

## IMPACT OF SCIENCE FRIDAY ON PUBLIC RADIO MEMBER LISTENERS

Published in The Informal Learning Review. September/October 2000 issue.

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Radio research typically examines a broad demographic picture of who listens to what station or what programming category. Rarely explored is the question of a radio program's impact on the lives of its listeners. However, radio shows funded by the Informal Science division of the National Science Foundation are required to carry out an impact evaluation. Recently, Multimedia Research completed a summative evaluation of *Science Friday* and its effects on listeners. *Talk of the Nation: Science Friday* is a weekly two-hour science talk show hosted by science correspondent Ira Flatow and broadcast on National Public Radio.

The evaluation focused on what demographic or background characteristics relate to whether or not one listens to *Science Friday* and to frequency of listening; what effects the series has on listeners and what kind of actions the series has prompted in listeners. Surveys were mailed to random names, stratified by gender, drawn from the member subscriber lists of public radio stations in Tallahassee, FL, and Boston, MA. Given that 2.1 million listeners contribute to public radio according to CPB revenue report data and that there are about 21 million listeners according to Arbitron estimates, our contributor lists represent about 10% of the listening audience. Thus, we can generalize our results to all subscribers but to only about 10% of the total public radio audience.

Of the 685 surveys that public radio members received, 403 or 59% were returned for analysis. Both the FL and MA sites had the same return rates. As planned, females comprised about half of the respondent sample (51%).

Of the public radio members, 55% reported listening to the radio series *Science Friday*. Of the 223 listeners, 12% said they listened every week, 56% listened 1-3 times per month, and 32% tuned in less than once per month. Gender and ethnicity were unrelated to whether one listened to the show. About half of both listeners and non-listeners were female (51%), and almost all of each response group was white (96%).

Listeners differed significantly from non-listeners in terms of educational level, employment status and age. Respondents with education beyond a college degree included 71% of *Science Friday* listeners compared with 53% of non-listeners. Listeners and non-listeners also differed significantly in their employment status; 83% of listeners were employed compared with 63% of non-listeners, whereas 12% of listeners were retired compared with 26% of non-listeners. Finally, listeners were significantly, if not meaningfully, younger than non-listeners. Listeners ranged in age from 22 to 83 years with a mean age of 51 years, and non-listeners ranged in age from 22 to 89 years with an older mean age of 56 years.

Listeners also differed significantly from non-listeners in terms of their self-rated interest in and knowledge of science. Respondents rated how interested they are in science, generally speaking, by using a five-point scale from "not at all interested" (1) to "very interested" (5). Listeners of *Science Friday* reported a mean science interest of 4.1, which is statistically significantly higher than the mean interest of non-listeners at 3.8. Respondents also rated how knowledgeable they are about science, as a member of the general public, by using a five-point scale. Again, listeners of *Science Friday* estimated a significantly higher level of science knowledge (mean = 3.6) than non-listeners (mean = 3.3).

Respondents indicated their primary and secondary source of science information, given eight possible sources. The largest percentage of both groups reported that "magazines/journals" were their primary or secondary source of science information: Listeners (28%); Non-Listeners (30%). Beyond that, listeners felt their next major sources of science information were radio (22%) and newspapers (19%); whereas non-listeners chose newspapers (23%) and television (22%).

Given all of the demographic variables and background variables described above, only one appeared as a strong predictor of listening or not listening to *Science Friday*. Knowing whether "radio" is a primary or secondary source of science information for respondents permits us to predict 17% of the variance in their listening or not listening status. None of the demographic and background variables related significantly to the frequency of listening to *Science Friday*.

Appeal and program engagement were high among listeners. Listeners responded to several statements reflecting their feelings about the series using a 5-point scale, from strongly disagree to strongly agree. A large portion of listeners either strongly agreed or agreed that they "enjoyed listening to the series" (93%) and that they "listened attentively when they heard the series come on the radio (74%).

Four-fifths of listeners felt that *Science Friday* was comprehensible and informative in terms of science knowledge and science awareness. Most listeners either strongly disagreed or disagreed with the negative statements that "the information on *Science Friday* is too technical for me" (85% disagreed); that they "have not expanded their knowledge of science by listening to the series" (84%), and that "the series has not increased my awareness of science news topics" (80%). Another 60% either strongly agreed or agreed with the sentiment that *Science Friday* makes them "notice science in other news media."

An open-ended question regarding how respondents felt *Science Friday* has affected them personally elicited answers from only half of the sample but yielded two major categories of impact. The strongest impact noted was in the cognitive area of acquisition of science knowledge; 38% of listeners wrote answers indicating that the series increased their learning, understanding and awareness of science information. Subcategory analysis showed that listeners felt that *Science Friday* updated them on current events, was informative, broadened their existing knowledge, increased their interest in unfamiliar fields of science, improved their understanding

of science topics or increased their awareness of science issues. A smaller group of listeners (16%) reported a generally positive feeling elicited by the series; that is, listeners either enjoyed listening or felt the series was interesting or excellent.

Provided with a checkoff list of actions, respondents determined whether listening to *Science Friday* had ever prompted them to take those actions related to the series. Two-thirds of listeners have "discussed topics with others," and half had "read related information in books, magazines, newspapers." One-third of listeners "searched for more information about a topic," and one-quarter "modified personal habits or philosophies" or "accessed an Internet web site." Some 18% had "purchased a book or other item related to a show topic," and 13% were prompted to "vote in a certain way" or "make donations to a non-profit institution." Frequency of listening to *Science Friday* related significantly to the actions of "discuss," "read," "search," "modify," "access web" and "purchase," as described above. Higher than expected frequencies of these actions appeared for those who were more frequent listeners of *Science Friday*. For example, of those who listened less than once per month, 8% were prompted to purchase a related book or item; of those who listened one to three times per month, 22% had purchased a book; and of those who listened every week, 30% had purchased a book -- and names or authors of those books were often listed by listeners in their survey answers.

In conclusion, slightly over half of our public radio members listened to *Science Friday* and two-thirds of those listened more than once per month. As compared with non-listeners, *Science Friday* audience members were significantly younger, more highly educated, more often employed, and considered themselves more interested and more knowledgeable in science. Most significantly, in consideration of the sponsorship by the National Science Foundation, the series has a strong positive impact on listeners' comprehension and awareness of science issues and a considerable influence on listeners' actions beyond the two-hour program. The series clearly acts as a catalyst to stimulate people to further self-education, but also, perhaps more importantly, demonstrates a critical multiplier effect by inspiring significant numbers of listeners to discuss science with their colleagues, friends and family members.