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Assimilation or Contrast?

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Abstract

Three experiments were conducted to determine under which conditions responses to a general question become more similar to ("part-whole assimilation") or more dissimilar from ("part-whole contrast") responses to a preceding specific question. The results suggest that asking a specific question increases the cognitive accessibility of the information used to answer it. The answer to the subsequent general question will therefore be based in part on the same information, resulting in similar responses. The highly accessible specific information, however, will not always be used. Most importantly, central principles of conversation urge communicators to be informative and to avoid redundancy. Therefore, if both questions are perceived as belonging together, the previously activated will be disregarded, which results in dissimilar responses to the general question. The conditions under which these effects occur are identified and experimentally manipulated, and the implications for questionnaire design are discussed.

The Context Paradox in Attitude Surveys: Assimilation or
Contrast?

It has been widely recognized that the context in which a question is placed in a survey interview may affect the obtained responses (cf., Cantril, 1944; Schuman & Presser, 1981). For example, placing a question at different positions in the interview or questionnaire (e.g., Andrews & Withey, 1976; Wilkening & McGranahan, 1978) or, changing the order of two questions (e.g., Hyman & Sheatsley, 1950; Rugg & Cantril, 1944) may result in different marginals and in different associations with other variables. The exact conditions under which context effects do or do not emerge, however, are ill understood. Schuman and Kalton (1985) concluded from a review of a large number of questionnaire results that such effects are less frequent than one might expect, that they "occur in practice only under very special circumstances and [that] it may be possible, through careful experimentation, to identify what these are" (p.657).

In the present paper, we will address a specific context effect in a theoretical framework that is derived from research on the activation of information (Wyer & Srull, 1986) and the logic of conversation (Grice, 1975). Specifically, we will explore under which conditions preceding specific questions affect responses to subsequent general ones, and vice versa. Turner (1984), for example, compared answers of married respondents who were asked about "happiness with life in general" when the same question was placed either after the more specific question about happiness with

marriage or after respondents' evaluation of their own financial conditions. General happiness ratings were consistently higher if they were assessed after the specific question about happiness with marriage rather than after the question about one's financial situation. The reason for this context effect is seen in the possibility that the particularly high ratings of happiness with marriage may influence the general happiness rating in the same direction. Turner (1984) reports a correlation of $\gamma = .75$ for the two measures. There was no evidence, however, that the specific marital happiness question was influenced by the context in a similar way.

The finding that the response to a more general target question will be "assimilated" toward the response to a more specific context question is readily explained by psychological theories of cognitive accessibility (cf., Wyer & Srull, 1986). These theorists found that an ambiguous concept will be interpreted in terms of the applicable information that is most accessible to the respondent at the time. Prior use of the information, particularly the recency and frequency of prior use (cf., Srull & Wyer, 1979, 1980), were found to be the most important determinants of accessibility.

Accessibility of information may also influence a judgment by systematically biasing the sample of information on which the judgment is based. This is particularly true if a respondent is faced with a general judgment task that does not specify the relevant information (cf., Schwarz & Strack, 1985). If, for

instance, respondents are required to report their happiness with life in general, they may base their answer on various sets of relevant specific information. Which specific information, however, enters into the general answer depends on its accessibility. This was shown in a study by Strack, Schwarz, and Gschneidinger (1985, Exp. 1) who had respondents think about their present life and, depending on conditions, write down three events that were either particularly positive and pleasant or were particularly negative and unpleasant. When the respondents were later, under a different pretext, asked to indicate how happy and satisfied they were with life as a whole, those who had to list positive events described themselves as happier and more satisfied than those who had to list negative events. This result suggests that thinking about a selected class of events may render this specific information more accessible and thereby increase the likelihood that it will become the basis of the judgment.

One way of activating specific contents consists of asking prior questions that contain the particular concept. For instance, asking the respondents about their happiness with marriage will increase the accessibility of this specific content. The psychological theories would predict that respondents who are required to evaluate their life as a whole will be more likely to base their general judgment on the previously activated specific information. As a result, the response will be assimilated toward the more specific judgment.

Assimilation, however, is not the only effect that has been

observed as a consequence of asking a specific question prior to a more general one. Schuman and Presser (1981) report survey results that show the opposite influence, i.e., a judgmental contrast on the response to a general question when it was placed after a more specific one. Schuman and Presser (1981: 36) named this finding a "part-whole contrast" which was found for different content areas.

Among other contents (e.g., Schuman, Presser, & Ludwig, 1981), these authors report survey results (SRC-79) showing that asking married respondents about their marital happiness first and about their general happiness second led to a contrast effect on the general happiness judgment. More specifically, respondents' evaluation of their life in general was less positive when the marital-happiness question was asked before. When the general question was answered out of the context of the more specific one, that is, when it was asked first, 52.4% of the respondents described themselves as "very happy" with life in general. However, when the same question was asked after the more specific marital happiness question, only 38.1% of the respondents chose this category although between 63.1% and 69.8% of the respondents considered their marriage "very happy". In other words, the judgment of general happiness became significantly more different from the specific marital evaluations when the specific context was activated by the prior question.

Schuman and Presser (1981: 42-43) point at the discrepancy between this data pattern and the previously described assimilation

findings and emphasize the importance of reconciling these divergent results.

It is clear that such a contrast effect cannot be explained with the accessibility principle alone. Accessibility theories predict that a target response is assimilated toward the accessible context either because the the target question is interpreted on the basis of the accessible context information or that the sample of information used as a basis of judgment is biased. The contrast finding suggests that although the specific information was more accessible, it was not used when the respondent answered the more general question. If the use of information, however, is not implied by its cognitive accessibility (cf., Martin, 1986), it may be determined by aspects of the specific situation.

In their discussion of part-whole contrast for another content area, Schuman & Presser (1981) suggest that respondents may "subtract" the specific content from their interpretation of the general question and redefine what the general question is about. From the the conflicting findings, however, it is not clear under what conditions such a "subtraction" would take place. Therefore, a more general theoretical approach seems necessary to identify the determinants of how the activated information influences the judgment.

One such approach is to construe the survey situation as an exchange of information that is governed by the rules of natural conversations. Such rules have been formulated by Grice (1975),

empirically been tested by H.Clark and his collaborators (cf. Clark, 1985) and by Hilton and Slugoski (1986), and their relevance for survey situations has been noted by Tourangeau (1984). According to this perspective, the success of a conversation depends on the participants behaving in a cooperative manner. For Grice, the most important principle of cooperation is the attempt to be "informative". To be informative means that respondents try to answer a question in such a way that they provide the information the questioner needs and that they avoid answers that would provide information the questioner does not want to have.

To decide on the informativeness of a conversational contribution, the respondent can draw upon the general nature of the conversational situation. In a survey situation, for instance, the answer "in Chicago" would be an informative response to the question "Where were you born?". In a survey, the answer "At home." or, "In a hospital." would probably not be informative. However, this could be an informative response to the same question when it is asked in a different social situation.

The decision what would be an informative contribution is inextricably tied to the interpretation of the concept. That is, the respondent must identify the intended referent of a question. In the present example, the request for information about the respondent's residence is semantically undetermined with respect to the aspect of "residence" about which information is sought. The concrete situation, however, in which the question is asked, allows further inferences.

Often, the respondent must identify the particular referent of a question content in the course of an ongoing conversation. In such a situation, the respondent may infer the requested information by considering what is the presupposed knowledge and what is the focus of the question content that deviates from the presupposed knowledge (cf. Hilton & Slugoski, 1986; Levinson, 1983). It is then that the presupposed knowledge can be "subtracted" (Schuman & Presser, 1981) to identify the referents of the general question. A more concrete strategy based on this principle is the so-called "given-new contract" (cf. Clark & Haviland, 1977). This contract suggests that respondents assume that questioners ask for information they do not yet possess, that is, information the respondent has not yet given in the course of the conversation.

Consider the following fragments of two natural conversations where two questions are asked in sequence. Conversation A: "How is your wife?", (answer), "And how is your family?". Conversation B: "How is your work?", (answer), "And how is your family?". What does the questioner refer to by "your family"? More specifically, is "family" meant to include the respondent's wife or only his children? In conversation A, the "given-new contract" permits the inference that "family" should refer to the children because the information about the wife has already been given in the answer to the previous question. In Schuman and Presser's (1981) terms, the specific referent "wife" is "subtracted" in the interpretation of the more general concept of "family". This is not the case for conversation B. There, it is more likely that the answer

to the second question will include the wife's well-being because this information has not yet been provided and is therefore a new and informative contribution to the conversation.

It is important to note that the "given-new contract" operates only if both questions are perceived as belonging together. In the course of a natural conversation, this is typically the case because the conversational context remains unchanged over some period of time and the contributions of the conversants relate to each other. In the present example, the continuity is further emphasized by the word "and" as an introduction to the second question.

In a survey situation, however, this is not always the case. Therefore, it depends on whether two or more questions are perceived as belonging together or not. Sometimes, questionnaires are constructed so as to avoid such a perception. This is typically done by placing related questions at different positions of the questionnaire or by inserting filler items. At other times, the relatedness of several questions is made explicit by mentioning a common theme or topic as an introduction to a set of questions. Most frequently, however, the relatedness of survey questions remains unclear and the arising ambiguity must be resolved by the respondent.

It is our prediction that the direction of the influence of a specific question on the answer to a more general one depends on whether the two questions are perceived as belonging to the same

conversational context. If the questions are perceived as unrelated, then thinking about the specific content will increase its accessibility for later use. Thus, the content activated by the specific question is likely to become the basis for answering a subsequent, more general question. If, however, both questions are perceived as belonging to the same conversational context, the specific content will be "subtracted" and will not be used for the response to the general question.

On the basis of the above reasoning it is possible to derive differential predictions about when to expect "part-whole contrast" and when to expect "part-whole assimilation" in a survey situation. Part-whole assimilation should occur when a specific question is asked before a more general one without a conversational context that precludes the use of this information. Part-whole contrast should occur when a specific question is asked before a more general one and a conversational context becomes effective that precludes the use of the activated information. This is because, if a series of questions is asked in a conversational context, the possible referents of a more general question should be different from the referent of the specific question. In Schuman and Presser's (1981) terms, these referents should be "subtracted" and the answer be based on the distinct features that allow the respondent to provide new information. Figure 1 provides an illustration for this relationship.

Figure 1 about here

To test these predictions, it is necessary to vary both the activation of specific information and the conversational context in which the questions are placed. This was attempted in an experimental survey.

Experiment 1

Method

Respondents were 180 freshmen and sophomores of the University of Illinois who agreed to answer a short "questionnaire on student issues" that consisted of 15 items.

The general question asked respondents to indicate on an 11-point scale "how happy" they were "with life in general". The endpoints were labelled "not so happy" and "extremely happy". The domain of happiness that was used as the specific question was "dating". Emmons and Diener (1985) found that "happiness with dating" was most closely related to general happiness in a student population and therefore, a question about dating happiness was considered functionally equivalent with the specific question about marital happiness for the adult surveys. To be precise, the students were asked "how happy are you with your dating" and the response scale

was identical to that of the general happiness question.

The questions were asked under three experimental conditions. There was a control condition in which the specific happiness question, i.e., the question about dating happiness, was asked after the general happiness question. Under this condition, the specific information was not activated and therefore its accessibility should not be increased when the general question is answered. In a second condition, the specific happiness question was asked before the general one. This was done by placing the dating question at the end of the first page of the questionnaire and the general happiness question at the beginning of the second page. In this condition, the specific information should be more accessible when the answer to the general question is generated and the answer to the general question should therefore be based on the specific information. A third condition was identical except that the two questions were placed in a "conversational context". This was achieved by introducing the two questions in the following way:

"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. On the basis of the prior reasoning, it was assumed that although the specific information would be highly

accessible when the general question was answered, it would not be used.

The degree of relatedness between the answers to the specific and the general happiness question was assessed by the Pearson correlation between the ratings on the response scale.

Results

As can be seen from Table 1a, the correlation between "general happiness" and "happiness with dating" was very small ($r = .16$)

Table 1 about here

in the control condition where the specific question was placed after the more general one. This correlation was significantly increased ($r = .55$), $z = 2.44$, $p < .007$, when the question about dating happiness was asked before the general happiness question. This was expected on grounds of the accessibility principle. However, when a conversational context was created such that the two questions were presented as relating to one another, the correlation decreased significantly to a moderate level ($r = .26$), $z = 1.88$, $p < .03$, and was not significantly higher than in the control condition, $z = .56$. This was predicted on the basis of the conversational postulate to request and provide new informa-

tion.

From Table 1b it can be seen that the mean ratings of neither general nor specific happiness were significantly affected by the experimental manipulations. In addition, the pattern of standard deviations suggests that the observed differences in correlations are not due to differences in variances.

Discussion

This pattern of correlation coefficients suggests that asking a specific question before a more general one may increase the correlation between the respondents' answer to the two questions. This result is explained by the theory of cognitive accessibility which states that information that is activated at a given point in time will become cognitively more accessible and therefore more likely to be used in a subsequent judgment to which it is relevant. The present pattern of coefficients also suggests that the use of this information may be influenced by conversational rules that become effective in specific conversational contexts. Particularly, the communicative demand to be informative, i.e., to add new information to what one has already provided, may influence the interpretation of question content and prevent the respondent from using the activated information. As a result, the relation between the two responses will be decreased.

Experiment 2

In the first study, however, the answers to both questions were measured on the same response scale. This raises the possibility that respondents may simply base their rating of the general question on their previous rating of the specific one. Under the activation condition, respondents may have been inclined to check the same value on the response scale. Under the conversation condition, the individual value on the first scale may have served as an anchor for the second rating (cf., Ostrom & Upshaw, 1968) and the motivation to be informative may have resulted only in a deviating use of the response scale and not in a different interpretation of question content.

A possible strategy to be informative by selecting different points on the response scale can be ruled out if the response scales are not identical. Applied to the present content, if the evaluation of dating and of life in general is communicated in a different answer format, a deviating use of the response scale cannot account for a possible communication effect.

Therefore, a second study was conducted in which the specific question was not about happiness with dating but instead about the frequency of dating. As Emmons and Diener (1985) have shown, frequency of dating is closely related to happiness with dating and therefore represents an evaluative aspect of this life domain that can be assessed in an open-answer format.

If the same pattern of correlations emerges from an experimental survey in which respondents are asked how frequently in a month they normally go out on a date, the confidence in the original interpretation of the effect would be increased.

Method

180 freshmen and sophomores received a questionnaire about "student issues" under the same experimental conditions as in Experiment 1. The only difference was that the former question about happiness with dating was replaced by a question that asked how often they normally go out on a date. The answer, the dating frequency per month, had to be written down in an open answer format.

Results

Table 2a shows that the pattern of correlation coefficients is

Table 2 about here

the same as for Experiment 1. The correlation between "general happiness" and "frequency of dating" was very small and not different from 0 ($r = -.12$) in the control condition where the specific question was placed after the more general one. The relationship between the two variables increased significantly.

($\underline{r} = .66$), $\underline{z} = 5.04$, $p < .001$, when the question about dating frequency preceded the general happiness question. And again, when both questions were placed in the same conversational context, the correlation was reduced ($\underline{r} = .15$), $\underline{z} = 3.43$, $p < .001$, and somewhat, but not significantly higher than in the control conditions, $\underline{z} = 1.44$. As in Experiment 1, the means were not affected by the experimental manipulation and the standard deviations cannot account for the pattern of correlations. This can be seen from Table 2b.

Discussion

The results of the second experiment add further support to the proposed mechanism. They show a "part-whole-assimilation" effect is obtained if the specific content is activated before the general question. And they replicate the "part-whole-contrast" effect if both questions are placed in the same communication context.

Further, these results rule out the possibility that the particular pattern of correlations was merely caused by a differential use of the response scale. Rather, the increased accessibility of the specific information and, under the appropriate condition, the interpretation of the content of the general question in the light of the given-new contract seem to be responsible for the effects.

Experiment 3

So far, the tendency not to use the content of a preceding question for the answer to a subsequent question but to "subtract" its referents in the interpretation (cf. Schuman & Presser, 1981) has only been applied to situations where two contents stand in a part-whole relationship.

The same mechanisms, however, should not only apply if two contents are hierarchically related but also if they are semantically similar. An example would be the concepts of happiness and satisfaction. As illustrated in Figure 2, happiness and satisfaction

Figure 2 about here

share a large number of common features. It is therefore not surprising that judgments of happiness and satisfaction are typically highly correlated (cf., Veenhoven, 1984). At the same time, there exist features that are distinctive for each concept. Happiness, for instance, may be more related to affective determinants while satisfaction may be influenced more by normative and comparative considerations (cf., Andrews & McKennel, 1980).

If respondents apply the given-new contract in order to identify the referents of a question, they should base their answers on

the distinctive features. That is, they should assume that the two questions pertain to different aspects of their life and should emphasize these differences in forming and communicating the respective judgments. As a result, the correlation between the two judgments should be decreased under such conditions. This is the prediction of the third experiment in which the respondents were asked to report both their happiness and their satisfaction with life in general and in which these questions were either placed in the same conversational context, or not.

Method

Respondents were 40 students of the University of Mannheim (W.-Germany) who had been recruited for an unrelated study. Among a large number of questions that were only relevant for another investigation, respondents were given the following two questions: "How happy are you with your life as a whole"? and "Taken all things together, how satisfied are you with your life"? The questions had to be answered on 11-point scales where "1" was labeled "unhappy" or "unsatisfied" and 11 was labeled "happy" and "satisfied", respectively. For some respondents, a conversational context was introduced by the following paragraph: "The following two questions refer to two aspects of your personal well-being: a) happiness with life, b) satisfaction with life." For other respondents, this paragraph was omitted.

Results

As can be seen from Table 3a, the difference between the cor-

Table 3 about here

relations is quite dramatic. When the two questions were asked without establishing a conversational context, judgments of happiness and satisfaction were strongly related ($r = .91$). This relationship, however, decreased sharply ($r = .59$), $z = 2.47$, $p < .007$, when both questions were asked in the same conversational context. As in the two previous studies, the mean judgments did not differ as a function of the experimental manipulation and differences in the variances cannot account for the pattern of correlations (see Table 3b).

Discussion

These findings show that the discussed mechanism does not only apply to survey situations where two hierarchically related questions are asked in different orders. The results of Experiment 3 demonstrate that the principles of natural conversations also operate for questions that are very similar in content. The drastically reduced correlation between the answers that was found when both questions were placed in a common conversational context suggests that respondents try to be informative by concentrating more on the distinctive features of both concepts.

General discussion.

Taken together, the findings clearly suggest that to study the psychological mechanisms involved in the generation of answers to survey questions contributes to the understanding of response effects (for a general model of information processing in a survey situation, cf. L.Martin & Strack, 1987). In the present case of two related questions, the analysis of the specific cognitive and communicative processes allowed to specify the differential conditions of contrast and assimilation.

The results of the present studies demonstrate that activating specific information may make this information more accessible for later use and render the answer to the general question more similar to the answer to the previous specific question. At the same time, the logic of conversation may preclude the use of this information because the respondent may presuppose the specific knowledge in the questioner and attempt to add new information to what is already given. As a consequence, the general answer will become more different. The present findings suggest that these conversational principles will come into effect if several questions are perceived as belonging together. Accordingly, we may expect assimilation effects if two questions are perceived as unrelated but the information used to answer the previous one does bear on the later one. Thus, introducing filler items, changing the response format, and similar means -- often introduced to reduce order effects -- may decrease the likelihood of contrast effects. On the other hand, placing two questions back to

back, presenting them with same lead in, or using the same response format, may emphasize the shared "conversational context" and may thus decrease the likelihood of assimilation effects and increase the likelihood of contrast effects. In survey situations, this "conversational context" may be induced by many characteristics of the questionnaire and the interview, and subsequent research may identify more such conditions.

Wording of the questions

Experiment 1

General question:

How happy are you with life in general?

not so happy 1 2 3 4 5 6 7 8 9 10 11 extremely happy

Specific question:

How happy are you with your dating?

not so happy 1 2 3 4 5 6 7 8 9 10 11 extremely happy

Conversational context:

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, and
- b) happiness with life in general.

Experiment 2

General question:

How happy are you with life in general?

not so happy 1 2 3 4 5 6 7 8 9 10 11 extremely happy

Specific question:

How often do you normally go out on a date?

about times in a month

Conversational context:

Now, we would like to learn about two areas of life that may be important for people's overall well-being:

- a) frequency of dating, and
- b) happiness with life in general.

Experiment 3

Happiness question:

Wie glücklich sind Sie mit Ihrem Leben als Ganzem?
unglücklich 1 2 3 4 5 6 7 8 9 10 11 glücklich

Translated:

How happy are you with your life as a whole?
unhappy 1 2 3 4 5 6 7 8 9 10 11 happy

Satisfaction question:

Alles in allem, wie zufrieden sind Sie mit Ihrem Leben?
unzufrieden 1 2 3 4 5 6 7 8 9 10 11 zufrieden

Translated:

Taken all things together, how satisfied are you with your life?
unsatisfied 1 2 3 4 5 6 7 8 9 10 11 satisfied

Conversational context:

Die beiden folgenden Fragen beziehen sich auf zwei Aspekte Ihres persönlichen Wohlbefindens:

- a) das Lebensglück,
- b) die Lebenszufriedenheit.

Translated:

The following two questions refer to two aspects of your personal well-being:

- a) happiness with life,
- b) satisfaction with life.

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Table 1a: Correlations between "General Happiness" and "Happiness with Dating"

Control condition	Specific information activated	Activation + conversational context
a) r = .16 (N = 60)	b) r = .55 (N = 60)	c) r = .26 (N = 60)

a) vs. b): $p < .007$

b) vs. c): $p < .03$

a) vs. c): n.s.

Table 1b: Means and standard deviations

	Control condition		Specific information activated		Activation + conversational context	
	Mean	SD	Mean	SD	Mean	SD
Hap/Gen:	7.67	1.97	7.88	2.08	8.75	1.61
Hap/Dat:	6.13	3.11	6.83	3.43	7.17	2.79

No significant mean differences for both variables.

Table 2a: Correlations between "General Happiness" and "Frequency of Dating"

Control condition	Specific information activated	Activation + conversational context
a) r = -.12 (N = 60)	b) r = .66 (N = 60)	c) r = .15 (N = 60)

a) vs. b): $p < .001$
 b) vs. c): $p < .001$
 a) vs. c): $p > .05$

Table 2b: Means and standard deviations

	Control condition		Specific information activated		Activation + conversational context	
	Mean	SD	Mean	SD	Mean	SD
Hap/Gen:	7.67	1.97	8.31	2.03	7.95	1.78
Fre/Dat:	4.97	5.17	3.86	3.77	4.57	3.62

No significant mean differences for both variables.

Table 3a: Correlations between "Happiness" and "Satisfaction"

		Conversational context	
		yes	no
a)	$r = .59$ (N = 20)	b)	$r = .91$ (N = 20)

a) vs. b): $p < .007$

Table 3b: Means and standard deviations

		Conversational context			
		yes		no	
		Mean	SD	Mean	SD
Happiness		8.40	1.64	8.63	1.83
Satisfaction		7.73	2.55	8.15	2.35

No significant mean differences
for both variables.

Figure 1

General Happiness

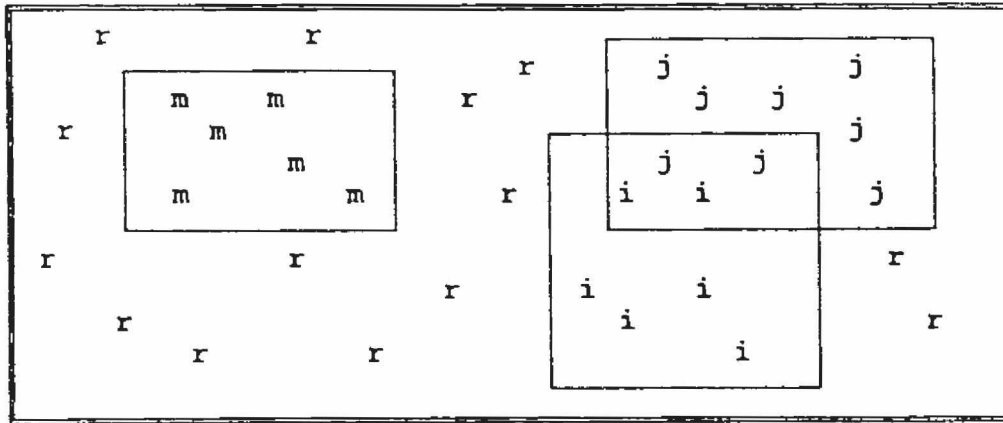
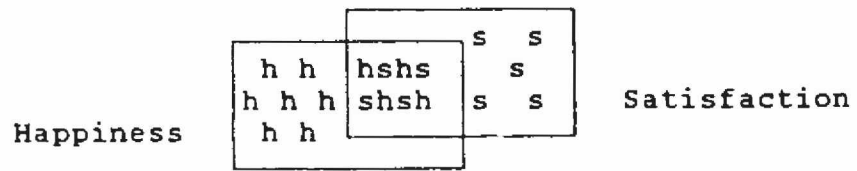


Figure 2



Authors' note

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