Figure 10.4. EXPERIMENTAL PLANS: Cigarette Advertising and Tobacco Consumption

The article reprinted below is of interest because it illustrates how *limited* blocking and replicating and the *absence* of random assigning substantially increase the limitations on the Answer obtained from an experimental Plan.

EM8802: The Globe and Mail, January 21, 1988, page A5

Success of Norway's cigarette ad ban disputed

BY GRAHAM FRASER
The Globe and Mail

OTTAWA

Did the Norwegian ban on tobacco advertising in 1975 reduce smoking, or didn't it?

The Canadian Cancer Society had Dr. Kjell Bjartveit, chairman of the Norwegian Government's National Council on Smoking and Health, tell a news conference yesterday that the ban has stopped an "alarming increase" in smoking in Norway since 1950.

Dr. Bjartveit argued that the advertisers and cigarette manufacturers had distorted Norwegian statistics by not showing the dramatic increases from 1950 to 1965, when a ban was first endorsed by the Norwegian Parliament, thus suggesting that the adverising ban didn't work.

However, Jean Boddewyn, a professor of marketing at the City University of New York, appeared before the parliamentary committee on Bill C-51 on behalf of the Canadian Tobacco Manufacturers Council to argue that advertising bans do not work. Norway is not a model, and Dr. Bjartveit's figures were misleading.

"I am not so sure that Norway is such a model country," Mr. Boddewyn said. "After all, this is a country that has also banned private radio and television, that has also banned the advertising of alcoholic beverages ... and that has also banned the use of premiums in advertising. In other words, a rather intolerant and uncompromising country, I would say."

Dr. Bjartveit said that tobacco sales had increased from 1,450 grams per capita in 1950-51 to 2,000 grams per capita in 1969.

Fluctuations then took place between 1969, when the Norwegian Parliament endorsed a ban and 1975, when the ban was enforced, and consumption reached 2,100 grams per capita.

Then, with enforcement of the act and three price increases, the consumption fluctuated and dropped to a little over 1,800 grams per capita in 1982 before creeping up slightly to just under 1,900 grams per capita in 1986.

"We feel the data we have presented clearly show there is an effect on children's smoking," Dr. Bjartveit said, presenting charts showing that smoking by girls and boys at the ages of 13, 14 and 15 had risen to a peak in 1975, when the ban was introduced, and then had dropped off.

Mr. Boddewyn said that the MPs should question Dr. Bjartveit's premises, facts and conclusions.

"One of his charts implies that, without the ban, Norwegian tobacco consumption would have kept increasing for ever," he told the committee. "This is nonsense since the consumption of all mature products levels off or declines sooner or later, and such a levelling off or decline of tobacco consumption has already happened in countries without a ban – like Canada."

1 To assess the matter described in the article as a case of data-based investigating, we first describe it in the language of the PPDAC cycle; using the information provided in the article, identify the following components of the Problem stage:
the *Question*; the *response* variate; the *focal* variate; the *aspect*.
- Outline the extent to which *blocking*, *random assigning* and *replicating* were able to be incorporated into the Plan.
  - Describe briefly how the extent of blocking, random assigning and replicating impinges on error assessment in the Conclusion stage of the PPDAC cycle for this investigation.

2 On the basis of the information given in the article:
- state Dr. Bjartveit's case and summarize the evidence which supports it.
  - What fundamental *difficulty* does Dr. Bjartveit face in making his case?
- state Mr. Boddewyn's case and summarize the evidence which supports it.
  - Do you see any inconsistency between Mr. Boddewyn's comments and the resources expended by tobacco companies in hiring 'experts' like Mr. Boddewyn to try to strengthen their case for opposing an advertising ban? Explain briefly.
- Which of the two cases you have summarized do you consider the stronger? Explain briefly.

3 In the second paragraph of the middle column of the article, Mr. Boddewyn makes a number of comments about regulations in Norway. Indicate how this information is relevant to Mr. Boddewyn's case.

4 Dr. Bjartveit uses tobacco sales in *grams per capita* in his argument;
- suggest *reason(s)* for his use of figures of this nature;
- outline possible *weakness(es)* of such data in the context of the article.

5 Assuming that Dr. Bjartveit and Mr. Boddewyn are using the *same* time series data on tobacco sales in Norway, suggest reason(s) why they reach diametrically opposed Answers.

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