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Chapter 2

Context Effects in Attitude Surveys: Applying Cognitive Theory to Social Research

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ABSTRACT

Judgmental and conversational processes underlying context effects in attitude surveys are explored. Most importantly, preceding questions may influence the interpretation of subsequent ones, and may determine which information respondents consider in making an attitude judgment. The conditions that moderate the emergence of assimilation and contrast effects are specified, and theoretical and applied implications are discussed.

INTRODUCTION

Psychologists as well as survey researchers in sociology, political science and related fields have long been aware that attitude measurement is context dependent. Nevertheless, research on context effects developed fairly independently in these scientific communities. Whereas psychological research on the emergence of context effects in attitude measurement has traditionally

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been influenced by psychophysical models (see Eiser, 1990, for a comprehensive review), survey researchers documented a variety of question-order effects in attitude measurement, usually with little reference to the underlying judgmental processes (see Hippler & Schwarz, 1987; Schuman & Presser, 1981; Schuman, in press, for reviews of that research tradition).

It has only been recently that cognitive (social) psychologists and survey methodologists have developed collaborative research programs, applying principles of information processing to the question-answering process in survey interviews. This collaboration was initiated by two conferences, one organized by the US National Academy of Sciences during the fall of 1983 (cf. Jabine *et al.*, 1984) and the other by ZUMA, a German social science methodology center, during the summer of 1984 (cf. Hippler, Schwarz & Sudman, 1987). In the meantime, collaborative research programs have been institutionalized in different countries and a number of theoretical models of the cognitive and communicative processes underlying survey responses have been proposed (e.g. Feldman & Lynch, 1988; Feldman, in press; Schwarz, 1990; Schwarz *et al.*, in press; Strack, in press; Strack & Martin, 1987; Tourangeau, 1987, in press; Tourangeau & Rasinski, 1988). On the applied side, this development promises to provide a theoretical framework for questionnaire construction that is likely to replace the largely intuitive "art of asking questions" in survey research. On the theoretical side, this collaborative enterprise poses a number of challenging issues for basic research in psychology (cf. Schwarz, Strack & Hippler, in press).

One of these challenging issues concerns the conditions under which preceding questions may influence the responses given to subsequent ones. Whereas the potential impact of question order on the responses obtained in opinion surveys is well documented (see Payne, 1951; Schuman & Presser, 1981; Schwarz & Sudman, in press, for numerous research examples), the conditions under which context effects may emerge are not well understood—and when they emerge it has typically been difficult to predict their direction. In the present chapter, we shall draw on current theorizing in social cognition to identify variables that give rise to question context effects and to specify the conditions under which answering a preceding question results in assimilation or contrast effects on subsequent judgments, that is, the conditions under which a subsequent judgment becomes similar to, or dissimilar from, a related previous judgment.

THE PROCESS OF QUESTION ANSWERING

From a cognitive perspective, answering an attitude question requires that respondents solve several tasks (see Feldman, in press; Strack, in press; Strack & Martin, 1987; Tourangeau & Rasinski, 1988, for detailed discussions). As a

first step, respondents have to interpret the question to understand what is meant. If the question is an opinion question, they may either retrieve a previously formed opinion from memory or "compute" one on the spot. To do so, they need to retrieve relevant information from memory to form a judgment. Once a "private" judgment is formed in their mind, respondents have to communicate it to the researcher. To do so, they may need to format their judgment to fit the response alternatives provided as part of the question. Moreover, respondents may wish to edit their response before they communicate it, due to influences of social desirability and situational adequacy. Accordingly, interpreting the question, generating an opinion, formatting the response, and editing the answer are the main psychological components of a process that starts with respondents' exposure to a survey question and ends with their overt report, as shown in Figure 2.1, which is adapted from Strack and Martin (1987).

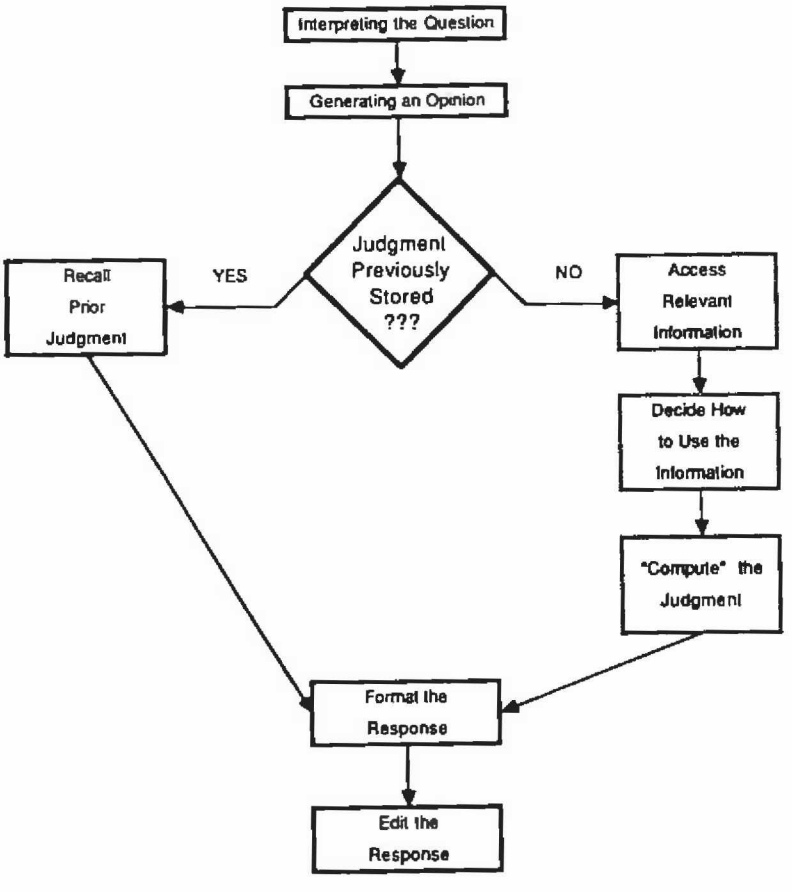

Figure 2.1 Respondents' tasks in a survey situation. Adapted from Strack and Martin (1987)

The nature of preceding questions may influence the question-answering process at each of these steps, but is most likely to exert an influence by affecting how respondents interpret subsequent questions, which information they retrieve from memory, and how they use this information in making a judgment. Accordingly, the impact of question order on question interpretation, information retrieval, and information use will be of key interest in the present chapter.

QUESTION INTERPRETATION

Not surprisingly, the impact of preceding questions on the interpretation of subsequent ones is the more pronounced the more ambiguous the question is. To begin with an extreme case, consider research in which respondents are asked to report their opinion about a highly obscure—or even completely fictitious—issue, such as the "Agricultural Trade Act of 1978" (e.g. Bishop, Oldendick & Tuchfarber, 1986; Schuman & Presser, 1981). As a psychologist, one may wonder why a researcher would ever want to ask such a question. The reason is that political scientists and other survey researchers are concerned that the "fear of appearing uninformed" may induce "many respondents to conjure up opinions even when they had not given the particular issue any thought prior to the interview" (Erikson, Luttberg & Tedin, 1988, p. 44). To explore how meaningful survey answers are, survey researchers introduced questions on fictitious issues. Presumably, respondents' willingness to report an opinion on a fictitious issue casts some doubt on the reports provided in survey interviews in general. In fact, about 30–50% of the respondents *do* typically provide an answer to issues that are invented by the researcher. This has been interpreted as evidence for the operation of social pressure that induces respondents to give meaningless answers, which are presumably based on a "mental flip of coin" (Converse, 1964, 1970). Rather than providing a meaningful opinion, respondents are assumed to generate some random response, apparently confirming social scientists' wildest nightmares (see Smith, 1984, for a discussion of these "non-attitudes").

From a psychological point of view, however, these responses may be more meaningful than has typically been assumed in public opinion research. As noted above, respondents' first task is to determine the meaning of the question. If the question is highly ambiguous, they may ask the interviewer for clarification. Chances are, however, that the well-trained interviewer responds, "Whatever it means to you", thus leaving respondents to their own devices. In this situation, respondents are likely to turn to the context of the ambiguous question to determine its meaning, much as they would be expected to do in any other conversation (Clark, 1985; Grice, 1975). In fact, respondents have no reason to assume that the researcher violates each and

every maxim that governs social discourse in everyday settings by asking a question that is neither informative and truthful nor relevant and clear. Accordingly, they may be likely to turn to the context of the conversation to determine the meaning of the ambiguous utterance (cf. Schwarz & Strack, in press, for a more general discussion of conversational aspects of research procedures).

Once respondents have assigned a particular meaning to the issue, thus transforming the fictitious issue into a better defined one that makes sense in the context of the interview, they have no difficulty in reporting a subjectively meaningful opinion. Even if they have not given that particular issue a lot of thought, they may easily identify the broader set of issues to which this particular one apparently belongs. If so, they can use their general attitude towards the broader set of issues to determine their attitude towards this particular one.

A study by Strack, Schwarz and Wänke (in press) illustrates this point. In this study, German college students were asked about their attitude towards an "educational contribution". For half of the sample, this target question was preceded by a question that asked them to estimate the average tuition fees that students have to pay at US universities. The other half of the sample had to estimate the amount of money that the Swedish government pays every student as financial support. As expected, students' attitude towards an "educational contribution" was more favorable when the preceding question referred to money that students receive from the government than when it referred to tuition fees. Subsequently, respondents were asked what the question actually referred to. Content analyses of respondents' definitions of the fictitious issue clearly demonstrated that respondents used the context of the "educational contribution" question to determine its meaning.

As may be expected, the use of apparently related questions in interpreting ambiguous ones is more pronounced the more respondents have the opportunity to screen the content of the questionnaire. Accordingly, it has been found to be more pronounced in self-administered questionnaires, where respondents can go back and forth between questions and may spend as much time on them as they want, than in face-to-face or telephone interviews, where question presentation is strictly sequential and the time available to think about each question is severely limited (see Schwarz *et al.*, in press, for a discussion of the influence of mode of data collection on respondents' cognitive tasks). For example, in a study by Schwarz *et al.* (1990), respondents were asked to report their attitudes towards a fictitious issue, namely the "International Trade Act of 1986", either under self-administered or under telephone interview conditions. As expected, fewer respondents reported not having an opinion on the fictitious issue if the question was presented in a self-administered questionnaire rather than in a telephone interview, indicating that respondents were more likely to make sense of the ambiguous question

under self-administered conditions. In addition, their substantive responses to the International Trade Act question were closely related to their responses to several questions about import/export restrictions—asked five questions earlier—if the questions were presented in a self-administered questionnaire (gamma = 0.69), but not if they were presented in a telephone interview (gamma = 0.11).

In summary, respondents may turn to the content of related questions to determine the meaning of ambiguous ones. In doing so, they interpret the ambiguous question in a way that makes sense of it, and subsequently provide a subjectively meaningful response to *their* definition of the question. Accordingly, it comes as no surprise that responses to fictitious issues do *not* conform to the model of mental coin flipping as Converse and other early researchers hypothesized, but do show a meaningful and systematic pattern, as Schuman and Kalton (1985) observed.

THE IMPACT OF PRECEDING QUESTIONS ON THE INFORMATION USED TO ANSWER SUBSEQUENT ONES

However, preceding questions do not only influence the interpretation of subsequent ones in a straightforward way. Rather, they also determine which information comes to respondents' mind when making a subsequent judgment, and influence how respondents use that information. We shall consider each of these aspects in turn.

Information Accessibility

As a large body of literature in cognitive psychology indicates (see Bodenhausen & Wyer, 1987; Wyer & Srull, 1989, for reviews), individuals are unlikely to retrieve all information that may potentially bear on a judgment but truncate the search process as soon as enough information has come to mind to form a judgment with sufficient subjective certainty. Accordingly, their judgments strongly reflect the impact of the information that is most accessible in memory at the time of judgment. This is usually the information that has been used most recently, for example for the purpose of answering a preceding question.

Two studies on reported life satisfaction may illustrate this point. In one of these studies (Strack, Martin & Schwarz, 1988), American college students were asked to report their general life satisfaction as well as their dating frequency in a self-administered questionnaire, and the two questions were asked in two different orders. When general life satisfaction was assessed prior to the frequency of dating, the correlation between both variables was

low and not significant, $r = -0.12$. Reversing the question order, however, dramatically increased the correlation to $r = 0.66$.

This reflects the well-known impact of increased cognitive accessibility: individuals do not retrieve all potentially relevant information when they are asked to evaluate their life, but form a judgment on the basis of the subset of information that comes to mind most easily at that point in time (cf. Schwarz & Strack, 1991). Accordingly, respondents were more likely to consider their dating behavior in making judgments of life satisfaction when this information was easily accessible, due to its use in answering the dating question, than when it was not.

Similarly, the correlation between ratings of "happiness with marriage" and "happiness with life as a whole" depended on the order in which both questions were asked in a sample of German adults (Schwarz, Strack & Mai, 1991). If the general happiness question preceded the marital satisfaction question, both questions were moderately correlated, $r = 0.32$. If the question order was reversed, this correlation increased to $r = 0.67$. However, the observed increase in the correlation of marital satisfaction and general life satisfaction was less pronounced, $r = 0.46$, and not significant, when *several* specific questions (work, leisure time, and marriage) preceded the general one. This finding reflects that the larger number of preceding questions increased the accessibility of a more varied set of potentially relevant information, thus reducing the impact of any specific piece of information.

In the framework of social cognition theorizing, these effects are not surprising. However, the methodological implications of cognitive accessibility processes have rarely been appreciated in substantive psychological and social research. As the above findings illustrate, we would draw very different conclusions about the impact of dating frequency or marital happiness on general life satisfaction depending upon the order in which the general and the specific questions were asked. And we would do so not only on the basis of the correlations but also on the basis of the means.

For example, respondents who reported high marital satisfaction also reported higher life satisfaction when the specific question preceded the general one ($M = 9.5$, on an 11-point scale) than when it did not ($M = 8.5$). Conversely, respondents who were unhappy with their marriage reported lower general life satisfaction when their attention was drawn to this aspect of their life ($M = 5.8$) than when it was not ($M = 6.8$). Because the impact of the specific information depends on its valence, however, these effects may cancel one another in a heterogeneous sample. In fact, mean differences as a function of question order could not be observed in this particular study in the sample as a whole ($F < 1$). This suggests that context effects may often *not be detected* because their conditional nature is rarely taken into account (see Smith, in press, for a more extended discussion of conditional order effects).

On first glance, the finding that context effects may cancel out one another

in heterogeneous samples may suggest that context effects pose less of a problem to survey research than one might assume. This conclusion, however, is misleading. Although the mutual cancellation of context effects may result in a reasonably accurate estimate of the average opinion in the sample as a whole, it does undermine comparisons of subgroups as well as the analysis of the relationship among different variables, which is at the heart of most scientific uses of survey data.

Assimilation or Contrast?

In the study described above, answering a marital satisfaction question resulted in assimilation effects in the subsequent evaluation of one's life as a whole, that is, the answers to the general question reflected the valence of the life domain to which respondents' attention was drawn. This, however, is not always the case. Under some conditions, answering a preceding question may result in contrast effects on responses to a subsequent question.

A study by Strack, Schwarz and Gschneidinger (1985; see also Schwarz & Strack, 1991) may serve as an illustration. In this study, some subjects were asked to write down three *recent* events that were either particularly positive and pleasant or particularly negative and unpleasant. Others, however, were asked to report positive or negative *past* events that had happened to them more than five years ago. This was done under the pretext of collecting life events for a life-event inventory, and the dependent variables, among them "happiness" and "satisfaction", were said to be assessed in order to "find the best response scales" for that instrument. As might be expected, subjects who had previously been induced to think about positive aspects of their present life described themselves as happier and more satisfied with their life as a whole than subjects who had been induced to think about negative aspects. If subjects had to report *past* events, however, the consequences were quite different. Thinking about hedonically relevant past events did not only fail to influence well-being judgments in the direction of their valence, but actually had a reverse impact. Respondents who thought about negative past events reported *higher* well-being than respondents who thought about positive past events.

Thus, highly accessible information influenced the judgment in the direction of its hedonic quality, resulting in assimilation effects, if it pertained directly to subjects' present living conditions. If the easily accessible information pertained to subjects' previous living conditions, on the other hand, it apparently served as a salient standard of comparison, resulting in contrast effects. Accordingly, no main effect of hedonic valence, but only a crossover interaction of valence and temporal distance, was obtained in this study.

In more general terms, these findings suggest that assimilation effects are likely to emerge if the previously activated information is *included* in the

temporary representation that respondents form of the target category that is to be evaluated, in the present study the temporary representation of their current living conditions. If the activated information pertains to a different category—in the present study to a different period of one's life—it is *excluded* from the temporary representation of the target category. Note, however, that the recalled events may still bear on the dimension of judgment and may therefore serve as standards of comparison (e.g. Kahneman & Miller, 1986) or as reference points for anchoring the response scale (e.g. Ostrom & Upshaw, 1968). Either of these processes, comparison or scale anchoring, may result in contrast effects (see Schwarz & Bless, in press, for a more detailed discussion).

In line with this assumption, subsequent research (Strack, Schwarz & Nebel, 1987) demonstrated that it is not temporal distance by itself that moderates the use of accessible information about one's life, but rather the subjective perception of whether the event one thinks about pertains to one's current conditions of living or to a different episode of one's life. Specifically, we asked students to describe either a positive or a negative event that they expected to occur in "five years from now". For half of the sample, we emphasized a major role transition that would occur in the meantime, namely leaving university and entering the job market. Theoretically, this should increase the probability that respondents would assign the expected event to a "different" phase of their life, and would therefore use it as a standard of comparison.

The results support this reasoning. When the role transition was *not* emphasized, subjects reported higher happiness and life satisfaction when they had to describe positive rather than negative expectations. When the role transition *was* emphasized, this pattern was reversed, and subjects reported higher well-being after thinking about negative rather than positive future expectations. Again, these findings suggest that easily accessible information elicits assimilation effects if it is assigned to the category of judgment, but results in contrast effects if it is excluded from that category.

This inclusion/exclusion assumption has recently been tested in a rather different content domain, namely the evaluation of politicians (Schwarz & Bless, 1990, experiment 1). One of the most highly regarded politicians in Germany is currently Richard von Weizsäcker, who serves as President. He has been a member of the Christian Democratic party for several decades, but the office of President requires that he no longer actively participates in party politics. Officially, the President as the representative figurehead of the Federal Republic of Germany is considered to take a neutral stand on party issues. This rendered him particularly suitable for the present experiment.

Specifically, we asked subjects a number of political knowledge questions. In one condition, they were asked to recall the party of which "Richard von Weizsäcker has been a member for more than 20 years". Answering "CDU"

should assign Richard von Weizsäcker to the category of politicians of the Christian Democrats. According to the inclusion/exclusion model, subjects should evaluate politicians of the CDU more favorably if they include Richard von Weizsäcker, who is highly respected. The data support this hypothesis. Including Richard von Weizsäcker in the category increased the evaluation of CDU politicians to $M = 6.5$ on an 11-point scale (11 = very positive) relative to $M = 5.2$ in a condition in which no question about Richard von Weizsäcker was asked.

In another condition of the same study, however, subjects were asked which office Richard von Weizsäcker holds "that sets him aside from party politics". Answering this question should *exclude* Richard von Weizsäcker from the category of CDU politicians. Accordingly, he may serve as a comparison point. If so, this exclusion condition should result in lower evaluations of CDU politicians in general. This was again the case ($M = 3.4$).

In summary, these findings indicate that asking a preceding question increases the cognitive accessibility of the information that is used to answer it. This increases the likelihood that this information will come to mind when respondents are later asked another question to which it may be relevant. How this easily accessible information affects the judgment, however, depends on whether it is included within the target category that is to be judged or not. If the information is assigned to the target category, for example the Christian Democrats in the above example, it will be included in the database that is considered in making this judgment. This results in assimilation effects. If the information that comes to mind is assigned to a different category, but bears on the same underlying dimension, it will serve as a reference point. This results in contrast effects.

These inclusion/exclusion processes may result in some apparently paradoxical findings. For example, in one study (Schwarz & Bless, 1990, experiment 2) respondents were asked two questions about a political scandal that received much attention in the Federal Republic of Germany, namely the so-called Barschel scandal, that bears some resemblance to the Watergate scandal in the United States. Subsequently, their trust in politicians was assessed in two different ways. Some respondents were asked to evaluate the trustworthiness of politicians in general. Nor surprisingly, these respondents reported lower trust in politicians when they had previously answered questions on the Barschel affair than when they had not. Other respondents, however, were asked to evaluate the trustworthiness of three specific politicians whom pretests had shown to be not particularly trusted. In this case, a reversed pattern emerged. Respondents who had previously thought about the scandal now evaluated these specific politicians as *more* trustworthy. Thus, thinking about the same event reduced trust in politicians as a group but increased trust in individual group members who were not considered particularly trustworthy to begin with.

This, of course, is exactly what the inclusion/exclusion model of assimilation and contrast effects (Schwarz & Bless, in press) would predict. When respondents are asked to evaluate politicians in general, the specific ones that come to mind as a function of the scandal questions are clearly relevant: they are members of the category "politicians", and are therefore included, resulting in assimilation effects. If respondents are asked to evaluate a specific politician, however, this is not the case. Rather, in thinking about specific persons, each person makes up a category by him- or herself (Brewer, 1988). Nevertheless, the politicians who were involved in the scandal, and their behavior, still come to mind. But given that they are not included in the category, they may now serve as reference points. And relative to them, even not so trustworthy candidates do not look that bad after all. Needless to say, political scientists' substantive conclusions about the impact of political scandals on trust in politicians would be quite different depending on which version of the trust questions was used.

Deriving Subsequent Judgments from Preceding Ones

Assume, however, that respondents were asked to answer both types of questions. For example, respondents might first be asked to evaluate the trustworthiness of politicians in general, and might then be asked to evaluate the trustworthiness of three specific ones. How might this question sequence affect the obtained results?

Research in social cognition suggests that individuals who have already formed a judgment are unlikely to start from scratch when asked to make a second, related judgment. Rather, they are likely to derive the second judgment from the implications of the first one, without reconsidering the original information used in making the initial judgment. For example, Carlston (1980) asked subjects to form an impression of a student who allowed a fellow student to cheat in an exam by copying his answers. Some subjects were first asked to evaluate if the target person was "honest", whereas others were asked if he was "kind". The answer is obviously "no" to the honesty question, but "yes" to the kindness question. However, when subjects who had first evaluated the target's honesty were later asked to rate his kindness, they judged him to be less kind than subjects who evaluated his kindness initially. Conversely, those who had first evaluated his kindness rated him as more honest on the second occasion than did those who evaluated his honesty initially.

This pattern of findings suggests that subjects did not recall the behavioral information they had used to form the first judgment when they were asked to make the second judgment. Rather, they apparently used the evaluative implications of the first judgment to derive the second one, assuming that "good (or bad) traits go together". Thus, if he is kind, he must be honest, and vice versa.

Applied to the above issue of politicians' trustworthiness, these findings suggest that respondents who are first asked to rate the trustworthiness of politicians in general may subsequently base their evaluation of specific politicians on the implications of their general judgment, concluding that the specific politicians presented to them are probably not very trustworthy either. Empirically, this is the case. In the above study (Schwarz & Bless, 1990, experiment 2), respondents who first thought about a political scandal and then evaluated the trustworthiness of politicians in general as being low subsequently gave low ratings of the trustworthiness of the specific politicians as well. Conversely, those who thought about the scandal and then evaluated the trustworthiness of three specific politicians as relatively high subsequently concluded that politicians in general are relatively trustworthy as well. Thus, thinking about the scandal affected respondents' *first* judgment, and the implications of the first judgment were then used to derive the *second* one. Depending on which question was asked first, one may therefore conclude that thinking about a political scandal decreases or increases trust in politicians in general, and decreases or increases trust in specific ones. Again, the substantive conclusions drawn are to a large extent a function of the structure of the questionnaire.

A Limiting Condition

It is important to note, however, that the emergence of contrast effects may require that the preceding question and the dependent variable tap the same underlying dimension. Simply drawing attention to an extreme exemplar, without triggering thoughts about the exemplar along a specific evaluative dimension, may not be sufficient to generate contrast effects. For example, in a study by Schwarz, Münkel and Hippler (1990), conducted in a market research context, some respondents were asked to estimate how frequently Germans drink vodka and others how frequently Germans drink beer. Subsequently, they had to rate how "typically German" various drinks are.

Subjects who estimated how frequently Germans drink vodka rated subsequent drinks as more typically German than subjects who estimated how frequently Germans drink beer. This replicated contrast effects that were obtained when the typicality of all stimuli, including the extreme ones, had to be rated. Other subjects, however, were asked as part of the preceding questions to estimate the calorific content, rather than the consumption, of vodka or beer. While this question also serves to render these drinks highly salient in the interview context, it does not tap the typicality dimension that underlies estimates of the consumption of these drinks. As a result, estimating their calorific content did *not* influence subsequent typicality ratings.

This finding, which awaits replication in other content domains, suggests that contrast effects may only emerge as a function of preceding questions *if* these questions tap the same underlying dimension of judgment. If they tap a

different dimension, the information activated by the preceding question may not serve as a reference point and may therefore not affect respondents' judgments. Applied to the discussion of political trust, this would suggest that a question about Barschel's place of birth may not affect subsequent judgments, even though it would also increase the accessibility of Uwe Barschel as a politician.

In contrast, carryover effects from a first to a second judgment, as observed in Carlston's (1980) study as well as the political trust study reported above, are unlikely to require that both judgments bear on the same dimension. Rather, carryover effects of this type seem to require that individuals hold a subjective theory that specifies the implications of the first judgment for the second one (see Wyer & Srull, 1989, for a more detailed discussion). In principle, these subjective theories may link rather diverse dimensions, resulting in a potentially rich set of heterogeneous carryover effects. Most likely, the nature of these theories, and certainly their cognitive accessibility at the time of judgment, is itself context-dependent, further increasing the potential impact of the research instrument on the obtained results.

The Impact of Conversational Norms

The above research examples demonstrate that preceding questions influence what comes to mind, and indicate that the emergence of assimilation and contrast effects depends on inclusion or exclusion of that information from the database used to make the subsequent judgment. In these examples, the inclusion or exclusion of easily accessible information was manipulated by using recent or distant events (Strack, Schwarz & Gschneidinger, 1985), by eliciting different categorizations of the primed information (Schwarz & Bless, 1990, experiment 1; Strack, Schwarz & Nebel, 1987), or by varying the dependent variable (Schwarz & Bless, 1990, experiment 2). Another variable that determines the inclusion or exclusion of easily accessible information is the operation of conversational norms that prohibit redundancy.

Specifically, one of the principles that govern the conduct of conversation in everyday life (Grice, 1975) requires speakers to make their contribution as informative as is necessary for the purpose of the conversation but not more informative than is required. In particular, speakers are not supposed to be redundant and to provide information that the respondent already has. In psycholinguistics, this principle is known as the "given–new contract", which emphasizes that speakers should provide "new" information rather than information that has already been "given" (Clark, 1985; Haviland & Clark, 1974). Strack and Martin (1987) pointed out, following related suggestions by Bradburn (1982) and Tourangeau (1984), that this principle may be applied to the emergence of question-order effects in survey interviews.

Specifically, these considerations suggest that respondents may hesitate to

reiterate information that they have already provided in response to a preceding question. For example, in one of the studies mentioned above (Schwarz, Strack & Mai, 1991), respondents who have just reported their marital happiness may consider the subsequent question about their happiness with life as a whole to be a request for *new* information. They may therefore interpret the general question to refer to *other* aspects of their life, much as if it were worded, "Aside from your marriage, how happy do you feel about the other aspects of your life?" If so, these respondents may deliberately exclude information about their marriage in answering the general life satisfaction question, despite its high accessibility in memory.

To provide a direct test of this assumption, the studies by Strack, Martin and Schwarz (1988) and Schwarz, Strack and Mai (1991), reported above, included an explicit manipulation of the conversational context in which the specific and the general questions were presented. This was accomplished by a joint lead-in to both questions that read, for example:

> Now, we would like to learn about two areas of life that may be important for people's overall well-being:
> (a) happiness with marriage
> (b) happiness with life in general.

Subsequently, both happiness questions were asked in the specific–general order. As reported earlier, asking the marital satisfaction question first increased the correlation between marital satisfaction and general life satisfaction from $r = 0.32$ to $r = 0.67$. This was *not* the case, however, when both questions were introduced by a joint lead-in, $r = 0.18$.

This suggests that respondents deliberately ignored information that they had already provided in response to a specific question when making a subsequent general judgment *if* the specific and the general questions were assigned to the same conversational context, thus evoking the application of conversational norms that prohibit redundancy. In that case, respondents apparently interpreted the general question as if it referred to aspects of their life that they had not yet reported on. In line with this interpretation, a condition in which respondents were explicitly asked how satisfied they were with "other aspects" of their life "aside from their relationship" yielded a nearly identical correlation of $r = 0.20$.

In addition, respondents who were induced to disregard their marriage in evaluating their life as a whole, either by the conversational context manipulation or by explicit instructions, reported higher life satisfaction when they were unhappily married and lower life satisfaction when they were happily married than respondents who were not induced to exclude this information. Thus, contrast effects were obtained when conversational norms elicited the exclusion of the primed information, whereas assimilation effects were obtained when the activated information was included, as described previously.

Finally, suppose that several specific questions, for example questions about one's job satisfaction, leisure satisfaction, and marital satisfaction, are asked prior to the question about one's general life satisfaction. How would asking several specific questions affect the operation of the Gricean redundancy norm? In that case, it seems plausible that respondents may always interpret the general question as a request for a summary judgment, irrespective of whether the questions are placed in a joint conversational context or not. The available data are in line with this assumption. Specifically, introducing three specific questions along with the general question as part of the same conversational context did *not* result in a decreased correlation of respondents' relationship satisfaction and general life satisfaction, $r = 0.48$, as compared to the same question order without a lead-in, $r = 0.46$. Moreover, explicit instructions to include all three life domains addressed in the specific questions when making the general judgment resulted in a similar correlation of $r = 0.53$, whereas the instruction to exclude these domains resulted in a correlation of $r = 0.11$.

In summary, respondents may deliberately exclude information that they provided in response to a preceding question when answering a subsequent more general one if both questions are assigned to the same conversational context, resulting in contrast effects. However, they are unlikely to do so if several relevant questions preceded the general one. In the latter case, they interpret the general question as a request for a summary statement, resulting in the inclusion of previously provided information and accordingly in assimilation effects under all conditions. This contingency accounts for apparently inconsistent findings reported in survey literature that provided the initial impetus for the present set of studies (Strack, Martin & Schwarz, 1988; Schwarz, Strack & Mai, 1991). For example, Schuman and Presser (1981) obtained contrast effects of reporting one's marital happiness on a measure of general life satisfaction, whereas Smith (1982; see also Smith, in press) obtained assimilation effects, although he apparently used the same questions in the same order. An inspection of the respective questionnaires reveals, however, that the marital satisfaction question was the only specific question used by Schuman and Presser, whereas it was part of a larger set of specific questions in Smith's study.

In addition to illustrating the operation of inclusion and exclusion processes as a function of conversational norms, the present findings draw attention to the frequent neglect of conversational principles in social cognition research. According to social cognition theorizing (see Higgins & Bargh, 1987, for a review), the use of information is solely determined by its cognitive accessibility and its applicability to the judgment at hand. As the above study illustrates, however, easily accessible information, that is clearly applicable to the judgment at hand, may not be used in making a judgment if its repeated use would violate the conversational norm of non-redundancy (see Strack, Martin

& Schwarz, 1988, for a more detailed discussion). Thus, social cognition research needs to pay attention to the social context in which a judgment is made, in addition to the determinants of accessibility and applicability (cf. the contributions in Schwarz & Strack, in press).

CONCLUSION

As this selective review of recent research on context effects in attitude measurement illustrates, the order in which related questions are asked, either in the psychological laboratory or in opinion surveys, may greatly influence the results obtained. In fact, these influences may be so pronounced that researchers may draw opposite conclusions about the same substantive relationship, depending on the order in which they ask the relevant questions. While much remains to be learned, the reviewed research suggests that the underlying processes are systematic and predictable.

When individuals are asked an attitude question, they first need to understand what is meant. If the question is ambiguous, they may consult the context of the question (e.g. Strack, Schwarz & Wänke, in press) or its formal features (e.g. Schwarz *et al.*, 1988; Schwarz, 1990) to determine its meaning. After having made sense of the question, respondents may either recall a previously formed judgment from memory or compute a judgment on the spot. To do so, they have to retrieve relevant information from memory. However, they are unlikely to recall all information that may bear on the judgment at hand but will truncate the search process as soon as enough information has come to mind to solve the task (e.g. Bodenhausen & Wyer, 1987). Accordingly, their judgment is based primarily on the information that comes to mind most easily.

Whether this easily accessible information results in assimilation or in contrast effects depends on whether it is or is not included in the representation of the category that is to be judged (Schwarz & Bless, in press). If it is included, an assimilation effect is likely to emerge. If it is excluded, a contrast effect may emerge, provided that the information bears on the dimension of judgment. The inclusion or exclusion of highly accessible information is a function of its relationship to the object of judgment (e.g. Schwarz & Bless, 1990; Strack, Schwarz & Gschneidinger, 1985) and of the operation of conversational norms (e.g. Schwarz, Strack & Mai, 1991; Strack, Martin & Schwarz, 1988). The perceived relationship of the primed information to the object of judgment may be influenced by the wording of preceding questions (as in the Weizsäcker study), by the nature of the dependent variable (as in the political trust experiment), or by the temporal distance of the event one thought about (as in the life satisfaction experiment of Strack, Schwarz & Gschneidinger, 1985), to name just a few variables that have been investigated to date.

Whether or not a sequence of questions evokes the operation of conversational norms of non-redundancy, on the other hand, depends on the similarity of the questions asked, their introduction (e.g. Schwarz, Strack & Mai, 1991; Strack, Martin & Schwarz, 1988), or the spacing of the questions in the questionnaire (e.g. Ottati *et al.*, 1989). Most certainly, future research will uncover additional variables that are likely to influence the inclusion or exclusion of highly accessible information from the database used to compute a judgment. Hopefully, this research will support the heuristic usefulness of the general framework offered here.

In concluding, we hope that the present chapter may illustrate that the recent collaboration of survey methodologists and cognitive (social) psychologists on the processes that underlie survey responses promises to be an enterprise of mutual benefit. On the one hand, this collaboration offers insights to survey researchers that are likely to reduce the risk of interpreting method effects as substantial findings. On the other hand, it opens up a realm of challenging issues to psychologists which are likely to prove stimulating and fruitful for basic psychological theorizing.

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