

Words matter

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Responses to survey questions can be affected by assumptions embedded in the question. A 1994 national survey conducted at Pennsylvania State University demonstrated the effects of such suppositions. The survey asked 1,000 respondents about their food safety concerns; they were divided into four groups of 250 and each group was asked different questions.

Consumers in group 1 were asked "How concerned are you about IMS in seafood?" Fifty-three percent said that they were either somewhat or very concerned, and 30% said they did not know. The wording of this question implies several underlying assumptions. In particular, this question assumed that the respondent is concerned about IMS, the only question being the degree of concern. Questions posed to the other three groups included filters designed to reduce the effects of such assumptions.

In group 2, consumers were asked "Are you concerned about IMS in seafood?" If they said yes, they were asked about their level of concern. When this concern filter was used, the proportion of respondents expressing concern decreased to 32%, with 25% saying they did not know. For groups 1 and 2, the questions assumed that respondents know what IMS is, or have at least heard of it.

In group 3, consumers were asked "Have you ever heard of any health problems associated with IMS in seafood?" When this awareness filter was used, only 24% of the respondents said that they had heard of health problems, with 65% saying they had not, and 11% saying they did not know or weren't sure. Comparing the 24% who said they had heard of IMS to the 53% and 32% expressing concern in groups 1 and 2 suggests that several people who expressed concern in groups 1 and 2 had not heard of IMS.

The wording of questions posed to groups 1, 2 and 3 all assumed that IMS exists. Group 4 combined the awareness

and concern filters in order to minimize the effects of the suppositional wording in groups 1, 2 and 3. In group 4, consumers were asked if they had heard about health problems associated with IMS in seafood. Those who said they had heard of it were asked if they were concerned, and those who were concerned were asked their degree of concern. Even after applying both filters, 18% of the respondents in group 4 said they were somewhat or very concerned about IMS, a *food safety issue that does not exist*.

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The varying proportions of respondents expressing concern about IMS in the four groups shows how results can be affected by question wording. Filters help minimize the tendency for survey respondents to overstate their concerns, but they are seldom used because they slow down questioning and respondents may find them tedious.

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Further reading

Herrmann RO, Sterngold A, Warland RH. 1998. Comparing alternative question forms for assessing consumer concerns. *J Cons Affairs* 32(1):13-29.

Sterngold A, Warland RH, Herrmann RO. 1994. Do surveys overstate public concerns? *Public Opin Quarterly* 58(2):255-63.

result. To a skeptic, a notable problem in survey results is the degree to which they can be influenced by how questions are worded. Compounding this problem is the fact that the exact wording of questions often is not presented with the results (especially in the popular press), so that it is easy to misinterpret findings or put them in an inappropriate context.

Suppositional wording is a way of asking a question that implies particular assumptions, which in turn affects responses; it has been shown to influence the level of concern expressed by respondents (see sidebar, page 100). In addition, imbedded assumptions can be seen in other types of questions. Information is often provided to respondents along with the questions, and its content and wording can influence responses. In some recent surveys, a definition of biotechnology or genetic engineering was read to respondents. For some respondents, the definition may have been their first exposure to the technology. What they are told can have a pronounced effect on how they answer subsequent questions.

The sensitivity of responses to wording is especially problematic when survey responses are used to infer or predict market behavior. If responses are sensitive to wording, how much can they reveal about choices consumers would make? While it is important to be cautious in interpreting survey responses, when taken together the surveys do tell a fairly consistent story.

Lack of awareness

One of the most notable regularities in survey responses is the lack of U.S. consumer awareness about agricultural biotechnology. Most studies find that roughly half of those surveyed have heard little or nothing about food produced using biotechnology, genetically modified (GM) foods or genetic engineering. Shanahan et al. (2001) reviewed 12 surveys conducted between 1993 and 2000, and in 10 at least 50% of the respondents had heard "not much" or "nothing at all" about biotechnology. A Gallup Poll conducted in 2001 found that 40% had heard "not much" or