Effects of Self-Schema Elaboration on Affective and Cognitive Reactions to Self-Relevant Information

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ABSTRACT. The basic assumption of the integrative self-schema model (ISSM; L.-E. Petersen, 1994; L.-E. Petersen, D. Stahlberg, & D. Dauenheimer, 1996; D. Stahlberg, L.-E. Petersen, & D. Dauenheimer, 1994, 1999) is that self-schema elaboration (schematic vs. aschematic) affects reactions to self-relevant information. This assumption is based on the idea that schematic dimensions occupy a more central position in the cognitive system than aschematic dimensions. In the first study, this basic prediction could be clearly confirmed: The results showed that schematic dimensions possessed stronger cognitive associations with other self-relevant cognitions as well as a higher resistance to change than aschematic dimensions did. In the second study, the main assumptions of the ISSM concerning the affective and cognitive reactions to self-relevant feedback were tested: The ISSM proposes that, on schematic dimensions, reactions to self-relevant feedback will most likely follow principles of self-consistency theory, whereas on aschematic dimensions positive feedback should elicit the most positive reactions that self-enhancement theory would predict. The experimental results clearly confirmed the hypotheses derived from the ISSM for affective reactions. Cognitive reactions, however, were in line with self-consistency principles and were not modified by the elaboration of the self-schema dimension involved.

HOW THE SELF-CONCEPT influences the search for and the processing of self-relevant information is one of the most intensely discussed questions in self-concept research. How do people respond to self-concept discrepant positive and negative feedback or self-concept consistent feedback? For example, will they be most satisfied with positive feedback (affective reaction) or do they judge self-consistent feedback as especially valid and reliable (cognitive reaction)?
Answers to these questions have been provided by self-enhancement theory and self-consistency theory. In this article, both of these theories are illustrated in more detail, after which we will introduce a new theoretical approach: the integrative self-schema model (ISSM; Petersen, 1994; Petersen, Stahlberg, & Dauenheimer, 1996; Stahlberg, Petersen, & Dauenheimer, 1994, 1999). The ISSM assumes that the cognitive elaboration of a self-concept dimension, for which a certain feedback is given, is an important variable that moderates the dominance of self-enhancement or self-consistency principles when processing self-relevant information.

Self-Enhancement Theory and Self-Consistency Theory

The self-enhancement theory postulates that people normally strive either to protect their self-esteem or to enhance it when receiving and evaluating self-relevant information (Brown, 1986; Brown, Collins, & Schmidt, 1988; Sedikides & Strube, 1997). People are therefore expected to prefer positive feedback and also to react affectively and cognitively more positively to such feedback. Self-consistency theory can be traced back to Heider’s balance theory (1944) and Festinger’s theory of cognitive dissonance (1957). These theories postulate that people strive for cognitive consistency among their own attitudes, beliefs, and personal values. The self-consistency theory states that people with low self-concept react more favorably to negative feedback than to positive feedback because negative feedback confirms their low self-concept. The opposite pattern of results should occur for people with high self-concept. More recently, the self-consistency idea has been the focus of renewed interest under the label of self-verification and self-confirmation in the research of Swann (1983, 1985, 1990) and Andrews (1989).

Until now, a number of researchers have analyzed the effects of the motive to protect or enhance self-esteem and the motive to maintain self-consistency (see Jones, 1973; Shrauger, 1975; Swann, Pelham, & Krull, 1989, for overviews). The basic findings can be summarized as follows: Affective reactions such as satisfaction with the feedback or liking for the information source can best be predicted by self-esteem theory (Dittes, 1959; Jacobs, Berscheid, & Walster, 1971; Skolnik, 1971; Walster, 1965; for exceptions, see Deutsch & Solomon, 1959; Dutton & Arrowood, 1971). On the other hand, numerous findings confirm the prediction of self-consistency approaches when cognitive reactions are analyzed, such as evaluation of the validity and reliability of, or attributions concerning, self-related feedback (Feather, 1983; see also the findings concerning the depressive attributional style in Sweeney, Anderson, & Bailey, 1986).

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In the past, however, most researchers have concentrated only on either the affective or the cognitive reactions without incorporating both reactions at the same time (for exceptions, see Jussim, Yen, & Aiello, 1995; McFarlin & Blascovich, 1981; Moreland & Sweeney, 1984; Swann, Griffin, Predmore, & Gaines, 1987). One of our goals in this study is to simultaneously analyze affective and cognitive reactions to self-relevant feedback. However, apart from the kind of reaction itself, other variables might influence the preferences for certain kinds of self-relevant information. A new theoretical approach, the ISSM (Petersen, 1994; Petersen & Stahlberg, 1995; Stahlberg, Petersen, & Dauenheimer, 1994, 1999), further specifies the conditions under which principles of self-esteem protection or self-consistency are expected to dominate reactions to self-relevant information.

The Integrative Self-Schema Model

The ISSM assumes that the cognitive elaboration of the self-concept dimension, for which a certain feedback is given, will moderate affective and cognitive reactions toward such feedback. The ISSM is based on the work of Markus and her colleagues on self-schemata (Markus, 1977; Markus & Sentis, 1982; Markus & Wurf, 1987). According to Markus (1977), self-schemata are cognitive generalizations about the self that influence the processing of self-related information. A dimension is characterized as schematic when people assess themselves as extreme on that dimension and rate the dimension as highly important. Fiske and Taylor (1991) suggested that schematic dimensions are held with high certainty. Recent research supported this view: In several studies Pelham (1991) found a high correlation between the factor certainty of self-assessment and the epistemic measures evidence (the quantity of evidence supporting the self-image) and consistency (the consistency of the evidence supporting the self-image). In contrast, a dimension is characterized as aschematic when individuals assess themselves as moderate on that dimension, when they report a low certainty regarding this assessment, and when they rate the dimension as being of low importance.

Several studies have shown that the processing of self-related information is influenced by the existence or nonexistence of well-articulated self-schemata (e.g., Kuiper & Rogers, 1979; Markus, 1977; Mueller, 1982). The following studies, examinations of people's reactions to self-schema incongruent feedback, are of special importance to the ISSM. In one of Markus's studies (1977, Study 2), participants possessing a self-schema on the dimension dependence–independence or not possessing a self-schema on this dimension, received fictitious feedback on their results in a suggestibility test. Schematically independent participants were told that they were very easily influenced, whereas participants displaying a schematic dependency were informed that, according to the suggestibility test, they were not easily influenced. Finally, aschematic participants were assigned randomly to the different feedback conditions. Results showed that participants with a highly elaborated self-schema were less willing to accept the feedback containing information
about themselves than participants with no self-schema on this dimension. Sweeney and Moreland (1980) obtained similar results.

The ISSM assumes that the elaboration of self-schemata will also affect whether self-enhancement principles or self-consistency principles will dominate the reactions to self-relevant feedback. This assumption is based on the following ideas: Schematic dimensions should include various well-elaborated cognitions that have many connections among themselves and are combined with cognitions of other self-schemata. These connections result in a high resistance to change and cause people to react favorably to feedback that is consistent with their self-schemata. Thus, reactions regarding schematic dimensions should be in line with self-consistency theory predictions. This assumption is supported by the studies of Markus (1977, Study 2) and of Sweeney and Moreland (1980).

Opposed to this, aschematic dimensions are characterized by a smaller number of dimension-relevant cognitions with fewer connections among themselves and to other self-schemata. This implies a low resistance to change. Thus, people could change their aschematic self-conceptions more easily in the direction of a more flattering self-image. Therefore, the ISSM assumes that people should react favorably to positive feedback, as predicted by the self-enhancement theory.

**STUDY 1**

The basic assumption of the ISSM is that schematic dimensions occupy a central position in the cognitive system. In the first study, we analyzed to what extent schematic and aschematic self-concept dimensions are associated with other self-relevant cognitions in the cognitive system and how high is their resistance to change. We derived the following hypotheses from the ISSM:

1. Schematic dimensions are more strongly connected with other self-relevant cognitions in the cognitive system than aschematic dimensions.
2. Schematic dimensions have a higher resistance to change than aschematic dimensions.

**Method**

**Overview**

We analyzed whether self-schemata that were schematic or aschematic differ on two variables: number of cognitive connections and resistance to change. We operationalized the elaboration of self-schemata by combining participants’ self-descriptions on the dimensions in question (extremity of self-description), the certainty of this judgment, and the importance attributed to this dimension, into one index of self-concept elaboration. To measure the number of cognitive connections, we asked participants, with the help of a diagram, to specify the connections of each self-concept dimension with their central personality attrib-
utes and goals in life. Following this, the participants answered questions on each self-concept dimension regarding their resistance to change.

Participants

Students (N = 74; 51 women, 23 men) at the University of Kiel participated in the experiment; the majority were psychology students. Participants were between the ages of 18 and 45, with an average age of 26.3 years. The students received experimental credits for their participation.

Procedure

The students expected to participate in a study to analyze the structures of the self-concept. We administered the experiment in two sessions. In the first session, the students received a questionnaire referring to six self-concept dimensions (attachment behavior, considerateness, self-confidence, self-control, achievement orientation, and spontaneity). Each dimension was introduced by a short definition. For example, the dimension achievement orientation was described in the following text: “A person who is highly achievement-oriented prefers to work hard. Without external reinforcement she or he pursues ambitious goals and determinedly tries to reach them.”

The order in which the self-concept dimensions were presented was randomly chosen. For each dimension, participants rated their actual self and their ideal self on a 21-point rating scale anchored at the ends with very low (−10) and very high (+10). Next, the certainty with which the self-concept is held was assessed on a 11-point rating scale ranging from 0 (not at all certain) to 10 (extremely certain). In addition, participants rated the importance of a self-concept on an 11-point rating scale ranging from not at all important (0) to extremely important (10). On the basis of these ratings, we computed an index of self-schema elaboration.

Schematic versus aschematic. To classify the self-concept dimensions into schematic and aschematic, we used an index of the elaboration of self-schemata. The scale includes the items extremity, certainty, and importance (Cronbach’s alpha for the scale was .72). For each self-concept dimension, the sum scores of the three items, in which the extremity score was included as an absolute score, were calculated, resulting in possible values from 0 (not at all elaborated) to 30 (extremely elaborated). Beginning with this index score, the dimension with the highest index value per participant was labeled schematic, and the dimension with the lowest score was labeled aschematic.

Number of connections. In the second session, we asked participants to indicate the number of cognitive connections between the self-concept dimension and
other important self-relevant cognitions. Participants were given two sheets of paper on which 12 boxes were arranged as follows: In the middle of the paper, there was a box in which either the selected schematic or aschematic dimension (counterbalanced) was written. Around this central box, another 12 boxes were arranged. In these boxes, participants were asked to fill in six central personality attributes and six important goals in life. We expected that the personality attributes and the goals in life that were used for the first self-concept dimension would then also be used for all remaining self-concept dimensions.

After this exercise, the participants’ task was to decide whether each personality attribute and each goal in life was connected with the self-concept dimension displayed in the center of the diagram. We asked the students to mark each connection by drawing a line from the center box to the relevant peripheral boxes of the diagram. Participants could also grade the degree of each connection by marking strong and important connections with a red line and weak and unimportant connections with a yellow line. If no connections were perceived between the self-concept dimension and a personality attribute or a goal in life, respectively, no line had to be drawn (scored as no connection). The instructions were given in written form, together with an example by the experimenter to make the task more concrete.

Resistence to change. Finally, participants received the following questions to determine the resistance to change on each self-concept dimension: “Would a judgment differing from your own self-assessment elicit unpleasant emotions?” (0 = no unpleasant emotions at all, 10 = very unpleasant emotions); “Would changes on this dimension also affect your self-assessment on other self-concept dimensions?” (0 = not at all, 10 = very much); and “Would changing your self-assessment on this dimension be difficult for you?” (0 = not at all, 10 = very difficult). High scores on these scales were interpreted as indicators of a high resistance to change. On the basis of these ratings, a Resistance To Change Scale was computed (Cronbach’s alpha for the scale was .73).

Results

Number of Connections

Table 1 contains the mean numbers for all connections, important and unimportant, and for personality attributes and goals in life, between schematic and aschematic self-concept dimensions on the one hand and other important self-relevant cognitions on the other hand. Schematic dimensions showed significantly more connections with important self-related cognitions than did aschematic dimensions, $M_{sch} = 7.00$ versus $M_{asch} = 5.74$, $t(73) = 4.09, p < .001$. However, this overall effect differed, depending on the importance of the connection. The difference between schematic and aschematic dimensions was significant for
important dimensions only, $M_{sch} = 4.88$ versus $M_{asch} = 3.00$, $t(73) = 6.42$, $p < .001$, and can be shown with reference to personality attributes, $M_{sch} = 2.55$ versus $M_{asch} = 1.73$, $t(73) = 4.13$, $p < .001$, and goals in life, $M_{sch} = 2.34$ versus $M_{asch} = 1.27$, $t(73) = 6.11$, $p < .001$. For unimportant connections, this difference was reversed, resulting in more connections for aschematic than schematic dimensions, $M_{asch} = 2.74$ versus $M_{sch} = 2.11$, $t(73) = 3.24$, $p = .002$. Again, this can also be shown with reference to personality attributes, $M_{asch} = 1.34$ versus $M_{sch} = 1.11$, $t(73) = 1.45$, $p = .151$, and to goals in life, $M_{asch} = 1.41$ versus $M_{sch} = 1.00$, $t(73) = 2.60$, $p = .011$.

**Resistance to Change**

Table 2 contains the mean scores of the Resistance To Change Scale and the mean scores of the items used to measure the resistance to change. The mean scores of the resistance-to-change scale differed significantly for schematic and aschematic dimensions, $M_{sch} = 5.42$ versus $M_{asch} = 4.32$, $t(73) = 4.90$, $p < .001$.

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**TABLE 1**

| Mean Ratings of Number of Connections as a Function of Self-Schema Elaboration |
|---------------------------------|------------------|------------------|
| **Number of connections**      | **Self-schema elaboration** |
|                                 | **Schematic**    | **Aschematic**  |
| Important connections:         |                  |                  |
| To personality attributes     | $M$              | 2.55             | 1.73             |
|                                | $SD$             | 1.42             | 1.36             |
| To goals in life               | $M$              | 2.34             | 1.27             |
|                                | $SD$             | 2.34             | 1.29             |
| Total                          | $M$              | 4.88             | 3.00             |
|                                | $SD$             | 2.41             | 2.23             |
| Unimportant connections:       |                  |                  |
| To personality attributes     | $M$              | 1.11             | 1.34             |
|                                | $SD$             | .97              | 1.28             |
| To goals in life               | $M$              | 1.00             | 1.41             |
|                                | $SD$             | 1.14             | 1.42             |
| Total                          | $M$              | 2.11             | 2.74             |
|                                | $SD$             | 1.56             | 2.01             |
| Total                          | $M$              | 7.00             | 5.74             |
|                                | $SD$             | 2.96             | 3.03             |
TABLE 2
Mean Ratings of Resistance to Change as a Function of Self-Schema Elaboration

<table>
<thead>
<tr>
<th>Resistance to change</th>
<th>Schematic</th>
<th>Aschematic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unpleasant emotions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$M$</td>
<td>4.96</td>
<td>3.57</td>
</tr>
<tr>
<td>$SD$</td>
<td>2.78</td>
<td>2.56</td>
</tr>
<tr>
<td>Consequences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$M$</td>
<td>4.95</td>
<td>3.82</td>
</tr>
<tr>
<td>$SD$</td>
<td>2.63</td>
<td>2.68</td>
</tr>
<tr>
<td>Alterations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$M$</td>
<td>6.35</td>
<td>5.58</td>
</tr>
<tr>
<td>$SD$</td>
<td>2.14</td>
<td>2.08</td>
</tr>
<tr>
<td>Total (scale)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$M$</td>
<td>5.42</td>
<td>4.32</td>
</tr>
<tr>
<td>$SD$</td>
<td>1.87</td>
<td>1.87</td>
</tr>
</tbody>
</table>

Note. Values can range from 0 (no unpleasant emotions/no consequences/alterations would be easy) to 10 (many unpleasant emotions/more consequences/alterations would be difficult).

Results showed that information that is inconsistent with self-description leads to more unpleasant feelings and greater dissatisfaction on schematic dimensions than on aschematic dimensions, $M_{sch} = 4.96$ versus $M_{asch} = 3.57$, $t(73) = 4.26$, $p < .001$. Furthermore, participants reported that alterations on schematic dimensions would lead to greater consequences to their self-assessment on other self-concept dimensions than alterations on aschematic dimensions, $M_{sch} = 4.95$ versus $M_{asch} = 3.82$, $t(73) = 3.33$, $p = .001$. Finally, to change a schematic dimension would be more difficult for participants than to change an aschematic dimension, $M_{sch} = 6.35$ versus $M_{asch} = 5.58$, $t(73) = 2.36$, $p = .021$.

Discussion

The basic assumption made by the integrative self-schema model was confirmed. Schematic dimensions possess more—especially more important—connections with other self-related cognitions than aschematic dimensions. Schematic dimensions also display a higher resistance to change than aschematic dimensions. These results support the assumption that self-discrepant feedback will lead to greater cognitive dissonance on schematic than on aschematic dimensions. Therefore, the results of Study 1 underline the assumption of the ISSM, that information inconsistent with a person’s self-view should lead to greater cognitive dissonance on schematic than on aschematic dimensions, and that therefore people will show a greater tendency to act with self-consistency motives on schematic dimensions than on aschematic dimensions. We tested the
theoretically derived hypotheses concerning the reactions to self-relevant information in Study 2.

**STUDY 2**

The focus of Study 2 was to analyze the reaction to positive, consistent, and negative, self-relevant feedback. Taking into account the previous findings on the dominance of self-enhancement motives concerning affective reactions and the same dominance of the self-consistency motives regarding cognitive reactions, we derived the following hypotheses from the ISSM:

1. In general, people will affectively react to self-relevant information in line with self-enhancement predictions: They will react more positively to information that deviates from their self-concept in a positive direction (i.e., in the direction of the ideal self) than to self-consistent information and information that deviates from their self-concept in a negative direction.

2. This general pattern will be more pronounced on aschematic dimensions than on schematic dimensions (depending on the strength of both processes—the general tendency to affectively act in line with self-enhancement motives and the general tendency to act in line with self-consistency motives on schematic dimensions—the data pattern might even be reversed on schematic dimensions).

3. In general, people will cognitively react to self-relevant information in line with self-consistency predictions: They will react more positively to self-consistent information than to self-discrepant information even if this information is positive.

4. This general pattern will be more pronounced on schematic dimensions than on aschematic dimensions (depending on the strength of both processes—the general tendency to cognitively act in line with self-consistency motives and the general tendency to act in line with self-enhancement motives on aschematic dimensions—the data pattern might even be reversed on aschematic dimensions).

**Method**

*Overview*

The experiment consisted of a 2 (elaboration of self-schemata: schematic vs. aschematic) × 3 (feedback: positive vs. self-consistent vs. negative) within-subject design with affective and cognitive reactions as dependent variables. The elaboration of self-schemata was operationalized by combining participants’ self-descriptions on the dimensions in question (extremity of self-description), the certainty of this judgment, and the importance of this dimension, into one index of self-concept elaboration (schematic vs. aschematic). Feedback was given for three highly elaborated and three poorly elaborated dimensions, respectively. Self-consistent feedback mirrored the actual self-descriptions. The
positive feedback deviated from self-descriptions in the direction of the ideal self, whereas negative feedback deviated in the opposite direction.

Participants

Students \((N = 51, 34\) men, 17 women\) from the University of Kiel participated in the experiment. Participants were between the ages of 18 and 41, with an average age of 25.6 years. They received DM 15 for their participation.

Procedure

The students expected to participate in a study to validate a new computer-based testing system designed to diagnose personality characteristics. All the data were gained by direct, participant–computer interaction. First, participants were asked to answer some personal questions concerning age, sex, and so forth. Afterward, 12 dimensions of personality were described briefly (as in Study 1). The self-concept dimensions were attachment behavior, considerateness, self-confidence, self-control, achievement orientation, spontaneity, femininity, masculinity, autonomy, self-centeredness, inferiority feelings, and assertiveness. The order of presentation for these 12 dimensions was random for each participant.

We asked the participants to evaluate themselves on each dimension on a 21-point rating scale ranging from 1 to 10; for example, “How would you rate yourself on the personality dimension just presented?” \((-10 =\text{very low} to +10 = \text{very high})\). Afterward, participants answered the following questions on each dimension: “How certain are you about this self-description?” \((0 = \text{not at all certain}, 10 = \text{extremely certain})\), and “How important is this dimension for you?” \((0 = \text{not at all important}, 10 = \text{extremely important})\). Finally, participants were told to rate their ideal selves on a 21-point rating scale. On the basis of these ratings, an index of self-schema elaboration was computed.

Schematic vs. aschematic. To divide the self-concept dimensions into schematic and aschematic self-schemata, we used the scale described in Study 1 (Cronbach’s alpha for the scale was .64). The index score was calculated for each self-concept dimension. Beginning with this index score (computed for every participant on all dimensions), the dimensions with the three highest index values per participant were labeled schematic, and the dimensions with the three lowest scores were labeled aschematic. All together, the different dimensions were nearly equally often classified as schematic and as schematic.

After the participants had provided these different self-ratings for all 12 dimensions, they worked on the allegedly real diagnostic system. Their task was to decide whether each of 104 attributes was self-descriptive or not. The attributes were taken from the Gough and Heilbrun Adjective Check List (1965) and were translated into German by the authors. They were indicative of 1 of the 12 per-
sonality dimensions on which the self-ratings had been given in the first part of the experiment. For each dimension, eight or nine adjectives were presented (for example, for the dimension achievement orientation, the adjectives ambitious, capable, energetic, industrious, easygoing, irresponsible, leisurely, and shiftless were provided). The participants were led to believe that these self-descriptions would form the basis for the personality feedback to be given later in the experiment.

During the next part of the experiment, participants received fictitious feedback on 6 of 12 personality dimensions that met the criteria of high or low self-elaboration, as described earlier. These feedback scores were given with the following instructions: “You have received a test score of ___ points on the dimension of (e.g.) achievement orientation.” The exact feedback score was determined as follows:

Self-consistent versus positive versus negative feedback. The feedback given was based on the self-ratings on the 12 dimensions and ratings of the ideal self. Positive feedback deviated 4 points from the self-assessment in the direction of the ideal self. Negative feedback deviated 4 points in the direction opposite of the ideal self. Pre-testing led to the choice of a 4-point discrepancy for the positive and negative feedback. This difference was selected because (a) for most pre-tested participants, this was a score that was clearly defined as being positively and negatively discrepant to the current self-concept, and (b) in most cases it allowed self-concept to remain within the limits given by the scale endpoints.

Naturally, neither positive nor negative feedback ever exceeded the most extreme points of the scale (−10 to +10), which meant that in a few cases (e.g., extreme self-assessment with even more extreme self-ideal) positive and negative feedback scores were given that deviated by fewer than 4 points from self-assessment (these cases were distributed nonsystematically over the different experimental conditions). Finally, participants received one of their own self-assessment ratings as consistent feedback. The kind of feedback given for each highly or poorly elaborated self-schema was randomly assigned. After each feedback score was presented, participants were asked to answer several questions concerning their immediate reaction to this feedback.

Affective reaction. Participants were asked, “Which spontaneous emotions does this feedback arouse within you?” and “How satisfied are you with your feedback on this dimension?” We asked the participants to answer these questions on 11-point scales (0 = bad emotions, 10 = good emotions, and 0 = not at all satisfied, 10 = absolutely satisfied). A high level of internal consistency (Cronbach’s α = .92) was found for these two items. The mean of both items was calculated to be used as a measure of the affective reactions of the participants.

Cognitive reaction. Participants were asked, “How valid do you think your feedback is?” and “Would assessments of people you know well coincide with the
above assessment?” Again, we asked the participants to answer these questions on 11-point scales (0 = _not at all valid_, 10 = _absolutely valid_, and 0 = _no coincidence whatsoever_, 10 = _very great coincidence_). These two items showed a high level of internal consistency (Cronbach’s _α_ = .81). Here also, the mean of both items was computed to be used as a measure of the cognitive reactions of the participants.

At the end of the second experimental session, all participants were carefully debriefed, stressing the fictitious nature of the feedback by means of a process-debriefing (see Ross, Lepper, & Hubbard, 1975).

**Results**

The two dependent variables, affective reaction and cognitive reaction, were subjected to a 3 (feedback: positive vs. self-consistent vs. negative) × 2 (elaboration of self-schemata: schematic vs. aschematic) analysis of variance (ANOVA) with repeated measures on both factors. Although the dependent variables showed significant correlations (affective and cognitive reactions, _r_ = .49), two ANOVAs were computed because of the special data patterns predicted for each dependent variable. This procedure was further justified because an ANOVA with the “kind of dependent variable” as an additional factor yielded significant interactions of the factors “feedback” and “kind of dependent variable,” _F_(2, 100) = 6.88, _p_ < .01, and of all three factors, _F_(2, 100) = 10.24, _p_ < .001. We performed planned comparisons (_t_ tests) for our specific, theoretically derived hypotheses.

**Affective Reactions**

Means regarding this dependent variable are contained in Table 3. The ANOVA revealed a significant main effect for feedback, _F_(2, 100) = 26.31, _p_ < .001. Participants who received negative feedback, _M_ = 4.13, were less satisfied with this information than participants who were confronted with self-consistent feedback, _M_ = 5.93, _t_(50) = 5.67, _p_ < .001, or positive feedback, _M_ = 6.34, _t_(50) = 6.96, _p_ < .001. The satisfaction scores in the latter two conditions did not differ significantly. The main effect was qualified by an interaction tendency, _F_(2, 100) = 2.80, _p_ = .06.

On the aschematic dimension, positive feedback, _M_ = 6.26, led to greater satisfaction than consistent feedback, _M_ = 5.09, _t_(50) = 2.72, _p_ < .01, whereas on schematic self-concept dimensions, the difference between positive feedback, _M_ = 6.43, and consistent feedback, _M_ = 6.78, was even reversed, although not significantly. The satisfaction scores for negative feedback were in schematic and aschematic dimensions significantly lower than for positive and consistent feedback (all _ps_ < .01).
TABLE 3
Mean Ratings of Affective Reactions as a Function of Self-Schema Elaboration and Feedback

<table>
<thead>
<tr>
<th>Self-schema elaboration</th>
<th>Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td>Schematic</td>
<td></td>
</tr>
<tr>
<td><em>M</em></td>
<td>6.43</td>
</tr>
<tr>
<td><em>SD</em></td>
<td>2.80</td>
</tr>
<tr>
<td>Aschematic</td>
<td></td>
</tr>
<tr>
<td><em>M</em></td>
<td>6.26</td>
</tr>
<tr>
<td><em>SD</em></td>
<td>2.14</td>
</tr>
</tbody>
</table>

Note. Values can range from 1 (negative affective reaction) to 10 (positive affective reaction).

TABLE 4
Mean Ratings of Cognitive Reactions as a Function of Self-Schema Elaboration and Feedback

<table>
<thead>
<tr>
<th>Self-schema elaboration</th>
<th>Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td>Schematic</td>
<td></td>
</tr>
<tr>
<td><em>M</em></td>
<td>6.59</td>
</tr>
<tr>
<td><em>SD</em></td>
<td>1.97</td>
</tr>
<tr>
<td>Aschematic</td>
<td></td>
</tr>
<tr>
<td><em>M</em></td>
<td>5.41</td>
</tr>
<tr>
<td><em>SD</em></td>
<td>1.80</td>
</tr>
</tbody>
</table>

Note. Values can range from 1 (negative cognitive reaction) to 10 (positive cognitive reaction).

Cognitive Reactions

Table 4 summarizes the means for the variable cognitive reactions. Again, the ANOVA revealed a main effect for feedback, *F*(2, 100) = 8.42, *p* < .001. In general, participants evaluated the feedback as more valid when self-consistent, *M* = 6.74, rather than when positive, *M* = 6.00, *t*(50) = 3.33, *p* < .01, or negative, *M* = 5.69, *t*(50) = 3.40, *p* < .01. We found no interaction effect.

Discussion

Hypothesis 1, that people will affectively react to self-relevant information in line with self-enhancement predictions, was not clearly supported by the data.
Although reactions were more positive after positive than after negative feedback, a comparative, significant difference between positive and consistent feedback could not be found. Hypothesis 2, that the self-enhancement motive will be more pronounced in the aschematic dimension, was significantly supported by the results. On aschematic dimensions, positive feedback led to significantly greater satisfaction than consistent or negative feedback.

Hypothesis 3 was also clearly confirmed by the results. In general, the participants reacted cognitively to self-relevant information in line with self-consistent predictions. They reacted more positively to self-consistent information than to self-discrepant information even when this information was positive. Finally, there was no support for Hypothesis 4. The consistency effect was not more pronounced on schematic than on aschematic dimensions.

**GENERAL DISCUSSION**

This study tested predictions concerning reactions to self-relevant feedback derived from several theoretical positions. According to self-enhancement theory, people are expected to prefer positive information about the self and also to react affectively and cognitively more positively to such information than to self-consistent and negative information (see Brown, Collins, & Schmidt, 1988). In contrast, the self-consistency point of view postulates that individuals’ affective and cognitive reactions should be more positive to self-consistent than to positive or negative information (see Swann, 1985, 1990). Shrauger (1975) postulated that self-enhancement theory predictions should hold for affective reactions, whereas cognitive reactions should follow principles of self-consistency.

The ISSM (Petersen, 1994; Petersen & Stahlberg, 1995; Stahlberg, Petersen, & Dauenhoeimer, 1994, 1999) further specifies the conditions under which principles of self-enhancement or self-consistency are expected to dominate reactions to self-relevant information. The ISSM proposes that on schematic self-concept dimensions, participants’ reactions to self-relevant feedback are most likely to follow principles of self-consistency theory, whereas on aschematic dimensions, positive feedback should elicit the most positive reactions, as self-enhancement theory would predict. We therefore hypothesized that the differences in affective and cognitive reactions should be moderated by the elaboration of self-schemata. This assumption is based on the idea that the schematic self-concept dimensions are related to a greater number of other self-relevant cognitions and therefore should have a higher resistance to change than aschematic self-concept dimensions.

These basic predictions made by the ISSM were clearly confirmed by the first experiment: Schematic dimensions were related more strongly and to a greater number to other self-relevant cognitions than were aschematic dimensions. Furthermore, different indicators suggest that the resistance to change was higher on schematic than on aschematic dimensions. Therefore, one can conclude
that information that is inconsistent with a person's expectation will lead to
greater cognitive dissonance on schematic rather than on aschematic dimensions.

The main assumptions of the ISSM concerning the reactions to self-relevant
information were tested in the second study. The results for the variable affective
reaction supported the predictions of the ISSM. Although in general reactions
were not more positive after positive than after consistent feedback, as Shrauger
(1975) would have predicted, this effect was clearly confirmed for aschematic di-

densions. Participants reacted more positively to positive feedback whenever
their self-concepts were not well articulated and not highly elaborated.

On the contrary, on highly elaborated self-concept dimensions the difference
was reversed, although not significantly: Participants reported greater satisfac-
tion with consistent self-relevant feedback than with positive feedback. The data
for the cognitive reactions variable supported the self-consistency or self-confir-
ma tion approach: Participants attributed a higher validity to the self-consistent
feedback than to positive or negative feedback, thus confirming the assumption
that the self-consistency principle dominates cognitive reactions. Contrary to the
predictions of the ISSM, in the present experiment the cognitive reactions to
feedback of different valences were not modified by the elaboration of the self-
schema dimensions involved.

Combining the results of both experiments, the following conclusions can be
drawn: Schematic dimensions possess a high resistance to change and are strongly,
and in numerous ways, connected with other self-relevant cognitions in the
cognitive system. Thus, they can be expected to lead to great dissonance when
individuals are confronted with schema-incongruent feedback. As a conse-
quence, we hypothesized that the affective and cognitive reactions would be less
positive to flattering information than to self-consistent information.

In contrast, on aschematic dimensions, we hypothesized that expectation-
inconsistent information would lead to little dissonance, because the cognitive
associations among the few existing dimension-related cognitions are weak. As
a consequence, an individual was expected to accept positively discrepant informa-
tion and to react more positively to this kind of information than to consistent
information. The results of the present study clearly supported this latter predic-
tion of the ISSM for the affective reactions but not for the cognitive reactions.

Of course, our study has limitations. First, the combination of the results of
the two studies makes the theoretical assumptions of the ISSM only plausible. In
the present two studies, the postulated relations between the differential cogni-
tive embeddedness of schematic and aschematic self-schemata, their resistance
to change, and the reactions to self-relevant information, were tested only subse-
quently, and therefore the results support the assumption that resistance to
change and embeddedness of self-relevant cognitions might mediate reactions to
self-relevant feedback. An experiment that contains all mentioned variables and
allows the usage of a regression or covariance approach is necessary to confirm
this causal relationship.
A second limitation concerns the participants. In both experiments the participants were students, so, strictly speaking, our conclusions are only valid for young, academic individuals. We do not have theoretical evidence for the assumption that other participants (nonstudents, older persons) would react differently. But before we generalize the results of the present experiments, these findings should be replicated with nonstudent and older participants. This might be especially interesting because, in another study (Dauenheimer, Stahlberg, & Petersen, 1997), we assumed that over the life span, dimensions would become more schematic as knowledge about oneself in different situations accumulated. This assumption would imply that elderly people would react with self-consistent predictions more often than with self-enhancement predictions.

REFERENCES


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