Supplementary Interviewing Techniques to Maximize Output in Free Listing Tasks

Devon D. Brewer

Field Methods 2002 14: 108
DOI: 10.1177/1525822X02014001007

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DEVON D. BREWER
University of Washington

Free listing is an important ethnographic tool for defining semantic domains. However, when informants free list items from a particular domain, they often do not mention all items they know because they forget items and/or do not understand that they should list exhaustively. In this article, the author reviews results from research on three supplementary interviewing techniques to encourage full responding and enhance recall in such tasks (nonspecific prompting, reading back to the informant the items he or she free listed, and using free-listed items as semantic cues). These methods increase substantially the number of items elicited from individual informants and the number of items in a domain identified from informants in the aggregate. Moreover, these techniques do not require the interviewer to have any prior domain knowledge to be effective.

Free listing is a basic ethnographic tool for defining semantic domains (Weller and Romney 1988). When people free list items from a semantic domain—such as the names of plants, treatments for a particular illness, or brands in a specific product category—they often do not list all the items they actually know in the domain. Sometimes informants do not understand that the interviewer seeks to elicit as much of their knowledge as possible, and thus limit their responses (Weller and Romney 1988). Another pervasive problem is that informants simply forget to list items they know. Several observations indicate this inability to list completely all the items one knows in a domain. First, after trying to list all the items in a domain they can, informants frequently remark that they know other items but just can't recall them, even with considerable effort. Second, with repeated interviewing, infor-

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An earlier version of this article was presented at the sessions in honor of A. Kimball Romney at the 29th annual meeting of the Society for Cross-Cultural Research, New Orleans, February 2000. I thank Susan Weller for useful discussions on the topics covered here. Sharon Garrett and three anonymous reviewers provided helpful comments on a previous draft of this article. This research was supported by a grant from the National Institute on Drug Abuse, no. R29DA10640.

Field Methods, Vol. 14, No. 1, February 2002 108–118

mants list some items they didn't mention in the initial free listing interview (a phenomenon called reminiscence) (Brown 1923; Lazar and Buschke 1972; Brewer 2000). Third, informants typically recognize far more items in a domain than they free list (Hutchinson 1983).

To elicit items as completely as possible, ethnographers need to communicate to informants that they should list items as exhaustively as they can and enhance informants' recall of items in the domain. Any supplementary interviewing technique used to enhance recall in an ethnographic context must not require the interviewer to have prior domain knowledge, because ethnographers usually do not have detailed knowledge of the domain when collecting free lists from informants. Cognitive psychologists have devised a number of ways to increase the number of items mentioned in free listing, but these require the interviewer to have extensive knowledge of many items in the domain or categories of items within the domain (e.g., Buschke, Goldberg, and Lazar 1973; Glidden and Mar 1978).

In this article, I review the effectiveness of three simple supplementary interviewing techniques to maximize output in free listing. These methods—nonspecific prompting, reading back to an informant the items he or she free listed, and using free-listed items as semantic cues—are intended to encourage informants' complete responding and to enhance their recall in one-on-one free listing interviews conducted orally. None of these techniques requires that the interviewer have prior knowledge of the domain. Much of the evidence for the first two techniques comes from research on personal and social networks involving elicitation tasks that are cognitively and structurally similar to free listing from semantic domains.

NONSPECIFIC PROMPTING

In response to a free-listing question, informants typically free list items on their own for one to many minutes, depending on the domain. Eventually, an informant indicates that he or she is finished listing or cannot think of other items. At this point, the interviewer should prompt nonspecifically with a question like, "What other kinds of *X* are there?" with *X* representing the name of the domain (Weller and Romney 1988). The interviewer may prompt in this way as appropriate until the informant insists that he or she cannot remember any more items.

The nonspecific prompts can be worded differently for different domains, or even for the same domain for variety when multiple prompts are required. The prompts should be phrased positively to elicit additional items and not *yes* or *no* as responses (Weller and Romney 1988). Similar kinds of probes

and prompts are standard in survey research (Sudman and Bradburn 1983) and contact interviews for eliciting sexual partners in sexually transmitted disease control activities (Communicable Disease Center 1962). Nonspecific prompting demonstrates to informants that they are to list items as completely as possible and prods them to keep searching their memories when they might otherwise stop.

I interviewed employees of a public relations department of a university to elicit the names of their coworkers (Brewer 1995b). I typically prompted nonspecifically only once. Nonspecific prompting increased the number of coworkers recalled by a small amount (first interview: $n = 11$, mean percentage increase = 4%, maximum percentage increase = 12%, percentage of informants listing more in response to prompting = 45%; second interview: $n = 7$, mean = 16%, maximum = 70%, percentage listing more in response to prompting = 57%).

My colleagues and I prompted nonspecifically in eliciting sexual and drug injection partners from persons at high risk for HIV and other sexually and parenterally transmitted infections ($n = 156$) (Brewer, Garrett, and Kulasingam 1999). The median and modal number of prompts we used was 1, although we used multiple prompts for approximately 25% of the interviewees, and in some cases prompted nonspecifically as many as 7 times. Nonspecific prompting increased the number of partners recalled by 10% on average for both types of partners (maximum percentage increase = 120%–243%; percentage of subjects listing additional partners in response to prompts = 21%–22%; $n = 89$ for injection partners, $n = 141$ for sexual partners).

In a recent ethnographic methods course I taught, students prompted nonspecifically when they conducted free-listing interviews. In three semantic domains, such as games of chance (with bingo players as informants) and signs that a person may become violent (with police officers as informants), their nonspecific prompting increased the number of items elicited by 16%–18% on average, based on sample sizes of five to eighteen informants across domains. Of the informants in these samples, 44%–100% listed additional items in response to nonspecific prompting.

READING BACK THE LIST OF FREE-LISTED ITEMS

Once an informant insists that he or she cannot recall any more items after nonspecific prompting, the interviewer can still use other techniques to elicit additional items. The first method is to read back slowly to the informant the items that he or she free listed (assuming the interviewer has written the

informant's responses down) and prompt nonspecifically once more. This technique can be used under the guise of checking the accuracy of the interviewer's written record of informant responses. Reading back the list of free-listed items allows informants to review their responses and add items they thought they had already mentioned but actually had not or to add items that come to mind, by whatever mechanism, during the review.

Brewer, Garrett, and Kulasingam (1999) read back the list of sexual and injection partners an interviewee mentioned after nonspecific prompting was finished. Reading back the list increased the number of partners elicited slightly beyond those mentioned during free listing and nonspecific prompting (injection partners: $n = 90$, mean increase = 7%, maximum increase = 100%, percentage of interviewees listing additional partners = 26%; sexual partners: $n = 141$, mean increase = 5%, maximum increase = 117%, percentage of interviewees listing additional partners = 18%). In this study, nonspecific prompting and reading back the list elicited moderately more partners in absolute and proportional terms for interviewees who free listed many rather than few partners. Brewer and Garrett (Forthcoming) conducted similar interviews to elicit sexual and drug injection partners and observed comparable increases from nonspecific prompting and reading back the list.

USING FREE-LISTED ITEMS AS SEMANTIC CUES

The final and most powerful supplementary technique for enhancing recall is to use the items an informant free listed as semantic cues (Brewer, Garrett, and Rinaldi Forthcoming). Interviewers may use this method after nonspecific prompting and reading back of the list. For each of the items an informant previously listed, the interviewer asks the informant to think about all the other items in the domain that are similar to or like that item and then to list any of those he or she has not yet mentioned. After an informant lists all the additional items he or she can in response to the semantic cue (whether the response item[s] are similar to the cue item) or says he or she cannot remember any additional items in response to that cue item, the interviewer repeats the process with the next free-listed item until all previously mentioned items have been presented as semantic cues.

This method exploits a natural associative process hypothesized to drive free listing. The process is inferred from observations of semantic clustering, or the tendency people have to mention semantically similar items adjacently in free listing tasks. Romney, Brewer, and Batchelder (1993) modeled semantic clustering as an outcome of a semantically driven associative pro-

cess in which an individual associates from one item to the next in a probabilisitic fashion based on how similar items are to each other semantically. Using free-listed items as semantic cues to elicit additional items, then, imitates this process and allows informants to search their memories deliberately and systematically with the free-listed items serving as mental guideposts.

My colleagues and I evaluated the effectiveness of this technique in a randomized controlled experiment (Brewer, Garrett, and Rinaldi Forthcoming). We asked one set of adults ($n = 33$) to free list kinds of fruit and another set—a sample of drug injectors ($n = 43$)—to free list kinds of recreational or street drugs. Both sets of interviewees were drawn from the larger Brewer, Garrett, and Kulasingam (1999) study. We prompted informants nonspecifically, but for this experiment we did not read back the list of items they free listed. Instead, we randomly assigned informants to receive either the items they free listed as semantic cues ($n = 17$ for fruits, $n = 20$ for drugs) or the letters of the alphabet as alphabetic cues to elicit additional items that began with particular letters.

The free-listed items as semantic cues increased substantially the number of items elicited. (We excluded repetitions, synonyms of items an informant had listed, items not at the basic level of contrast [Rosch 1978], and idiosyncratic items [listed by only one informant or not identified in standard dictionary references] from all analyses summarized here [for details, see Brewer, Garrett, and Rinaldi Forthcoming].) All informants, except two in the semantic condition for the drug domain, listed additional items in response to the cues. The semantic cues increased the number of items elicited by a mean of 48%–49% (median increase = 40%–43%; maximum increase = 175%–213%). This translates into approximately 6 and 9 additional items elicited in the drug and fruit domains, respectively, on average. Across domains, the increase represents a mean of .42–.48 additional items elicited per semantic cue. Of the semantic cues, 23%–29% were successful in eliciting additional items on average, and a mean of 1.5–1.7 additional items was elicited per successful cue.

Figure 1 shows the free list and cue-elicited responses for a representative informant (in terms of the effectiveness of the semantic cues in eliciting additional items) in the fruit domain. This case study illustrates both the semantic associations from cue to response items as well as semantic clustering in free listing.

The alphabetic cues were much less effective than the semantic cues in eliciting additional items. For instance, on a per cue basis, semantic cues elicited 2–3 times as many additional items as alphabetic cues. It is possible that alphabetic cues might provide an incremental increase in the number of additional items elicited after semantic cues have been administered. However,

FIGURE 1
Free List and Items Elicited by Semantic Cues for a Representative Subject in the Fruit Domain (free list begins at the top and proceeds downward, and cue-elicited items are in parentheses next to their cue items)

apple
banana (cued: plantain)
orange (cued: tangelo, lemon, lime)
guava
watermelon
honeydew
cantaloupe
kiwi (cued: starfruit)
strawberry (cued: salmonberry)
blueberry
raspberry (cued: blackberry)
boysenberry
tomato
pineapple
tangerine
papaya
mango
pomegranate
grape
litchi (cued: elderberry)
satsuma
grapefruit (cued: cherry)
cranberry (cued: currant, lingonberry)
raisin
plum (cued: prune)
peach
nectarine

such uses of alphabetic cues would be limited to literate informants who speak languages with alphabets and list items that do not represent multiword concepts (which would not likely be triggered by alphabetic cues).

The semantic cues were effective in identifying additional items at the aggregate level. That is, when the responses of sets of informants are combined, the semantic cues elicited items that would not otherwise have been identified from informants' free lists alone. For each domain, we randomly sampled 1,000 sets of five, ten, and fifteen informants, respectively, from our data. For each set, we noted how many distinct items were free listed (including those elicited by nonspecific prompting) by one or more informants. Then we noted how many additional items were listed by one or more informants in response to the semantic cues but were not free listed by any of the informants in the set. These additional items represented items identified only as a result of the semantic cues.

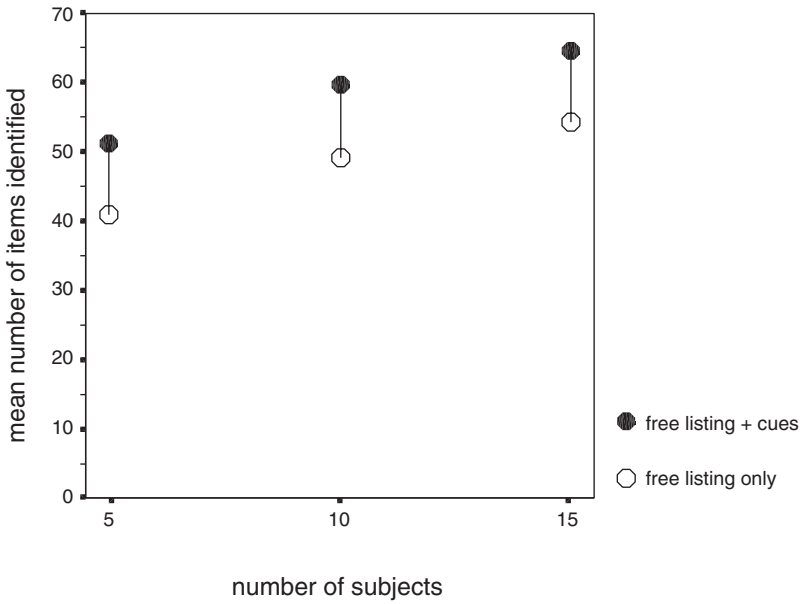
The semantic cues allow a substantial proportion of additional items to be identified. Figures 2 and 3 show the mean numbers of items identified by free listing only and by free listing and semantic cues together for the randomly drawn sets of five, ten, and fifteen informants, respectively. For the fruit domain, the percentage increases in the mean number of items identified by semantic cues are 25%, 22%, and 19% for sets of five, ten, and fifteen informants, respectively. For the drug domain, the percentage increases are 31%, 26%, and 24% for sets of five, ten, and fifteen informants, respectively. Although the effect of the semantic cues in identifying additional items lessens slightly as the sample size grows, even with fifteen informants, the effect is still appreciable. For the purpose of identifying items, the semantic cues contribute as much information as adding free lists from approximately five to six more informants to the sample.

Other analyses showed that the items elicited by semantic cues are only modestly less familiar to informants as measured by frequency of mention. This indicates that items elicited by the semantic cues include common as well as less-common items.

DISCUSSION

The available evidence indicates that three supplementary interviewing techniques—nonspecific prompting, reading back the list of free-listed items, and using free-listed items as semantic cues—can be used to elicit additional items after informants stop free listing. Because these techniques enable an interviewer to extract more information from each informant, they may lead to more complete and efficient ethnographic research.

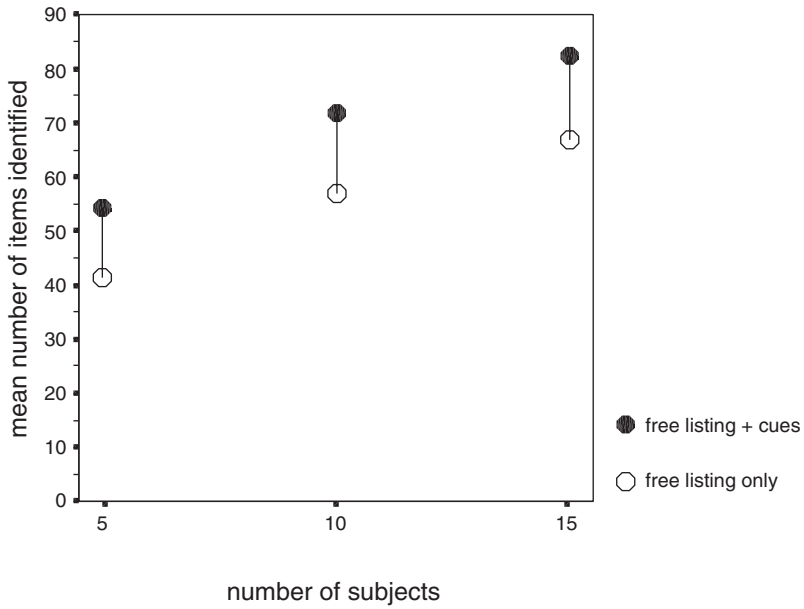
FIGURE 2
Mean Number of Fruits Identified from Free Listing Only and from Free Listing and Semantic Cues for Randomly Selected Sets of Five, Ten, and Fifteen Informants



In an experimental evaluation of interviewing techniques for eliciting additional sexual and injection partners, Sharon Garrett and I (Brewer and Garrett Forthcoming) found that supplementary recall cues (analogous to the semantic and alphabetic cues in the study by Brewer, Garrett, and Rinaldi Forthcoming) tended to elicit additional partners beyond those already elicited by free listing, nonspecific prompting, and reading back the list of free-listed items. Therefore, I recommend that nonspecific prompting, reading back the list, and semantic cues be used together as a set when eliciting items from a semantic domain. After an informant finishes free listing on his or her own, the interviewer can first use nonspecific prompts, then read back to the informant the items he or she free listed, and finally administer the free-listed items as semantic cues.

In the studies reviewed here, nonspecific prompting elicited additional items from a sizable fraction of informants (21%–100%), with an overall

FIGURE 3
Mean Number of Drugs Identified from Free Listing Only and from Free Listing and Semantic Cues for Randomly Selected Sets of Five, Ten, and Fifteen Informants



mean increase in the number of items elicited between 4% and 18%. In one study of elicitation of sexual and drug injection partners, reading back the list elicited additional partners for 18%–26% of interviewees, accounting for an overall mean increase in the number of partners elicited between 5% and 7%. In another study, free-listed items as semantic cues elicited additional items beyond free listing and nonspecific prompting for virtually all informants. The overall mean increase in the number of items elicited was between 48% and 49%. The semantic cues were also substantially effective in identifying additional items even when the free listing responses of multiple informants were pooled.

These supplementary techniques may be especially valuable to apply when researchers conduct rapid ethnographic studies or have few informants with whom to work. In many ethnographic field situations, interviewing doz-

ens of informants can be very time and labor intensive. In other circumstances, there may not be dozens of informants to interview, as there may only be a handful of knowledgeable informants (perhaps due to some vanishing cultural tradition or concentration of expertise in a small number of individuals). In all of these scenarios, it is essential to gather as much information as possible from each informant interviewed, and the three supplementary techniques may help achieve this goal.

More research is required to determine the generalizability of the results summarized here. For instance, these techniques should be evaluated with informants from diverse cultures and in semantic domains involving items represented by phrases or sentences (e.g., Romney et al. 1979; Brewer 1992). Further research might also examine the effects of varying the order in which the different supplementary techniques are administered. In addition, future research might investigate the relationship between the total number of items an informant mentions in an interview (during free listing and in response to the supplementary techniques) and other indicators of knowledge (see Brewer 1995a).

REFERENCES

Brewer, D. D. 1992. Hip hop graffiti writers' evaluations of strategies to control illegal graffiti. *Human Organization* 51:188–96.

———. 1995a. Cognitive indicators of knowledge in a semantic domain. *Journal of Quantitative Anthropology* 5:107–28.

———. 1995b. Patterns in the recall of persons in a department of a formal organization. *Journal of Quantitative Anthropology* 5:255–84.

———. 2000. Forgetting in the recall-based elicitation of personal and social networks. *Social Networks* 22:29–43.

Brewer, D. D., and S. B. Garrett. Forthcoming. Evaluation of interviewing techniques to enhance recall of sexual and drug injection partners. *Sexually Transmitted Diseases*.

Brewer, D. D., S. B. Garrett, and S. Kulasingam. 1999. Forgetting as a cause of incomplete reporting of sexual and drug injection partners. *Sexually Transmitted Diseases* 26:166–76.

Brewer, D. D., S. B. Garrett, and G. Rinaldi. Forthcoming. Free listed items are effective cues for eliciting additional items in semantic domains. *Applied Cognitive Psychology*.

Brown, W. 1923. To what extent is memory measured by a single recall? *Journal of Experimental Psychology* 6:377–82.

Buschke, H., P. C. Goldberg, and G. Lazar. 1973. Reminding and retrieval from permanent storage. *Journal of Experimental Psychology* 101:132–38.

Communicable Disease Center. 1962. *Venereal disease branch field manual*. Atlanta, GA: Venereal Disease Branch, Author.

Glidden, L. M., and H. H. Mar. 1978. Availability and accessibility of information in the semantic memory of retarded and nonretarded adolescents. *Journal of Experimental Child Psychology* 25:33–40.

Hutchinson, J. W. 1983. Expertise and the structure of free recall. In *Advances in consumer research*, edited by R. P. Bagozzi and A. M. Tybout, 585–89. Ann Arbor, MI: Association for Consumer Research.

Lazar, G., and H. Buschke. 1972. Successive retrieval from permanent storage. *Psychonomic Science* 29:388–90.

Romney, A. K., D. D. Brewer, and W. H. Batchelder. 1993. Predicting clustering from semantic structure. *Psychological Science* 4:28–34.

Romney, A. K., T. Smith, H. E. Freeman, J. Kagan, and R. E. Klein. 1979. Concepts of success and failure. *Social Science Research* 8:302–26.

Rosch, E. 1978. Principles of categorization. In *Cognition and categorization*, edited by E. Rosch and B. B. Lloyd, 27–48. Hillsdale, NJ: Lawrence Erlbaum.

Sudman, S., and N. M. Bradburn. 1983. *Asking questions*. San Francisco: Jossey-Bass.

Weller, S. C., and A. K. Romney. 1988. *Systematic data collection*. Newbury Park, CA: Sage.

*DEVON D. BREWER is the director of STD/HIV disease intervention services with Public Health–Seattle and King County and affiliate assistant professor of anthropology, psychology, and sociology at the University of Washington. His research focuses on social networks, infectious disease, research methods, memory and cognition, and evolutionary psychology. Some of his recent publications include (by Brewer, Potterat, et al.) "Prostitution and the Sex Discrepancy in Reported Number of Sexual Partners" (*Proceedings of the National Academy of Sciences*, 2000) and "Forgetting in the Recall-Based Elicitation of Personal and Social Networks" (*Social Networks*, 2000).*