged may not turnout in larger numbers than young individuals due to age per se, but simply because they belong to a generation with higher turnout levels throughout the life-cycle. Therefore it is important to evaluate generational and age effects simultaneously.

Finally, neither age nor generation may be the cause of the declining turnout. Some third variable, unrelated to age and generation, could vary across time – i.e. a period effect. Examples are the 2009 EP election in Denmark and Latvia where highly salient referendums were held simultaneous with the EP election, which boosted the turnout. Another example is the "first-time-boost" of the first held EP election in a new member state (Franklin, 2001). Period effects may also be of an even more general nature – if the public perceives EP elections as less important than previously or if it generally becomes more political disinterested, this is likely to result in a negative period effect.

Several studies have tried to disentangle the effects of age, generations and period on turnout at national elections. Blais et al. (2004) find effects of age as well as generations on changes in turnout in Canadian elections. However, as the age composition is relatively constant over time, lower turnout among the post-baby boomer generation is found to be the main reason behind the turnout decline. Similar results have been found for Finland (Wass, 2007b), Sweden, Norway and Germany (Gallego, 2009). Thus from the

[2] An obvious limitation of our focus on the total effects is that we get a fairly overall picture of the factors that are at play. The analyses are designed to estimate the relative effects of age, generations and period rather than explaining why they matter.

[3] It should be noted that it need not to be. As discussed by Goerres (2009: 30–31), in addition to the effects of early socializing experiences, different generations may have different likelihoods of obtaining particular socio-economic characteristics during their life-course. As we do not include interactions between generations and age in our models, we capture the average generational effects over the life-course and the average life-cyclical effect across generations.

[4] Note that while there is general agreement that the effect of age declines with age, part of the literature finds that the effect never becomes negative (e.g. Goerres, 2007b, 2009).

existing literature one would expect both age and generation effects to be related to change in turnout, while the decline over time is primarily due to the generation effect since young generations with lower propensity to vote replace the older generations with a high propensity to vote.

The effects could potentially differ in EP elections compared to national elections. On the one hand, younger generations may be relatively more willing to vote in the second order elections, since the first elections in 1979 came at the same time or after they became eligible. Thus, EP elections have been a more integrated part of their political socialization. On the other hand, differences observed at national elections may be even stronger in EP elections due to lower perceived saliency (Franklin, 2004).

Whereas the existing literature mainly uses the results from the relationship between age, generation and turnout to explain the decline in turnout, we also use the results to project future turnout. Possible generational differences should affect future turnout as the younger generations make up an increasingly larger part of the population. If the post-boomer generations, as suggested by previous work (e.g. Blais et al., 2004; Wass, 2007b), have substantial lower turnout than earlier generations, the decline can be expected to continue until the population has been entirely replaced by post-boomers (Franklin, 2004). In other words, if the previous structural decline is due to generational differences, the decline will most probably continue in the many years to come.

In addition to generational composition, changing age composition can be consequential for turnout (Konzelmann et al., 2012). In the Western countries, demographers have projected that the population is getting increasingly older (e.g. Eurostat, 2008). If a curvilinear causal relationship between age and turnout exists, the change in the age composition is likely to affect turnout negatively, since the elderly vote less than the middle-aged.[5]

4. Data

The object of the generational analysis is EP elections in 11 member states of the EU: Belgium, France, Italy, Luxemburg, Netherlands, Denmark, Ireland, United Kingdom, Greece, Portugal and Spain.[6] These countries are selected, since they have all participated in EP elections since 1989 and in most cases even 1979. The time frame provides sufficient leverage to separate the effects of age, generation and period on turnout. Germany was a founding member of the EU, but is omitted from the analyses, since surveys conducted in connection to EP elections before and after the reunification are hardly comparable.

The data used for all models are the EES and Eurobarometer (EES, 1989–2009). The EES was conducted for the elections in 1989, 1994, 1999, 2004 and 2009 in those EU countries that were member states at the individual elections (in 2004, however, important variables are missing from Luxemburg and Belgium). We use only the post-election studies. For 1979 and 1984 we use the fall edition of the Eurobarometer (in 1979 some questions were added to the standard Eurobarometer). Our pooled file consists of 66,732 respondents counting only those who were eligible and answered the turnout, age and gender questions.

The dependent variable in all models is self-reported turnout. It is well known that turnout is heavily overestimated due to over-reporting and self-selection of respondents in surveys (Bernstein et al., 2001; Karp and Brockington, 2005), and the EES is no exception. The reported turnout among the respondents in our file is 72% as compared to about 57% if there was no selection bias in the surveys and if there was no over reporting. To ensure that the models yield predictions of actual turnout and that results are not driven by different quality of the surveys (or differential misreporting) across time, all regressions are weighted according to actual turnout in the specific country in the specific election year. Furthermore, in the pooled models, we weight in order to make each country count equally regardless of country size or sample size.

Defining and characterizing generations is a highly debated issue but we have applied a general categorization often used (Blais et al., 2004; Wass, 2007b). More specifically, we distinguish between the pre-war generation (born–1944), the baby-boomers (1945–1959), generation 60s (1960–1969), generation 70s (1970–1979) and the post-70s generation (1980 or later).[7] The pre-war generation has experienced the war, entered early into work life, has typically not much education and is often said to focus relatively on physical and material security. The baby-boomer generation has experienced strong urbanization and industrialization, increasing of living standards and political mobilizations during the 60s. The generation 60s has on many dimensions experienced a more smoothed life compared to earlier generations but did experience the oil

[5] As previously mentioned, a part of the literature suggests that the effect of age is always positive. This, along with the increasing average age of the electorate, has lead to a discussion within part of the welfare literature, somewhat related to the present discussion, that the elderly in the future will gain increasing weight elections (e.g., Goerres 2007a; Sinn and Uebelmesser, 2002; Tepe and Vanhuysse, 2009).

[6] An important issue is whether to include compulsory voting countries. One could make the argument that the voting rules in these countries provide no room for generational and age differences. However, even though formal rules exist they are not enforced strictly in the countries under investigation. Italy no longer has compulsory voting. In Greece non-voters were not punished or fined since the revision of the constitution in 2001. In Belgium and Luxembourg (Luxembourg's compulsory voting laws exempt individuals over 70) the courts rarely enforce fines on abstainers though they can legally do so. That being said, it is plausible that the effects of generation and age are lower in the compulsory voting countries due to stronger voting norms and formal rules (they would in principle also be higher in the cases where enforcement has become more lenient over time). Thus, Tables 4 and 5 will analyze all countries separately, thus allowing for a more detailed picture of each individual country.

[7] We also estimated our models using an alternative definition proposed by Becker (1995) which distinguishes between the pre-war generation (1910–1929), the silent generation (1930–1939), the protest generation (1940–1954), the lost generation (1955–1969) and the pragmatic generation (1970–). The general trends in the results are the same as with the current definition. With the Becker definition it is possible to show that the silent generation actually has slightly higher turnout than those born before 1929 (about 2 percentage points when looking at all countries). This definition does not distinguish between the two youngest generations in our definition. This makes the difference between the youngest generation and the older ones slightly lower (18 instead of 20 percentage points lower when we use the silent generation as a baseline).

crises early in life. The generation 70s has been described as a pragmatic generation with increasing individualization occurring during their youth. Finally, the post-70s generation has experienced increased globalization, the end of the cold war, and the advancement of the internet and technological advancement. The categorization is based on the assumption that the relevant variation is between the generations, not within (Becker, 1995; Blais et al., 2004; Wass, 2007b). It should also be noted that our definition of generations is based on general world trends and events. Others would call for more context/country specific definitions (e.g. Goerres, 2009). Our aim is to provide a general overview of the effects of generations across many European countries which makes a general definition preferable though of course details might be lost in such a general comparison.

5. Descriptive analysis

Table 2 presents turnout rates across generations in the eight member countries in order to provide a first general descriptive insight into the possible causes of the decline. For the moment we focus only on the eight old member countries to make the sample comparable across time. The cells contain the mean turnout in eight of the countries.

First of all, there are indications of generational effects in Table 2. For instance, the pre-war generation and the baby-boomers have consistently higher turnout rates than the other generations across elections – even when we take possible life-cycle effects into account. Another example is the baby-boomers in 1989 (70.5%) compared with generation 60s in 1999 (50.0%). Among the youngest generations, the generational differences seem to be less pronounced. The descriptive results are of course only suggestive, but if the generation specific patterns turn out to be causal, this will most likely affect turnout, since the composition of generations in the electorate change naturally as the elderly generations move beyond their life-expectancy and as the post-70s generations gradually compose a larger part of the electorate.

There are also indications of age effects within generations. In all generations, turnout in the last year of observation is higher than the turnout of the first year. Furthermore, the increase seems to be strongest for the first years of eligibility. Take for instance generation of the 70s which enters into the electorate in 1989 with a turnout of only 36.9 percent. In the subsequent election, the generation's turnout has risen about 15 percentage points. A similar, though more moderate, pattern can be found for the post 70s generations when the 1999 and 2009 elections are compared. From the perspective of a curvilinear functional form, it is slightly surprising that turnout does not drop significantly for the pre-war generation in the last time period. It should also be noted that even if life-cycle effects exist causally, this does not necessarily imply that life-cycles explain differences across time. For instance, if the age composition of the electorate was stable, age per se cannot be the explanation.

There are some indications of period effects in Table 2, because three of the four eligible generations experience declining turnout between 1989 and 1999 when the overall turnout decline is observed. This could indicate that something happened which affected all generations and age groups equally.

Table 2
Cohort table for EU-9 (except Germany).

	1979	1984	1989	1994	1999	2009
Pre-war generation	70.2	69.5	70.5	67.0	66.7	70.5
Baby-boomer	59.2	57.2	65.1	61.1	59.4	63.9
Generation 60s	54.4	52.3	53.3	50.0	48.1	57.0
Generation 70s	–	–	36.9	51.4	49.3	50.8
Post 70s generations	–	–	–	–	44.8	52.2

The year 2004 is omitted from the cohort table since birth year was missing for Luxemburg and turnout missing for Belgium in the surveys. The blanks are due to generations that were not eligible at the election in question. Respondents are weighted in order to match official turnout at each election at country level. Similarly, the countries are weighted reverse to their sample size such that the countries count equally in each election year. All cells is based on more than 1000 respondents – exceptions being generation 60s in 1979 (237 respondents), generation 70s in 1989 (281 respondents) and post 70s generations in 1999 (272 respondents).

6. What explains the turnout decline?

What is the causal impact of the three factors considered – generation, age and period? We seek to answer this question by estimating individual level logistic regressions with turnout as the dependent variable. An inherent problem when trying to estimate the impact of the three factors is the so-called identification problem which arises because the value of one of the factors can be completely determined by the two others (e.g., van den Broek, 1999; Glenn, 2005; Konzelmann et al., 2012; Kritzer, 1983; Markus, 1983; Wass, 2007b: 652). The model can be identified by omitting one of the variables or – as in the present study – by posing functional restrictions on at least one of the variables. It is important to note the plausibility of the results thus hinges upon the functional assumptions being made. As argued earlier we distinguish between five generations and thus include four dummies to capture cohort effects (the pre-war generation is the reference category). For the life-cyclical effects almost all studies find that the relationship is curvilinear (decreasing after a certain age or increasing at a slower pace). We therefore include age and age-squared in the model. Finally, for period we include a dummy variable distinguishing between the elections in the period between 1979 and 1994 (four European elections) and the period between 1999 and 2009 (three European elections) as the raw percentages could indicate a break around the 1994 and 1999 elections.

Following Blais et al. (2004) we do not include variables later in the causal chain as we wish to investigate the total effects of the age, generation and period variables – not just the direct effects. Thus, for instance, our estimate of the generational differences will be an estimate of the total effect of the generations in question, regardless whether these effects are mediated by differences in educational levels, differences in primary socialization, different environmental influences etc. However, we do include a gender dummy since gender is exogenous in the sense that it along

with generation and age is the most antecedent variable in the causal chain (Blais et al., 2004: 224).

We also control for a range of election variables suggested by Franklin (2001) which could in principle be correlated with our main variables of interests. Time to the next national election (based on data from Armingeon et al., 2010) is included, as Franklin (1999, 2001) has shown that turnout increases when the EP election takes place shortly before a national election due to increased saliency of the second order election. We also include a dummy for the first election to the EP, to capture any first-time boost. We begin by looking at all countries in a pooled model to get a sense of the general trends – then each of the 11 countries is investigated separately which, more realistically, allows for different cohort effects in the individual countries.

As model (1) in Table 3 shows, there is a quite substantial total effect of the three factors in question. First, the pre-war generations have an approximately 20 percentage point higher turnout than the two latest generations, even when the effect of age is taken into account. This effect is almost identical to the one found for national elections in Canada (Blais et al., 2004). The baby-boomer generation is only 6 percentage points behind the pre-war generation while the corresponding number for the generation 60s is 14 percentage points. Generation 70s has 4 percentage points lower turnout than the generation 60s. The difference between the two youngest generations is not statistically significant.

There a substantial curvilinear effect of age with a top-point around age 52, as Fig. 1 above illustrates. Hence, the curve-linear effect, which is observed in many cross-sectional studies (e.g. Wolfinger and Rosenstone, 1980) is not merely due to generational differences between the younger and the older generations. In fact, for the very old, when investigated cross-sectionally the generational differences even cover some of the curvilinear effect, since the older generations have a low turnout due to their old age, while their generation drives their turnout upwards (contrary, among the young, the positive relationship between age and turnout is overestimated in a cross-sectional analysis, since the middle-aged partly turnout more due to their generational affiliation and not merely due to their age).

Women vote 3 percentage points less than men – at least according to the self-reported answers utilized in this study. We experimented with interactions between generations and gender (not shown since it is not the primary focus here). The interactions were significantly positive for the younger generations, indicating that the gender differences are less profound among younger than the older generation (Bhatti and Hansen, 2011; Christy, 1987; Franklin et al., 2004: 7). Finally, there is a period effect of about 2 percentage points – i.e. some of the drop in turnout around 1999 is due to factors affecting the entire electorate.

Now what is the relative effect of the composition variables (generation and age) and period in explaining the turnout decline? In model (2) we have a rough estimate of the structural decline in turnout – i.e. the difference between pre-1999 and the three most recent elections,

Table 3
Logistic regression on individual level turnout, pooled model for EU-12 countries (excluding Germany).

	(1)		(2)	
	Log coef.	Average marginal effect	Log coef.	Average marginal effect
Generation (baseline=pre-war):				
Baby boomer	−0.31***	−0.06	–	–
	(0.04)			
Generation 60s	−0.69***	−0.14	–	–
	(0.06)			
Generation 70s	−0.91***	−0.18	–	–
	(0.07)			
Post 70s generations	−1.00***	−0.20	–	–
	(0.09)			
Age in years	0.04***	–	–	–
	(0.00)			
Age in years^2	−0.00***	–	–	–
	(0.00)			
1999 election or later	−0.10**	−0.02	−0.27***	−0.05
	(0.03)		(0.02)	
Woman	−0.16***	−0.03	−0.14***	−0.03
	(0.02)		(0.02)	
Time to election (years)	−0.09***	−0.02	−0.09***	−0.02
	(0.01)		(0.01)	
First EP election	0.02	0.00	0.19***	0.04
	(0.04)		(0.04)	
Constant	1.96***	–	2.57***	–
	(0.15)		(0.06)	
n	66,732		66,732	
McFadden pseudo R^2	0.15		0.12	
Log likelihood	−38,446		−39,676	
Chi^2	5,817		5,029	

*$p < 0.05$,**$p < 0.01$,***$p < 0.001$. Coefficients to the left are unstandardized logistic coefficients. Standard errors in parentheses. To the right the average marginal effects are shown. The regressions also includes country fixed effects and a dummy for the 2009 Danish election due to a simultaneous high-saliency referendum (coefficients not shown). In each election respondents are weighted to match the official turnout as depicted in Table 1. Furthermore, each country weights equally in the regression (but each country does not weight equally within each election year). No VIF values were above 5 (apart from age and age-squared) in the two models. We tested alternative versions of the period effect (a continuous election variable along with its squared version or dummies for each separate election) with similar results.

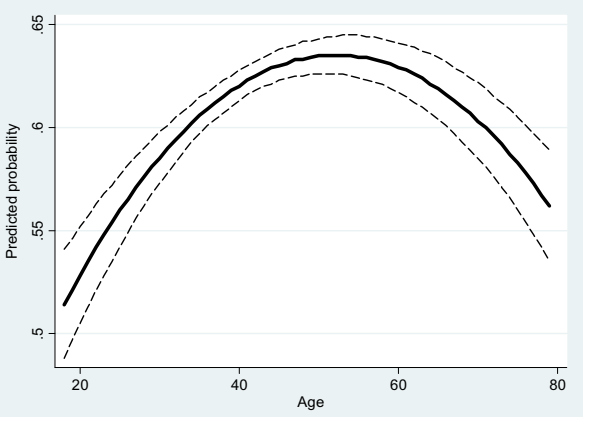

Fig. 1. Predicted probabilities, by age (all other variables at their means, CI 95%).

Table 4
Logistic regression on individual level turnout, separate country models.

	Baby boomer	Generation 60s	Generation 70s	Post 70s generations	Age curvilinear	Period	Women	Years to elections	*n*	McFadden pseudo R^2
Belgium	−1	−5	−5	**−13**	**Yes**	2	0	−0	5129	0.02
Britain	**−4**	**−9**	**−12**	**−11**	**No**	**−14**	−2	**−8**	7648	0.04
Denmark*	−4	**−9**	−9	−8	**Yes**	1	**−4**	1	7113	0.02
France	**−12**	**−21**	**−19**	**−12**	**Yes**	**−8**	−1	**−3**	7144	0.07
Greece	**−10**	**−14**	**−33**	**−25**	**Yes**	**−11**	**−8**	1	4702	0.15
Ireland	**−7**	**−20**	**−28**	**−32**	**Yes**	**12**	**−3**	**−7**	6170	0.07
Italy	**−6**	**−18**	**−16**	**−34**	**Yes**	**−5**	**−5**	1	9689	0.04
Luxembourg	−2	−7	**−12**	−5	**Yes**	3	−2	–	2598	0.02
Netherlands	**−9**	**−18**	**−16**	**−20**	**No**	**−8**	−1	**−3**	7355	0.04
Portugal	1	−8	−11	**−16**	**Yes**	**14**	**−5**	**13**	4247	0.04
Spain	**−10**	**−24**	**−31**	**−34**	Yes	**6**	**−3**	**−4**	4937	0.06

Reference category for the generational variables is the pre-war generation. Bold effects are statistically significant $p < 0.05$ (for age it indicates that age and age-squared are jointly significant). For all variables except age the average marginal effects are depicted. "Yes" in age curvilinear indicates that the partial age–turnout relationship is curvilinear and has a top-point between 18 and 80 years of age. The regressions are weighted so turnout corresponds to the official turnout. "*" = dummy for high-saliency referendum included. For most of the countries the maximum VIF (apart from age and age-squared) is below 5. Exceptions are Denmark (5.2 for period), Portugal (7.56 for generation 70s) and Spain (8.90 for generation 70s).

when we only take the election specific variables into account and not the age/generation composition of the electorate (this is not a perfect estimate as the structural variables could in principle be correlated with generation and age). The structural decline is estimated to 5.5 percentage points (the 0.05 in the model (2)). In model (1) we see that the causal impact of period is 1.9 percentage points (the 0.02 in model (1)). Thus, more than half of the apparent period effect seems to be due to generation and age.

The composition effect is mainly due to generational replacement. From the 1979–1994 to the 1999–2009 period, the pre-war generation share of the electorate has dropped dramatically from 47% to 22%, while the proportion of baby-boomers hardly changed from 29% to 27% (the numbers are based on the proportions in the survey). In the meantime, the younger generations make up an increasingly larger share of the electorate: Generation 60s has increased from 17% to 22%, generation 70s from 7% to 18%, and post 70s generations from 0% to 11%. The change in the age composition actually has a slightly positive impact on turnout, since average age of the electorate increases from 44 years to 46 years. Thus, the drop due to composition covers a slightly positive effect due to age and a strong negative effect due to generational replacement.

Above we described the effects when all 11 countries are pooled. However, it is unlikely that the socializing experiences that drive the generational effects are identical in all countries. Thus, in Table 4 we have calculated the average marginal effects from logistic regressions equivalent to model (1), Table 3 for the individual countries.[8]

In almost all countries the average marginal effect for younger generations is clearly negative and furthermore statistically significant. However, the effects do vary substantially across countries. The effect is least in the compulsory voting countries. This makes theoretical sense – when there is limited room for individual decision to vote or abstain, differences across generations should not be large. Furthermore, generational differences are limited in Denmark. In most countries, the main generational effects are between the pre-war generation and baby-boomers and between the baby-boomers and generation 60s. Spain and Italy tops with about 34 percentage point difference between the oldest and the youngest generations after controlling for age. The differences are more than 20 percentage points in Spain, Greece, Ireland and Italy. In almost all countries there is a curvilinear relationship between age and turnout. Finally, in about two thirds of the countries, there is a statistically significant period effect.

Like in Table 3, we re-estimated all models excluding the composition variables (generation and age) in order to provide a rough estimate of the period effect and the composition effect. The first column in Table 4 shows the results from such a model. The second column shows the estimated causal effect of period from Table 4, while the third column indicates the difference between the two estimates – i.e. the estimated composition effect.

In almost all countries the change over time in composition seems to have had a negative effect. The effect is largest in Ireland, Greece and Italy which were also

Table 5
Structural decline, period effect and compositional effect between 1979–1994 and 1999–2009 (percentage points).

	Estimated structural decline	Period effect	Compositional effect (generation and age)
Belgium	−0.8	+1.6	−2.4
Britain	−15.1	−13.7	−1.4
Denmark	−1.0	+0.6	−1.6
France	−9.2	−7.8	−1.4
Greece	−18.0	−10.9	−7.1
Ireland	+5.2	+12.2	−7.0
Italy	−10.9	−5.0	−5.9
Luxembourg	+1.6	+3.5	−1.9
Netherlands	−11.5	−7.8	−3.7
Portugal	+12.5	+14.4	−1.9
Spain	+0.8	+6.1	−5.3

Weights are applied as described in Table 4.

[8] We omit the first time boost variable since it creates severe multicollinearity in most regressions and was furthermore unimportant in model 1. Furthermore, we of course exclude the country fixed effects as we are looking at individual countries.

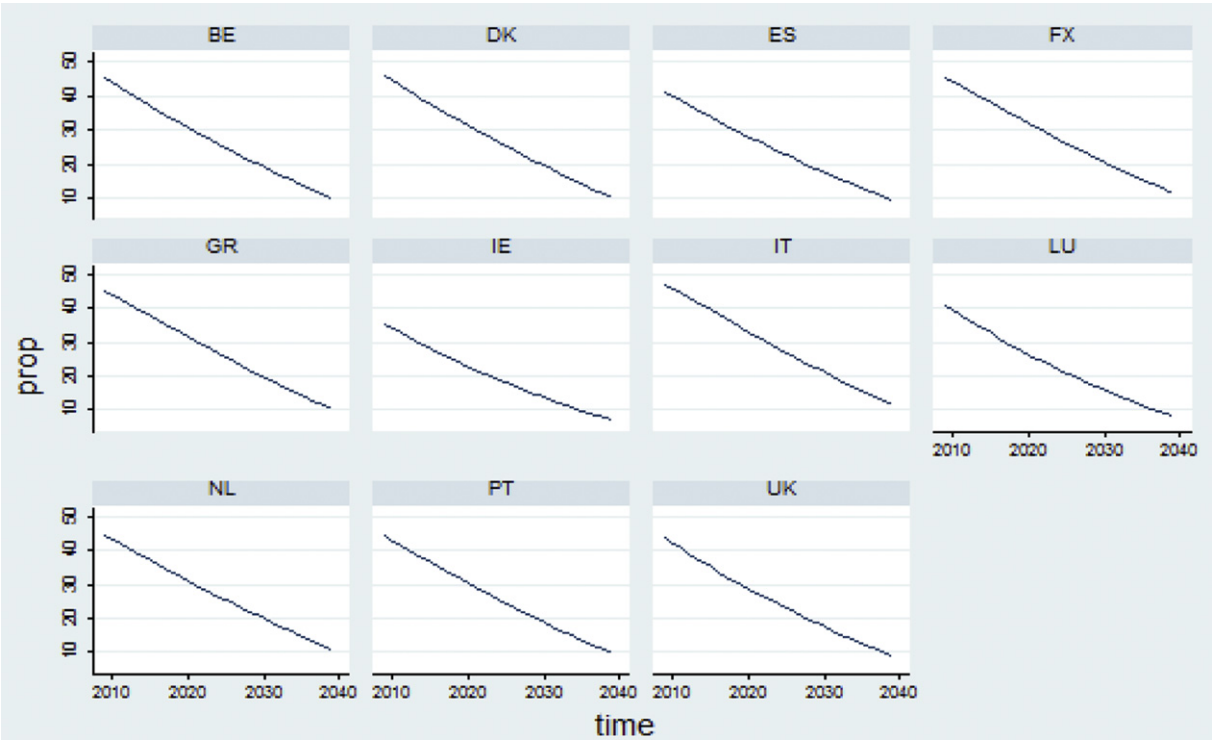

Fig. 2. Share of the electorate in the pre-war and baby-boomer generations. Note: Eurostat (2008) unfortunately does not distinguish between the ages of individuals over 80 years. Thus, the remaining members of a generation drop out when they reach 80.

some of the countries where we found the most profound causal effect of generation. As mentioned in the pooled model, changes in generational composition are estimated to cause a substantial drop in turnout. The pattern is almost uniform across countries: The share of the two oldest generations has declined from 60% to 80% to about 40–50%. The age composition is relatively constant.

The results from Tables 3–5 not only indicate that the changed composition of the electorate has historically led to declining turnout, but also that there could be further trouble ahead. Even though the share of the pre-war and baby-boomer generations – the ones with the highest turnout – has declined over time, they still comprise 40–50% of the electorate. Thus, there is reason for concern about the future as these generations will slowly pass away.

7. Looking forward – trouble ahead?

One implication of the analyses presented so far is that the inevitable future changes in the generational and age compositions of the electorates, are very likely to affect future turnout (see also Konzelmann et al., 2012). A first likely change is in the generational composition. Fig. 2 shows the proportion of eligible voters in pre-war and baby-boomer generations – i.e. those generations that have a particular higher turnout than the younger ones. Unsurprisingly, as time passes, these generations will compose an increasingly smaller part of the electorate. Assuming that the generations that will enter the electorate in the future will vote at the same levels at those that have recently entered, this will affect turnout in a negative direction. Interestingly, the generational effect will continue to impact turnout until around 2040 when the higher turnout generations have been eliminated entirely from the electorate.

A second probable change is in the age composition. It is well-known that the Western population is getting older. This has lead to concern among economists that European welfare states are facing a demographical challenge, as more citizens are soon entering into retirement (e.g. Razin and Sadka, 2005). As the curvilinear age effects in Tables 3 and 4 indicates, this could also affect turnout as elderly vote substantially less than their middle-aged counterparts. Fig. 3 shows the projected proportion of individuals of 70 years or older – age groups that are well beyond the top-point of the age–turnout relationship. In all 11 countries, the proportion of elderly voters increases substantially – in most instances around 15 percentage points within the next 30 years. This should other things being equal affect turnout negatively due to the curve-linear life-cyclical affects.

In Table 6 we predict the future turnout based on forecasts of the age composition of future voters from Eurostat (2008). The simulations are carried out by estimating a predicted turnout for each possible combination of age (18–80 years), gender (men, women), and generation (the 6 generations) based on the country level regressions from Table 4. Then the relative weight of each of these about 750 groups is determined by the proportion of each group

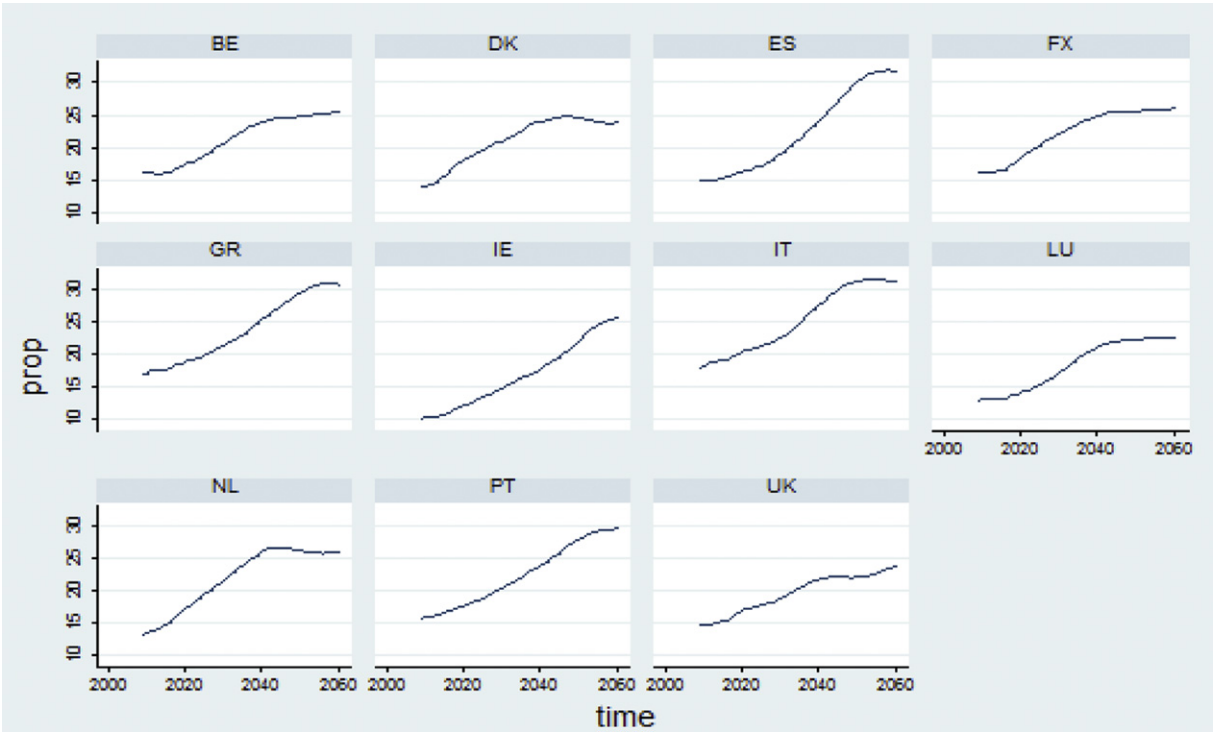

Fig. 3. Proportion of eligible voters 70 years or older Calculations are based on Eurostat (2008).

in the Eurostat population predictions.[9] We simulate two scenarios. One where the future generations (born after 1991) have the same turnout as the youngest generation currently eligible (the post-70s generation). Another where we more optimistically assume that the future generations will have a 10 percentage points higher turnout. This will allow us to get some idea of how much change is needed to achieve a constant turnout.

If the patterns presented in Table 4 continue, all countries will experience a future drop in turnout due to the simultaneous changes in age and generational composition. The predicted changes largely follow the magnitude of the generational coefficients from Table 4. The challenges seem to be most severe in some of the Southern European countries – especially Spain, Italy and Greece. Furthermore, the changes especially kick in between 2020 and 2040. The decline in turnout is rather dramatic – especially because it occurs on top of already declined turnout levels.

A 10 percentage point increase in turnout among the newer generations compared to the post-70s generation will be sufficient to offset the decline completely in four of the countries. However, it is important to note that a decline is likely to happen in the remaining seven countries even with such a dramatic increase. The average projection is still negative, −0.9 percent in 2020 and -3.3 percent in 2040, though it is an improvement compared to the −2.5 percent and −7.7 percent in the constant turnout scenario. In general one percentage point change in turnout for the post-1991 generations translate into a 0.15 percent change in the predicted turnout in 2020 and 0.45 percent in 2040 (with some small differences across countries).

Table 6
Predicted changes from predicted 2009-level (percentage points).

	2009 to 2020		2009 to 2040	
	Current level	+10 percentage points	Current level	+10 percentage points
Belgium	−2.1	−0.4	−7.3	−2.7
Britain	−1.3	0.4	−3.5	1.4
Denmark	−1.0	0.8	−2.6	2.1
France	−0.5	1.1	−2.0	2.6
Greece	−3.8	−2.5	−12.7	−8.7
Ireland	−3.9	−2.1	−11.0	−6.1
Italy	−6.0	−4.7	−18.1	−14.2
Luxembourg	−0.7	1.1	−3.3	1.6
Netherlands	−2.0	−0.3	−5.6	−1.1
Portugal	−2.1	−0.6	−6.8	−2.5
Spain	−4.3	−2.9	−12.3	−8.3

The base year from where the forecasted changes in turnout are calculated is 2009. Changes are shown since the absolute values can vary slightly from the actual election turnout in 2009, mainly since we use the true population proportions and not the sample proportions.

[9] The period variable is set to post-1994 while the variable 'years to election' is set to 2 years for all countries. As mentioned in the note to Fig. 3 a generation drops out when it reaches 80 years of age due to the limitations in the Eurostat data. This likely leads to a slight overestimation of the changes. Finally, the Eurostat data does not distinguish between the two genders – thus, the shares of men and women for each age group is assumed to be identical.

8. Conclusion

In the present article we extended the empirical literature on the effect of age, generation and turnout to EP elections (Blais et al., 2004; Wass, 2007a, 2007b; Gallego, 2009). The results largely follow the ones from the study of national elections in single countries such as Canada and Finland. Generally speaking, the post-baby-boomers vote substantially less than previous generations. Furthermore, there is a curvilinear relationship between age and turnout. There are also period effects, though they cannot account for the entire magnitude of the turnout decline. Though the general trend seems to align with the existing literature, we do find some interesting variations across countries. For instance, in the compulsory voting countries, there are almost no generational differences. Also, we do not find evidence of such differences in Denmark.

We utilized the estimated effects in the analysis to consider how the generational and life-cyclical effect will impact in the future turnout to the EP which to our knowledge has not been done previously. In order words, the reason *why* turnout declined in the previous years is informative in order to speculative *whether* the future will bring further decreases. The analysis points to an expected continued turnout decline. The projected turnout drops differ markedly between countries. Generally speaking, turnout is expected to decrease the most in the countries with the largest estimated generational differences.

Forecasts are, of course, notoriously uncertain since they predict the future on the basis of current patterns. Thus, the forecast rests on the assumption that the model estimated is not only an accurate estimate of the true effects of the variables in question, but also that the effect of the individual variables will be constant over time. Many things can happen which may counteract the predicted turnout declines. New generations may be more politically active than the current ones, the elderly of the future may have better health than the current ones which in turn may limit the turnout decline due to age, or we may simply see a positive future period effect if, for instance, general public interest in the EU increases. Nevertheless, the predictions do indeed give us a strong indication about what will happen due to the projected demographical changes in the composition of the electorate if the current patterns of political engagement continue in the future. If there are no dramatic chocks, the results of the analysis strongly suggest that turnout will decline to EP elections in almost all the countries under investigation, simply due to the demographical development.

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