

C A L I F O R N I A I N S T I T U T E O F T E C H N O L O G Y

Division of the Humanities and Social Sciences
Pasadena, California 91125

THE DECLINE OF COMPETITION IN CONGRESSIONAL ELECTIONS:
MAYHEW MAY STILL BE RIGHT

Naim H. Al-Adhah

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ABSTRACT

Several theories have been advanced to explain the reduction in the number of competitive congressional districts during the past decade. Among these is Mayhew's theory, which attributes the reduction to the increasing control of campaign resources by incumbents. Ferejohn presents evidence which casts doubt on Mayhew's thesis. In this paper, Ferejohn's evidence is examined within the framework of a simultaneous equation model. I conclude that Mayhew's thesis, although bloodied by Ferejohn's attack, is still very much alive.

THE DECLINE OF COMPETITION IN CONGRESSIONAL ELECTIONS:

MAYHEW MAY STILL BE RIGHT!

Introduction

A number of authors have presented evidence that since 1950, there has been a noticeable decline in the proportion of competitive Congressional districts. For example, Tufte [4] shows that there has been a decrease in the "swing ratio", that is, the likelihood that a 1 percent shift in votes will cause a change in the outcome of an election. Kostroski [8] and Erikson [5] confirm the casual observations by showing that there has been a substantial increase in the incumbency advantage in postwar Congressional elections.

Three competing theories have been advanced to explain this phenomenon. The first is advanced by Tufte [4], who explains it by the incumbent manipulation of the redistricting schemes. He argues that "reapportionment rulings have given incumbents new opportunities to construct secure districts for themselves." The second theory is due to Burnham [7]. This one attributes the causes to a basic change in the behavior of the electorate. He points out that Tufte's observation regarding the drop in swing ratio may be due to the decreasing salience of party identification in the voting decision of the individual. The third theory, advanced by Mayhew [2], attributes the causes to the more effective use of the institutional advantages of incumbency by the incumbents. He argues that increasing use of the

resources of the incumbency office, such as the franking privilege and publicity by the incumbent increased his salience,¹ which in turn increased his share of the aggregate vote.

Ferejohn [3] finds himself in substantial agreement with the theory of basic change in electorate behavior. He successfully presents evidence against the theory of the incumbent manipulation of redistricting schemes by showing that the phenomenon of declining competitiveness has occurred both in the states that have been redistricted and in those that have not. He also argues against the theory of institutional advantage of incumbency.

This paper will show that both the theories of basic change in electorate behavior and institutional advantage of incumbency may account for the change in voting behavior. It will first establish the relevancy of incumbency and candidate's salience to the individual's voting decision in a framework which recognizes the potential effect of other variables, such as economic conditions. It will then establish and explore the interactive nature of incumbency and salience. The various findings of this preliminary analysis will be used to motivate the form and variables of a simultaneous equations model of electoral competition. This procedure is necessary in order to avoid ad hoc inclusion of variables and to reduce the possibility of bias due to simultaneity and misspecification.

¹Candidate's salience means his recognition by the voter. Recognition and salience will be used interchangeably in this paper.

The most general formulation of the model establishes that both incumbency and salience have positive and significant effects on voting. It further establishes that incumbency also works through the salience variable in influencing the voting decision of the individual.

On The Theory of Institutional Advantages of Incumbency

In a discussion of the kinds of activities in which congressmen find it electorally advantageous to engage, Mayhew identifies "advertising" as an effective activity in winning votes. His definition of "advertising" is simple: "It is any effort to disseminate one's name among constituents to create a favorable image, but in messages having little or no issue content." [2] Mayhew essentially agrees with Stokes and Miller's assertion [9], that "Recognition carries a positive valence; to be perceived at all is to be perceived favorably." He further points out that incumbents engaging in "standard routines," such as frequent visits to constituency, nonpolitical speeches, and correspondence with constituents, will be better known than their challengers. The incumbent can afford to engage in these "advertising" activities, because the public largely foots the bill, while challengers must meet their own expenses.

Thus Mayhew's model is simple: incumbency means greater control of electoral resources, which in turn produces higher salience of incumbents, which leads to greater incumbency voting. See Figure 1.

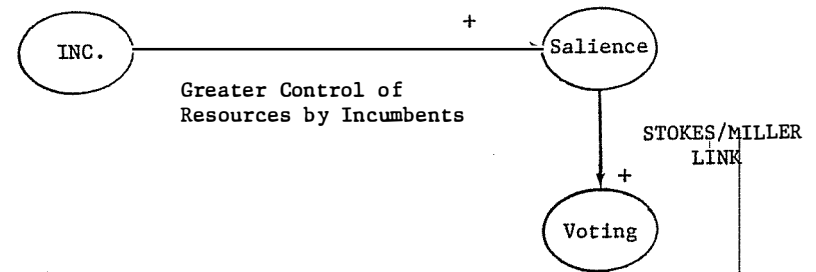


Figure 1

Ferejohn on The Theory of Institutional Advantages of Incumbency

Ferejohn [3] casts doubt on the theory of Institutional Advantages of Incumbency. For this theory to be correct, it must be true that: 1) there should be an overall increase in the level of recognition of the incumbent; 2) the relative level of recognition of incumbents versus challengers should also show an increase; 3) Increased level (or relative level) of recognition translates behaviorally into an increased level of incumbency voting.... However, he establishes that: 1) the level of incumbency voting increases over time; 2) this increase is not accompanied by increasing salience of the incumbent over time; 3) increasing salience of both the incumbent and the challenger may decrease the probability of voting in their favor.

Essentially, he doubts that the Stokes/Miller link is always positive; he presents evidence that the link might sometimes be negative [3]. He also denies the positive link between incumbency and salience. Ferejohn's model is shown in Figure 2.

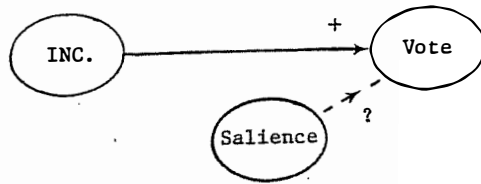


Figure 2

Preliminary Investigation of the Data

The task of this section is to probe the available data using simple statistical techniques to suggest the relevancy to the individual's voting decision of various variables which are considered a priori as being relevant. It will also expost the interaction between these variables. These findings will be used as motivation for the simultaneous equations model. Various indices will be extracted from the raw data in the SRC surveys (1956-1970). These indices will then be used to make some tentative hypotheses and observations.

Three categories of party affiliations will be considered: Democratic, Independent and Republican. Also considered will be three categories of respondents to the question regarding their perception of changes in economic conditions; those who perceived "better" conditions, those who perceived the "same" conditions, and those who perceived "worsened" conditions. For this, use will be made of the following question in the SRC survey: "During the last few years, has your financial situation been getting better, getting worse, or stayed the same?"

For the salience variable, use will be made of a question in the SRC survey that asked the respondent to name the candidates for the House in his district. If the respondent could name the candidate,

he was considered to recognize him; otherwise not. The limitation of our data is mainly due to the availability of recognition data only for the 1958, 1964, 1966, 1968, and 1970 elections.

The results are mainly reported in the Appendix, and the Appendix tables have the labels A and B following the table number to distinguish them from the summary tables in the main text. Since it will be necessary to make some observations regarding the relative effect of certain variables over time, the differential values of these variables will be shown in the tables rather than their absolute values. For example, if a test is to be made that recognition of the incumbent is increasing over time relative to that of the challenger, then the relevant variable to observe over time is the differential recognition of the incumbent: the percent recognizing the incumbent minus the percent recognizing the challenger. This will simplify the form and inference from the summary tables. Of interest will be the number of entries in the original table with a positive or negative sign, the magnitude of the entries (how positive or negative they are), and the number of cases that show increasing or decreasing entries over time.

The Effect of Incumbency

Ferejohn [3] demonstrates the influence of incumbency on the voting decision, contradicting an earlier finding by Kramer [10]. Kramer's model, however, eliminates some spurious effects by controlling for economic conditions and presidential coattails.

Table 1A investigates the effect on the proportion of the Democratic vote of Democratic incumbency rather than Republican (Table

1B exhibits the same effect on the proportion of the Republican vote), controlling for different economic responses.

Entries in Table 1A are Democratic incumbency advantage, and are given by: proportion of people who voted Democratic in Democratic incumbent district, minus proportion of people who voted Democratic in Republican incumbent district. Thus, positive entries imply positive effect of Democratic incumbency on the Democratic vote. Moreover, the higher these entries are, the greater is the inferred effect of incumbency on the share of votes. The evidence is summarized in Table 1.

Table 1
Vote Differentials Due to Incumbency:
Summary of the Entries in Tables 1A and 1B

	Proportion of Positive Differentials in Tables	Proportion of Cases Supporting Increasing Effect of Inc.
Democratic Inc. 1A	89	100
Republican Inc. 1B	72	50

n = 42 n = 6

Several observations may be made from Table 1:

- a) In general, the data support the contention of positive and increasing effect of incumbency on voting. Only 17 percent of all the cases show a negative entry. This agrees with Ferejohn's finding [3].
- b) The Democratic share of votes is more sensitive to Democratic incumbency than is the Republican share to Republican incumbency. This is shown by a higher proportion of large entries in Table 1A than 1B

(there are 17 percent more entries which are greater than 40 percent in Democratic incumbency). Moreover, the former shows increasing effect of incumbency on voting. More than 80 percent of cases in this category support this observation, while the picture for the Republican share of votes is not clear enough to reach a conclusion.

There is other interesting information which may be obtained from the raw data in Tables 1A and 1B:

c) The people who perceive worsening economic conditions (whether they vote Democratic or Republican) are the least likely to be influenced by incumbency. For example, in the case of Republican incumbency, 67 percent of the negative entries fall in the "worse" category.

d) Republicans seem to be the least affected by their own incumbency. Thus, it seems legitimate to include incumbency as a relevant variable in any further analysis of the question under investigation. This finding agrees, in general, with Ferejohn's.

The Effect of Candidate Salience

In this section, a search will be made for evidence in support of the Stokes/Miller observation: "to be perceived at all, is to be perceived favorably." The differential salience of the other party's candidate is calculated for those who voted for the other party candidate, controlling for party identification (PID) and economic response. See Table 2A. There is a similar table for those who voted for their own party candidate (Table 2B). Thus, entries in Tables 2 are: the percent

of those who voted for candidate X and recognized him, minus the percent of those who voted for X and recognized the other candidate. Hence, the more positive the entries in the table, the firmer the inference regarding the positive effect of salience on the candidate's vote.

All entries are positive and reasonably large, indicating some positive correlation between salience and vote. Moreover, if 1958, 1964, and 1966 are regarded as the first period, and 1968 and 1970 as the second period, some weak inference can be drawn regarding the effect of salience over time; more than 50 percent of cases show increasing effect over time. This inference stays the same, whatever definitions are adopted for the first period and the second period of analysis. Moreover, the data in Tables 2A and 2B show the relationship between salience and voting to be more strongly positive for the other party's candidate than for the candidate of the voter's party: 75 percent of the cases in the former category show an increasing effect, while only 50 percent of the cases show such a trend for the latter category. Table 2 summarizes these findings.

These tentative results indicate, to a certain extent, the existence of the Stokes/Miller link between salience and vote. Thus, for the moment at least, it can be concluded that the salience of candidates is positively related to the voting decision of the individual voter.

Table 2

	Percent of Positive Entries	Percent of Cases Increasing Over Time
Differential Salience of Own Party In Its Vote	100	50
Differential Salience of Other Party In Its Vote	100	75

Salience and Incumbency --
Another Dimension

Most of the models dealing with the effect of salience on voting consider recognition of the candidates by the voter as an exogenous phenomenon beyond the rational calculus of the voter. Very little effort has been expended to discover the underlying process behind the quest of the individual voter for knowledge of the candidate's name. Knowledge and retention of this piece of information is not costless, hence there must be a process through which this cost is defrayed or compensated. Investigating this process helps to avoid simultaneity bias in specifications of models for voting. It also promises to enrich our knowledge of how various variables interact to effect the voting decision. Mayhew's [1] explanation of the principal source of decline in the number of competitive seats in Congress,

may be viewed as a model of "defrayed cost." See Figure 3.

The Elements of the "Defrayed Cost" Model

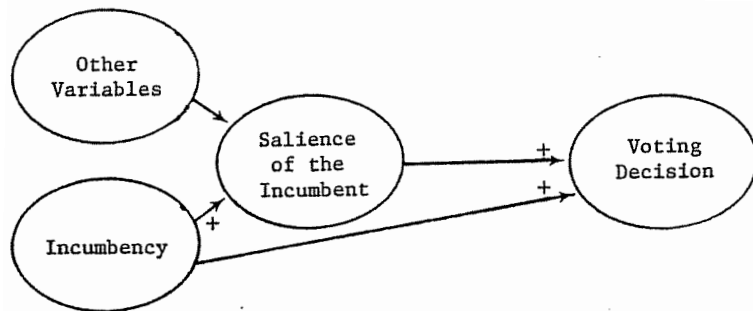


Figure 3

Consider "saliency" as a consumable political good with a positive "perceived" price that could be consumed in any quantity. This assumption is valid if saliency is considered as a continuum, starting from a mere recollection of the candidate's name to a comprehensive knowledge of his personality, achievements and background. However, only one level of recognition is observable, due to various institutional and experimental design considerations. Let g be the quantity of knowledge which an individual possesses about the candidate and k be the quantity of knowledge which corresponds to knowing the "name" only. Then

if $g \geq k$ we observe 1,
and if $g < k$ we observe 0.

Assume a neoclassical utility function (the assumption of diminishing marginal utility of information in this case is highly

plausible) and a positive perceived price for information. Then, an individual's maximization of this utility subject to his budget constraint will determine whether he will purchase this political commodity and how much he will consume. The demand equation for g will be:

$$D_g = D_g(P_1, P_2, \dots, P_g, \dots, P_h, I)$$

where I is the "income" of the individual. Thus, the greater the income, the higher the demand for this political good (unless an inferior good is considered; in this case, the opposite is true). Also, in the tradition of general equilibrium analysis, assuming all goods are gross substitutes, the lower the price of g , the greater is D_g [12]. Thus, saliency should rise if the incumbent lowers the cost of information to the individual voter by making use of media and publicizing his Congressional activities.

Does the data capture this covariation of incumbency and awareness? Table 3A shows the incremental percentage of those who recognize the Democratic candidate and reside in an area with Democratic incumbents over those who reside in an area with Republican incumbents, controlling for economic responses. For example, in 1958, the percentage of the Democrats in the "better" category who recognize the Democratic candidate and reside in a district with a Democratic incumbent exceed those in the same category who reside in a district with a Republican incumbent by 89.7 percent. Table 3A is summarized in Table 3.

Table 3
Differential Saliency of the Democratic Candidate
Due to His Incumbency

Percent of Positive Entries (n = 15)	Percent of Entries Greater Than 80 Percent (n = 15)	Percent of Cases Increasing Over Time (n = 3)
100	60	100

The following tentative observations may be made:

- 1) All entries are positive and exceptionally large, which confirms strong covariation between incumbency and saliency.
- 2) There is some evidence to indicate an increasing effect of incumbency on saliency over time, at least for the "better" response category.

The conclusion [3] that there is no evidence of an increasing effect of incumbency on saliency is not substantiated. Hence, a major link in the theory of the institutional advantage of incumbency remains unbroken. Ferejohn's contrary conclusion follows from a table which shows no increase in the proportion of total voters who recognize the incumbent. The variable that should have been considered is the proportion who voted for the incumbent, not the proportion of total registered voters. When considering total registered voters, Ferejohn's conclusion is not surprising, since a higher proportion of those who don't vote cannot recall the name of the incumbent [13]. Admittedly, however, these initial results, like Ferejohn's, are based on a small number of cases.

A preliminary model is formulated to test the relationship between saliency of the Democratic candidate and incumbency. The model is of the form:

$$RD = \alpha + \alpha_1 Ed + \alpha_2 D + \alpha_3 R + \alpha_4 ID + u$$

where

- Ed = 1 if respondent has college degree
= 0 otherwise
- D = 1 if respondent is a Democrat
= 0 otherwise
- R = 1 if respondent is a Republican
= 0 otherwise
- ID = 1 if the incumbent is a Democrat
= 0 otherwise.

A probit estimation procedure is used. The results are reported in Table 4. Education and incumbency are significant in all years, while the party identification variable is significant in only one case, which corresponds to the respondent being Republican in the 1970 election. The important item to notice, however, is that incumbency increases its significance and influence over time. This is a crucial link in the theory of institutional advantage of incumbency, as Ferejohn rightly observes.

Table 4

Equation for the Recognition of the Democratic Candidate

	Const.	Education	Democrat	Republican	Inc. Dem.
1958	-0.35 * (0.19)	0.28 * (0.11)	0.25 (0.20)	-0.03 (0.20)	0.19** (0.10)
1964	-0.13 (0.21)	0.30 * (0.10)	0.15 (0.21)	0.02 (0.22)	0.21* (0.09)
1966	-0.28 (0.21)	0.32 * (0.12)	-0.02 (0.20)	-0.10 (0.21)	0.45* (0.11)
1968	-0.25 (0.18)	0.20 * (0.10)	0.03 (0.2)	-0.03 (0.20)	0.72 * (0.01)
1970	-0.40 * (0.20)	0.44 * (0.11)	0.02 (0.20)	-0.43* (0.19)	0.38* (0.11)

* significant at 5 percent

** significant at 10 percent

Hence, there does exist some support for the "defrayed cost" model in this data. Incumbents provide information about their activities at a low cost to the electorate. This low cost information impinges on the individual voter randomly, affecting the later acquisition of this information, which translates itself into higher incumbency voting.

Economic Condition and Salience

Another possible model is to postulate that the salience of the Congressional candidates increases if the individual voter is economically worse off, once control is made for incumbency. This model will be termed "the Avenger." That is, the individual voter is most likely to incur the cost of information by seeking the candidates' names if he is hurt economically by the President's policies. Ferejohn finds that, of those who vote for their own party, a lower proportion are aware of the candidate's name. This may be due to the presence of a lower proportion of those whose conditions are worsened within that group.

Table 4A tests this model by showing the covariation of the perception of economic conditions and salience. Specifically, it shows the salience of the incumbent Congressman within each economic response category in two cases:

- a) When the incumbent Congressman belongs to the President's party.
- b) When the incumbent Congressman belongs to the challenger's party.

This will establish the presidential effect, if there is any. For example, in 1958 there are 87.5 percent Republicans in the "better" category who recognize the incumbents from the presidential party.

Define P_{better} as the salience of candidate X in the "better" response category, and P_{worse} as the salience in the "worse" response category.

The model is supported if $P_{\text{worse}} \geq P_{\text{better}}$ for salience of the Congressional candidates. The evidence in Table 4A seems to indicate some covariation between salience of candidates and economic perception.

The support for the model is also satisfactory, since 70 percent of all the cases support the model. The support for the model is the case of the presidential party candidates is overwhelmingly stronger than the case of the challengers.

Thus, economic conditions should be included as a relevant variable in any further investigation of the salience variable. There is some evidence in support of both the "defrayed cost model" and "the Avenger" model.

Next, some of Ferejohn's evidence will be examined. His conclusion is that "controlling for incumbency status, in four of ten comparisons, increased recognition of his own party candidate actually decreased the probability of voting for him!" This conclusion, however, does not agree with the results of his earlier model without interaction terms between salience and incumbency [3]. For example, the regression results of his model show that the recognition of the Democratic candidate is positively significant for all elections, and that for the Republican candidate is positively significant for all elections except that of 1966. His model also shows that incumbency is positively significant in all the cases except that of 1958. See Table 5A. Ferejohn suggests estimating a more saturated version of his model by including interaction variables between incumbency and salience. Hence, the following model is estimated.

$$Y = \alpha + b_1P + b_2I + b_3R + b_4RI + u$$

Y is the voting variable

where Y = 1 if vote Democrat

= 0 otherwise.

P is the party identification variable

$$P = \begin{bmatrix} P_1 \\ P_2 \end{bmatrix}$$

where $P_1 = 1$ if respondent is Democrat

= 0 otherwise

$P_2 = 1$ if respondent is Republican

= 0 otherwise.

I is the incumbency variable

I = 1 if incumbent is Democrat

= 0 otherwise.

R is the salience variable

R = 1 if recognize Democrat candidate

= 0 otherwise.

RI is the salience/incumbency interaction variable.

Table 5 shows the results of this regression.

Table 5

Vote for the Democratic Candidate A Saturated
Version of Ferejohn's Model

	CONST.	RI	P ₁	P ₂	I	R
58	-0.57* (0.21)	-0.04 (0.25)	1.50* (0.21)	-1.0* (0.21)	0.47* (0.18)	0.36* (0.15)
64	0.25 (0.23)	0.11 (0.21)	0.52* (0.23)	-1.3* (0.23)	0.53* (0.16)	0.08 (0.14)
66	-0.65* (0.23)	0.47* (0.26)	1.0* (0.21)	-0.91* (0.22)	-.66* (0.18)	-0.02 (0.20)
68	-0.62* (0.19)	-0.21 (0.22)	0.86* (0.19)	-0.85* (0.20)	0.60* (0.17)	0.46* (0.14)
70	-0.74* (0.22)	-0.26 (0.28)	1.20* (0.21)	-1.30* (0.22)	1.30* (0.20)	0.36* (0.18)

The model supports Ferejohn's observation that the incumbency variable exhibits a significant and increasing effect on vote. However, the model also shows that the recognition variables have a similar trend in the later part of the period. To establish the significance of the recognition terms, a likelihood ratio test is conducted and the null hypothesis is rejected at 5 percent for all elections. However, this model is so riddled with multicollinearity that some interaction terms are bound to lose their sign stability and that all coefficients of the model are suspect.

The lesson learned from the previous exercise is that a single equation formulation that has both recognition and incumbency variables

as independent variables is not suitable for answering this inquiry on two grounds: first, the true model is susceptible to multicollinearity; second and more seriously, it is established that the model is misspecified under the most general assumptions regarding the interaction of salience and incumbency.

Finally, the model formulated by Ferejohn does not disprove that an adequate distributional shift in party identifiers may account for the observable change in the pattern of voting. His model was of the form:

$$\text{Vote} = \delta(\text{PID}, \text{Rec}, \text{PID} \cdot \text{Rec}) + u.$$

It follows from the evidence presented in this paper that recognition is driven in part by incumbency and that incumbency is a significant factor in explaining the voting behavior. However, Ferejohn's model relegates incumbency to the error terms while keeping the recognition variable as an explanatory variable. This renders the model misspecified and casts doubts on the interpretation and significance of the variables in the model.

The Model and Estimation Procedure

The information in the previous tables are certainly suggestive, but firm conclusions have to await further evidence which takes care of the simultaneity effect, on one hand, and insures proper control of all relevant variables in the problem, on the other. The evidence in the data provides a reasonable basis to establish relevancy of the various factors to the individual voting decision. For example, it has been shown, given the limitations of data and of tabulation technique, that the salience of candidates, incumbency, and to a lesser degree, the

individual's perception of his economic lot are related to the voting decision. Moreover, it has been shown that incumbency and economic perception are related to the salience of the candidate.

It remains to formulate a model that captures the most critical relevant variables on the one hand and takes into consideration the simultaneous nature of the political phenomena on the other. This kind of formulation improves on the specification of previous models and reduces simultaneity bias; it will also exposit the primary and secondary influences of various variables on the individual's vote. A two-equation model will be formulated. The first equation will have the voting for presidential party candidates as a dependent variable, and the salience of the presidential party candidate, perception of economic conditions, incumbency, and party affiliation as explanatory variables. The second equation will have the salience of the presidential party candidate as dependent variable, and incumbency, interaction between perception of economic conditions and party ID, education, and party identification as explanatory variables.

However, Mayhew's interpretation of the powers of the incumbency office may be restrictive. Such powers include, in addition to the advantages of the label of incumbency and use of the franking privileges, the opportunities to do more services for the constituencies. In this case, the opportunities given to Congressmen by the incumbency office to render services to their constituencies increases the more the Congressmen remain in office. The model, as it stands, measures the overall effect of the powers of the incumbency office, viewed from

this wider interpretation of these powers. However, the observable rise in the effect of incumbency on salience may be due not only to the increasing power of the incumbency office, but also to the increasing efficiency of long-time incumbents in using these powers. In this case, it may be advantageous to include two variables in the salience equation: the dichotomous variable, I , measures the power of the incumbency office, and a continuous variable, I_c , measures the accumulated learning of incumbents. This modification may affect some of the results reported in this paper, and shed further light on the effect of incumbency in the electoral process, but we leave it to future studies. Nevertheless, this paper demonstrates that even with this self-imposed limitation on the structure of the model different results are obtained.

The Model

$$Y_1 = 1 \text{ if } \alpha_1 + b_1P + b_2I_1 + b_3(DB) + b_4(DW) + b_5(RB) + b_6(RW) + b_7(IB) + b_8(IW) + b_9(R_1) + \epsilon_1 > 0 \quad (1)$$

$$= 0 \text{ otherwise}$$

$$R_1 = 1 \text{ if } \hat{R} = \alpha_2 + c_1P + c_2I_1 + c_3E + c_4(DB) + c_5(DW) + c_6(RB) + c_7(RW) + c_8(IB) + c_9(IW) \geq K \quad (2)$$

$$= 0 \text{ otherwise}$$

and a similar equation for R_2

where:

y is the voting variable

i.e. $y = 1$ if voting for the presidential party candidate
 $= 0$ otherwise.

R is the salience variable

$$\begin{bmatrix} R_1 \\ R_2 \end{bmatrix}$$

where: $R_1 = 1$ if recognize the Presidential party candidate
 $= 0$ otherwise.

F is the economic response variable

$$F' = \begin{bmatrix} F_1 \\ F_2 \\ F_3 \end{bmatrix}$$

where: $F_1 = 1$ if the response is "better"
 $= 0$ otherwise
 $F_2 = 1$ if the response is "same"
 $= 0$ otherwise
 $F_3 = 1$ if the response is "worse"
 $= 0$ otherwise.

P is the party identification variable

$$P = \begin{bmatrix} P_1 \\ P_2 \\ P_3 \end{bmatrix}$$

where: $P_1 = 1$ if the respondent is Democrat
 $= 0$ otherwise
 $P_2 = 1$ if the respondent is Republican
 $= 0$ otherwise
 $P_3 = 1$ if Independent
 $= 0$ otherwise.

I is the incumbency variable

$I_1 = 1$ if the Presidential party candidate is incumbent
 $= 0$ otherwise.

E is the education variable

$E = 1$ if the respondent has college degree
 $= 0$ otherwise.

The interaction terms are

$D\beta = 1$ if the voter is Democrat and perceived "better" conditions
 $= 0$ otherwise
 $DW = 1$ if Democrat and perceived "worsened" conditions
 $= 0$ otherwise
 $R\beta = 1$ if Republican and perceived "better" conditions
 $= 0$ otherwise
 $RW = 1$ if Republican and perceived "worsened" conditions
 $= 0$ otherwise
 $I\beta = 1$ if Independent and perceived "better" conditions
 $= 0$ otherwise

and ϵ_1, ϵ_2 are random components.

In every variable, one category is not included in the actual regression model to avoid overidentification. Notice that the formulation of the model allows pooling of data from several elections to nail down the effect of some crucial variables. As has been indicated, the data used is SRC (1956-1970) election data.

Although the salience variable R is observable as dichotomous, it will be assumed to reflect a continuous variable \hat{R} , with a threshold k such that

$$\hat{R} > k \Rightarrow R = 1,$$

$$\hat{R} < k \Rightarrow R = 0. \quad (3)$$

This assumption will facilitate using a two-step probit estimation procedure. Equations (2) and (3) define a standard probit model; coefficients of (2) can be estimated by maximum likelihood procedure. These estimated coefficients are used to construct \hat{R} , which can be used as an instrument to replace R in (1). The rest of the estimating procedure proceeds analogously to the two-stage least square [15].

A two-stage probit technique is used in estimating the model for individual elections and for pooled runs. All tests of significance are conducted at the 5 percent level of confidence.

A word of caution has to be added here. It has been shown that in the second stage of such procedures, the standard errors of the coefficients are not consistent [14]. This makes the distribution of the ratio of the coefficients to their standard errors not t exactly. Therefore, the conclusion of significance derived from the inspection of these ratios has to be taken with this fact in mind.

Results

The Salience Equation. Table 6 shows the result of the regression of the first equation. The following observations may be made:

1. Incumbency is positive and significant in all elections (except that of 1964 where it also picks up the wrong sign). Pooling of data establishes this observation firmly. There is some evidence that incumbency increased in influence towards the end of the period considered. This is a crucial step in Mayhew's argument, which seems to be supported by these findings.

2. Except for two cases, that of "Dembet" in 1970 and "Indworse" in 1958, the coefficients of economic conditions are not significant and do not possess sign stability in the equation for the salience of the presidential party candidate.

3. Party identification does not have any effect on salience.

4. Education is significantly positive in all elections and in pooled runs.

A modified equation for the salience of the challenger's party candidate, where no interaction terms are included, is run. Table 7 shows the results of this regression. The above findings are firmly supported.

Table 6
Saliency of the Presidential Party Candidate

	CONST. α_1	DEM b_1	REP b'_1	INC b_2	DEM BET b_3	DEM WOR b_4	REP BET b_5	REP WOR b_6	IND BET b_7	IND WR b_8	ED b_9
	S.E	S.E	S.E	S.E	S.E	S.E	S.E	S.E	S.E	S.E	S.E
58	-0.62*	0.15	0.16	0.35*	0.18	0.07	0.3	-0.07	0.09	-0.51*	0.35*
	0.18	0.19	0.2	0.07	0.1	0.1	0.29	0.31	0.12	0.17	0.08
64	-0.14	0.17	0.35	-0.08	-0.002	-0.01	-0.48	-0.52	-0.05	-0.13	0.28*
	0.26	0.26	0.27	0.07	0.1	0.13	0.33	0.4	0.14	0.22	0.09
66	-0.6*	-0.06	0.1	0.23*	-0.1	-0.01	-0.35	-0.29	-0.15	-0.07	0.50*
	0.19	0.2	0.2	0.09	0.12	0.13	0.27	0.3	0.16	0.16	0.10
68	-0.36	0.004	0.1	0.42*	-0.06	-0.05	-0.26	-0.40	-0.1	-0.2	0.27*
	0.2	0.2	0.22	0.08	0.11	0.14	0.28	0.32	0.14	0.17	0.09
70	-0.75*	0.21	-0.05	0.44*	-0.36*	-0.13	0.04	0.07	0.10	0.19	0.63*
	0.16	0.18	0.19	0.08	0.13	0.12	0.25	0.23	0.16	0.16	0.09
64 & 68	-0.26	0.08	0.20	0.18*	-0.007	-0.04	-0.04	-0.17	-0.36	-0.44	0.27*
	0.16	0.16	0.17	0.05	0.07	0.1	0.1	0.13	0.21	0.25	0.06

Table 7

Equation for the Recognition
of the Challenger's Party

	CONST.	EDUCATION	DEMOCRAT	REPUBLICAN	INC. REP.
1958	-0.75* (0.20)	0.18** (0.11)	0.17 (0.20)	0.42* (0.21)	0.80* (0.09)
1964	-0.64* (0.22)	0.40* (0.10)	-0.11 (0.22)	0.23 (0.22)	0.92* (0.09)
1966	-0.41* (0.19)	0.29* (0.12)	-0.04 (0.20)	0.25 (0.21)	0.36* (0.12)
1968	0.14 (0.18)	0.48* (0.10)	-0.31 (0.19)	-0.18 (0.19)	0.19* (0.09)
1970	-0.38* (0.19)	0.60* (0.12)	-0.40* (0.19)	-0.24 (0.20)	0.79* (0.11)

The Voting Equation

Table 8 shows the results of regressing the first equation of the model using the computed values of the salience variable from the first step of the estimation procedure. The following observations may be made.

1. Except in 1958, where it also picks up the wrong sign, incumbency is positive and significant. Pooling data establishes this observation firmly. There is also some evidence in support of Ferejohn's assertion that the incumbency effect is greater during off-year elections than in on-year elections [3].

2. Except for the 1964 election, salience has a positive, significant effect on voting. Pooling the data, however, seems to indicate that the effect is primarily during off-year elections. This is perhaps due to the "drowning" of the effect of salience by the presidential coat-tail effect. Moreover, there is some evidence that salience exhibits an increasing effect on voting. This finding, and the previous one that indicates that incumbency exerts increasing influence on salience, strengthen Mayhew's argument.²

3. The pattern of signs for the economic conditions/party affiliation interaction terms is confusing and does not support any positive or negative hypotheses about their effect on voting.

²In reference to the observation, made earlier, regarding the lack of consistency of the standard errors of the coefficients in the second stage, it is reassuring to note the absence of sign anomalies in these coefficients. Moreover, the fact that what is of interest here is trends over time rather than individual significance of coefficients.

Table 8
Voting Equation

	α_2	DEM c_1	REP c_1'	INC b_3	DEM BET b_4	DEM WOR b_5	REP BET b_6	REP WOR b_7	IND BET b_8	IND WR b_9	REG b_{10}
	S.E	S.E	S.E	S.E	S.E	S.E	S.E	S.E	S.E	S.E	S.E
58	-0.13	-1.4*	0.74*	-0.12	+0.44*	-0.17	0.003	0.27	-0.29*	0.64*	0.9*
	0.27	0.27	0.23	0.13	0.2	0.26	0.32	0.36	0.13	0.21	0.29
64	-0.19	0.36	-0.94*	0.21*	-0.009	-0.02	-0.4	0.16	0.30	-0.09	0.15
	0.26	0.27	0.3	0.08	0.1	0.14	0.36	0.42	0.16	0.27	0.33
66	-0.1*	0.97*	-0.31	0.36*	-0.09	-0.11	0.34	0.34	0.04	0.36	0.43*
	0.24	0.22	0.25	0.1	0.12	0.13	0.3	0.33	0.2	0.20	0.19
68	0.45*	0.44*	-0.71*	0.13	0.09	-0.11	-0.33	-0.33	0.16	-0.27	0.49*
	0.22	0.21	0.23	0.17	0.11	0.13	0.32	0.37	0.19	0.24	0.24
70	-0.66*	-0.91*	0.61*	0.45*	0.25	0.02	-0.69*	-0.38	+0.05	0.15	0.58*
	0.2	0.22	0.20	0.11	0.2	0.19	0.33	0.26	0.15	0.16	0.15
64 & 68	-0.40*	0.42*	-0.79*	0.24*	0.06	-0.06	0.14	-0.22	-0.33	-0.26	0.24
	0.17	0.16	0.18	0.07	0.07	0.09	0.12	0.17	0.24	0.27	0.24

On examining the evidence presented in these tables, the following observations may be made from Tables 8 and 9:

1. There is a slight increase in the coefficient of incumbency in the equation for votes of candidates of the presidential party.
2. There is also a slight increase in the coefficient of saliency of the candidate of the presidential party in the vote equations.
3. Almost all of these coefficients are significant and positive (Table 9).
4. There is a slight increase in the coefficient of incumbency in the saliency equation for presidential party candidate equation.

The second and third observations do not support Ferejohn's [3] contention of Mayhew's theory. The link between the increasing significance of incumbency voting and the increasing salience of the incumbent must be broken in order to sustain objections to Mayhew's theory.

However, the fourth observation shows that incumbency is increasing in significance even when salience is controlled. This means that the Ferejohn-Burnham theory of basic change in the electorate behavior may also be right.

It is the conclusion of this paper that Mayhew's theory is not defeated. It must therefore await further evidence to either substantiate it or to discard it. Further, it is found that both the theories of institutional advantage of incumbency and basic change in electorate behavior account for a significant part of the decline of competition in Congressional elections.

A more direct examination of the problem posed by Mayhew is still desirable. Such examination involves the inclusion of campaign expenditure and duration of incumbency in both equations of the model. A better specified model may even involve adding a third equation for incumbency. While such modifications may affect some of the results reported in this paper, it is proper to point out that the specification in this paper is dictated by both theoretical and practical considerations posed by the availability of data.

Table 1B
 Republican Incumbency Advantage

"Better"

PID \ YEAR	*56	58	*60	62	*64	66	*68	70
DEMOCRAT	10.0	68.6	-42.9	-	37.0	23.0	25.0	77.8 ↑
INDEPENDENT	51.7	50.0	-25.0	-	44.5	33.4	87.5	50.0 ↔
REPUBLICAN	30.9	41.6	10.0	-	3.5	-16.9	29.8	10.5 ↓

"Worse"

PID \ YEAR	*56	58	*60	62	*64	66	*68	70
DEMOCRAT	30.0	20.0	-9.0	-	-20.0	42.8	38.1	90.0 ↑
INDEPENDENT	-14.2	20.0	-100.0	-	100.0	-50.0	25.0	80.0 ↑
REPUBLICAN	50.0	45.3	-17.7	-	24.1	-12.8	-10.0	6.9 ↓

Entries are: Proportion of people who voted Republican in Republican incumbent district - proportion of people who voted Republican in Democratic incumbent district.

* on-year Congressional elections

Table 2A

	1ST PERIOD			2ND PERIOD		
	58	64	66	68	70	
DEMOCRAT/BETTER	17.1	10.0	19.2	17.1	44.4	↑
DEMOCRAT/WORSE	60.0	20.0	42.9	23.8	45.5	↓
REPUBLICAN/BETTER	15.0	11.5	46.2	14.3	62.5	↑
REPUBLICAN/WORSE	25	0	31.5	28.6	14.3	↑

Entries are: among the people who voted for the other party candidate (percent recognize other party candidate - percent recognize own party candidate).

Table 2B

	1ST PERIOD			2ND PERIOD		
	58	64	66	68	70	
DEMOCRAT/BETTER	22.9	25.5	23.8	15.8	4.5	↓
DEMOCRAT/WORSE	22.7	28.0	31.6	26.9	38.2	↑
REPUBLICAN/BETTER	23.2	2.8	8.5	21.1	19.0	↑
REPUBLICAN/WORSE	25.0	13.8	10.9	5.0	24.0	↓

Entries are: among the people who voted for their own party candidate (percent recognize own party candidate - percent recognize other party candidate).

Table 3A

Saliency and Incumbency (in Democratic Candidacy) Effect
on PID's Controlling for Economic Conditions

"Better"

Year PID	58	64	66	68	70
Democrat	89.7	88.4	85.3	82.2	100
Independent	60.0	25.0	50.0	100	100
Republican	100	62.5	70.0	66.6	100

Entries are:

(proportion recognizing the
Democratic candidates in an
area with Democratic
incumbents)

-

(proportion recognizing the
Democratic candidate in an
area with Republican
incumbents)

Table 4A: Saliency and Economic Conditions

ECONOMIC RESPONSE \ YEAR	*58	*64	*66	68	*70
BETTER	87.5	81.3	80	83.3	63.6
SAME	88.9	94.1	88.9	77.8	75.0
WORSE	100	100	100	62.5	100

Entries are: proportion of Republicans recognizing the Incumbents
of the presidential party.

Differential Saliency of the Challenger's Party

Incumbent Candidate Among the Republicans

ECONOMIC RESPONSE \ YEAR	*58	*64	66	68	*70
BETTER	.70	85.7	77.8	89.5	91.7
SAME	93.3	94.7	87.5	94.7	100.0
WORSE	100	100	70.0	62.5	100.0

Entries are as defined above for the challenger party.

*Supports the "Avenger Model."

Table 5A

Ferejohn's Model, Reestimated Using Probit

	CONST.	DEMOCRAT	REPUBLICAN	RI	RD	RR
1958	-0.12 (0.21)	1.5* (0.21)	-0.98* (0.22)	-0.28* (0.13)	0.81* (0.17)	-0.72* (0.18)
1964	0.78* (0.23)	0.52* (0.23)	-1.3* (0.23)	-0.40* (0.11)	0.44* (0.13)	-0.53* (0.14)
1966	0.15 (0.21)	0.99* (0.22)	-0.91* (0.22)	-0.73* (0.16)	0.74* (0.17)	-0.81* (0.17)
1968	-0.61* (0.2)	0.82* (0.19)	-0.89* (0.2)	0.33* (0.11)	0.83* (0.15)	-0.70* (0.14)
1970	0.49* (0.21)	1.2* (0.21)	-1.3* (0.22)	-0.81* (0.16)	0.73* (0.18)	-0.99* (0.19)

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