Lior Gideon *Editor*

Handbook of Survey Methodology for the Social Sciences

Springer

Handbook of Survey Methodology for the Social Sciences

Lior Gideon
Editor

Handbook of Survey Methodology for the Social Sciences

Springer

What Would You Do? Conducting Web-Based Factorial Vignette Surveys

26

Hadar Aviram

Much of the skill and challenge of conducting surveys involves the need to engage respondents deeply with the survey topic. Factorial surveys, or vignette surveys, offer a unique opportunity to do so. Rather than asking respondents about their lives and experiences, vignettes solicit their thoughts and opinions on hypothetical scenarios, which are crafted and manipulated by the researcher to control for specific variables. While this unique research design overcomes some challenges presented by other surveys, it presents challenges of its own, and requires care and skill. This chapter aims to provide a tentative step-by-step guide to conducting vignette surveys on the web, offering advice on (and some examples of) the design, recruitment, and analysis of such surveys.

26.1 Why Vignettes?

Vignettes are "artificially constructed case descriptions, presented for respondents to consider and to report what they would have done in the circumstances" (Sapsford 1999, p. 142). The appeal of vignette surveys lies in their unique design. They are based on a clean experimental premise: The researcher presents respondents with a hypothetical scenario and asks them for their opinions or reactions to the scenario. Not all respondents, however, are exposed to the same scenario. The researcher creates multiple subtle variations on the scenario, controlling for the variables she is interested in. These variations are randomly assigned to respondents, thus allowing statistical testing of the impact of such variations on respondents' reactions to the scenario (Raffery 2001).

The usage of vignettes offers several advantages as a research design, which stems from its experimental nature. First, it allows the researcher a high degree of control over the variables tested. Since all control over the text of the scenario lies with the researcher, and the scenarios are randomly assigned, running regressions and testing hypotheses do not require the assumptions involved in analyzing panel data and the like. The fact that the scenarios are similar save for the intentional variations creates "clean" comparisons, which would require a variety of statistical assumptions if respondents were asked about actual past events.

Second, vignettes allow access to invisible domains of human experience. Confronting respondents with hypothetical situations allows researchers to target groups they would not have otherwise been able to identify. For example, it is much easier to interview respondents about their willingness to engage in civil litigation (Aviram and Leib 2010), tax evasion (Thurman 1989), organizational dishonesty (Elis and Simpson 1995; Jehn and Jonsen 2010),

H. Aviram (✉)
Hastings College of the Law,
University of California, 200 McAllister Street,
San Francisco, CA 94102, USA
e-mail: hadar.aviram@gmail.com

L. Gideon (ed.), *Handbook of Survey Methodology for the Social Sciences*,
DOI: 10.1007/978-1-4614-3876-2_26,

end-of-life planning (Denk et al. 1997), or police reporting (Aviram and Persinger 2012), than to locate people who have already done so. Moreover, in situations in which there are real dilemmas, vignettes can capture professionals who would choose different courses of action across an array of choices (Taylor 2006; Hughes and Huby 2002; Ludwick and Zeller 2001).

A third and related advantage pertains to the ability to raise sensitive issues through hypothetical scenarios. This is particularly important in studies that examine issues of victimization and vulnerability (Denk et al. 1997; Leighton 2010; Jehn and Jonsen 2010; Aviram and Persinger 2012; Alexander and Becker 1978). Careful crafting of a vignette allows creating some distance between the scenario and the respondent, providing the latter with a safer, more comfortable cognitive environment for his or her reply.

Finally, as a cross between experimental designs and survey research (Dülmer 2007), factorial vignette studies are a less costly alternative in fields in which conducting a full-blown experiment would be too expensive (Shooter and Galloway 2010).

There are, however, some drawbacks and caveats associated with the experimental nature of vignette surveys. These stem from the fact that respondents are commenting on hypothetical situations, not actual experiences, which create difficulties extrapolating as to their realistic responses (Abbott and Sapsford 1993). It is not always possible to guess how this might affect response bias, but some concerns may involve the fact that respondents might be more emotionally removed from situations they have not experienced in person, and therefore might appear to be more proactive, or purport to respond in ways that they perceive as more ethical or more courageous. Also, the success of a vignette survey depends on the respondents' imaginations and their ability to place themselves in the hypothetical situation, which, of course, differs among respondents. These concerns mean that vignettes must be crafted with much care and are crucial for the successful conduction of the survey, as well as the ability to learn and generalize from it.

26.2 Potential Topics for Vignette Surveys

Vignette surveys are potentially useful in a myriad of fields. They are particularly appealing for studying situations that present moral and ethical dilemmas. Vignette research designs have been used extensively in sociology, social psychology, medical sciences, public policy, behavioral economics, empirical philosophy, criminology, and criminal justice.

Scholars, whose interests lie at the crossroad of law and social science, use vignettes to tap into the decision-making process whether to pursue legal action to remedy a situation or a dispute. This chapter discusses vignette survey technique using two examples from recent studies conducted by the author of this chapter: A vignette survey measuring people's perceptions and responses to domestic violence situations (Aviram and Persinger 2012) and a vignette survey examining the impact of relationships on the decision to invoke legal action (Aviram and Leib 2010). In both cases, respondents were directed to a web survey in which they were confronted with a hypothetical scenario; the aim was to test which variables accounted for respondents' likelihood of resorting to the law to resolve their problems.

In the domestic violence study, respondents read a scenario describing a domestic violence incident that occurred to a friend of theirs. The scenarios varied by the gender of the parties (male aggressor, female victim; female aggressor, male victim; same-sex male couple; same-sex female couple), by the extent of reciprocity in the violence, and, for the same-sex scenarios, by the existence of an outing threat by the aggressor. Respondents then answered questions about possible solutions to the problem in general, and their inclination to report the incident to the police.

In the friendship and disputes study, each respondent was confronted with five different scenarios describing everyday disputes. Each dispute varied in the relationship between the parties: good friend, co-worker, or acquaintance.

Respondents were asked questions pertaining to their perception of the dispute (a personal disappointment, a moral failure, or a legal violation), and were provided a scale for reporting the extent to which they would be willing to pursue different types of recourse, legal or non-legal, to the dispute.

26.3 Step I: Configuring the Research Design: What Do You Want to Study?

The first step in crafting a vignette survey is deciding on the variables to be tested. The dependent variables—the respondents' opinions or courses of action—are the questions that respondents will be asked following the scenario. In the domestic violence study, we were mainly interested in whether respondents would report domestic violence incidents to the police, but we also wanted to know whether they would recommend doing so to others, as well as the extent to which they would support alternative courses of action, such as anger management for the aggressor, therapy for the victim, group counseling, separation, or reconciliation. The answers to these questions, we hypothesized, would depend upon a variety of demographic and factual variables. Our focus, however, was on a particular aspect of domestic violence: its occurrence in unconventional gender settings. We wanted to know whether respondents would be more likely to report incidents occurring in a traditional gender setting—a male aggressor and a female victim—than incidents occurring in same-sex relationships or situations in which the aggressor was a woman and the victim was a man. Anecdotal evidence suggested that domestic violence was not a rare occurrence in these unconventional settings, but that the disturbing problem of underreporting such incidents was more severe when the setting deviated from the traditional scenario. For our purposes, this meant that the domestic violence scenario used would include all possible gender combinations. Rather than one independent variable accepting four values (one for each combination), we decided to include two independent variables: gender of the aggressor and gender of the victim.

We were interested in other issues as well, such as violent behavior in the past, seriousness of injuries, and the like, but for reasons explained below, budgetary constraints required focusing on variables related to the gender settings, such as mutual violence (which, as we hypothesized, might lead to blur the aggressor/victim divide and the perception of the incident as domestic abuse rather than "just fighting") and, for same-sex scenarios, explicit "outing" threats on the part of the aggressor, which on one hand might lead to a more serious perception of the incident, and on the other hand might dissuade respondents from reporting such incidents, due to fear that the act of reporting would lead to substantial harm to the victim beyond the abuse.

In the friendship study, we had two dependent variables: the perception of the dispute and the potential recourses (including, but not limited to, legal action). Our independent variable was the relationship between the parties to the dispute. Based on insights from law and society scholarship, the expectation was that people would be less inclined to perceive disputes with good friends as legal matters (they might be more likely to perceive them as personal disappointments or moral failures) and also enthusiastic about litigating such disputes. However, we also suspected that the nature of the relationship, and not just its intensity, might yield differences in perceptions and recourses. Therefore, a nominal independent variable with three values: good friend, co-worker, and acquaintance were chosen.

Considering the statistical analysis later on, it is usually best to pick independent variables that accept two or, at most, three values. This guideline is particularly helpful when dealing with multiple independent variables (and is not unrelated to budgetary limitations, as explained below). The analysis is greatly simplified if the study is configured as containing multiple independent variables of binary values, rather than fewer variables with more values. However, in cases in which various values are

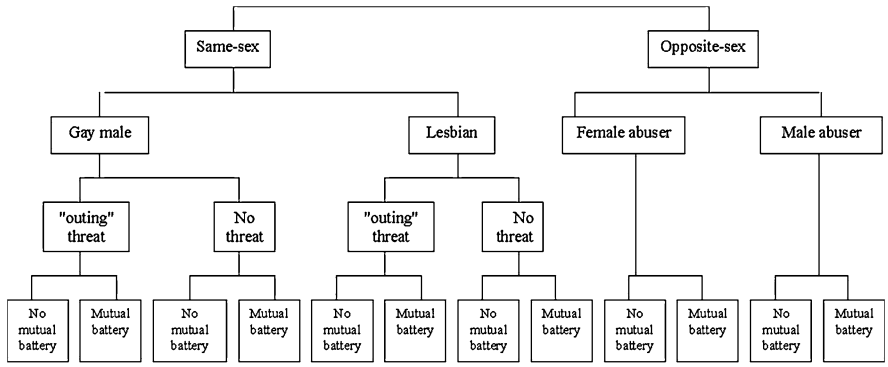

Fig. 26.1 Vignette structure for domestic violence (adopted from Aviram and Persinger 2012)

necessary, dummy variables can later be used to reconfigure categorical variables, though this requires additional steps in "cleaning" the database, and discerning the exact effects requires more sophisticated statistical analysis.

26.4 Step II: Get Real: Designing Around Budget Constraints

Budgetary constraints are always a serious issue in survey research, impacting various decisions, including sample size and length of survey (Salant and Dillman 1994). In the case of web surveys, while a surveyor's participation on the phone or in person is unnecessary, there are costs associated with respondent recruitment and programming. Some programming expertise is particularly valuable in vignette surveys, whose structure requires randomization of options, ordering, and other special features. If the researcher does not possess programming expertise, assistance in programming should be budgeted for as well. The unique feature of vignette surveys, however, is that the number of variations adopted in the hypothetical scenario has an exponential effect on the number of subjects required for an adequate statistical analysis. Consider, for example, the structure of our domestic violence survey portrayed in Fig. 26.1.

Parametric and non-parametric tests require a minimum *n* in each category. When taking into account the demographic questions included in the survey, the *n* increases. As can be seen in Fig. 26.1, each of the added variables doubled the number of scenarios, thus doubling the number of respondents needed (save for the "outing" threat variable, which only doubled the number of respondents assigned the same-sex scenarios). In the domestic violence survey, budget limitations meant foregoing the ability to control for previous violent incidents, the respective size of the parties, and the nature of the relationship between the parties.

Budget limitations impacted our design for the friendship study, too. We wanted to examine the impact of friendship on pursuing legal action in a set of five different scenarios: An unreturned loan, a rental dispute, a quibble over parking tickets, the theft of a business idea, and a dispute over season tickets jointly purchased. Presenting our respondents with only one randomly selected scenario would mean increasing our *n* five-fold. Our decision, therefore, was to present all scenarios to each respondent, randomizing the order in which they were received, and compensate for this choice at the analysis phase.

26.5 Step III: Crafting Good Vignettes

Having formed hypotheses and decided on variables within the research budget, the time comes to flesh out the hypothetical scenario for the survey. A few guiding principles might be helpful when doing so.

First, it is important to create realistic scenarios. In order for the vignette to be a useful and valid simulator of actual human behavior, the situation described need not be too much of a stretch for the respondents. There are various possible sources for everyday hypothetical situations. Previous research on the topic might provide some insights into the scenarios worth examining. For example, in our the friendship study, the season tickets scenario originated from first-hand evidence in one coauthor's previous work, in which he encountered a surprising amount of litigation around this issue. Similarly, the scenario in which one party lends a car to the other party only to later receive $500 worth of parking tickets emerged from real-life stories that Aviram and Leib (2010) heard anecdotally from friends (incidentally, my coauthor lent me his car when he went on sabbatical).

It is important, however, not to assume that a wide spectrum of respondents will connect with a situation that the research team happens to think common and mundane. Socioeconomic and cultural assumptions sometimes find their way into the crafted scenario, and care must be taken to avoid them. Since respondents will differ from each other, the scenario should be generally enough so as not to alienate any group of respondents. Pilot surveys, as well as circulating drafts of the scenarios among colleagues prior to deploying the survey, can be helpful in eliminating such biases.

In the domestic violence survey, we took great care not to imply a particular demographic milieu. Our basic scenario was as follows:

> *Your best friend, Jenny, has been in a two-year relationship with Ken.*
>
> *One night Jenny asks you to come pick her up because she and Ken had a fight. When you arrive Jenny is scraped up, has a black eye and a sprained shoulder. After you leave the couple's home, concerned, you ask what happened.*
>
> *Jenny tells you that she and her boyfriend, Ken, attended a party where they had too much to drink. Jenny explains that after the party Ken accused her of flirting with another man, yelled at her, calling her a liar and a cheater. Jenny admits that Ken was so angry that he lost control and shoved her down the stairs in their home, which resulted in the bruises and injured shoulder. According to Jenny, afterward, Ken was very sorry for pushing her and asked her not to tell anyone what had happened.*
>
> *You have noticed unexplained bruising on Jenny's forearms in the past. Jenny says that sometimes she is afraid of Ken, but she says it's her own fault for provoking him.*

In crafting the scenario, we were careful to avoid the topic of marriage (so as to avoid controversy in the same-sex scenarios), as well as to avoid a detailed layout of the couple's home, which could be a socioeconomic marker (the stairs could be in a house, or lead to an apartment). In the heterosexual scenarios we avoided the word "partner".

A variation of the scenario, occurring between lesbian partners, with an "outing" threat and mutual violence, read as follows:

> *Your best friend, Jenny, has been in a two-year relationship with Kathy.*
>
> *One night Jenny asks you to come pick her up because she and Kathy had a fight. When you arrive Jenny is scraped up, has a black eye and a sprained shoulder. Kathy's cheek is slightly bruised. After you leave the couple's home, concerned, you ask what happened.*
>
> *Jenny tells you that she and her partner, Kathy, attended a party where they had too much to drink. Jenny explains that after the party Kathy accused her of flirting with another woman, yelled at her, calling her a liar and a cheater. In response to these accusations, Jenny says she slapped Kathy on the cheek. Jenny admits that Kathy was so angry that she lost control and shoved her down the stairs in their home, which resulted in the bruises and injured shoulder. Jenny says, afterward, Kathy was very sorry for pushing her, but told her that if she told anyone what happened, Kathy would tell everyone that Jenny was a lesbian.*
>
> *You have noticed unexplained bruising on Jenny's forearms in the past. Jenny says that sometimes she is afraid of Kathy, but she says it's her own fault for provoking Kathy.*

When generating variations on the vignette, it is important to make sure that the story is coherent and believable in all its variations. The domestic violence stories had to be vivid and plausible across all gender situations and not appear outlandish with the outing and mutual violence variations. It is important to keep in mind that, for some respondent, even the possibility of having a best friend who is gay or

lesbian required an imagination leap; such situations are hardly avoidable, and these limitations must be kept in mind when analyzing and interpreting the findings.

Note that our vignettes did not present respondent with first-person experiences of victimization, but rather with an event that occurred to a "best friend". The sensitivity involved in victimization reports required a bit of distancing within the vignette, so as to decrease reluctance. Similar techniques are important when respondents are asked about ethical behavior (conflict, lying, deceit) in organizational or professional contexts (Jehn and Jonsen 2010).

Crafting the vignettes for the friendship study required similar attention to detail. Since the main variable was the degree of friendship between the parties to the dispute, ideally we would have liked to compare disputes with friends to disputes with strangers. However, stories involving transactions with friends seldom seemed plausible, everyday life occurrences when involving strangers. We therefore had to compromise for other relational levels, and ended up comparing good friends to co-workers and acquaintances. In addition, we wanted gender to be immaterial to decisions about dispute resolution, and were concerned about the fact that some respondents might find it difficult to imagine good friends of the opposite sex. We therefore chose gender-ambiguous names for the protagonists in our scenario. The five vignettes read as follows:

You loan Terry, a good friend/co-worker/acquaintance, $10,000, and have not been paid back on the due date. Terry loaned you this amount several years ago and you paid back in full.

One evening over drinks you tell Jamie, a good friend/co-worker/acquaintance, about a business idea you had. After a few weeks, you find out that Jamie has stolen your business idea, run with it, and hasn't shared any profits with you.

You give Chris, a good friend/co-worker/acquaintance, a very good deal on renting your apartment or house while you are away for a few months. You later find out that Chris sublet the place to somebody else at market rate, substantially above what Chris paid you, and therefore, made a profit. You and Chris never discussed the possibility of subletting.

You loan Ash, a good friend/co-worker/acquaintance, your car while you are away for a few months. When you return, you find out that Ash has accumulated $500 worth of parking tickets and didn't tell you about it.

You and Joey, a good friend/co-worker/acquaintance, have been alternating purchasing season tickets for one another for a number of years. The tickets cost several thousand dollars. This year, it is Joey's turn to purchase the tickets, but Joey doesn't want to buy them with you anymore. You feel it would be more fair to end the arrangement next year, when you would be "even" with each other.

Several things should be pointed out. First, all five situations represent realistic examples provided by the dispute and litigation literature. Second, we chose gender-neutral names for the protagonists, in the hopes of eliminating gender bias in dispute resolution and creating more flexibility for the respondents in imagining the relationship with the other party. Third, we took care to avoid any terminology evoking law or litigation, so as not to prime respondents toward legal perceptions or recourse options. And fourth, the less sensitive nature of this study did not require recurring to third-person techniques.

Finally, when constructing vignettes, it is important to keep in mind our own possible biases. Even the most careful vignette may reflect the researchers' personal and cultural beliefs and values (Rosenthal 1970). While administering the survey on the web removes the problematic situational effects, the story should be one with which a broad array of respondents, from diverse demographic and cultural backgrounds, can engage. This is one of many good reasons why vignette surveys should ideally be tested in a pilot study on a smaller, yet diverse, sample.

26.6 Step IV: Designing, Programming, and Administering the Survey

The success of a factorial survey depends on its programming and flow as much as on the content of the vignettes themselves. Even in the late 1970s, when surveys were administered by hand, survey design and structure was an important

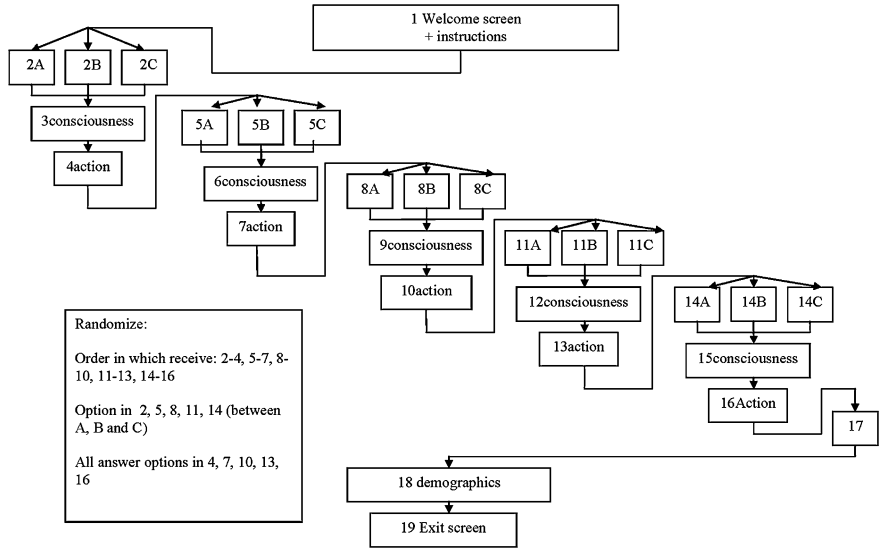

Fig. 26.2 Programming algorithm (adopted from Aviram and Leib 2010)

consideration (Sonquist and Dunkelberg 1977). There is a variety of software tools available for structuring surveys; some are available for free on the web, some come with software packages at research institutions, and some can be purchased, as a standalone product or as part of a programming service agreement. The choice of software platform depends, of course, on survey budget, but there are other considerations involving the software's capability to create proper randomization and its user friendliness.

One important factor to keep in mind is randomization and order bias (Schuman and Presser 1981). While the impact of preceding questions on later questions is always an issue in a survey, it is a source of particular concern in factorial surveys, because the thematic closeness in questions, all of which relate to the same vignette, may bias respondents to craft their answers so that they conform to each other. The implications of question-order effects are that many components of a given survey should be randomized: The order in which respondents receive vignettes, if the study uses several vignettes, some of the questions within each vignette, and the answers in multiple-choice vignettes.

Several studies encourage writers to use only one vignette per respondent and control factors within it (Rossi and Nock 1982; Shooter and Galloway 2010; Elis and Simpson 1995). This approach is methodologically "cleaner" than presenting each respondent with a sequence of vignettes: First, the possible impact of previous vignettes on subsequent ones is eliminated, and second, if data analysis requires comparing the vignettes to each other, all differences save for the designed variations are controlled for. However, sometimes budgetary considerations constrain the sample size and require asking respondents questions about several vignettes; after all, any additional variable in a vignette requires multiplying the number of respondents. This course of action, while more cost-effective, is riskier in the sense that the mere repetition of the scenario-answering experience may tire or bias respondents. It also makes the survey longer, a problematic consideration with regard to response rates (Reece and Siegal 1986). The gravest risk, however, is that later, in the analysis phase, the researcher will want to compare between different vignettes, answered by the same respondent. This creates serious sample distribution distortions, which are discussed further in the friendship survey. In our friendship study, for budgetary reasons, we compromised and presented respondents with all five of the stories (in randomized order, of course). Figure 26.2 presents the programming algorithm for the survey:

Since vignette studies often ask people about their opinions on sensitive, personal matters, it is important to create an environment that grants the same amount of legitimacy to each option. Experiments on survey wording have found that offering descriptions of two antagonized perspectives yields less bias than offering a one-sided statement and asking respondents to agree or disagree with it (Schuman and Presser 1981, p. 86). Also, merely asking respondents to "agree" or "disagree" with a given position may generate an agreement bias (Schuman and Presser 1981, p. 290). These are of particular importance in factorial studies, which are by nature used to gauge values and reactions and should be administered in an environment that fosters the individual's engagement with his or her personal values rather than conformism to survey expectations.

26.7 Step V: Respondent Recruitment and Sampling

Sample representation is of utmost concern to anyone conducting a survey. This is, of course, true for vignette surveys as well. While the survey is designed to gauge the significance of variables inserted into the vignette, demographic variables will invariably be included in any logit, probit, or OLS model, and it is therefore advantageous to obtain a sample as diverse and inclusive as possible. This is less of a challenge when conducting a study of decision making within a given professional group (Stanton and Rogelberg 2001, for examples see Hughes and Huby 2002; Taylor 2006), but requires more attention when addressed at the general population, measuring public opinions and expectations (Thurman 1989; Denk et al. 1997; Leighton 2010). As is the case in all web surveys, respondents are generally more educated and affluent than the general population (Stanton and Rogelberg 2001).

For those opting out of the less costly and problematic option of surveying students (Dalziel 1996; Peterson 2001), there are two main options. The first is working with a respondent recruitment firm. The costs involved with a professional service are considerable; however, this option may prove cost-effective if the service also provides survey software and programming. Professional recruitment is usually relatively swift, yielding a complete database within a few days.

It is important to keep in mind that professionally recruited subjects are usually modestly remunerated for their services on the panel. Payment in itself is not necessarily a problem, if it is commensurate with the value of respondents' time and effort (Reece and Siegal 1986), but several scholars raise the concern that "professional respondents" may substantially differ from one-shot respondents, in terms of survey fatigue and in other important ways (Baldinger 2001; Stanton and Rogelberg 2001). These concerns are mitigated by most reputable professional online survey panel companies through tight screening processes and rigorous control over survey distribution (Baldinger 2001).

The less expensive option is self-recruitment, which entails providing the survey link openly on the web and advertising online. While cheaper, this is more time-consuming and requires careful attention to survey variables when planning survey deployment. In the domestic violence survey, sexual orientation would have been an important variable in determining respondents' reactions to unconventional gender settings. We therefore oversampled GLBT respondents by posting links to our survey on GLBT Google and Craig's List groups. To avoid priming, we avoided addressing domestic violence groups, or indicating the topic of the survey in our advertisements.

One potential concern with self-recruitment in factorial studies stems from unexpected online reactions to specific vignettes. Any respondent, confronted with only one version of the vignette and unaware of the tested variables, may republish the link in other forums, compromising the diversity of the sample. In our domestic violence survey, a blogger who randomly happened to receive our female-toward-male violence variation concluded that the survey was "about male victims" and posted the link on a

fathers' rights forum. We had to intercede, exchange emails with the blogger, and politely ask that the link be removed. Such interventions are not always possible, and should be kept in mind when making decisions about respondent recruitment.

A final word pertains to sampling technique. For a couple of decades, the common wisdom in the field was that the sample for a factorial survey should be randomly drawn, in which case "each randomly drawn vignette sample is a reduced representative sample of the whole vignette sample from which it originates" (Dülmer 2007, p. 384). However, in a recent study, Dülmer experimentally shows that, under some circumstances, quota sampling is a superior method. While some of the challenges of random sampling are relaxed with wide web distribution, quota sampling can help in situations in which some variable combinations are impossible (such as, in our domestic violence study, the "outing threat" variable, which does not work with the opposite-sex scenarios). Choosing a quota sample might be a viable option in some circumstances, and is easily negotiable with most professional survey panel companies.

26.8 Step V: Statistical Analysis

Rather than providing a comprehensive guide to statistical analysis of surveys, this subchapter highlights the issue of hierarchical models and nesting, which is an important issue to keep in mind in vignette settings in particular. Most vignette survey studies will yield a database that includes, as independent variables, not only the variables in the vignette, but also a series of demographic variables pertaining to the respondents. As the analysis progresses, one is likely to run a number of tests on the data. A simple analysis assumes that respondents are interchangeable, and includes only vignette characteristics in the regression. A more complex analysis assumes and includes interactions between vignette and respondent, and typically the best regression model will be more inclusive.

A particular type of problem arises when, due to budgetary constraints, each respondent was presented with more than one vignette. This is not an issue if regression models are run for each type of vignette separately. However, sometimes researchers will want to include the type of vignette as an additional independent variable. In the friendship study, the plan was to include an analysis that compared the five scenarios—the loan, the business idea theft, the rental, the parking tickets, and the season tickets—to each other, and include this comparison in our regressions. Beyond the obvious design problem (vignettes differ from each other in a variety of ways that were not controlled for in the original design), there is also a sample distribution problem. Changing the unit of analysis from respondent to scenario does not simply increase the sample size from 1,000 to 5,000 observations; it creates a sample with 1,000 sets of five observations each. This creates a twofold problem related to the resulting change in sample distribution: First, the vignettes will have correlated error terms due to idiosyncrasies of the respondent, and second, the vignettes are hierarchically nested within respondents (Hox et al. 1991, p. 497; Raffery 2001).

The best way to confront the sample distribution problem is to take it into account in the research design and present all respondent with only one vignette, creating variations within the vignette. However, if this is not possible, there are several statistical solutions, and some or all of them should be pursued. First, it is highly recommended to run a Kolmogorov–Smirnov test on the original and modified samples, to check whether the databases' distributions differ significantly. Second, the modified database should be cluster-analyzed, thus controlling for intrarespondent effects. And third, hierarchical or multilevel analysis is recommended, including hierarchical models. Hox et al. (1991) have made some suggestions for such models. At the time of this chapter's writing, for Stata users, the GLLAMM patch addresses this exact problem (Rabe-Hesketh and Skrondal 2004).

26.9 Step VI: Interpreting the Results: Generalizations and Limitations

Even the most carefully crafted study becomes weaker with careless inference and over claiming. As with any research project, design and recruitment choices made due to budgetary constraints need to be explained and justified, so that the audience is aware of the limitations.

When framing data discussion and results, it is important to remember the limitations of vignette surveys. A hypothetical scenario, realistic and mundane as it may be, is not the real situation (Abbott and Sapsford 1993). It is risky, therefore, to leap from respondents' answers to the survey to strong predictive language about what respondents might do in real life. There are, for example, reasons to assume that people may report less temptation to cheat on their taxes (Thurman 1989) or engage in deceitful corporate behavior (Elis and Simpson 1995; Jehn and Jonsen 2010). In the domestic violence context, we assumed a bias on behalf of police reporting, and in the friendship context, we assumed a litigiousness bias. After all, in a hypothetical setting, people are not directly confronted with the practical, financial, and emotional costs of pursuing legal action.

That said, it is perfectly acceptable to explain, both in the methodological chapter and in the discussion, the steps taken to improve the experiment's external validity. The more the vignette simulates real-life situations, the easier it is to justify extrapolation and prediction. Moreover, even if a vignette survey does not offer a crystal ball of prediction, it does offer keener insights into people's consciousness and value systems than the traditional opinion survey. Ultimately, readers' confidence in inferences may vary with their enthusiasm about experimental methods and survey research; but even readers who are skeptical about the merits of generalizing from hypotheticals may learn something new about how people perceive and approach potential dilemmas.

Factorial surveys are wonderful research tools that combine an experimental design with the power (and reduced costs) of a survey. When meticulously planned and executed, and carefully interpreted, they can teach us much about opinions, values, and perceived courses of action.

References

Abbott, P., & Sapsford, R. (1993). Studying policy and practice: The use of vignettes. *Nurse Researcher, 1*, 81–91.

Alexander, C. S., & Becker, H. J. (1978). The use of vignettes in survey research. *Public Opinion Quarterly, 42*, 93.

Aviram, H. & Leib, E. J. (2010). *Are friendship and the law separate spheres? A vignette survey study*. Paper presented at the 5th Conference on Empirical Legal Studies, New Haven.

Aviram, H., & Persinger, A. M. (2012). Domestic violence in unconventional gender settings: A vignette survey study. *Hastings Women's Law Journal, 29*(2), 152 (forthcoming).

Baldinger, A. L. (2001). *Online research and data quality: Stepping toward truth. Council of American Survey Research Organizations Journal, 2001*, 93–96.

Dalziel, J. R. (1996). Students as research subjects: Ethical and educational issues. *Australian Psychologist, 31*, 119–123.

Denk, C. E., Benson, J. M., Fletcher, J. C., & Reigel, T. M. (1997). How do Americans want to die? A factorial vignette survey of public attitudes about end-of-life medical decision-making. *Social Science Research, 26*(1), 95–121.

Dülmer, H. (2007). Random or quota design? Experimental plans in factorial surveys. *Sociological Methods Research, 35*(3), 382–409.

Elis, L. A., & Simpson, S. S. (1995). Informal sanction threats and corporate crime: Additive versus multiplicative models. *Journal of Research in Crime and Delinquency, 32*(4), 399–424.

Hox, J. K., Kreft, I. G. G., & Hermkens, P. J. (1991). The analysis of factorial surveys. *Sociological Methods Research, 19*(4), 493–510.

Hughes, R., & Huby, M. (2002). The application of vignettes in social and nursing research. *Journal of Advanced Nursing, 37*(4), 382–386.

Jehn, K. A., & Jonsen, K. (2010). A multimethod approach to the study of sensitive organizational issues. *Journal of Mixed Research Methods Research, 4*(4), 313–341.

Leighton, S. (2010). Using a vignette-based questionnaire to explore adolescents' understanding of mental health issues. *Clinical Child Psychology and Psychiatry, 15*(2), 231–250.

Ludwick, R., & Zeller, R. A. (2001). The factorial survey: An experimental method to replicate real world problems. *Nursing Research, 50*(2), 129–133.

Peterson, R. A. (2001). On the use of college students in social science research: Insights from a second-order meta-analysis. *The Journal of Consumer Research, 28*(3), 450–546.

Rabe-Hesketh, S., & Skrondal, A. (2004). *Generalized latent variable modeling: Multilevel, longitudinal, and structural equation models*. Boca Raton: CRC.

Raffery, A. A. (2001). Statistics in sociology, 1950–2000: A selective review. *Sociological Methodology, 31*, 1–45.

Reece, R. D., & Siegal, H. A. (1986). *Studying people: A primer in the ethics of social research*. Macon: Mercer University Press.

Rosenthal, R. (1970). The social psychology of the behavioral scientist: On self-fulfilling prophecies in behavioral research and everyday life. In E. R. Tufte (Ed.), *The quantitative analysis of social problems*. Reading: Addison-Wesley.

Rossi, P. H., & Nock, S. L. (Eds.). (1982). *Measuring social judgment: The factorial survey approach*. Beverly Hills: Sage.

Salant, P., & Dillman, D. A. (1994). *How to conduct your own survey*. New York: Wiley.

Sapsford, R. (1999). *Survey Research*. London: Sage.

Schuman, H., & Presser, S. (1981). *Questions and answers in attitude suveys*. New York: Academic Press.

Shooter, W., & Galloway, S. (2010). The use of factorial surveys in leisure research. *Journal of Leisure Research, 42*(4), 641–652.

Sonquist, J. A., & Dunkelberg, W. C. (1977). *Survey and opinion research: procedures for processing and analaysis*. Englewood Clifs: Prentice Hall.

Stanton, J. M., & Rogelberg, S. G. (2001). Using Internet/Intranet web pages to collect organizational research data. *Organizational Research Methods, 4*(3), 200–217.

Taylor, B. J. (2006). Factorial surveys: Using vignettes to study professional judgement. *British Journal of Social Work, 36*(7), 1187–1207.

Thurman, Q. C. (1989). General prevention of tax evasion: A factorial survey approach. *Journal of Quantitative Criminology, 5*(2), 127–146.