

Assimilation and Contrast Effects in Part-
Whole Question Sequences: A
Conversational Logic Analysis

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Question Sequences:
A Conversational Logic Analysis

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Abstract

A theoretical model of the emergence of assimilation and contrast effects in part-whole question sequences is presented, and an experiment that tests its predictions is reported. Assimilation effects are predicted when one specific question precedes the general question and the two are not assigned to the same conversational context. If both questions are perceived as belonging together, however, conversational norms of non-redundancy prohibit the repeated use of information that has already been provided in response to the specific question when making the general judgment. Contrast effects may emerge in that case under specified conditions. If several specific questions precede the general question, however, the general one is always interpreted as a request for a summary judgment, resulting in assimilation effects even under conditions that foster contrast effects if only one specific question is asked. The model is supported by the reported experiment and is consistent with other findings reported in the literature.

Assimilation and Contrast Effects in Part-Whole Question
Sequences: A Conversational Logic Analysis

Survey researchers repeatedly observed that answering a specific question may influence the responses given to a subsequent general question (e.g.. McClendon & O'Brien. 1988 a, b; Schuman & Presser, 1981; Smith, 1982). However, the findings are inconsistent: In some studies, the responses to the general question are assimilated to the responses given to the specific question, whereas in others they are contrasted to the previous responses. For example. Schuman and Presser (1981) found that respondents were less likely to report high general life-satisfaction when they had previously answered a similar question on marital satisfaction. Given that most respondents reported high marital satisfaction, this pattern reflects a part-whole contrast effect. In contrast. Smith (1982; see also Smith, in press) obtained just the opposite result, although apparently using the same questions in the same order. Again, most respondents reported high marital satisfaction, but after having answered this specific question, they were subsequently more likely to report high general life-satisfaction as well.

Thus, Smith's (1982) data reflect a part-whole assimilation effect. In the present paper, we describe a theoretical model that accounts for the emergence of these apparently inconsistent findings, and report an experiment that was designed to test our predictions.

Cognitive Accessibility

In a theoretical analysis of the above findings. Strack and Martin (1987) suggested that the emergence of assimilation effect? on measure of general life-satisfaction reflects the increased accessibility of information about one's marriage that was used to answer the preceding marital satisfaction question. Specifically, individuals may use a variety of different aspects of their life to evaluate its overall quality, including their marriage, job. income, housing, and so on (see Schwarz & Strack, 1989, in press, for a more detailed discussion). Which of these potentially relevant aspects they select in making a judgment depends on which is most likely to come to mind at that point in time (e.g.. Schwarz & Clore. 1983; Schwarz, Strack, Kommer, & Wagner. 1987; Strack. Schwarz, & Gschneidinger, 1985). As a large body of literature in cognitive psychology indicates (see Bodenhausen & Wyer, 1937; 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, e.g. for the purpose of answering a preceding question.

In line with this assumption, Strack, Martin and Schwarz (1988) observed in an experiment with American college students that the correlation between ratings of "happiness with dating" and "happiness with life-as-a-whole" depended on the order in

which both questions were asked. If the general happiness question preceded the dating question, both questions were essentially uncorrelated, $r = .16$. If the question order was reversed, however, this correlation increased to $r = .55$, $z = 2.44$, $p < .007$, for the difference between both correlations. These findings indicate that respondents were more likely to use information about their dating-life in evaluating the quality of their life-as-a-whole when this information was more accessible in memory, due to its use in answering the preceding question.

The Impact of Conversational Norms

However, individuals do not always use the information that is easily accessible in memory. Under some conditions, they may intentionally disregard information that comes to mind, e.g., because it does not bear on the judgment at hand (Schwarz & Bless, 1990) or because other factors require that it should not be used. As Strack and Martin (1987) pointed out, following related suggestions by Bradburn (1982) and Tourangeau (1984), a particularly relevant factor that may inhibit the use of easily accessible information in a survey context is provided by conversational norms. Specifically, one of the principles that govern the conduct of conversation in everyday life (Grice, 1975) requests speakers to make their contribution as informative as is required 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", that emphasizes that speakers should provide "new" information rather than information that has already been "given" (Clark. 1985; Haviland & Clark. 1974).

Applied to question order effects in survey interviews, these considerations suggest that respondents may hesitate to reiterate information that they have already provided in response to a preceding question. Thus, 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 of your marriage, how happy do you feel about the other aspects of your life?". If so. these respondents may deliberately ignore information about their marriage in answering the general life-satisfaction question, despite its high accessibility in memory. Thus, conversational norms that discourage redundancy may provide the psychological rationale that underlies what Schuman and Presser (1981) have called a "subtraction effect".

To provide a direct test of this assumption. Strack et al. (1988) explicitly manipulated the conversational context in which the specific and the general question were presented. This was accomplished by a joint lead-in to both questions that read. "Now, we would like to learn about two areas of life that may be important for people's overall well-being: a) happiness with dating, b) happiness with life in general." Subsequently, both happiness questions were asked in the specific-general order. Under this condition, answering the dating question prior to the general happiness question did not result in an

increased correlation, $r = .26$; moreover, this correlation was significantly lower, $z = 1.88$, $p < .03$, than the correlation of $r = .55$, obtained under the same order condition without a joint lead-in. Thus, respondents based their general happiness judgment on information other than their dating-life when both questions were explicitly assigned to the same conversational context – despite the high cognitive accessibility of the previously used marital information.

Although testing differences in correlations provides the strongest test of the theoretical assumptions, survey researchers are typically more interested in differences in means and margins. Accordingly, we will extend our analysis to these differences in the present paper. Note in this regard, that the direction of differences in the means or margins depends on the valence of the information that is brought to mind by the specific question. For example, high dating happiness should result in reports of high general happiness if the specific information is included when making the general judgment, whereas low dating happiness should result in reports of decreased general happiness. While this prediction of part-whole assimilation effects is straightforward, the reverse does not necessarily follow. For example, disregarding one's happy dating life may not necessarily reduce judgments of general life-satisfaction. If respondents exclude information about one life-domain from consideration, they may turn to other life-domains as a basis of judgment. If so, their judgments may be determined by the evaluative implications of the new information they turn to. If they happen to have wonderful jobs in addition to a great dating life, they may still report high

happiness when they use their job situation as a basis of judgment. Thus, while we can conclude that the impact of dating happiness on general happiness will be reduced, and part-whole assimilation effects will not be obtained, it does not necessarily follow that a part-whole contrast effect will emerge. For this very reason, analyses of correlational differences rather than mean differences provide the theoretically more adequate test. The study reported in the present paper explores these possibilities, extending the analysis provided by Strack et al, (1988) from differences in correlations to differences in means.

In addition, more direct evidence on the assumed underlying process would be highly welcome. If respondents interpret the general question as referring to aspects of their life that have not been covered by the preceding specific question when both are put into the same conversational context, similar effects should be obtained when respondents are explicitly instructed to exclude the life-domain that was addressed in the specific question. Conversely, when they base their general judgment on the information that was brought to mind by the specific question if both questions are not assigned to the same conversational context, similar effects should be obtained when respondents are explicitly instructed to consider the life-domain that was addressed by the specific question. Thus, rewording the general question to include or exclude the specific life-domain addressed by the preceding question should provide additional evidence for the assumed process. The present study includes conditions that test these predictions.

Finally, additional insights into the variables that

determine whether two questions are perceived as belonging together or not are needed to increase the applied usefulness of our analysis. In the Strack et al, (1988) studies, using a self-administered questionnaire, respondents' perception of the conversational context was manipulated by introducing both questions with a joint lead-in, as described above. In conditions where respondents were not intended to perceive both questions as belonging together, the specific question was presented as the last question on one page, and the general question as the first question on the next page. Thus, explicitly connecting the two questions, or visually separating them, may affect respondents' interpretation of the conversational context. In a study of related interest, Ottati, Riggle, Wyer, Schwarz and Kuklinski (1989) observed that answering a specific question resulted in assimilation effects on a subsequent general question when both questions were separated by several filler items, but in contrast effects when both questions were presented adjacent to one another.

Another variable that seems highly likely to affect respondents' interpretation of the intended meaning of the general question is the sheer number of related questions that precede it. Most importantly, respondents may always interpret a general question as a request for a summary judgment if it is preceded by several specific ones, irrespective of whether the questions are explicitly placed into the same conversational context or not. Accordingly, they may always use the information that was primed by the specific question in making a general judgment.. thus increasing the likelihood of part-whole assimilation effects in the means even under conditions

where part-whole contrast effects might emerge if only one question were asked. In fact, the conflicting data reported by Schuman and Presser (1981) and Smith (1982) support this hypothesis. Whereas Schuman and Presser, who obtained a part-whole contrast effect, used only one specific question. Smith asked several specific questions before respondents had to answer the general one – and obtained a part-whole assimilation effect. The present study provides a direct test of this hypothesis.

Moreover, our analysis suggests that the number of specific questions asked may also affect the strength of part-whole assimilation effects. If several questions about different domains of one's life are presented, answering these questions should increase the accessibility of a broader set of information that bears on the general judgment than thinking about only one life-domain. If so, the impact of any specific domain on a subsequent general judgment should be reduced, due to the impact of easily accessible competing information. Accordingly, the correlation between the general and the specific measure, as well as part-whole assimilation effects in the means, should be less pronounced when several specific questions precede a general one than when only one specific question is asked. Again, the present study includes conditions that test these predictions.

Method

To explore the issues raised above, we conducted an experimental self-administered survey with a convenience sample

of 456 German adults (age 18 and over). The respondents were approached in the downtown pedestrian mall of a German city and were asked to answer a short two-page questionnaire. Park benches were available in that area of the pedestrian mall for their convenience. About 20% of the approached respondents complied with this request. Unfortunately, the demographic questions were omitted from the questionnaire, due to a technical oversight, and a detailed description of the sample is not possible. Given that the sole purpose of conducting the study in a pedestrian mall, rather than in the psychological laboratory, was to sample a reasonably heterogeneous population, this oversight does not severely restrict the value of the collected data.

To assure random assignment of respondents to one of nine conditions, the respective questionnaires were brought into a random order, and handed out by an experimenter who was blind to conditions. Respondents assigned to the General-Specific Condition were first asked to report their general life-satisfaction, and subsequently reported their satisfaction with three specific life-domains, namely their relationship, work, and leisure-time. Each judgment was made along 11-point rating scales, with 1 - "very dissatisfied" and 11 - "very satisfied"; the exact wording of the questions is given in the Appendix.

Respondents assigned to the One Specific-General Condition first reported their relationship satisfaction, and subsequently their general life satisfaction, whereas respondents assigned to the Three Specific-General Condition first reported their work and leisure satisfaction, followed by their relationship satisfaction, before they responded to the

general question. Thus, the question about respondents' relationship satisfaction immediately preceded the general question under all conditions, but was or was not itself preceded by the work and leisure satisfaction questions. In both conditions, the relationship question was presented as the last question on page one of the questionnaire, and the general question as the first question on the second page.

In the respective Conversational Context Conditions, the above specific-general question sequences were introduced with a joint lead-in. to ensure that respondents perceived the questions as belonging together, and all questions were presented on the same page. The lead-in read

"We would first like to ask you to report on two (four) aspects of your life, which may be relevant to people's overall well-being."

Finally, in the explicit instructions conditions, the wording of the general question was changed to explicitly request the inclusion or exclusion of specific information that we assume to be elicited by the above manipulations. Specifically, in the Explicit Exclusion Conditions, the respective wording read,

"Leaving aside the life-domain(s) that you already told us about, how satisfied are you currently with other aspects of your life?"

Conversely, this question read in the Explicit Inclusion Conditions.

"Including the life-domain(s) that you already told us about, how satisfied are you currently with your life-as-a-whole?"

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Results and Discussion

Correlational Analyses

Table 1 shows the correlation between respondents' reported relationship satisfaction and their reported general life-satisfaction as a function of the experimental conditions.

Table 1

As expected, the correlation between both measures increased from $r = .32$. in the general-specific condition, to $r = .67$, $z = 2.32$, $p < .01$, when the specific question preceded the life-satisfaction question. This finding replicates the results of the Strack et al. (1988) studies, indicating that respondents used the previously activated specific information in answering the general question. This interpretation is further supported by the respective explicit inclusion condition, which yielded a nearly identical correlation of $r = .61$, when respondents were instructed to consider their relationship in making their general judgment.

However, the observed increase in the correlation of relationship satisfaction and general life-satisfaction was less pronounced, $r = .46$, and not significant, $z = .803$ when several specific questions 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 the relationship satisfaction question relative to the single specific-general condition. Again, this interpretation is

* All reported tests are one-tailed, unless indicated otherwise

supported by a similar correlation, $r = .53$. in the respective explicit inclusion condition, where the wording of the question invited respondents to consider all three life domains in making their general judgment.

Thus, we conclude that respondents used the information brought to mind by the preceding questions in answering the general question, thus providing the prerequisite for the emergence of part-whole assimilation effects in the means. The impact of information bearing on respondents' relationship satisfaction was less pronounced, however, when other life domains were addressed as well, reflecting that the additional specific questions increased the accessibility of competing information.

Let us now turn to a consideration of the hypothesized impact of conversational norms. When a joint lead-in introduced one specific question and the general question as part of the same conversational context, no increase in the observed correlation was obtained, $r = .18$. This finding presumably reflects that respondents deliberately ignored information about their relationship under this condition because they had already provided it in response to the preceding question. In line with this interpretation, the respective explicit exclusion condition, in which respondents were asked to disregard their relationship in evaluating their life-as-a-whole. yielded a nearly identical correlation of $r = .20$. Moreover, the correlations obtained under the conversational context and explicit exclusion conditions were not only significantly lower than the correlation of $r = .67$ obtained under the same question order without a conversational context manipulation.

z 's = 3.14 and 2.95, $p < .002$. but also non-significantly lower than the correlation of $r = .32$ obtained in the general-specific condition, z 's = .75 and .63. n.s. This latter finding presumably reflects that some respondents in the general-specific condition did spontaneously consider their relationship in making the general judgment, although the accessibility of the respective information had not been experimentally increased.

In summary, we conclude 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, they apparently interpreted the general question as if it referred to aspects of their life that they had not yet reported on.

Let us now consider how the operation of this conversational norm is affected when several specific questions are asked prior to the general one. For that case, we hypothesized that respondents may always interpret the general question as a request for a summary judgment, irrespective of our manipulation of conversational context. The current findings 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, $r = .48$, as compared to the same question order without a lead-in, $r = .46$. Our hypothesis is

further supported by the explicit instruction conditions. Specifically, the instruction to include all three life-domains addressed in the specific questions resulted in a similar correlation of $r = .53$. whereas the instruction to exclude these domains resulted in a correlation of $r = .11$. that is significantly lower than the correlation observed under the same order condition without explicit exclusion instructions, $z = 1.88$. $p < .03$.

In summary, the complex pattern of correlations nicely conforms to the theoretical predictions, reflecting that the order in which the questions were presented determined the accessibility of relevant information in memory, whereas the perceived conversational context determined whether this easily accessible information was or was not used in making the general judgment. Specifically, the conditions in which respondents were expected to consider previously activated information about their relationship in evaluating their life-as-a-whole resulted in an average correlation of both measures of $r = .56$. which is significantly higher than the correlation of $r = .32$ observed under the general-specific question order, $z=1.85$. $p < .04$. In contrast, a non-significant decrease in correlations, $r = .17$, $z=1.0$, $p=.15$. was obtained under conditions where respondents were expected to deliberately disregard the previously provided information in making the general judgment. We now turn to the impact of these processes on respondents' reported mean life-satisfaction.

Differences in Means

As mentioned previously, the impact of including or excluding

information about the quality of one's relationship may affect judgments of general life-satisfaction in different directions, depending on whether relationship satisfaction is high or low.

Accordingly we used respondents' reported relationship satisfaction as a grouping variable, selecting respondents whose reported relationship satisfaction was approximately one standard deviation above or below the mean of the sample as the "happy" (values of 10 and 11) or "unhappy" (values of 5 or less) group, respectively. Table 2 shows these respondents' reported general life-satisfaction as a function of the experimental conditions. A 2 (number of specific questions) x 4 (order and conversational context conditions) x 2 (happy vs. unhappy relationship) analysis of variance, that treated the general-specific condition as a non-factorial control group, revealed a significant triple interaction. $F(3.233) = 3.41$. $p < .02$. which was diagnosed by planned contrasts (Rosenthal & Rosnow, 1985) and Duncan's range test (see subscripts in Table 2).

Table 2

As shown in the first part of Table 2. respondents who reported a high degree of relationship satisfaction reported higher general life-satisfaction when the single specific question preceded the general one ($M = 9.5$) than when it did not ($M = 8.5$), $t(177) = 1.06$. $p < .03$. This part-whole assimilation effect reflects that they were more likely to consider information bearing on their happy relationship when making the general judgment, as the previous correlational results demonstrated. Further paralleling the correlational

findings, this impact of thinking about one's relationship was eliminated when both questions were placed into the same conversational context ($M = 8.5$). Finally, explicitly instructing respondents to exclude ($M = 8.3$) or to include ($M = 9.4$) relationship information yielded effects equivalent to the specific-general condition with or without a joint lead-in, further supporting the current analysis. A theoretically specified contrast that tests the hypothesis that the "inclusion" of previously activated information results in part-whole assimilation effects confirms these conclusions, $t(177) = 2.01, p < .02$. for the inclusion contrast shown in the bottom part of Table 2. Respondents' reported life-satisfaction was unaffected by question order, however, if conversational norms or explicit instructions required them to "exclude" the previously activated information. $t(177) = 1.43, n.s.$, for the exclusion contrast shown in Table 2.

When several specific questions were asked, the impact of thinking about one's relationship was somewhat less pronounced ($M = 9.1$). and was not affected by the introduction of a joint conversational context ($M = 8.9$), again replicating the correlational findings. Accordingly, a nearly identical value of $M=9.1$ was obtained when respondents were instructed to include the previously reported information when making a general judgment, whereas explicit exclusion conditions resulted in a report of comparatively lower life-satisfaction, $M=8.0$. However, planned contrasts analogous to the ones reported above failed to reach significance, $p's > .20$.

The life-satisfaction reports of respondents who reported low relationship satisfaction provide a mirror image of these

findings. As shown in the second part of Table 2, thinking about their unhappy relationship before answering the life-satisfaction question ($M = 5.8$) decreased reported general well-being relative to the general-specific condition ($M = 6.8$), although this effect did not reach significance. $t(89) = -.97$, ns. A similar decrease emerged when respondents were explicitly instructed to include information about their relationship when making the general judgment ($M = 5.0$). Accordingly, the theoretically specified contrast indicates that unhappy respondents reported lower life-satisfaction under inclusion conditions. $t(89) = 2.75$, $p = .06$. for the contrast shown in Table 2.

Such a decrease was not obtained when both questions were presented as part of the same conversational context. In fact, under this condition, respondents reported higher general life-satisfaction ($M = 8.0$) than under the general-specific order condition, reflecting a part-whole contrast effect. $t(89) = 2.18$, $p < .03$. The explicit instructions condition again paralleled this finding ($M = 7.0$), although the effect was less pronounced. Accordingly, the planned contrast involving both of these conditions failed to reach significance. $t(89) = .23$, for the exclusion contrast shown in Table 2.

When several specific questions were asked, thus drawing respondents' attention to different areas of their life, thinking about their unhappy relationship did not notably influence their overall life-satisfaction, all p 's $> .20$.

Discussion

In summary, the obtained pattern of correlations and mean

differences nicely conforms to the theoretical predictions, although not all differences were reliable. Compared to the general-specific question order, we obtained increased correlations between relationship satisfaction and general life-satisfaction when respondents had previously reported their relationship satisfaction, and neither explicit instructions nor conversational norms discouraged the use of this easily accessible information in making the general judgment. Moreover, these increased correlations did translate rather consistently into part-whole assimilation effects in the means. Conversely, we obtained low correlations when either conversational norms or explicit instructions required respondents to disregard information that they had already provided in response to the specific question. However, this decrease in correlations did not consistently translate into mean differences. Rather, a part-whole contrast effect was only obtained for unhappy respondents, in one of the two conditions in which it might have occurred on theoretical grounds, and was not obtained for happy respondents.

On theoretical grounds, this relative unreliability of part-whole contrast effects is not particularly surprising. The conversational norms that underlie the disuse of previously communicated information only urge respondents not to be redundant. They do not themselves provide any cues as to what information might be considered in making the general judgment, but only specify which information should not be used. Accordingly, respondents may turn to a variety of different information, making it difficult to predict the nature of their general judgments. While one might expect that exclusion of a

life-domain with which one is especially happy should decrease life-satisfaction, it is important to note that such a straightforward subtraction model implicitly assumes that respondents consider all information that is potentially relevant. If so, the exclusion of some information from this fixed set should change their judgment. This implicit assumption, however, is unlikely to hold. In fact, if this assumption were valid, we should not observe part-whole assimilation effects which reflect that respondents' selection of information is a function of preceding questions.

Rather, it is more realistic to assume that respondents rarely use all information that may be relevant, but tend to truncate the search process early (Bodenhausen & Wyer, 1987). If so, they may well evaluate their life-as-a-whole on the basis of any life-domain that happens to come to mind, much as they did on the basis of their relationship in other conditions. Accordingly, their general judgment will depend on the information they happen to retrieve at that point in time. In the present study, for example, happy respondents should only have reported decreased general satisfaction if they were less happy with other domains of life that happened to come to mind than they were with their relationship; conversely, unhappy respondents should have reported higher general satisfaction if they were happier with other domains than they were with their relationship. Unfortunately, the available data do not allow us to evaluate this possibility in any detail.

In combination, these considerations suggest that part-whole assimilation effects should always be obtained when the use of previously activated information is not discouraged. Part-whole

contrast effects, on the other hand, do only follow from the exclusion of previously provided information under the conditions specified above.

Conclusions

We conclude from the reported findings and our previous results (Strack et al., 1988; Ottati et al., 1989) that the proposed theoretical model accounts for the emergence of assimilation and contrast effects in part-whole question sequences. Answering a specific question increases the accessibility of relevant information, and this easily accessible information is more likely to be used when making a subsequent general judgment to which it may be relevant. This is reflected in increased correlations of the specific and the general measure, as well as in part-whole assimilation effect in the means. Both of these effects are more pronounced when only one specific question, or several questions that bear on the same issue, are asked, than when several specific questions bearing on different issues are presented. In the latter case, the different questions are likely to draw attention to a more varied set of information, thus reducing the impact of any specific piece of information.

However, respondents do not always use the information that easily comes to mind. Rather, they may deliberately disregard the recalled information if its use would violate conversational norms. Accordingly, the use or disuse of easily accessible information is determined by whether respondents perceive the specific and general questions as belonging to the same conversational context or not. Some of the variables that

may influence this perception are lead-ins (e.g.. Strack et al.. 1988). the physical separation of items in the questionnaire, the number of filler items (e.g.. Ottati et al.. 1989) and the number of specific questions asked. Most importantly, the general question is always likely to be interpreted as a request for a summary judgment if it follows several specific questions, even under conditions where the questions are deliberately introduced as part of the same conversational unit, as was the case in the present study.

If respondents assume that the conversational norm of non-redundancy holds, they interpret the general question as a request to provide new information, that has not already been given by answering the specific question. Accordingly, they base their general judgment on other information that may be relevant. This is reflected in decreased correlations between the specific and the general measures. How this affects the means, however, depends on the evaluative implications of the new information that respondents turn to. Theoretically, this process will result in part-whole contrast effects if the implications of the new information that respondents consider are opposite to the implications of the information that they used to answer the specific question. If the implications of the new information are similar to the implications of the specific question, however, neither a contrast effect nor an assimilation effect may emerge. Finally, if the implications of the new information have the same valence, but are more extreme than the implications of the information used to answer the specific question, the general judgment will also become more extreme, a possibility that doesn't quite match with the

assimilation / contrast terminology. For example, our respondents with a happy relationship could have been even more happy with their work. In that case, the general judgment might have been even more positive under conditions where they had to look for new information, once the easily accessible information bearing on their relationship was eliminated from consideration. Accordingly, it is difficult to predict the specific outcome unless one has some insight into the information that respondents may use under these conditions. In this regard we agree with McClendon and O'Brien (1988 a, p. 771) "that there can be no substitute for substantive knowledge of the phenomena under investigation for predicting order effects" - although we'd like to add that substantive knowledge is of little use. unless one understands the general dynamics of judgmental processes.

Turning to the applied implications of our analysis, we note that the model offered here is consistent with the available findings. Most importantly, part-whole assimilation effects were found in surveys that presented several specific questions-, prior to the general one (McClendon & O'Brien. 1988 a, b; Smith. 1982). whereas part-whole contrast effects were obtained in a study that presented only the specific question immediately before the general one (Schuman & Presser, 1981). Whereas the former studies should be easily replicable, quite different results may emerge in replications of the latter study, depending on the implications of the information that respondents consider after disregarding information about their marriage. Accordingly, the prediction of part-whole assimilation and contrast effects requires the combined

consideration of the number of specific questions asked, of variables that may determine the perception of conversational context, and of the implications of the information that respondents may turn to, once they realize that the easily accessible information primed by the specific question should not be used.

Although the highly consistent pattern of the present findings fosters our belief that the underlying cognitive processes are systematic and reliable, the relative indeterminacy of the sources of information which respondents may use in making a general judgment renders it difficult to predict specific outcomes for question sequences that prompt the disuse of primed information. We assume that this will be reflected in future studies in consistent replications of assimilation effects under the conditions specified above, but in a heterogeneous set of apparent non-replications under conversational context conditions. Suffice it to say that the present model allows for all possible outcomes in the latter case and clearly specifies the conditions under which each particular one is likely to emerge.

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Table 1

Correlation of Relationship Satisfaction and Life-Satisfaction
as a Function of Question Order and Conversational Context-

Condition	Number of Specific Questions	
	One	Three
General-specific		.32*
Specific-general	.67*	.46*
Specific-general, with joint lead-in	.18	.48*
Specific-general, explicit inclusion	.61*	.53*
Specific-general, explicit exclusion	.20	.11

Note. N = 50 per cell, except for "Specific-general with joint lead-in". N = 56. Correlations marked by an asterisk differ from chance. $p < .05$.

Table 2

Mean Differences in Life-Satisfaction as a Function of
Relationship Satisfaction. Question Order and
Conversational Context

	Number of Specific Questions	
	One	Three
<u>Respondents with a</u>		
<u>Happy Relationship</u>		
Condition		
General-specific		8.5 a,b,c,d
Specific-general	9.5 f	9.1 b,c,d,e,f
Specific-general, with joint lead-in	8.5 a,b,c,d	8.9 a,b,c,d,f
Specific-general, explicit inclusion	9.4 f	9.1 b,c,d,e,f
Specific-general. explicit exclusion	8.3 a,b	8.0 a
<u>Respondents with an</u>		
<u>Unhappy Relationship</u>		
Condition		
General-specific		6.8 a,b
Specific-general	5.8 b	7.1 a,b
Specific-general. with joint lead-in	8.0 a	6.7 a,b
Specific-general. explicit inclusion	5.0 b	6.8 a,b
Specific-general. explicit exclusion	7.0 ab	7.1 a,b

Table 2 (continued)

"Inclusion Contrast"

Condition

General-specific	- 2
Specific-general	1
Specific-general, with joint lead-in	0
Specific-general, explicit inclusion	1
Specific-general, explicit exclusion	0

"Exclusion Contrast"

Condition

General-specific	- 2
Specific-general	0
Specific-general, with joint lead-in	1
Specific-general, explicit inclusion	0
Specific-general. explicit exclusion	1

Note. N is 15 to 21 per cell under "Happy Relationship" conditions, and 9 to 14 per cell under "Unhappy Relationship" conditions. Ratings were made along 11-point scales, with 11 labelled "very happy". In each part of the table, means sharing the same subscript do not differ at $p < .10$, two-tailed, Duncan test.

Appendix

German Question Wording

General Life-Satisfaction. "Was meinen Sie? Wie zufrieden sind Sie gegenwärtig mit Ihrem Leben insgesamt?" (1 = sehr unzufrieden. 11 = sehr zufrieden)

Relationship Satisfaction. "Denken sie bitte einmal an Ihre Partnerschaftliche Beziehung (Ehe oder Freund/in). Wie zufrieden sind Sie zur Zeit mit Ihrer Partnerschaft?" (1 = sehr unzufrieden. 11 = sehr zufrieden)

Work Satisfaction. "Wie zufrieden sind Sie – alles in allem – mit Ihrer Arbeit (Beruf. Studium oder Haushalt)?" (1 = sehr unzufrieden. 11 = sehr zufrieden)

Leisure Satisfaction. "Wie zufrieden sind Sie im allgemeinen mit der Art und Weise, in der Sie Ihre Freizeit verbringen?" (1 - sehr unzufrieden, 11 = sehr zufrieden)

Rewordings of General Question, (a) Inclusion, one specific question: "Wenn Sie den genannten Lebensbereich (Partnerschaft) berücksichtigen, was meinen Sie. wie zufrieden sind Sie gegenwärtig mit Ihrem Leben insgesamt?" (1 - sehr unzufrieden. 11 - sehr zufrieden)

(b) Inclusion. three specific questions: "Wenn Sie die genannten Lebensbereiche (Arbeit. Freizeit und Partnerschaft) berücksichtigen, was meinen Sie. wie zufrieden sind Sie gegenwärtig mit Ihrem Leben insgesamt?" (1 = sehr unzufrieden. 11 - sehr zufrieden)

(c) Exclusion, one specific question: "Wenn Sie den genannten Lebensbereich (Partnerschaft). über den Sie uns bereits berichtet haben, einmal außer acht lassen, wie zufrieden sind Sie dann gegenwärtig mit den anderen Aspekten Ihres Lebens?" (1 - sehr unzufrieden. 11 - sehr zufrieden)

(d) Exclusion, three specific questions: "Wenn Sie die genannten Lebensbereiche (Arbeit. Freizeit und Partnerschaft), über die Sie uns bereits berichtet haben, einmal außer acht lassen, wie zufrieden sind Sie dann gegenwärtig mit den anderen Aspekten Ihres Lebens?" (1 - sehr unzufrieden. 11 - sehr zufrieden)

Lead-In. a) One specific question: "Zunächst möchten wir Sie bitten, uns etwas über zwei Lebensbereiche mitzuteilen, die für das durchschnittliche Wohlbefinden von Menschen wichtig sein können: a) Zufriedenheit mit der Partnerschaft b) Zufriedenheit mit dem Leben insgesamt."

b) Three specific questions: "Zunächst möchten wir Sie bitten, uns etwas über vier Lebensbereiche mitzuteilen, die für das durchschnittliche Wohlbefinden von Menschen wichtig sein können: a) Zufriedenheit mit der Arbeit b) Zufriedenheit mit der Freizeit c) Zufriedenheit mit der Partnerschaft d) Zufriedenheit mit dem Leben insgesamt."

Translation of Questions

General Life-Satisfaction. How satisfied are you currently with your life-as-a-whole? (1 = very dissatisfied; 11 = very satisfied)

Relationship Satisfaction. Please think about your relationship to your partner (spouse or date). How satisfied are you currently with your relationship? (1 = very dissatisfied; 11 = very satisfied)

Work Satisfaction. How satisfied are you with your work (job, school, or housework)? (1 = very dissatisfied; 11 = very satisfied)

Leisure Satisfaction. How satisfied are you generally with the way you spend your leisure time? (1 = very dissatisfied; 11 = very satisfied)

Rewordings of General Question. See methods section.

Lead-In. See methods section.

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