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Title: Analysis of News Exposure Items from the 1995 Pilot
Date: January 24, 1996
Dataset(s): 1995 Pilot Study

Abstract

Zaller examines and evaluates the 1995 Pilot Study items designed to measure exposure to television news programming. The Pilot contained three general types of exposure items: self report exposure items, tests of domain specific information, and willingness to rate media personalities on feeling thermometer scales. Because each of the batteries have different advantages and drawbacks, Zaller considers each separately. Zaller finds that the domain specific items, which test knowledge of news anchors, perform as expected. That is, the anchor information items function as valid measures of political information, but also tap a dimension of information somewhat independent of the NES political information scale. Furthermore, the anchor information items are not simply another opportunity for respondents to show they are well informed; only respondents with both high levels of political information and high news exposure score well on those items. Thus, the anchor information items seem to function as the sort of domain specific measure of television exposure that they were designed for. The "willingness to rate" anchor items, on the other hand, capture a factor somewhat correlated with political information, but largely independent of it. Thus, the willingness to rate items seem to be little more than a flawed measure of political information. Turning to the self-reported exposure items, Zaller argues that the traditional NES measure is inherently problematic and probably suffers from significant over-report. Zaller finds little evidence to suggest that either a longer exposure question battery or embedding the exposure item in a sequence of related items improves the performance of that item. In conclusion, Zaller argues that the new items, by and large, do not improve the measurement of media exposure. The one exception is that the anchor information items seem to be both a valid and reliable indicator of exposure to television news.

Analysis of News Exposure Items from the 1995 Pilot

January 24, 1996
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Amid signs of renewed scholarly interest in the effects of mass communication in presidential campaigns, the 1995 NES Pilot undertook three mini-studies to improve the measurement of exposure to the mass media. The first involves exposure to TV news, which is believed by some scholars to be the most important influence in presidential campaigns. The second involves exposure to paid advertising, a hard-to-study but probably important influence. The third involves talk radio.

From his assessment of the results of these three mini-studies, Bartels concluded that Pilot-tested items on entertainment and talk radio exposure work well and warrant inclusion on a regular NES study, but that items intended to measure exposure to TV news represent little obvious improvement over existing measures. My own analysis has led me to agree with Bartels in the case of campaign advertising exposure, and I have not yet had a chance to analyze the talk radio items. In the area of TV news, I disagree with Bartels' assessment, since, as it seems to me, some of the new items have performed about as well as could have been expected. Therefore, this memo is almost entirely devoted to an analysis of the TV news exposure items carried in the Pilot.

Background

In 1989, NES devoted a sizable fraction of its Pilot study to improved measurement of media exposure. Most significantly, the 1989 Pilot tested the effects of greater measurement specificity. Thus, for example, exposure to network TV news was distinguished from local TV news, National Public Radio from regular news broadcasts, the Wall Street Journal from local newspapers, and so forth. The criterion for effective performance was the capacity of an exposure item to discriminate which respondents had learned the rudiments of news stories that broke during or just before the survey period. These stories covered a very wide range of topics: the resignation of House Speaker Jim Wright, two prominent Supreme Court decisions, a DC-10 crash, an incident in which Ronald Reagan fell off his horse, Zsa Zsa Gabor's altercation with a Beverly Hills police officer, and President Bush's trip to Europe.

The results of the study were discouraging from the point of view of improved measurement of media exposure, since, despite extensive data exploration, none of the items, or any combination of them, could be made to work very well (Price and Zaller, 1993). The results did, however, have a bright side: They indicated that the standard NES information battery did an excellent job of discriminating which respondents learned from news reports and which did not, even when the story was entirely current non-political, such as the DC-10 crash. The superior performance of the standard information battery had little theoretical significance, since it merely showed that one measure of information correlates well with other measures of information. But as a practical matter, the results indicated that the NES was already carrying an effective measure of day-to-day media exposure.

Yet a general measure of political information can be used to measure media exposure only to the extent that all media function as "common carriers" of roughly the same information, from Jim Wright to Zsa Zsa Gabor. To a surprising extent, the common carrier condition seemed to hold for the news items tested in the 1989 Pilot, but it need not always hold --; and, in the particular case of communication in presidential elections, there is reason to doubt that it does hold. One certainly cannot assume that people who are attentive to mainstream news in general --; which is what existing NES media items measure and what the 1989 Pilot tried to improve upon --; are equally attentive to talk radio and paid advertising, and that all three media carry roughly the same messages. It may also be the case that, as some research suggests, citizens who attend to TV news get different information than citizens who are instead exposed to newspapers or news radio. These concerns are, in my understanding, the main reason that NES has gotten back into the business of trying to measure media exposure in the aftermath of the disappointing results of the 1989 Pilot.

There is, of course, an obvious problem in attempting to study campaign advertising in a non-campaign period. Even in a campaign period, it is difficult to study advertising effects. However, previous studies by Tom Patterson and Robert McClure indicate that, because much campaign advertising is interlarded between TV entertainment programs, it is possible to measure exposure to it by measuring TV entertainment exposure. And, of course, exposure to TV entertainment can be measured in a non-electoral setting, which is what the 1989 Pilot sought to do.

The 1995 Pilot carried three general types of exposure items:

1. Self-report exposure items. These items directly ask citizens about their habits of media exposure, e.g., "Do you ever watch national network news programs ... Do you ever watch Home Improvement? ... How often?" This is the type of item the 1989 Pilot tried but failed to improve upon.

2. Tests of "domain specific information." These items ask about information closely related to a particular show or medium, e.g., "Do you happen to know which network [Tom Brokaw] works for?... Do you happen to know how many children Grace has in Grace Under Fire?..."

3. Willingness to rate a media personality on a feeling thermometer. The assumption is that only people who are familiar with the given media personality --; e.g., Tom Brokaw or Rush Limbaugh--; from regular media exposure will be willing to rate him or her.

For network TV news, the 1995 Pilot carried all three of these types of items. For entertainment television, it carried the first two types of items. And for talk radio, it carried the first and third type.

As measures of media exposure, each type of item has characteristic strengths and weaknesses. The strength of media self-reports is face validity: They at least seem to be directly measuring exactly what we want to know, namely, how much respondents habitually use each type of medium. The weakness is the possibility that people may often give unreliable reports of their media habits. In particular, many people appear to

over-report their media habits. As Price and Zaller wrote in their analysis of the 1989 media exposure items:

> National Public Radio hired Arbitron to assess the size of its listening audience by means by diaries which a representative sample of adults were paid to fill out on a daily basis. These diary reports indicated that the percentage of persons who listen to NPR at least once a week is 6 percent rather than 35 percent [as reported by Pilot respondents]. Moreover, while the survey respondents who claimed to be NPR listeners reported listening to NPR an average of four days a week, NPR's internal estimate is that most of its listeners tune in just 2 to 3 times a week. Thus, the NPR self-report measure appears to overstate the size of the NPR audience by a factor of about 10.

> To take another example, when respondents to the 1984 and 1988 National Election Studies were asked to name the particular newspapers they read, about 2 percent mentioned the Wall Street Journal. Yet in the 1989 Pilot, 10 percent answered yes to the question, "In a typical week, do you get any news from the Wall Street Journal?"

More disturbing than the over-report itself is that it is doubtful that over-reporting is evenly distributed across individuals. One doubts, for example, that the individuals in the 1989 Pilot who reported reading the Wall Street Journal seven days a week really read that paper more regularly than those who reported reading it only five days a week --; or, for that matter, only one day a week. Even if, moreover, exposure were accurately reported, some people might, for reasons of greater acuity or attentiveness, absorb more information or influence from the exposure.

The advantage of political information is that respondents cannot credibly over-report their propensity to receive information from the media. The weakness, for certain purposes, of information tests qua exposure measures is that the analyst cannot be sure which media respondents are using and learning from. A person who can recall the name of the Federal Reserve chair or which party controls Congress may have acquired the information from almost any media outlet. To the extent that the mass media function as common carriers of roughly the same news and opinion, this presents little problem, so long as one can reasonably assume that the information was acquired from the media rather than elsewhere. But for purposes of measuring exposure to media that do not carry a common message, the indeterminacy of information sources is a problem. To deal with it, those who designed the 1995 Pilot study sought to come up with items that would test people on information that could only have been acquired by exposure to the particular medium of interest --; e.g., the ability to recall the color of Dan Rather's ties as a measure of exposure to CBS news.

The strength of the "willingness to rate" items is that they are simple and efficient to ask. The weakness is that respondents may be willing to rate people about whom they know little or even nothing. Even more readily than for the self-report exposure items, respondents may overstate they actual political involvement.

In the analysis that follows, I will attempt to assess each type of item in light of its potential strengths and weaknesses.

Network TV News Exposure

I begin with four items intended to measure information that most people would obtain only through exposure to network TV news. The stem question, asked of a random half-sample, was

> We're interested in how much people learn about television news personalities. Take Tom Brokaw. Do you happen to know which network he works for -- is it CBS, CNN, or which?

> What about Peter Jennings... Dan Rather... Bernard Shaw?

Note that, although the range of choices people may make is strictly limited and probably available in memory to many respondents, these questions are not closed-ended or fixed choice. They require respondents to supply information not in the question itself. Hence guessing, while possible, is neither easy nor encouraged.

Among people who said they watched network news at least occasionally, the percent able to correctly link an anchor to a network ranged from 25 percent for Shaw, to 34 percent for Brokaw, to 45 percent for Jennings, to 52 percent for Rather. These rates are somewhat higher than Bartels reports. The reason, as far as I can tell, is a difference in the handling of missing data codes. Respondents who said they watch no TV news were not subsequently asked the anchor information items, and were assigned a missing data code. Bartels seems to have converted these missing codes to answers of "not correct," presumably on the assumption that most of the people would have been unable to answer the questions even if they had been asked them. Given, as we shall see, the modest correlation that exists between self-reported network news exposure and correct answers, I am uncomfortable with this assumption. I am also uncomfortable with it in the case of the "willingness to rate" tests of familiarity with anchor persons, where it also leads to differences between my results and those of Bartels. However, this coding difference has no bearing on the different conclusions the two of us reach concerning the performance of these items. It simply makes close comparisons of our results a bit more confusing than they might otherwise be.

Correct answers to the anchor information questions are, as I just indicated, only modestly correlated with respondents' self-reported levels of network news exposure. I shall therefore take some space to establish the measurement properties of the information items.

A principal components factor analysis of the four anchor information items and eight information items from the 1994 NES survey yielded the following factor loadings:

<div align="center">*</div>

	Factor 1	Factor 2
Who controlled House	.67	-.44
Who appoints judges	.65	-.19
Identify Tom Foley	.64	-.03
Peter Jennings	.62	.48
Who controlled Senate	.60	.46

Identify Al Gore	.59	-.32
Who interprets constitution	.58	-.35
Identify Boris Yeltsen	.56	-.01
Bernard Shaw	**.51**	**.29**
Tom Brokaw	**.54**	**.60**
Dan Rather	**.54**	**.54**
Identify William Rehnquist	.41	.14

As can be seen, the anchor information items all load well on the first principal component, but also hang together as a second and somewhat orthogonal factor.

Since all of the information items in this analysis are 0-1 dichotomies, I calculated the item-to-total logit coefficient for each anchor item against a scale made up of the eight 1994 information items. The average of these four logit coefficients was .79. By comparison, the average item-to-total logit coefficient for each of the 1994 items against all remaining 1994 items was 1.77.

These results are encouraging, for they suggest that the four anchor information items are doing what we want them to do: Functioning as valid measures of political information, but yet tapping a dimension of information that is somewhat different than what the regular NES information items tap.

I turn now to analysis of the four feeling thermometers testing the willingness of respondents to rate the same four anchors. These items were asked in a different half-sample from the items asking respondents to link anchors to their networks, and produced generally higher levels of apparent awareness. The percent "willing to rate" --; that is, to assign a score other than 50 on the 100 point feeling thermometers --; ranged from 44 percent for Shaw to 76 percent for Brokaw to 81 percent for Jennings to 82 percent for Rather. Factor analysis of these 0-1 items produced results (not shown) similar to those above, except that the four anchor "willingness to rate" items loaded less strongly on the first information dimension: Their average loading on this dimension was only .25, compared to .55 for the four anchor information items in the analysis above. Also, the average of the four item-to-total logits on the 1994 items was only .25 (compared to .79 for the four anchor information items above).

Thus, the "willingness to rate" items seem to capture something that is somewhat correlated with political information, but mostly independent of it.

I turn now to self-reported news exposure. The 1995 Pilot carried several such items, of which the following are the most pertinent:

...Do you ever watch national network news programs like "World Tonight" on ABC, "The NBC Nightly News," or "The CBS Evening News?"

How often do you watch these types of shows --; every day, most days, once or twice a week, or only occasionally.

In one form of the study, respondents were also asked: Which of the network news programs do you watch most often --; "World News Tonight"... etc.

The following table shows the effect of frequency of network news exposure on level of anchor information, where each respondent is being asked about the anchor that he or she most often watches. Cell entries are the percent of persons in each category able to cite the correct network for the anchor whose show they claim to watch. *

	Only Occasionally	Once/twice A week	Most Days	Every Day
Peter Jennings	40%	67	71	82
(for ABC watchers)	(10)	(12)	(14)	(17)
Dan Rather	62	50	33	47
(for CBS watchers)	(13)	(14)	(15)	(15)
Tom Brokaw	67	50	39	44
(for NBC watchers)	(9)	(16)	(18)	(9)
Bernard Shaw	60	50	0	50
(for CNN watchers)	(5)	(6)	(1)	(2)
Own anchor	57	54	46	60
	(37)	(48)	(48)	(43)

Taken at face value, these findings are rather astonishing. Only for Peter Jennings and ABC news is their a strong relationship between anchor information and self-reported news exposure. For other networks and anchors, there is essentially no relationship, and overall the relationship is only .16. (If, as in Bartels' analysis, respondents who said they watch no network TV and were therefore not asked to link networks to anchors are counted as zeros on both exposure and anchor information, the correlation rises, but only to about .22.)

If correctly calculated and replicable, these findings may be expected to make a rather noisy splash in the field of communication studies. It is a commonplace in the literature of this field that citizens fail to learn from TV news because, in significant part, the news is so vacuous. To mention just one example, the most important element in Pattern and McClure's indictment of TV news in Unseeing Eye is that exposure to campaign advertising (as measured by an entertainment exposure battery of a type that, as Bartels' report shows, works quite well) is more strongly associated with campaign learning than

is self-reported news exposure, where news exposure is measured by the type of item used here.

But however vacuous TV news programs may be, they do not fail to publicize the names of their anchors. To the contrary, they seek to make celebrities of them. Hence, the low correlation between self-reported news exposure and anchor information cannot be blamed on the emptiness of TV. Nor can it be wholly blamed on format, since the same format produces stronger results for newspaper exposure. Two other explanations need to be considered:

1. That people "vague out" or for some other reason fail to absorb information from television, and

2. That network news exposure item elicits, for some unknown reason, an unusually unreliable report of actual behavior.

Whichever explanation is more correct, it is certainly an arresting fact that only 60 percent of news watchers are able to link the name of the news anchor to the show they say they watch every day.

Some additional light is shed on this problem by the following figure, which shows the effect of self-reported network news exposure on anchor information for respondents at three levels of general political information (as measured by the 1994 items):

FIGURE GOES HERE

Two inferences may be drawn from this figure. First and most obviously, self-reported media exposure does appear to be associated with greater anchor information, but only for respondents who are generally well-informed about politics. This interaction is highly statistically significant. Second, general political information has a strong link with anchor information, but only for people who watch the news on TV. This indicates that anchor information is not simply another opportunity for well-informed people to show that they are well-informed; it is, rather, a type of information acquired by a specific activity, namely, watching the news. This constitutes additional evidence that anchor information is functioning as the sort of domain-specific measure of TV exposure that the designers of the Pilot study were hoping for.

This pattern of results amply confirms the skepticism toward media self-report variables that was expressed in Price and Zaller (1993) on the basis of their analysis of items from the 1989 Pilot. There is, however, one more piece to the story. Although self-reported exposure hardly correlated with information about one's own network anchor (r=.01), it does have a significant correlation with a summary measure of anchor knowledge (r=.16) and with general information as measured in the 1994 survey (r=.15). The latter relationship, moreover, is about as strong among less educated respondents as among highly educated ones, such that the arresting pattern in the above figure does not recur. There is, in other words, no exposure X education interaction, such that TV exposure has effects only or mainly for highly educated respondents. The effect of network news exposure on general information is by no means over-powering --; by way of

comparison, the bivariate correlation between newspaper exposure, as measured in the 1994 study, and general information is .28 --; but it is reassuring to discover that network news exposure does, despite its poor performance in capturing anchor information, capture some of what it would be expected to capture.

But what of the "willingness to rate" items? A summary indicator of willingness to rate the four anchors has a correlation of .17 with network news exposure and a correlation of .15 with general political information. These compare to correlations for summary anchor information of .16 and .43 with news exposure and general information, respectively. It is not surprising to find that the correlation of "willingness to rate" with news exposure is low --; self-reported news exposure does not, for some reason, seem to correlate very strongly with anything. But the similarly low correlation of "willingness to rate" with general information is disturbing. It suggests that "willingness to rate" is simply another anemic measure of media exposure.

It is also worth noting that respondents who are prone, probably for reasons of social desirability, to over-report their media use could be equally overly willing to rate media anchors that they have little or no familiarity with. Altogether, then, "willingness to rate" seems to me an inherently suspect and underperforming type of exposure measure.

One more piece of the TV news study needs to be reviewed. Several media scholars suggested to the NES Board that TV news exposure performs so badly in NES surveys because it is so badly measured. The NES TV news exposure question from the 1994 survey is:

How many days in the past week did you watch the news on TV?

This question, it was maintained, comes to respondents "out of the blue," so to speak, giving them too little chance to think and to search their memories in preparation for answering it.

An alternative approach was proposed by which respondents would be more gradually led up to and walked through the key questions about media exposure. The questions themselves would also be more user-friendly and intelligible. The new approach would take more time, but, it was hoped, it would also work better.

One of the new item sequences is the network news exposure series shown earlier. These items have no counterpart in the traditional NES surveys, but they were experimentally asked in two locations in the Pilot study. On Form A, respondents were asked the network news questions "out of the blue," while in Form B they were asked these questions after some 13 TV exposure questions had already been asked, many of which involved news programs.

Among these 13 TV news exposure questions, the following pair was included:

There are lots of programs on television, like entertainment, sports, movies, and the news. We are interested in whether you watch the news. Some people don't and some do. Do you ever watch news programs.

How often do you watch news programs -- every day, most days, once ors twice a week, or only occasionally?

The latter question is the key one and was asked as the fourth in the series. The hope was that, in this context, it would function as a more gently effective way of eliciting accurate information.

We have, then, two tests of alternative questions, the experimental variation in the context of the network news battery, and the wordier, two-item "how often" series vs. NES's spare "how many days."

The criterion for evaluation is capacity to predict general political information. As was concluded in the email conference for this Pilot study, one useful lesson from the 1989 Pilot was that general political information measured essentially the same thing as questions about breaking news stories. To take an unusually clear example, being able to identify the House Speaker in the standard NES information battery was not very different from learning from a current news story that the Speaker had resigned --; or that the Supreme Court had handed down a new decision, etc. Hence it was decided that capacity to predict general political information would make as good a performance criterion for the exposure items as would knowledge of breaking news stories.

The test results are shown immediately below. The cell entries are correlations between general information and each given TV exposure measure:

[*](#)

	[*](#)Standard NES TV exposure item	[*](#) New two-item set	[*](#) Network news exposure
Form A	.15	.20	.15
Form B	.07	.05	.15

There is scant evidence in these data that the longer, two-item sequence works better than the traditional NES item, and no evidence whatsoever that embedding exposure items in a sequence of related items improves their performance. Whatever the form or context, self-reported exposure to TV news remains an anemic predictor of political information --; and by implication, current news and campaign information. By way of comparison, the correlation of the four-item anchor information scale with the general information scale is .43.

Also included on the Pilot was an item asking respondents how much attention they pay to the news when watching it on TV. Preliminary analysis indicates that this item has no value.

Of course, the real test of media exposure items is their capacity to predict support for, or changes in support for, political figures or issues. As I have argued elsewhere, however, the relationship between media exposure and political attitudes is complicated. Relationships can be positive, negative, or any of several varieties of non-monotonic, depending on the number and intensity of the messages carried in the media. If, in

addition, the analyst foregoes the assumption that the mass media are "common carriers" of roughly similar messages and begins to search for distinctive TV effects, the problem becomes even more challenging.

In the face of these complications, I spent by far the bulk of my time in preparing this report searching for TV effects on opinion. But the new measure that seems from the foregoing evidence to be strongest is anchor information, and that measure was asked of only half the sample. Hence instability of results proved a major problem.

That, in these circumstances, I was unsuccessful in using the new measures to find any distinctive TV effects cannot fairly be held against the measures. It was, or at least should have been, understood from the outset that the most that could be accomplished in the Pilot would be to use various consistency criteria to suggest which kinds of measures were most and least promising for inclusion on a larger production study. As I see it, that goal has been met for the TV exposure items. There is, from preliminary analysis, no evidence that a more respondent-friendly and leisurely approach to question-asking produces significant benefits. It also appears fairly clear that, despite the efficiency with which they can be administered, the "willingness to rate" items are unlikely to be good measures of TV exposure. They simply compound the worries about over-report that plague existing media use items. The item measuring exposure to network news, as distinct from general and local TV news, also seemed a surprisingly poor performer. I would like to retain it for use in the regular NES study, but there is nothing in its performance in the 1995 Pilot, except perhaps its astonishingly weak correlation with anchor information, to justify such inclusion. In all of this I am in at least rough agreement with Bartels. But I depart from Bartels' recommendations in viewing the anchor information items as demonstrably promising. The four of them alone form a scale with an alpha reliability of .74. This scale has a solid correlation with general political information --; but the correlation varies, as it should, from nil to large, depending on how much TV news a person watches. Anchor information thus seems to me as both a valid and reliable indicator of exposure to TV news. Whether such a measure can be used to uncover distinctive effects of TV on opinion can only be tested in a larger study, and, in my opinion, it deserves a shot.