Imperfect Memory and The British Electorate: Evidence of Partisan Instability from the British Household Panel Survey

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A more in depth version of this paper will be available September 1st 2001 upon request. Comments are appreciated.

1. Introduction

Debate continues over the nature and dynamics of individuals' attachments to political parties. In this paper, we investigate the question of partisan attachments over time. First, we discuss the debate among scholars of the long-term stability of partisanship.[1] Second, we identify the critical statistical assumptions of each of these theories and discuss how the concept of fractional integration offers a compromise between the strict assumptions of the two theories. Third, we explore ways in which the problems engendered by using long time-series data such as Gallup's governing party support series can be overcome in order to better understand the nature and dynamics of partisanship. Fourth, we use data from the British Household Panel Survey to begin to corroborate the findings of previous studies (Box-Steffensmeier and Smith 1996; Clarke and Lebo 2000) that show both an overall weak sense of partisanship as well as a great deal of heterogeneity in the partisan attachments of British voters. Finally, we discuss how we wish to extend our use of the BHPS to further analyze the attachments between British voters and their parties.

2. The Nature of Partisanship

As the link between the individual voter and the political parties that voters elect to govern, partisanship is crucial to the long-term stability of party systems. Indeed, the long-term stability of two-party systems in the United States and the United Kingdom can be attributable to the underlying affinity for one party or the other among a large proportion of voters. Decreased partisanship can certainly be blamed for increased instability of party systems in mature democracies. Wary of the

[1] We use the terms "partisanship," "party attachment," and "party identification (id)" interchangeably and understand them to mean some underlying affinity for a political party felt by a voter.

macro effects of this micro-level phenomena, the sources of partisanship, and its changes over time, are thus an important area of political research.

Studies of partisanship began by explaining it as an almost innate quality (Campbell et al. 1954, 1960, 1966). Born to parents with a given preference for existing parties, to a certain class, race, religion, and region, an individual's party preference would emerge from this so-called "funnel of causation" and would remain a definitive point in their understanding of politics throughout their lifetime. With partisan attachments so deeply ingrained, very little could be done to change them and thus the party system itself. To establish themselves, emerging parties would have to overcome these deeply ingrained beliefs and find for themselves a niche among the population. Scholarship supporting this theory of partisanship thus predicts long-term stability in party systems – a prediction supported by the evidence of British and American elections up until the 1960s.

A period of dealignment in American and British politics coincided with scholarship that relied more heavily on the economic determinants of vote choice. Beginning with Downs' *Economic Theory of Democracy* (1957) researchers began to emphasize the roll the economy played in government support levels and thereby in partisan attachments. Key's (1968) thesis proposed that voters supported or rewarded the incumbent government based on the state of their (the voters') pocketbooks. Thus, voting becomes dependent upon rational and *continually updated* opinions of the economy, and the effects of inherited long-term attachments are minimized. Since Key, there has been an explosion of research on the effects of the economy on partisanship and vote choice (e.g. Kinder and Kiewet 1979; MacKuen, Erikson, and Stimson 1992; Sanders 1991; Clarke and Stewart 1994, 1995; Clarke and Lebo 2000). Subsequent authors have argued whether voters are more concerned with the state of

their own pocketbooks (egocentric) or with the state of the national economy (sociotropic). Further argument has been over the question of whether voters reward or punish based on the past (retrospective) or choose the candidate who will perform best in the future (prospective). Accepting a greater role for economics in the choices voters make implies that the fortunes of parties can rise and fall with the economies they seek to govern or indeed over any important area of policy.

Indeed, beginning in the 1960s, voters seemed to rely more upon their evaluations of the economy as an overall period of dealignment began (Wattenberg 1996). In both the United States and the United Kingdom, the proportion of voters saying they were strongly aligned with one of the two major parties dropped substantially and the number of independents rose steadily, characterizing roughly a third of the electorate by the 1990s. At the party level, this meant huge landslides were possible for either party as the large and solid bases eroded and a greater number of voters were willing to cast votes based upon economics or policy preferences.[2] Also, with a larger group of uncommitted voters, third parties and candidates could become quite popular in a short period of time and win a large proportion of the vote. George Wallace's 1968 capture of 5 states in what had been known as the "solid (Democratic) South" in the U.S. presidential election was the first sign that voters were willing to choose alternatives to the major parties. Continued claims of independence and only weak attachments to parties by voters, coupled with other third candidate runs at the presidency – Anderson in 1980, Perot in 1992 and 1996, Nader

[2] While the U.S. and U.K. demonstrate this phenomenon well, the evidence from Canada is the strongest. In 184 and 1988 the Conservative Party won successive and powerful majorities. With a large downturn in the economy and the introduction by the Conservatives of unpopular policies (a Goods and Services Tax), voters reduces the Tory caucus from a majority of the chambers 295 seats to a paltry 2 seats in the 1993 national election. The Canadian Tories have not rebounded since and other parties have emerged with large, but fairly weak followings.

in 2000 – support the view that the dealignment of the 1960s was not followed by a realignment in the 1980s and 1990s.

In Britain, the 1980s saw the reemergence of the Liberals (SDP) as an electoral force as dealignment occurred there as well. The tendency of British voters to eschew the tradition of long-term party attachments and vote based on the issues and economics of the times continued over several elections with electoral support for the Liberals and SDP nearing that of the (then) waning Labour party. The continued presence of third parties in Britain and the overall declining numbers of strong supporters of the two major parties mirrors the continued dealignment evident in the U.S.

Despite this evidence, however, many scholars continue to argue that long-term feelings of partisan attachment still dominate the choices of voters (Green and Palmquist 1990; Green, Palmquist, and Schickler 1997). While allowing that short-term factors can move voters, these authors maintain that such shifts are transitory, as voters will soon return to their preferred party. Thus, a voter may defect from their party during an election or express a preference for another party in an opinion poll, but their underlying partisanship is unchanged. Fluctuations in the fortunes of parties may occur but their long-term stability is assured. Certainly, the claims of these authors are buoyed by the continued ability of major parties in the United States and the United Kingdom (though not in Canada) to weather the storm of recent years and continue to dominate elections. *Of key importance here is that if partisanship truly follows this type of behaviour, some equilibrium level of support for a given party will*

exist based on the fundamental split between voters. While support[3] may rise or fall, it will quickly return to its equilibrium level.

Thus, on one side of the argument are those who claim that – despite short-term fluctuations -- partisanship is stable and continually returns to an equilibrium level. Opposed to this is the theory that partisanship is weak and that voters continually update their opinions. Of importance to us, the debate between these two sides extends beyond the theoretical and is inextricably bound with the question of how to model partisanship over time.

3. Time Series Modeling using Aggregated Data

The standard popularity function seeks to develop a statistical model of a party of leader approval over time (see, for example Mueller 1970, MacKuen 1983, MacKuen, Erikson, and Stimson 1992, Sanders 1991, Clarke and Stewart 1994). A representative sample of the population is taken each month (or each quarter) and the percentage of people responding positively to a question such as, "Do you approve or disapprove of the job _____ is doing as _____" is recorded as the popularity level.[4] Over many months, the movement of this variable can be tracked, and with the addition of some explanatory variables like "national economic expectations" models can be developed to explain the movements of popularity.[5]

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[3] Support may be measured in several ways: as vote intention, i.e. "which party would you vote for if an election were held tomorrow."; as party identification, i.e. "Generally speaking do you think of yourself as a supporter of any one political party?" if answered no, "Do you think of yourself as a little closer to one political party than to the other?" followed by, "Which one?"; or as leader support, "Do you approve or disapprove of the job _____ is doing as Prime Minister/President. In this study, we use the BHPS questions on party identification which should demonstrate more stability than the more impulsive "vote intention."

[4] Models of partisanship over time are slightly less popular but follow the same pattern.

[5] While using a different sample each month, the wealth of time-points (approaching 300 for governing party support and PM approval in the UK) makes study of these data attractive.

Before the addition of explanatory variables, however, the modeler must concern themselves with modeling the popularity variable in terms of its own past behaviour. At any given point, the value of the variable will not be randomly determined or merely a function of the values of independent variables, rather it will be dependent to some degree on its value in previous periods. The value of governing party support today, for example, depends a great deal on the value of governing party support last month.

Two standard ways of modeling past behaviour dominate the literature and implicitly follow very closely the theoretical arguments about partisanship discussed above. The distinction between the two rests on the question of stationarity. A stationary series is one that fluctuates around a constant mean. A stationary series will have finite variance and shifts from the mean level will decay as the series returns to its equilibrium level. Because any shift from the mean will eventually decay, a stationary series is often referred to as having "short memory." A non-stationary series (also known as a random walk or unit-root series) is one that builds upon its previous value with no decay. Such a series will be the sum of its changes over time. With no decay over time, such a series may be characterized as possessing "perfect memory."

A series, Y_t, can be described as follows:

$$Y_t = \phi Y_{t-1} + \varepsilon_t + \theta\varepsilon_{t-1} \qquad \text{where: } \varepsilon_t \sim N(0,\sigma^2) \qquad (1)$$

Where $\phi=0$, the series is stationary and the value of previous time points is irrelevant to the present value.

Where $0<\phi<1$, the series is stationary with an autoregressive component. That is, the present value will depend in part on values of previous periods. The effect of any given period will decay, however. For example, if $\phi=.9$ and $Y_t = 10$ holding all else

equal, $Y_{t+1} = 0.9$, $Y_{t+2} = 0.81$, $Y_{t+3} = 0..73$ and so forth. Thus, following shocks, the series will ultimately return to some equilibrium level.

Where $\phi=1$, the series is non-stationary. Its value at any time will consist of its value at the previous time-point plus contemporaneous shocks and the lingering effects of shocks at previous periods.[6]

Further, ε_t represents the effects of contemporaneous shocks to the variable and θ represents the lingering effects of shocks at a previous period, ε_{t-1}.

Where $\phi < 1$, the series can be modeled using an ARMA (AutoRegressive Moving Average) specification (Box and Jenkins 1970). Values of ϕ and θ can be estimated and used to filter the series.

Where $\phi = 1$, the series needs to be *differenced*. By looking at the changes from one time point to the next rather than at the values of the series itself, a non-stationary series can be transformed into a stationary one and from there be modeled using an ARIMA (AutoRegressive Integrated Moving Average) specification. After differencing, ϕ and θ can be estimated and used to further filter the series.

4. Aggregation and Fractional Integration

The problem with the above dichotomy of stationarity versus non-stationarity is that it implicitly assumes homogenous individual-level behaviour. Fractional integration methods begin as a generalization of equation (1) above.:

$$\phi(1-B)^d Y_{t-1} = \varepsilon_t + \theta\varepsilon_{t-1} \qquad \text{where: } \varepsilon_t \sim N(0,\sigma^2) \qquad (2)$$

B represents the "backshift operator" so that $(B)Y_t = Y_{t-1}$.

[6] A "shock" refers to any event that may sway a voter. For example, a news release of a fall in unemployment or a foreign policy event can affect a person's opinion. Contemporaneous shocks are commonly identified as ε_t. The degree to which shocks of previous periods continue to affect contemporaneous values of Y_t is measured by θ.

d is the fractional integration parameter. Thus, the traditional approaches to time series allow only integer values to *d*, where 0 will create a stationary series and 1 a non-stationary series. Recognizing that the value of *d* may lie between 0 and 1 and realizing the diversity of characteristics in this middle ground motivates fractional integration techniques.

What creates a fractionally integrated series is heterogeneity at the individual level (Granger 1980). Heterogeneity here refers to individuals' possession of various degrees of autoregressive and moving-average behaviour. Granger explains a series Y_{jt} consisting of individuals j = 1,2,...n each with their own autoregressive parameter, α_j, randomly generated from a beta distribution (0,1):

$$Y_{jt} = \alpha_j Y_{jt-1} + \varepsilon_t \qquad \text{where } \varepsilon_{jt} \sim N(0,\sigma^2) \qquad (3)$$

Aggregating these autoregressive tendencies will create a series that is fractionally integrated, that is, it will long remember the behaviour of individuals for whom α approaches or equals 1 but it will quickly forget the past behaviour of those for whom α holds smaller values. The distribution of α among the individuals, j, will determining the level of fractional integration. Of key importance is that a fractionally integrated series will behave in a way fundamentally different from either a stationary or non-stationary series. A fractionally integrated series will exhibit a mix of characteristics. Figure 1 – a set of three autocorrelation functions -- shows the differences in the memory of a fractionally integrated, stationary autoregressive, and unit-root series. In the stationary series (the dotted line) a shock at one time point is forgotten within 10 periods as the equilibrium level is returned to. In the unit root series (solid line), shocks from long ago continue to influence the series and those strong correlations exist many time points later. The fractionally integrated, long memoried, series (bars) clearly falls in between. Explaining such a series without

accounting for the individual level heterogeneity presents an incorrect view of the nature of opinion formation across individuals. Further, such a series will need to be modeled differently, else severe statistical problems such as bias of estimates and spurious regression results are rampant (Lebo, Walker, and Clarke 2000; Lebo 2001).

5. Heterogeneity in the Formation of Opinions

Expecting heterogeneity in the way individuals react to new information and old beliefs is not a new theory to political scientists. Key's (1966) explanation that some voters are "stand-patters" while others are "switchers" and Converse's (1964) Black/White model are both consistent with finding aggregate measures of partisanship (and other public opinion series) to be fractionally integrated. The implementation of these theories into time series models, however, did not occur for decades as researchers were satisfied to over-simplify the behaviour of aggregated series.

Recently, several studies have shown popular time series created by aggregating individual-level data to be fractionally integrated (Box-Steffensmeier and Smith 1996, 1998; Lebo, Walker, and Clarke 2000; Byers, Davidson, and Peel 2000; Clarke and Lebo 2000). All these studies look at data collected from monthly or quarterly opinion polls. Thus, they are unable to directly view the tendencies of individuals over time and are thereby open to criticism. Indeed, finding a series to be fractionally integrated where d=0.5 could mean that half the voters exhibit stationary behaviour and the other half non-stationary behaviour. In such a series, the people who behave as stationary voters may switch allegiances but will return to their party of choice quickly. For the people with non-stationary behaviour, however, this reversion does not occur and a switch from one party will remain either indefinitely or until another shock pushes them back. On the other hand, diagnosing a series as being

d=0.5 could also mean that there is complete homogeneity, i.e. *d*=0.5 for each individual.

The question of heterogeneity within the electorate is key. Zaller (1992) explains that political knowledge is normally distributed within the population. Some voters will have a great deal of knowledge, some very little, with most around the middle. Further, we should expect those with a great deal of knowledge to be less likely to change their opinions. It will take a great deal of new knowledge for them to overcome their current opinions. On the other hand, those with relatively little political knowledge will be swayed much more easily. The latest news report may be enough to make them change their opinions about the state of the economy or the party they would support in the next election or even which party they feel closest to. Any voter may have an underlying sense of party identification, but it is the less involved voter with the minimum of political knowledge who will revert back to their underlying tendency most easily after digesting new information. For the voters with more knowledge, it will take a great deal of new information for them to overcome a previous shock that was big enough to move them away from their underlying party identification or to return them to their original identification following an earlier shift.

Thus, heterogeneity within the population should create a vast variety of autoregressive and moving average tendencies at the individual-level. Unfortunately, studies that have sought to test for the presence of fractional integration have been limited to aggregate-level data (Box-Steffensmeier and Smith 1996; Lebo, Walker, and Clarke 2000; Byers, Davidson, and Peel 2000). Authors of these studies have established the pattern they would expect to find if individual level heterogeneity exists, and have found such evidence. Nevertheless, the limitations of the data do not

allow those types of studies to look directly at how individuals opinions vary across time.

Three solutions to this problem are possible. First, monthly aggregate-level data from opinion polls can be disaggregated and re-aggregated to the group level. One might construct aggregate measures of party identification over time for groups based on age, political interest or the like. The memory of these variables could then be estimated and compared to see how much heterogeneity exists between groups. Second, the method of ecological inference (King 1997) could be adapted to infer individual-level data from aggregate data that changed on a monthly basis. Lastly, panel data studies can be employed to look directly at the various behaviour of different individuals and groups over time.

6. Evidence from the British Household Panel Survey

The BHPS allows us the opportunity to track individuals across 9 different time points. We can see and seek to explain voters' shifts from one party to another or from independence to partisanship. Table 1 demonstrates that the importance of party identification to vote choice is enormous. In this simple bivariate logit regression the dichotomous partisan identification variables explain between 45 and 49% of the variance in explaining vote choice in 1992, and between 31 and 44% in 1997. From these logit regressions we can estimate the predicted probabilities of supporting each of the parties in these two election years. As is shown in Table 1 a respondent is 78 percentage points more likely to support the Conservative party in 1992 if the respondent declares an identity to the party. This preliminary analysis demonstrates the predictive power, and thus the importance of party identification on vote choice in Britain.

What interests us here is whether the movement of party identification in the BHPS follows most closely the model of the fractionally integrated series rather than fitting in with the traditional models of stationary series or non-stationary series. Finding that different patterns of stability in their partisanship exist in different groups in the electorate indicates that party identification in the aggregate will follow the pattern of fractional integration. Some voters may exhibit very strong partisan links and some will exhibit very stable levels of independence, but there will also be voters who have no discernible underlying partisanship but will from time to time come to identify with one party or another.

Looking first at respondents' party identification, Figure 2 shows party ID for each of the first 9 waves of the BHPS. The percentage of voters identifying with the Conservative Party peaks at 34.9% in 1992 but quickly falls below the level of Labour Identifiers in 1993, the year after the Tories last election victory. Labour party identification peaks in 1998, shortly after the party's decisive defeat of the Conservatives. Overall, the highest level of identification is in 1992 where 73.1% of voters identified with one of the 3 major parties, leaving over a quarter of voters either supporting a minor party or identifying themselves as independent in that year.

Figure 3 begins to look at the stability of party identification. While 33.2% of respondents identify with the conservatives in Wave 1, only 28.9% identify with them in both waves 1 and 2, 23.8% in all of waves 1,2, and 3 and so forth so that only 11.8% of respondents identify with the conservatives in all 9 waves. Similarly, 14.8% of respondents identified with Labour across all 9 waves. Overall, only 28.9% of respondents demonstrated absolute stability in their expression of party identification. Note also, that the number of strongest Conservative supporters dipped below that of

Labour in 1996, just prior to the shift in government. Thus, fully 71.1% of the respondents were not consistent identifiers with one of the three major parties.

Figure 4 graphs the number of times people switched their identification from one wave to the next.[7] Again, only 28.3% are consistent across all 9 waves. Further, the frequency of changes is quite high with a majority switching their identification at least twice and 36.6% changing at least 3 times.[8]

Figure 5 shows the frequency of respondents reporting themselves as independents.[9] While only 6.7% consistently fall into the independent category, fully 64.4% fall into the category at one time or another. Based just on the evidence in these figures we can see that party identification is very much a fluid concept for a large proportion of voters. Each party has a core of supporters that remain identifiers over all nine waves, but this percentage diminishes with each wave. Switches in party identification are rampant as are multiple switches. What remains to be shown is how the level of stability in party identification (seen in Figure 4) can be explained as depending upon the individuals' interest in politics and a host of important demographic variables such as age, sex, class, religion, home ownership, and union membership. Finding that the level of political interest positively affects the level of stability in partisanship indicates support for the argument that those with little interest are more apt to oscillate between parties or between partisanship and independence. Interested voters will be more informed and it will take a great deal more information to make them change their identification. Once changed, they will not naturally revert back to an underlying partisanship.

[7] A change here may be from identifying with one party to identifying with another party or from party identification to independence or from independence to party identification.
[8] Note that 54 respondents switched party identification 7 times and 9 actually switched between each and every wave! .

Table 2 shows the strong relationship between political interest and partisan stability. The dependent variable is constructed as the number of times a respondent changes their partisanship between consecutive waves, as seen in Figure 4. We have used a number of explanatory variables typical in explaining the causes of partisanship (Campbell et al, 1960; but also Sanders and Brynin, 1997 using BHPS data). Those with more political interest exhibit much stronger stability across the nine waves in their choice of partisanship. Similarly there is a strong and positive relationship between age and partisan stability, which may indicate either an overall trend towards instability as the electorate changes or continuing difference in stability among different age groups. Regardless, as is the case with the political interest variable, heterogeneity exists among age groups demonstrated by their willingness to switch between parties. There are also positive and statistically significant relationships between stability and being a union member, a homeowner and having a religion. Finally, a similar positive, although not significant, relationship exists between stability and being male and subjective identification as working class.

7. Conclusions

Evidence from the British Household Panel Survey demonstrates the heterogeneity of the British electorate in terms of the stability of party identification. Levels of political interest are strongly and positively related to stability in identification over time. Thus, we find support at the individual level for models that

[9] To qualify as an independent a respondent must have answered no to **both** "Generally speaking do you think of yourself as a supporter of any one political party?" and: "Do you think of yourself as a little closer to one political party than to the other?"

find the presence of fractional integration rather than strictly adhering to the dichotomy of stationarity vs. non-stationarity.

Roughly a third of the respondents in the BHPS exhibit stable party identification across the 9 waves of the study. The vast majority switch allegiance at least once and have thought of themselves as an independent at least one time over the 9 year period. Thus, dealignment seems to continue to characterize the British electorate.

In the future, we will seek to further investigate the causes of partisan instability and more closely identify the individual-level dynamics occurring between waves. Specifically, we will seek to identify the patterns of movement individuals take from identification with one party to another and between independence and identification. Additionally, we will investigate the importance of economics on partisanship in order to better demonstrate what factors drive affinities for parties in the absence of a "funnel of causality."

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TABLE 1

Logit Models of Party ID to predict Vote Intention

	Conservative Vote		Labour Vote	
	1992	1997	1992	1997
Party ID (Conservative)	4.20	4.11		
	(.08)	(.09)		
	Z=48.5	Z=44.5		
Party ID (Labour)			3.95	3.18
			(.09)	(.08)
			Z=46.3	Z=42.1
Constant	-2.28	-2.50	-2.30	-1.42
Predicted Probability (0→1 in Party ID)	.78	.76	.74	.66
Pseudo R^2	.49	.45	.44	.31

TABLE 2

Ordinary Least Squares Models predicting Instability of Party ID

Dependent Variable: Number of changes between consecutive BHPS waves, from 1-9

	Coefficient	Std. error	t-statistic
Sex	-0.09	0.05	-1.91
Union Member	-0.19	0.07	-2.85
Religion	-0.16	0.05	-3.05
Home Owner	-0.14	0.06	-2.41
Subjective Class = “Working”	-0.09	0.05	-1.87
Political Interest	-0.34	0.03	-12.31
Age	-0.01	0.00	-6.30
Constant	3.54	0.10	37.03
N	5850		

Figure 1. Autocorrelation Functions for Fractionally Integrated, Random Walk and Stationary First-Order Autogressive Processes

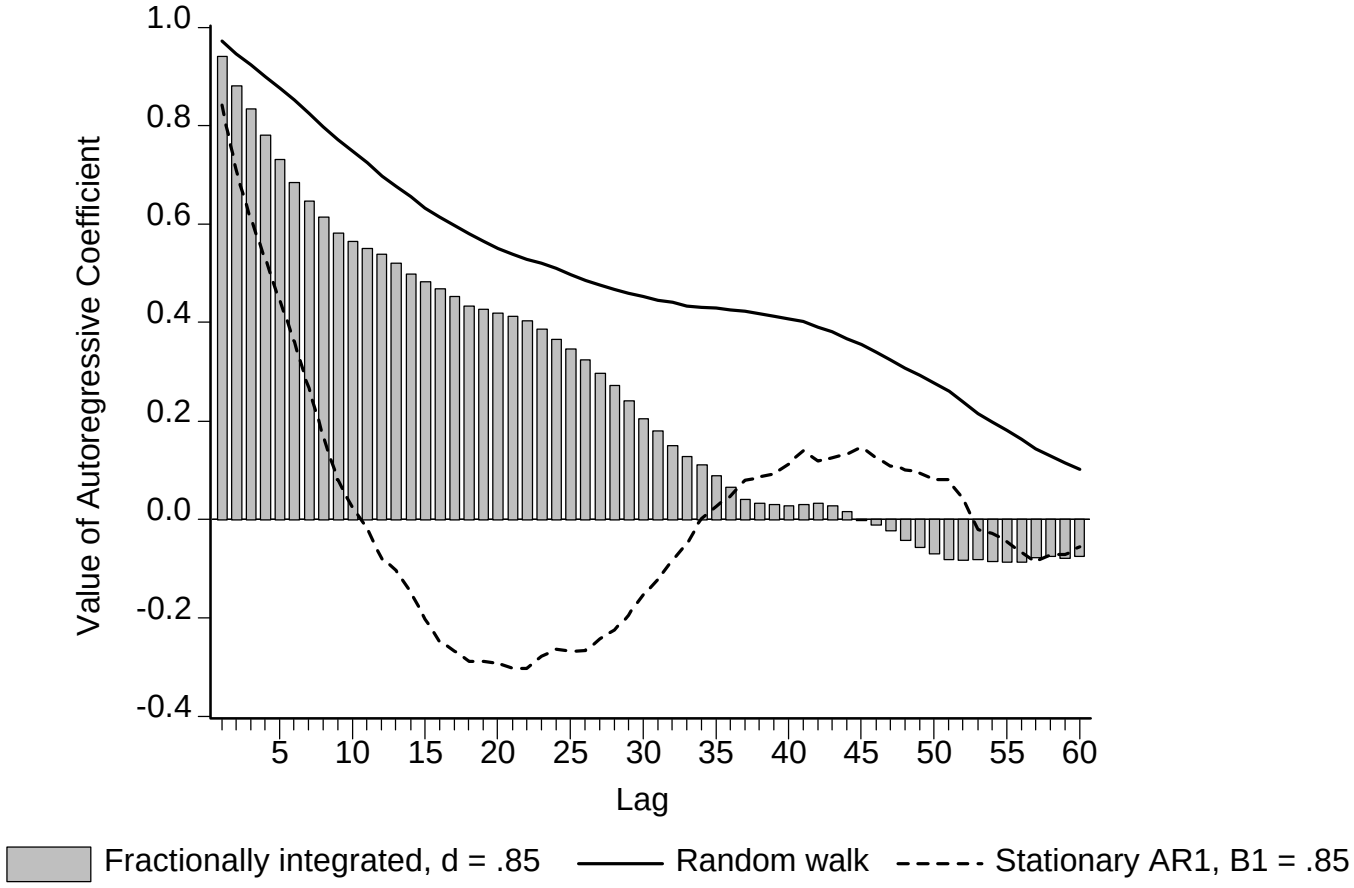
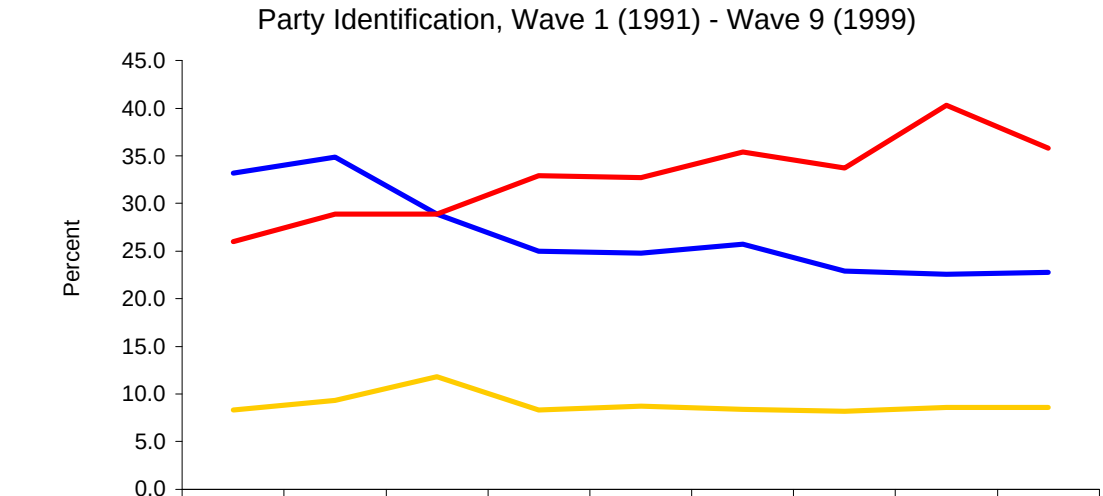
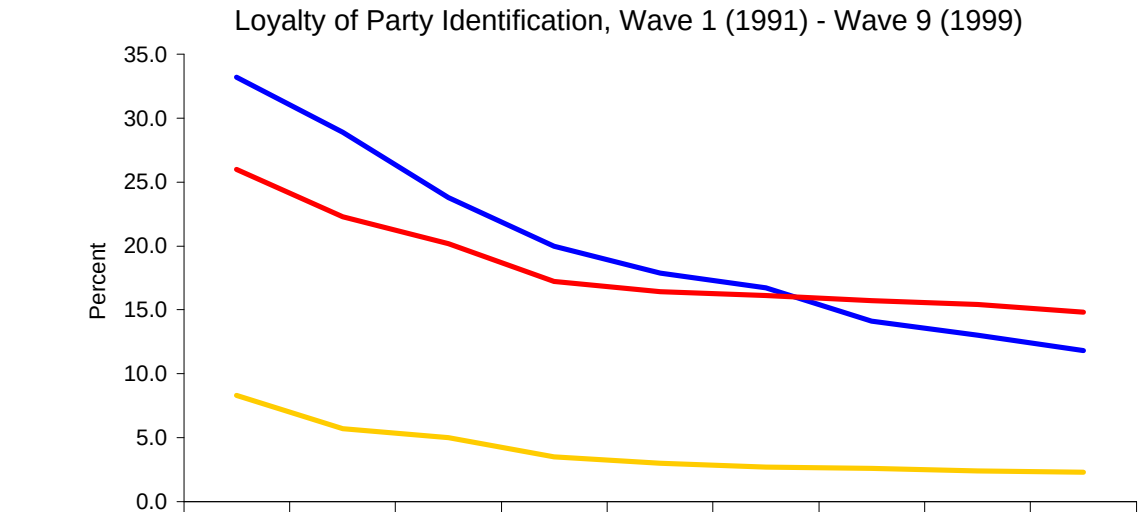


Figure 2



	wave 1	wave 2	wave 3	wave 4	wave 5	wave 6	wave 7	wave 8	wave 9
Conservative	33.2	34.9	28.9	25.0	24.8	25.7	22.9	22.6	22.8
Labour	26.0	28.9	28.9	32.9	32.7	35.4	33.7	40.3	35.8
Liberal	8.3	9.3	11.8	8.3	8.7	8.4	8.2	8.6	8.6

Figure 3



	wave 1	wave 2	wave 3	wave 4	wave 5	wave 6	wave 7	wave 8	wave 9
Conservative	33.2	28.9	23.8	20.0	17.9	16.7	14.1	13.0	11.8
Labour	26.0	22.3	20.2	17.2	16.4	16.1	15.7	15.4	14.8
Liberal	8.3	5.7	5.0	3.5	3.0	2.7	2.6	2.4	2.3

Figure 4

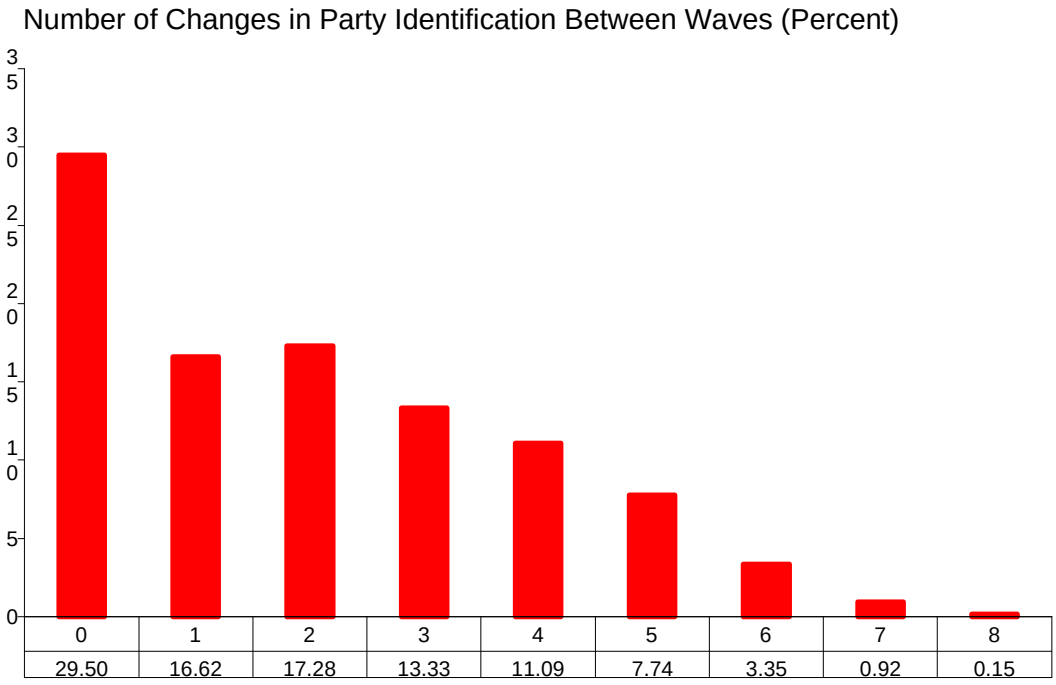


Figure 5