

## Notes and Comments

# The Influence of Turnout on the Results of the Referendum to Amend the Constitution to Include a Clause on the "Rights of the Unborn": A Review of Walsh's Findings\*

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*Abstract:* In a recent article Walsh analysed the effect of the low level of turnout on the results of the September 1983 Referendum and stated that "the most important general conclusion from the study is that the level of support for the amendment in the population seems to have been higher than that indicated in the Referendum results." This article is a detailed review of the meaning, logic, and methodology of Walsh's study. First, it questions the validity of Walsh's attempt to allocate a preference either for or against the constitutional amendment to those who did not vote. Second, it is shown that his key inference, "that those who abstained in each constituency were more likely to have held a 'yes' opinion than those who voted", does not follow logically from the statistical relationship identified by him. In addition, a number of important statistical and methodological errors in Walsh's paper are identified and these further invalidate his conclusions.

### I INTRODUCTION

In an article in the April 1984 issue of this *Review* Walsh examined the results of the Referendum to include in the Constitution a clause concerning the "right to life of the unborn". The stated aim of that paper was "to show that it is possible to make some inferences about the effect of the turnout on the results of this Referendum" (p. 228) and, in particular, Walsh was led to the following strong conclusion "The most important general conclusion from the study is that the level of support for the amendment in the population seems to have been higher than that indicated in the Referendum results" (p. 233). The purpose of this review is to question the validity of the

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exercise undertaken by Walsh and, more specifically, to show that his data are quite insufficient to support the conclusion he draws from them. Consequently, his conclusion is merely a speculation.

## II ON ASSIGNING A PREFERENCE TO ABSTAINERS

Walsh notes that “A feature of the poll that has attracted considerable attention was the low turnout. Only 54.6 per cent of the electorate voted in the Referendum, and the high abstention rate naturally fuelled speculation as to the ‘true’ level of support for the amendment in the population as a whole” (p. 227). His paper is an attempt to give an indication of the ‘true’ level of support by deriving a proposition about how the many non-voters would have voted, had they voted. It is interesting that at the outset he lists three possible interpretations of the low turnout in the Referendum. First, “that it represented a protest against the holding of the Referendum”. Second, that “the low turnout has been seen as a rejection of the substance of the proposed amendment by people who did not feel strongly enough to vote or were inhibited by public opinion from voting ‘no’.” And third, that the “true” level of support for the proposed amendment was greater than that indicated by the 35 per cent of the electorate who voted for it — “but the predictability of a ‘yes’ majority might have reduced the incentive of those in favour to actually come out and vote” (pp. 227–228).

However, the first of these interpretations is never mentioned again and is implicitly dismissed in his subsequent attempt to allocate non-voters as either “yes” or “no”. This is the source of our primary objection to his study. This objection is best appreciated by noting that he compares his study to that of Compton (1978) who assigned those who refused to answer the question on religion in the 1971 Census of Population in Northern Ireland to one or other of the religious affiliations. There is, in our view, no valid analogy between membership of religious affiliations and votes in a referendum. Almost everybody in Northern Ireland is, or was, a member of some religious affiliation (in a communal, if not always in a spiritual sense). Consequently, there is, up to a point, a certain validity in assigning everybody to one or other affiliation. However, there are not two but *three* options open to citizens in a referendum; yes, no, and not voting (or spoiling the vote). Consequently, abstentions, as well as the “yes” and “no” totals are a *part of the result* and, *a priori* (and in the absence of some independent evidence to the contrary), there is no justification for treating abstainers as either supporters or opponents of the proposed constitutional amendment. These statements, which apply to all referenda, are doubly true of the recent referendum on the “right to life of the unborn” where a complicated interaction of moral, legal, practical and political issues were involved. Walsh compares the turnout in the recent

Referendum with that in the referenda on EEC membership, Article 44 and Voting Age, and on Adoption and Senate Representation, and notes "the importance of factors specific to the actual poll on the turnout" (p. 228—p. 229). Given this acknowledgement that the level of turnout is an important feature, perhaps the dominant one, of each referendum, it is surprising that he does not treat abstention as an option on par with voting "yes" or "no", and that he does not regard the level of abstention as an integral part of the result.

### III WALSH'S ANALYSIS OF THE INFLUENCE OF TURNOUT ON THE REFERENDUM RESULTS

Having stated our primary objection to the exercise undertaken by Walsh let us consider the details of his analysis. In the Referendum on the "right to life of the unborn" the usual regional pattern of variation in levels of turnout was, to some degree, reversed. As he says "the usual high turnout in the south and west of the country did not occur. On the other hand, there was a relatively high turnout in constituencies, such as those in Dublin, where turnout is normally low." (p. 229). He confirms Gallagher's contention that turnout of itself is not systematically related to the Referendum vote (percentage of "yes" votes in total valid poll) (Gallagher 1983). However, Walsh suggests that rather than consider turnout as a percentage of the registered electorate the turnout should be compared with that in a general election, and chooses the election of November 1982 for this purpose. He then constructs a variable measuring the *fall* in participation between that General Election and the Referendum. (For simplicity we adopt his variable names: thus  $\text{DROP} = \text{Percentage turnout in November 1982} - \text{Percentage turnout in September 1983}$ .) He finds that across constituencies there is indeed a high positive correlation between "level of support for the amendment" and the percentage drop in turnout.<sup>1</sup> Thus, for example, in Dublin North East there was a drop in turnout of only 14 per cent and the "yes" votes were 49 per cent of those cast; while in Mayo West there was a 28.1 per cent drop in turnout but 81.2 per cent of those who did vote, voted "yes". (The data for each constituency can be found in Appendix A of Walsh's paper.) *This correlation is the basis of all Walsh's inferences about how non-voters would have voted* (p. 231) and hence is the basis for his statement "that the level of support for the amendment in the population seems to have been higher than that indicated in the Referendum results".<sup>2</sup>

<sup>1</sup>By "level of support for the amendment" Walsh means invariably "yes" votes as a percentage of the total votes cast (and defines this as YES%). Objections to this choice of measure will be outlined below.

<sup>2</sup>He also finds a strong positive correlation between the Fianna Fáil percentage of first preferences (in November 1982) and "yes" votes as a percentage of votes cast. In addition to these correlations some regression results are presented. These will be discussed below.

It is our contention that this high positive correlation is incapable of sustaining that inference. It is argued below:

1. That the inference Walsh draws from that correlation is highly counter-intuitive.
2. That the correlation is quite consistent with an inference diametrically opposed to that adopted by Walsh, and
3. That these variables are definitionally related and this creates difficulties in Walsh's investigation of the causal relationship between them.

(1) Walsh asserts that the "correlation between the drop in turnout and the outcome of the Referendum can be used to explore the hypothetical implications of a higher turnout" but notes that "the effect of these hypothetical additional votes on the outcome of the Referendum can be explored only if an assumption is made on how to allocate them to 'yes' or 'no' ". Three possible assumptions are considered. One is that those who did not vote in the Referendum (but voted in the November 1982 General Election) would have been distributed between "yes" and "no" in the same proportions as the votes actually recorded in their particular constituency. As he shows, the result of a calculation based on this assumption is to *raise* what he calls the "national proportion of 'yes' votes" from 66.9 to 67.7 per cent. But he considers that

this basis for allocating the additional votes is conservative in as much as no allowance is made for the possibility that the non-voters were *more likely than the voters within each constituency to have voted 'yes'*, as is suggested by the strong positive inter-constituency correlation between YES % and DROP<sup>3</sup>.

It is on this basis that he infers that:

the level of support for the amendment in the population seems to have been higher than that indicated in the Referendum results.

First, it is intended to draw attention to the fact that this hypothesis about the attitudes of those who abstained in the Referendum is highly counter-intuitive. It is suggested that it was predominantly Fianna Fáil voters, supporters of the amendment, who *failed* to turn out — and this in a situation in which Fianna Fáil had proposed and unequivocally supported the amendment, and in which that support was in line with the strong recommendation of the Catholic Church; whereas Fine Gael had equivocated and eventually opposed the amendment and that opposition could be expected to create confusion and conflict of loyalty in the minds of that party's supporters.

<sup>3</sup>Emphasis added. In the original article the word TURN<sup>83</sup> appeared instead of the word DROP; Professor Walsh has kindly confirmed this misprint (p. 232).

(2) However, in fact his hypothesis “that those who abstained in each constituency were more likely to have held a ‘yes’ opinion than those who voted” (p. 233) does not follow logically from the strong positive correlation between the YES % and the DROP in turnout. He derives this hypothesis from that correlation by arguing as follows

If this correlation holds within, as well as between, constituencies, there would be a higher proportion of ‘yes’ votes among the additional votes than among those actually cast (p. 232).

To appreciate the objection to Walsh’s hypothesis it is necessary to ask what this key sentence means. If it means that within each constituency, at the level, say, of polling districts, that those polling districts with a high “yes” percentage (of votes cast) will tend to be districts that showed a high drop in turnout, then it may well be true, and has a clear meaning. But, at the level of the polling district, as of at the constituency, the preponderance of “yes” over “no” votes *among those who voted* carries no implication whatsoever for the attitudes of those *who did not vote*. In fact, in the sentence quoted, Walsh leads the reader to his inference by suggesting (implicitly) that at the *level of the individual citizen* voting yes and “abstaining” are related events in the same way in which voting yes and voting Fianna Fáil in November 1982 seem to be related. But the strong positive correlation between yes as a percentage of votes cast and the drop in turnout should not be treated as analogous to the strong positive correlation between yes as a percentage of votes cast and the Fianna Fáil percentage of first preference votes, as it implicitly is by Walsh. For, voting “yes” and abstaining are *mutually exclusive events*; the observed positive correlation between “yes” votes *as a percentage of votes cast and a low number of votes being cast* may, indeed, suggest that *these two variables* are related, but cannot sustain the inference that supporting the amendment and abstaining in the Referendum are *associated attitudes*. It cannot, therefore, sustain the conclusion which he draws from this inference, that “a higher turnout would be estimated to have resulted in an even greater increase in the national proportion voting ‘yes’” (p. 233). Indeed, it should be pointed out that Walsh’s error here is of a type that has been much discussed in the literature on the design of non-experimental research. The problem arises in the use of what have become known as “ecological correlations”. Blalock summarises the literature on this by saying that “it may be incorrect to make inferences about correlations between variables, taking persons as units, on the basis of correlational data based on groups as units” (Blalock, 1961, p 97).<sup>4</sup> It should be clear that this is precisely what Walsh has done in deriving the central inference of his paper.

<sup>4</sup>Quite independent of the serious problems of *interpretation*, Blalock makes the statistical point that the larger the unit of analysis the greater the correlation coefficient; consequently when Walsh says “If this correlation holds within, as well as between, constituencies . . .” this is, in fact, highly unlikely.

A third assumption about how to allocate non-voters to "yes" or "no" is considered by Walsh, who says:

Only if it is believed that the large abstention rate in constituencies with a high YES %, reflected a covert 'no' vote among people who were deterred by the force of local opinion or traditional party loyalty from actually voting is it possible to maintain that the fall in turnout led to an overstatement of the level of 'yes' support (p. 232).

He dismisses this hypothesis saying "The strength of the positive correlation between DROP and YES % makes this interpretation implausible." For the reasons given above, this is a *non sequitur*. Indeed, a moment's reflection will confirm that a situation in which *all* those who favoured the amendment actually voted, and *all* those who abstained were in fact against the amendment, could generate exactly, the strong positive correlation between drop in turnout and "yes" votes as a percentage of the turnout, which he has identified. Finally, Walsh outlines a number of conclusions which are, he says, "supported by the research presented in this Note." The second of these is that:

. . . there is a strong tendency for a high 'yes' vote to have been recorded in constituencies where the drop in turnout relative to the November 1982 General Election was large. *This suggests* that the anti-amendment groups were *more successful* in mobilising their supporters than were those who promoted the amendment (p. 233 emphasis added).

This remarkable statement is also a *non sequitur*, and none of the evidence presented by Walsh can lend the slightest credence to it.

(3) Here it is shown that there is a *definitional relationship* between the variables chosen by Walsh and this casts further doubt on his interpretation of the *observed* relationship between them. The two variables DROP and YES% can be defined as follows:

$$D \equiv \frac{V-(Y + N)}{R} \qquad \text{YES \%} \equiv \frac{Y}{Y + N}$$

Where V is the constituency's turnout in November 1982 General Election, Y is the number of "yes" votes, N the number of "no" votes, R is the number of Registered electors, and D is used as an abbreviation for DROP.<sup>5</sup> Clearly these

<sup>5</sup>Here, for the purpose of demonstrating the definitional relation between these variables, we have simplified the definition of the variable DROP by assuming that the Register of electors was the same in November 1982 and September 1983.

two variables are definitionally related.<sup>6</sup> The substantive problems of interpreting any observed relationship between these two variables arises from the ambiguity of  $Y/Y + N$  as a measure of the support for the amendment — and this is explored further below. But the existence of a definitional relation between Walsh's two crucial variables also creates statistical problems in his analysis. Although his hypothesis concerning the attitudes of abstainers is inferred (incorrectly) solely from the positive correlation between YES % and DROP, he also presents the results of a regression analysis — and it is in that context that the statistical problem can be most clearly seen. His equation can be written as follows (using D as an abbreviation for DROP and where L denotes the combined share of the Labour Party and Workers Party in the November 1982 General Election).

$$\frac{Y}{Y + N} = a_0 + a_1 L + a_2 D + u \quad (1)$$

Walsh's OLS estimates of the coefficients of this equation must be treated with caution since there is reason to expect correlation between the regressor D and the random disturbance term. Equation 1 defines a stochastic linear relationship between  $Y/Y + N$  and two variables, L and D. But there also exists a *definitional* relationship between  $Y/Y + N$  and one of these variables — the drop in turnout. From the definition of DROP it follows that

$$\frac{Y}{Y + N} \equiv \frac{Y}{V - RD}$$

This defines a non-linear relationship between  $Y/Y + N$  and D. Any observed combination of  $Y/Y + N$  and D must satisfy *both* the stochastic linear relationship (1) and this exact non-linear relationship — in effect these variables are part of a system of simultaneous equations, and estimation of one of these equations is liable to give rise to estimates *which are both biased and inconsistent* (Wonnacott and Wonnacott, 1979, p. 260).

<sup>6</sup>The way in which these two variables are definitionally related has an interesting implication for correlation between them. Consider how these two variables could be correlated. D will be above its mean value when either N or Y are *below* their mean value. In the case where N is below its mean value (those opposed to the amendment have failed to turnout) then  $Y/Y + N$  will be *above* its mean value, and D and YES% will be *positively* correlated. In the case where Y is below its mean value (supporters of the amendment have failed to come out)  $Y/Y + N$  will be *below* its mean value, and D and YES% will be *inversely* correlated. An analogous argument applies to deviation of D below its mean value; these will tend to coincide with deviations of YES% *below* its mean value only when N is above its mean value. Prof. Walsh has shown that D and YES% are, in fact, *positively* correlated; this can *only* arise from the number of "no" votes, N, being below its mean value in those constituencies (in the South and West) where YES% is above its mean value.

## IV MEASUREMENT OF "SUPPORT" FOR THE AMENDMENT

Summarising his regression analysis Walsh says that the relationship between YES% and DROP "is very robust and insensitive to the combination of additional variables that is included in the regression". Here it is shown that, in addition to the logical and statistical problems outlined above, this relationship is far from robust in the face of a quite minor redefinition of the dependent variable.

Throughout his paper Walsh talks of the "outcome of the Referendum", the "national proportion of 'yes' votes", and "the level of support for the amendment" where he invariably means, "*yes*" votes as a percentage of those who voted. Despite its use in deciding whether an amendment is carried or lost this is a particularly unsuitable variable to adopt in order to examine the relationship between the number of "yes" or "no" votes and the level of turnout, since YES% (defined as  $Y/Y + N$ ) is as much a measure of opposition to the amendment as it is of the level of support for the amendment. To circumvent this problem we require a measure of support for the amendment which, unlike YES%, is independent of the number of "no" votes, and is less sensitive to the turnout in the Referendum. Suppose we accept Walsh's point that in examining the effect of turnout on the results of the Referendum the "normal" pattern of turnout (as indicated, for example, by the November 1982 General Election) is more significant than the full Register of electors, we can then define as a measure of the electoral support for the amendment the number of "yes" votes in a given constituency as a percentage of the normally active voters in that constituency (as approximated by the turnout in November 1982). Likewise, we can construct a measure of opposition to the amendment by taking "no" votes as a percentage of the turnout in the November 1982 election. We adopt the symbols Y% and N% for these two measures.

A brief examination of how these two variables are related to the drop in turnout is sufficient to show that the correlation stressed by Walsh is far from robust and that the inference drawn by him is also highly implausible. First, there was far more inter-constituency variation in the "no" vote than in the "yes" vote: the respective coefficients of variation are 0.47 and 0.14. This relatively small variation in the "yes" vote is a fundamental feature of the Referendum results. It alone would suggest that, in undertaking a study of the kind proposed by Walsh, the appropriate research task is to attempt to explain the variation in the "no" vote, and not the "yes" vote. His assumption that what needs to be explained is the variation in the "yes" vote results from the choice of  $Y/Y + N$  as a measure of the "yes" vote. But examination of the data reveals that the variation in that measure of the "yes" vote arises precisely from the large variation in the number of "no" votes across constituencies. Indeed, the correlation between Walsh's measure of support for the amendment,  $Y/Y + N$ , and our measure of opposition to the amendment ("no" votes as a percentage of



turnout in November 1982) is  $-0.98$ . Second, as Table 1 shows, when the misleading variable  $Y/Y + N$  is replaced by the more appropriate measure of support for the amendment proposed above then the correlation between "support" for the amendment and the drop in turnout, upon which Walsh bases his strong conclusion concerning the opinions of those who did not vote, is seen to be dramatically reduced from 0.77 to 0.42.

Table 1: *Correlation coefficients*

	YES%	Y%	N%
DROP	0.77	0.42	-0.86
N%	-0.98	-0.80	1.00

DROP = difference between percentage turnout in the November 1982 General Election and percentage turnout in the Referendum.

YES% = "yes" votes as a percentage of valid poll in the Referendum.

Y% = "yes" votes as a percentage of the turnout in the November 1982 General Election.

N% = "no" votes as a percentage of the turnout in the November 1982 General Election.

In addition, what emerges is that the drop in turnout is very strongly (negatively) correlated with the number of "no" votes (as a percentage of the November 1982 valid poll). These large changes in strength of correlation in the face of a minor change in the denominator of Walsh's measure of support for the amendment suggest a re-estimation of his regression Equation 1 (not forgetting the limitations of OLS estimates in this context). Table 2 below presents Walsh's preferred Equation (1) in which the dependent variable was  $Y/Y + N$ , and our re-estimation of this Equation (2) using  $Y/\text{turnout}$  in November 1982. A comparison of Equations 1 and 2 shows that the ability of the inter-constituency drop in turnout to explain the inter-constituency variation in support for the amendment seems to depend upon the use of the highly "impure" variable  $Y/Y + N$ .

Table 2: *Regression results.*

	<i>Dependent variable</i>	<i>Intercept</i>	L	DROP	R <sup>2</sup>
1.	YES%	44.0	-0.38 (2.6)	1.45 (6.6)	0.66
2.	Y%	46.0 (10.4)	-0.28 (2.4)	0.34 (1.9)	0.25
3.	N%	51.0 (12.8)	0.25 (2.3)	-1.54 (9.6)	0.77

t- statistics in parentheses

If, in analysing the Referendum, the drop in turnout is considered to have played a significant part in generating the observed “yes” and “no” votes then it would be of interest to ask whether the drop in turnout explains more of the variation in the “yes” vote or of the “no” vote. Once we adopt measures of the “yes” and “no” votes which are independent of each other and of the level of turnout in the Referendum then, as Equation 3 indicates, the drop in turnout would seem to explain much more of the variation in the “no” vote than of the “yes” vote (notwithstanding the fact that, as stated above, there was far more variation in the “no” vote to be explained).<sup>7</sup> In addition to the logical and statistical problems outlined above, this casts further doubt on Walsh’s view that the data “suggest that the anti-amendment groups were more successful in mobilising their supporters than were those who promoted the amendment.”

These correlations and regressions are *not* presented in an attempt to explain the result of the Referendum, and, in particular, it is not intended to attribute a preference for or against the amendment to those who did not vote; the primary point of this review was, and remains, the argument that *a priori* there is no validity in such an exercise. Rather, they are presented in order to demonstrate that Walsh’s statistical results (in addition to the unwarranted inferences he draws from them) are themselves highly dependent on the use of the misleading variable  $Y/Y + N$ , and that when more suitable measures of support for, or opposition to, the amendment are adopted a quite different set of relationships between the drop in turnout and the “yes” and “no” votes seems to emerge.

## V CONCLUSION

The primary purpose of this study has been to question the validity of Walsh’s attempt to assign a preference either for or against the amendment to those who abstained in last year’s Referendum. In addition, it has been shown that his data are insufficient to support the strong inference he draws from them. We are forced, therefore, to the conclusion that there is no basis in fact or logic for Walsh’s statement “that the level of support for the amendment in the population seems to have been higher than that indicated in the Referendum results”.

<sup>7</sup>The  $R^2$  in Equations 2 and 3 are non-comparable since the dependent variable is different in each equation. A more exact test of whether the drop in turnout explains more of the variation in “yes” or in “no” vote is achieved if DROP is made the dependent variable and we ask whether the “yes” vote (Y%) or the “no” vote (N%) can (in combination with other variables) explain more of the variation in the drop in turnout. This has been done and, subject to the limitations of OLS estimates in this context, confirms that the stronger relationship exists between the “no” vote (as measured by N%) and the drop in turnout.

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