

**Mental Construal Processes:  
The Inclusion/Exclusion Model**

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The terms assimilation and contrast describe the direction of contextual influences on evaluative judgment. Researchers speak of “assimilation” or “carry-over” effects whenever judgments are positively correlated with the valence of the context information, that is, when positive contextual information results in a more positive evaluation or negative contextual information results in a more negative evaluation. Conversely, they speak of “contrast” or “backfire” effects whenever judgments are negatively correlated with the valence of the context information, that is, when positive contextual information results in a more negative evaluation or negative contextual information results in a more positive evaluation. The sources of these effects are as varied as the sources of information that can serve as input into evaluative judgment.

At the most general level, evaluative judgments can be based on declarative as well as experiential information. First, judges may form a mental representation of the target (i.e., object of judgment) based on specific descriptive features and may compare it to some standard to arrive at an evaluation (e.g., Schwarz & Bless, 1992a). Second, they may rely on target related metacognitive experiences as a source of information, e.g., how easy or difficult it was to recall target features or to process a target description (e.g., Schwarz et al., 1991a; for a review see Schwarz, 2004). Third, judges may use their apparent affective reaction to the target as a source of information, without necessarily considering specific descriptive features of the target (e.g., Schwarz & Clore, 1983; for reviews see Pham, 2004; Schwarz & Clore, 1996). Finally, any of these sources of information may be perceived as exerting an undue influence and judges may attempt to correct for this influence (e.g., Strack & Hannover, 1996; Wilson & Brekke, 1994). To do so, they may draw on another source of information to form a judgment. If none is available, they may merely adjust their evaluation to compensate for the perceived bias. All of these routes to judgment can give rise to assimilation and contrast effects, reflecting that these terms serve as “catch-all” concepts that merely describe the direction of an observed contextual influence.

This chapter addresses feature-based judgments and explores the mental construal processes involved in forming representations of the target and standard. It highlights that the same piece of information can result in assimilation as well as contrast effects, depending on how it is used. We begin with a discussion of mental construal processes. Subsequently we address the variables that determine whether a given piece of information

is used in constructing the target, giving rise to assimilation effects, or in constructing the standard, giving rise to contrast effects. Throughout, our discussion follows the logic of our inclusion/exclusion model (IEM; Schwarz & Bless, 1992a), which has fared well over the decade since its original presentation. We conclude with a discussion of the implications of construal processes for three applied issues, namely asymmetries in public opinion and the dynamics of stereotype change and brand extensions.

### **Mental Construal Principles**

Any feature-based evaluative judgment requires a representation of the target (i.e., the object of judgment), as well as a representation of some standard against which the target is evaluated. We assume that both representations are constructed on the spot, based on the subset of potentially applicable information that is most accessible at the time of judgment. As has been observed in numerous studies, people rarely retrieve all information that may be relevant to a judgment but truncate the search process as soon as “enough” information has come to mind to form a judgment with sufficient subjective certainty (for reviews see Bodenhausen & Wyer, 1987; Higgins, 1996). This accessibility principle implies that the chronically or temporarily most accessible information exerts a disproportionate influence. Moreover, the use of highly accessible information is accompanied by a metacognitive experience of fluent processing, which lends additional credibility and weight to the information (Schwarz, 2004).

How chronically or temporarily accessible information influences the judgment depends on how it is used (Schwarz & Bless, 1992a). First, a given target is evaluated more positively the more positive features its representation includes, and more negatively the more negative features its representation includes. This effect is more pronounced the more extreme the evaluative implications of these features are. Accordingly, any contextual influence that affects the construal of the target gives rise to assimilation effects. Second, a given target is evaluated more negatively when it is compared to a positive rather than negative standard or rated relative to a positive rather than negative scale anchor. Accordingly, any contextual influence that affects the construal of the standard or scale anchor gives rise to contrast effects. These mental construal principles are central to the IEM (Schwarz & Bless, 1992a) and a close reading of the contributions to the present

volume will show that most variables known to influence the emergence of assimilation and contrast effects can be conceptualized in terms of their influence on the representations formed of the target and standard or scale anchor.

It is worth noting that the role of experiential information can also be conceptualized in these construal terms. First, when relevant features are easy to bring to mind, the experienced ease of recall suggests that there are many of them, consistent with Tversky and Kahneman's (1973) availability heuristic. Accordingly, the resulting representation is more positive when positive features are easy rather than difficult to bring to mind (for reviews see Schwarz, 1998; Schwarz, Bless, Wänke, & Winkielman, 2003). This increases the size of assimilation effects when the features bear on the representation of the target, but the size of contrast effects when they bear on the representation of the standard. Experienced difficulty of recall exerts the opposite influence. Second, people may draw on their apparent affective reaction to the target as a basis of judgment, essentially asking themselves, "How do I feel about this?" (for a review see Schwarz & Clore, 1996). In doing so, they may misread pre-existing moods (e.g., Schwarz & Clore, 1983), affective responses to contextual information (e.g., Winkielman, Zajonc, & Schwarz, 1997) or the positive affect resulting from processing fluency (e.g., Reber, Winkielman, & Schwarz, 1998) as their response to the target. This apparent affective response to the target may either be used in lieu of a more feature-based representation or may be considered an additional relevant feature, depending on feature accessibility and the judge's processing motivation. In either case, the apparent affective response results in assimilation effects, here in the form of affect-congruent judgments (e.g., Schwarz & Clore, 1983). The influence of experiential information is eliminated when the informational value of the recall experience or affective reaction is undermined through (mis)attribution manipulations, thus rendering the experience irrelevant to the target at hand.

### **Assimilation Effects**

Whenever contextual variables bring information to mind that is included in the representation formed of the target, they give rise to assimilation effects. However, contextual variables can do so in a number of different ways.

First, as numerous priming experiments have shown, ambiguous information is interpreted in terms of the most accessible applicable concepts, resulting in more positive

target representations when positive rather than negative concepts come to mind (e.g., Higgins, Rholes, & Jones, 1977; Srull & Wyer, 1979; for a review see Higgins, 1996). This conceptual priming process is at the heart of the interpretation component of Stapel and colleagues' (this volume; Stapel & Koomen, 1998; 2001) interpretation-comparison model. Going beyond classic conceptual priming effects, Stapel and Koomen's research illustrates that a range of contextual variables, including specific exemplars, can serve interpretive functions when an interpretation mindset is experimentally induced (e.g., Stapel & Koomen, 2001).

Second, contextual variables may bring features to mind that may otherwise not be considered. When these features are included in the representation of the target, they result in more positive or negative target representations, depending on the valence of the included features. For example, Schwarz, Strack, and Mai (1991; see also Strack, Martin, & Schwarz, 1988) asked survey respondents to report their marital satisfaction and their general life-satisfaction in different question orders. When the general life-satisfaction question preceded the marital satisfaction question, the answers correlated  $r = .32$ . Reversing the question order, however, increased the correlation to  $r = .67$ . This reflects that the marital satisfaction question brought marriage related information to mind, which was included in the temporary representation that respondents formed of the target "my life." Accordingly, happily married respondents reported higher, and unhappily married respondents reported lower, general life-satisfaction in the marriage-life than in the life-marriage order. Similarly, thinking about a politician who was involved in a scandal (say, Richard Nixon) decreases the perceived trustworthiness of politicians in general (Schwarz & Bless, 1992b). In theoretical terms, the accessible exemplar (Nixon) is included in the representation formed of the target (politicians), resulting in an assimilation effect.

Third, contextual variables may influence the categorization of the target. Assigning the target to a category results in the inclusion of category consistent features in the representation of the target. Accordingly, the resulting target representation is more positive when the target is assigned to a positive rather than negative category. As observed in numerous stereotyping studies, the extent to which the representation also includes individuating information about the specific target depends on the perceiver's processing motivation and capacity (cf. Fiske & Neuberg, 1990). As addressed later, categorization

processes are influenced by perceived fit, that is, the overlap between features of the target and features of the category and related variables. However, different categorizations can also be elicited through questions that invite different category assignments, even when motivation, capacity and fit are held constant (e.g., Bless, Schwarz, Bodenhausen & Thiel, 2001; Bless & Wänke, 2000; Stapel & Schwarz, 1998).

The assumption that assimilation effects are a function of the information that is included in the representation of the target also specifies the key determinants of the *size of assimilation effects*. One determinant is the extremity of the contextual information that is included in the representation of the target (Schwarz & Bless, 192a). Not surprisingly, including extremely negative information results in a more negative judgment than including only mildly negative information. A second, and theoretically more interesting, set of determinants derives from the set size principle of models of information integration (for reviews see Anderson, 1981; Wyer, 1974). On the one hand, the size of assimilation effects increases with the amount of contextual information added to the representation of the target. For example, the trustworthiness of politicians as a group should be evaluated less favorably when three scandal ridden politicians are brought to mind than when only one is rendered accessible. On the other hand, the influence of a given piece of accessible information decreases with the amount and extremity of other information that is included in the representation of the target. For example, in the above marital satisfaction study (Schwarz et al., 1991b), the correlation of marital satisfaction and life-satisfaction dropped from  $r = .67$  to  $r = .43$ , when questions about three different life-domains (job, leisure time, and marriage) preceded the general life-satisfaction question, thus bringing a more diverse range of relevant information to mind. Similarly, Bless, Igou, Wänke, and Schwarz (2000) found that bringing a scandal ridden politician to mind had less influence on judgments of the trustworthiness of politicians in general, the more other, trustworthy politicians were rendered accessible. Extending these findings to a natural context, Simmons, Bickart and Lynch (1993) observed in an election study that the influence of earlier questions on subsequent political judgments decreased as the election neared, presumably because an increasing amount of relevant information became chronically accessible over the course of the campaign. Bless, Schwarz, and Wänke (2003) provide a more detailed discussion of the size of context effects.

In sum, assimilation effects arise when contextual information is used to form a representation of the target. The size of assimilation effects follows the set size principle of information integration models (e.g., Anderson, 1981). On the one hand, assimilation effects increase with the amount and extremity of the included contextual information. On the other hand, the impact of a given piece of contextual information decreases with the amount of other information included in the representation of the target.

### **Contrast Effects**

Whereas assimilation effects are a function of the representation formed of the target, contrast effects are a function of the representation of the standard or scale anchor. Whenever the evaluative implications of positive (negative) temporarily accessible information are more extreme than the evaluative implications of chronically accessible information used in constructing a standard, they result in a more extreme positive (negative) standard. Application of this standard elicits contrast effects on all judgments to which it may be relevant. Hence, judgments are less positive the more positive the standard is and in less negative the more negative the standard is.

As an example, consider the impact of political scandals on assessments of the trustworthiness of politicians. As already noted, thinking about a scandal ridden politician, say Richard Nixon, decreases trust in politicians in general, reflecting that the exemplar can be included in the representation formed of the political class (i.e., a superordinate category), resulting in an assimilation effect. If the trustworthiness question pertains to a specific politician, however, say Bill Clinton, the primed exemplar cannot be included in the representation formed of the target -- after all, Bill Clinton is not Richard Nixon (i.e., lateral categories are mutually exclusive). In this case, Nixon may be used in constructing a standard of comparison, relative to which Clinton seems very trustworthy. An experiment with German exemplars confirmed these predictions (Schwarz & Bless, 1992b): Thinking about a politician who was involved in a scandal decreased the trustworthiness of politicians in general, but increased the trustworthiness of all specific exemplars assessed. Hence, the *same* information can result in assimilation as well as contrast effects, depending on whether it is used in forming a representation of the target or of the standard.

As discussed in the next section, numerous different variables can influence

whether information is used in constructing a representation of the target or of the standard. It is the diversity of these variables, rather than the diversity of the underlying processes, that results in the richness of empirical research into assimilation and contrast effects.

The *size of contrast effects* follows the same logic as the size of assimilation effects, except that the rules of the set size principle now apply to the representation formed of the standard (see Bless et al., 2003). First, the extremity of the standard is a function of the amount and extremity of the information used in forming a representation of the standard. Hence, the more extreme the contextual information used in constructing a standard, the larger the contrast effect. Second, the impact of a given piece of contextual information decreases with the amount and extremity of other information that enters the construction of the standard. For example, thinking of a scandal ridden politician increases the perceived trustworthiness of other politicians, as discussed above (Schwarz & Bless, 1992b). However, when additional politicians are brought to mind, who were not involved in the scandal, the resulting standard of comparison is less extreme. Judged against this less negative standard, other politicians are now evaluated less positively. Hence, Bless and colleagues (2000) observed that individual politicians were perceived as more trustworthy after participants thought about a single scandal ridden politician (an extremely negative standard) than after they thought about a mix of a scandal ridden politician and several moderately trustworthy ones (a moderate standard).

In sum, contrast effects arise when contextual information is used in forming a representation of the standard. The size of contrast effects again follows the set size principle of information integration models (e.g., Anderson, 1981). On the one hand, contrast effects increase with the amount and extremity of the contextual information used in constructing a standard. On the other hand, the impact of a given piece of contextual information decreases with the amount of other information included in the representation of the standard (see Bless et al., 2003, for a more detailed discussion).

#### **A Note on Subtraction Processes**

The above assumptions capture the bulk of assimilation and contrast effects, as usually understood. However, the logic of mental construal entails two additional possibilities that give rise to conditions under which judgments may shift toward (assimilation), or away from (contrast), the evaluative implications of contextual

information. To date, these possibilities have received little empirical attention.

First, judgments may sometimes shift away from the implications of temporarily accessible information *without* involving a change in standards. This is the case when a contextual variable (a) draws attention to a chronically accessible positive (negative) feature of the target to mind *and* (b) elicits the exclusion of this feature from the representation of the target, thus resulting in a target representation that is less positive (negative). Suppose, for example, that a political party has a highly respected politician, who figures prominently in citizens' representation of his party and contributes favorably to its evaluation. If citizens were induced to exclude this politician from the mental representation of his party, the party would be evaluated more negatively. Empirically, this is the case. For example, Bless and Schwarz (1998) asked German participants a knowledge question that (a) brought a highly respected German politician to mind and (b) reminded them that this politician holds an office that "prevents him from participating in party politics." As expected, this manipulation resulted in less favorable evaluations of this politician's party, *without* affecting evaluations of other parties. This indicates that the manipulation only affected the representation formed of the target party, but not the representation formed of the standard, which would result in contrast effects that generalize across applicable targets (as observed in Schwarz & Bless, 1992b).

We refer to this possibility as a *subtraction-based contrast effect*. On theoretical grounds, we assume that such effects are rare. They require (a) that a positive (negative) feature is chronically accessible and (b) attention is drawn to it through a contextual influence. Moreover, this influence (c) needs to elicit the exclusion of this feature from the representation of the target, without (d) eliciting its inclusion in the representation of the standard. These conditions were met in the above experiment. Presumably, reminding participants that this politician's office puts him above the fray of party politics not only prompted his exclusion from the representation of his own party, but also rendered him irrelevant as a standard for evaluating any other party.

As a second possibility, judgments can shift towards the evaluative implications of contextual information without requiring a change in the representation of the target. Suppose, for example, that citizens' representation of the standard against which they evaluate politicians includes a highly accessible villain, say Richard Nixon. If a contextual

variable (a) brought Nixon to mind *and* (b) elicited his exclusion from the representation of the standard, it would result in a more positive standard. Any politician evaluated against this more positive standard would now appear more negative. Such a *subtraction-based assimilation effect* would merely require a change in the standard, without an accompanying change in the representation of the target. This possibility awaits systematic investigation.

### **Summary**

In sum, the IEM (Schwarz & Bless, 1992a) traces the emergence of assimilation and contrast effects to changes in the mental representations formed of the target and standard. Information that is included in the representation formed of the target results in assimilation effects. Information that is included in the representation formed of the standard results in comparison based contrast effects, provided that the resulting extremity of the standard differs from the target representation. Comparison based contrast effects generalize across all targets to which the standard is applicable. Finally, information that is merely excluded from the representation of the target, and not used in forming a representation of the standard, results in subtraction based contrast effects, which are limited to the specific target. Conversely, information that is merely excluded from the representation of the standard, and not used in forming a representation of the target, results in subtraction based assimilation effects. Subtraction based assimilation effects generalize to all targets to which the standard is applied. Throughout, the size of assimilation and contrast effects can be predicted on the basis of a set size principle. Next, we address the variables that determine whether a given piece of information is used in constructing a representation of the target or a representation of the standard.

### **Determinants of Information Use**

A plethora of different variables has been shown to elicit assimilation or contrast effects. The IEM conceptualizes their operation in terms of their influence on information use: Do they increase the likelihood that a given piece of information is used in forming a representation of the target? Or do they increase the likelihood that a given piece of information is used in forming a representation of the standard? The operation of these variables can be organized by assuming that perceivers tacitly ask themselves three

questions, which serve as filters that channel information use. These filters determine if the information is used to form a representation of target, resulting in an assimilation effect, or a representation of the standard, resulting in a contrast effect.

### **Why Does It Come to Mind?**

Some of the information that comes to mind may clearly irrelevant to the judgment and needs no further consideration. Information that may potentially be relevant on the judgment needs to pass a first filter: "Am I only thinking of this information because it was brought to mind due to some irrelevant influence?" If so, the accessible information is not used in forming a representation of the target. For example, in conceptual priming experiments, highly accessible concepts are not used in forming a representation of the target when participants are aware of the potential influence of the priming episode (e.g., Lombardi, Higgins, & Bargh, 1987; Martin, 1986; Strack et al., 1993). Awareness of an irrelevant influence is more likely when the contextual information is externally presented (e.g., by an experimenter), rather than generated by participants themselves (e.g., Mussweiler & Neumann, 2000).

This (seemingly) self-generated nature of one's own thoughts is one of the reasons why information brought to mind by preceding questions in a survey interview is more likely to pass the first filter than information brought to mind by other contextual variables. Moreover, survey respondents usually assume that adjacent questions are substantively related, unless indicated otherwise (Schwarz, 1996). In combination, this renders it unlikely that the thoughts elicited by preceding questions are seen as exerting an undue influence under regular interview or questionnaire conditions. At the other extreme, most priming experiments explicitly present the priming and judgment tasks as unrelated. This increases the likelihood that the "why-does-it-come-to-mind?" filter is applied when a possible influence is perceived. Many natural priming episodes, like exposure to television news, fall in between these extremes.

Finally, it is worth noting that experiential information is similarly filtered with respect to why one has this experience at this point in time. If variables likely to affect experiential information are perceived as exerting an undue influence, the informational value of the experience is undermined. Under these conditions, the experiential

information is not used and judges turn to other inputs, if available (e.g., Schwarz & Clore, 1983, with regard to affect; Schwarz et al., 1991a with regard to ease of recall).

### **Does it Bear on the Target?**

When the information passes this first test, the second filter is: "Does this information represent a feature of the target?"

**Concept Priming.** The answer to this question is always positive when the contextual influence is due to concept priming, unless participants are aware of the potential influence of the priming episode (e.g., Martin, 1986; Strack et al., 1993). This reflects that highly accessible concepts influence the encoding of the target information itself, resulting in different perceptions of ambiguous target behaviors (e.g., Higgins et al., 1977; Srull & Wyer, 1979). Interpretation-based assimilation effects (see Stapel et al., this volume) are therefore likely to be robust. Not surprisingly, these effects are not obtained when participants are implicitly or explicitly instructed to engage in a comparison process, thus inducing them to use the primed information in constructing a representation of the standard rather than the target (e.g., Stapel & Koomen, 2001).

Most contextual information, however, requires a decision on how it should be used. This decision is driven by the numerous variables known to influence the categorization in general, as a few examples may illustrate.

**Category Structure.** As already noted, thinking of a scandal ridden German politician decreased the trustworthiness of German politicians in general, but increased the trustworthiness of every individual politician evaluated (Schwarz & Bless, 1992b). This reflects that the target category "German politicians" is superordinate to the context information (a specific scandal ridden politician) and hence invites the inclusion of the subordinate scandalous exemplar. In contrast, other specific politicians are lateral target categories, which are mutually exclusive. As a result, exemplar priming elicits assimilation effects on judgments of superordinate targets, but contrast effects on judgments of lateral targets, as has been observed across a wide range of different tasks (e.g., Bless et al., 2000; Schwarz & Bless, 1992b; Stapel & Schwarz, 1998; Wänke, Bless, & Igou, 2001; Wänke, Bless, & Schwarz, 1998).

As Stapel and Koomen (2001) illustrated, however, the trait concepts brought to mind by exemplars can be used in interpreting target information when the perceiver is in

an interpretative mindset. In this case, the interpretive effects of concept priming can override the comparison effects imposed by a lateral category structure. Theoretically, this should be most likely when the target description is ambiguous, consistent with standard concept priming results (e.g., Higgins et al., 1977).

***Category Boundaries.*** Not surprisingly, categorization decisions are strongly influenced by salient category boundaries. For example, Strack, Schwarz, and Gschneidinger (1985) asked participants to recall a positive or negative life-event that happened either recently or several years ago. Recent events resulted in an assimilation effect on later judgments of current life-satisfaction, whereas distant events resulted in a contrast effect. This reflects that recent events could be included in the representation of the target category “my life now,” whereas the distant events could not, and hence served as a standard of comparison. In follow-up experiments (reviewed in Schwarz & Strack, 1999), freshmen were asked during their first month at college to recall a positive or negative life-event that happened “during the last two years.” Replicating the earlier findings, these recent events resulted in assimilation effects on current life-satisfaction. Other freshmen were given the same task, except for a small addition to the instructions: they were asked to recall a positive or negative event that happened “during the last two years, that is, before you came to the university.” This addition emphasized a category boundary that invited them to chunk the stream of life into their high school time and college time. Under this condition, a contrast effect emerged, indicating that it is not temporal distance per se, but the categorization of the accessible event that drives assimilation and contrast.

Conversely, imposing a shared categorization can blur the otherwise perceived category boundaries. For example, Seta, Martin, and Capehart (1979) observed assimilation effects in attractiveness ratings of two target persons when both were assigned to the same category (college major), but contrast effects when they were not. Similarly, Brown, Novick, Lord, and Richards (1992) obtained assimilation effects on self-evaluations when participants shared a birthday with the comparison other, but contrast effects otherwise. In a particularly interesting variation on this theme, Stapel and Koomen (2005) showed that cooperation gives rise to assimilation effects on self-evaluations, whereas competition gives rise to contrast effects. Presumably, cooperation

imposes a shared categorization (“we”), much as shared majors or birthdays can do.

***Feature Overlap.*** Another general determinant of categorization is feature overlap: A given stimulus is more likely to be assigned to a given category, the more it shares category features. For example, Herr, Sherman, and Fazio (1983; see also Herr, 1986) observed assimilation effects when a target stimulus was rated in the context of moderate stimuli, but contrast effects when it was rated in the context of extreme stimuli. They concluded that "to the extent that a comparison of features of the activated category and the target stimulus results in matching or overlap, a judgment of category membership should occur" (Herr, 1986, p. 1107), eliciting an assimilation effect. If the overlap is insufficient, on the other hand, thus constituting an exclusion relationship, "the priming exemplars serve as standards of comparison" (Herr, 1986, p.1107), resulting in a contrast effect.

Similarly, Mussweiler, Ruter, and Epstude (2004; Mussweiler, 2003) observed that a search for similarities between the self and a comparison person elicited assimilation effects on self-evaluations, consistent with the high feature overlap resulting from a similarity search. Conversely, a search for dissimilarities elicited contrast effects, consistent with the perception of low feature overlap. Note that these differential search foci are likely to simultaneously affect the representations formed of the target and of the standard, which gives additional power to the effect. By definition, similarities are features that are shared by the self and other and can hence enter into both representations. Including similarities in the representation of the self results in assimilation, while their simultaneous inclusion in the representation of the other results in a standard that is similar to the self, thus also attenuating any contrast that may otherwise be observed. Dissimilarities, on the other hand, imply that some feature X applies to the self, whereas some feature Non-X applies to the other. Including feature X in the self again elicits assimilation towards X. However, including feature Non-X in the representation of the other results in a standard that is dissimilar to the self with regard to X, further enhancing the judgment that the self is high on X.

Findings of this type converge on the conclusion that “distinct” information (low feature overlap) elicits contrast effects, whereas “non-distinct” information (high feature overlap) elicits assimilation effects, as Stapel and colleagues observed in numerous

experiments (e.g., Stapel & Koomen, 2000; Stapel & Winkielman, 1998; see Stapel, this volume for a review).

***Category Heterogeneity and Mutability.*** Categories differ in heterogeneity. People assume, for example, that the members of a natural category (e.g., birds) are more similar to one another than the members of an artifactual composite category (e.g., things in a house). Not surprisingly, the perceived internal homogeneity or heterogeneity of a category constrains the range of information that can be included in the category representation. *Ceteris paribus*, a given piece of information is therefore more likely to result in assimilation effects in judgments of heterogeneous target categories, but in contrast effects in judgments of homogeneous target categories. Similarly, target categories that are perceived as highly mutable allow for the inclusion of a more varied set of information than less mutable target categories, giving rise to assimilation effects in the former, and contrast effects in the latter case (e.g., Stapel & Koomen, 2001). In a related vein, Lambert and Wyer (1990) demonstrated that exemplars that fell within perceivers' range of beliefs resulted in assimilation effects, whereas contrast effects emerged when exemplars fell outside perceivers' range of beliefs.

***Direct Manipulations.*** In many of the preceding examples, categorization was driven by characteristics of the target category and the context information. This renders it difficult to determine with certainty that the observed effects are due to categorization *per se*, rather than to some other characteristic of the information. To avoid this ambiguity, we often relied on direct categorization manipulations in tests of the IEM. As already seen, this can be achieved by asking knowledge questions that invite the inclusion or exclusion of an exemplar from the superordinate category (e.g., Bless & Schwarz, 1998; Stapel & Schwarz, 1998) or the assignment of several targets to the same or different categories (e.g., Wänke, Bless, & Schwarz, 1999).

In a related approach, Bless and Wänke (2000) presented all participants with the same list of moderately typical TV shows, thus keeping the features of the exemplar and category constant. To manipulate participants' perceptions of the shows' typicality, participants were asked to select two shows that they considered either (a) "typically favorable," (b) "atypically favorable," (c) "typically unfavorable" or (d) "atypically unfavorable." Classifying a show as "typically" favorable or unfavorable evoked its

inclusion in the superordinate category, resulting in assimilation effects on ratings of TV shows in general. Conversely, classifying a show as “atypically” favorable or unfavorable evoked its exclusion from the superordinate category, resulting in contrast effects on ratings of TV shows in general. Similarly, Bodenhausen, Schwarz, Bless, and Wänke (1995) demonstrated that the impact of highly successful African-Americans (e.g., Michael Jordan) on judgments of perceived discrimination was moderated by knowledge questions that invited the inclusion or exclusion of the primed exemplar from the superordinate category. Such findings highlight that differential categorization can drive the emergence of assimilation and contrast effects even under conditions of otherwise identical target and context information.

***Presentation and Judgment Order.*** In addition, categorization decisions can also be a function of more fortuitous aspects of the experimental procedures used, such as the order in which stimuli are presented or judgments are assessed. For example, Wedell, Parducci, and Geiselman (1987) asked participants to rate the attractiveness of faces that were either presented successively or in pairs. When the faces were presented successively, the same face was rated more favorably when presented in the context of less attractive faces, reflecting a contrast effect. When the faces were presented in pairs, however, the same face was rated less favorably when presented simultaneously with a less attractive face, reflecting an assimilation effect. The authors traced this assimilation effect “to a failure to separate the individual stimulus from other stimuli that are simultaneously present” (Wedell et al., 1987, p. 231). Apparently, the use of a successive or simultaneous presentation format influenced the categorization of the stimuli, mediating the emergence of assimilation and contrast effects.

Similarly, Martin and Seta (1983) observed the emergence of assimilation and contrast effects in an experiment that followed Byrne's (1971) similarity-attraction paradigm. Their participants received descriptions of two target persons and learned that one person shared their attitudes on three out of six issues, whereas the other shared their attitudes on all six issues. Participants rated the attractiveness of the targets either sequentially, after having read the respective individual description, or simultaneously, after having read both descriptions. As usual, target persons who agreed on all issues were rated as more attractive than target persons who agreed only on half of the issues.

More important, this difference was more pronounced under sequential than under simultaneous rating conditions. This again indicates that sequential ratings foster contrast between targets, whereas simultaneous ratings foster assimilation, as observed by Wedell et al (1987).

**Summary.** As our selective review illustrates, *any* variable that influences the categorization of information can determine whether a given piece of information is included in the representation of the target or in the representation of the standard. This suggests a crucial role for numerous variables that have so far received little attention in assimilation and contrast research. For example, several studies indicate that individuals form broader categories, and include less typical exemplars, when in a happy rather than sad mood (e.g., Bless, Hamilton, & Mackie, 1992; Isen, Daubman, & Gorgolione, 1987; Sinclair & Mark, 1992; for a review see Schwarz, 2002; Schwarz & Clore, 1996). This suggests that assimilation effects should be more likely when perceivers are happy rather than sad. Similarly, cultural research indicates that individuals with an independent self-construal are likely to focus on focal objects, whereas individuals with an interdependent self-construal are likely to integrate the object in its context (for reviews see Nisbett, 2003; Oyserman, Sorensen, Cha, & Schwarz, 2005). Hence, assimilation effects should be more likely for individuals with an interdependent self-construal and contrast effects for individuals with an independent self-construal (for suggestive evidence see Hannover, Kühnen, & Birkner, 2000). These possibilities await systematic testing.

### **Conversational Norms**

The third and final filter pertains to the norms of conversational conduct that govern information use in conversations: "Is it conversationally appropriate to use this information?" Conversational norms prohibit redundancy and invite speakers to provide information that is new to the recipient, rather than to reiterate information that the recipient already has (Grice, 1975; for reviews see Schwarz, 1994, 1996). Hence, highly accessible information is not used when it violates this conversational norm, again resulting in contrast effects.

For example, recall the previously reviewed marital satisfaction study, where life-satisfaction and marital satisfaction correlated  $r = .32$  in the life-marriage order, but  $r = .67$  in the marriage-life order (Schwarz et al., 1991b; see also Haddock & Carrick, 1999;

Strack et al., 1988;). As discussed earlier, this assimilation effect reflects that the preceding marital satisfaction question brought marriage related information to mind, which respondents used in forming a representation of their lives in general. In another condition, both questions were explicitly placed in the same conversational context, thus evoking the norm of nonredundancy. This was accomplished by a joint lead-in to both that read, "Now we would like to learn about two areas of life that may be important for people's overall well-being: happiness with marriage and happiness with life in general." Subsequently, both happiness questions were asked in the marriage-life order. With this lead-in, the correlation dropped from the previously obtained  $r = .67$  to  $r = .18$ , indicating that respondents deliberately disregarded information that they had already provided in response to the marital satisfaction question when making a subsequent general life-satisfaction judgment, despite its high accessibility in memory. Presumably, they interpreted the general question as if it referred to aspects of their life that they had not yet reported on. Supporting this interpretation, a condition in which the general question was reworded in this way resulted in a nearly identical correlation of  $r = .20$ .

Paralleling these differences in correlation, respondents who were induced to disregard their marriage in evaluating their life-as-a-whole reported higher life-satisfaction when they were unhappily married, and lower life-satisfaction when they were happily married, than respondents who were not induced to exclude this information. Thus, contrast effects were obtained when conversational norms elicited the exclusion of the primed information from the representation formed of one's life, despite its obvious substantive relevance to this judgment.

***Cultural Differences.*** Subsequent research showed first evidence for cultural differences in the emergence of assimilation and contrast effects. In general, interdependent cultures value more indirect forms of communication, which require a higher amount of "reading between the lines," based on close attention to the conversational context. If so, interdependent individuals may be more sensitive to the potential redundancy of their answers to related questions than independent individuals. Empirically, this is the case. In a conceptual replication of the Schwarz et al. (1991b) study, Haberstroh and colleagues (2002) asked German and Chinese students to report on their general life-satisfaction as well as their academic satisfaction. Both questions were

presented without a joint lead-in to explore if chronically interdependent Chinese are more sensitive to conversational context than chronically independent Germans (for evidence on these chronic differences see Oyserman, Kimmelmeier, & Coon, 2002). Replicating earlier results, the answers of German students correlated  $r = .53$  in the life-academic order, and this correlation increased to  $r = .78$  in the academic-life order, indicating an assimilation effect. The answers of the Chinese students showed a nearly identical correlation of  $r = .50$  in the life-academic order, yet this correlation dropped to  $r = .36$  in the academic-life order, indicating a contrast effect. Subsequent experiments with German participants (Haberstroh et al., 2002) tested the causal role of independence/interdependence through priming procedures, resulting in parallel effects.

In combination, these findings indicate that cultural differences in conversational conduct can give rise to cultural differences in the emergence of assimilation and contrast effects. Theoretically, the same holds true for any other cultural difference that may affect information use, as discussed in the context of cultural differences in categorization strategies.

### **Putting it Together**

We reviewed three “filters” that capture the major determinants of information use. The first filter checks whether the information may have come to mind for an irrelevant reason; the second filter tests if the information represents features of the target; and the final filter addresses whether use of the information is conversationally appropriate. Information that passes all three tests is included in the representation formed of the target and results in assimilation effects. Information that fails any one of these filters is excluded from the representation formed of the target, but may be used in forming a representation of the standard, resulting in contrast effects.

*Attention and Capacity.* Application of these filters requires attention and cognitive capacity, suggesting that assimilation effects are more likely than contrast effects under conditions of low cognitive resources. However, different filter variables are likely to be differentially susceptible to attention and capacity constraints.

Suppose, for example, that a contextual influence brings an exemplar to mind and the judgment requires evaluation of another exemplar. Given that lateral categories are mutually exclusive, no elaborate categorization decisions need to be made and contrast is

likely even under low attention conditions. In fact, contrast effects have been observed even when the primed exemplar is presented subliminally and the judgment is to be made fast (Winkielman, Coleman, & Schwarz, 1994). At the other end of the continuum, noticing the potential redundancy of one's answers to related questions in the absence of strong conversational cues requires close attention to the conversational common ground. As seen above, contrast effects are more likely under these conditions when chronic or temporary interdependence fosters attention to the common ground (Haberstroh et al., 2002), and limited cognitive capacity would presumably disrupt this process. Similarly, noticing an undue influence and correcting for it requires cognitive resources and the otherwise resulting contrast effects are eliminated under low resource conditions (e.g., Martin & Achee, 1992; Meyers-Levy & Tybout, 1997). Other categorization relevant variables fall in between these extremes and the systematic exploration of attention and capacity issues provides a promising avenue for future research.

***Information Use, Not the Information Itself is Crucial.*** As our review of the IEM indicates, the model assigns the crucial role to how contextual information is *used*, rather than to the characteristics of the information itself. As discussed above, characteristics of the contextual information can be powerful determinants of information use. However, even when we hold all features constant, the *same* information can give rise to assimilation *and* contrast effects, depending on how it is used. The most compelling evidence for this implication of the IEM is provided by experiments that manipulated the categorization of accessible information directly, without involving changes in the presented features (e.g., Bless & Schwarz, 1998; Bless, Schwarz, Bodenhausen, & Thiel, 2001; Bless & Wänke, 2000; Stapel & Schwarz, 1998; Wänke, Bless, Schwarz, 1999). Hence, any approach that focuses primarily on characteristics of the target or context information results in overly localized explanations of limited explanatory power. More important, the effects predicted by these approaches can be easily overridden by other variables that affect information use, like direct manipulations of how the information is categorized. From the perspective of the IEM, the diversity of the variables that can elicit assimilation or contrast does not reflect a diversity of the underlying processes. Instead, the operation of the variables can be parsimoniously conceptualized by identifying their influence on information use, that is, whether a given

piece of information is used in constructing a mental representation of the target or of the standard against which the target is evaluated.

### **Applied Implications:**

#### **Perceptions of Exemplars and Groups**

In addition to providing an integrative conceptualization of the processes underlying the emergence of assimilation and contrast effects, the theoretical assumptions of the IEM bear on core issues of substantive interest to social psychologists. In this final section, we address trade-offs in the perception of exemplars (e.g., persons or products) and their superordinate category (e.g., social group or brand) that have been observed across a wide range of content domains. As will become apparent, what's favorable for evaluations of the exemplar is usually unfavorable for evaluations of the exemplar's group, and vice versa, giving rise to a natural tension in interests.

#### **Public Opinion**

As already noted, accessible exemplars can be included in the representations formed of their groups, a superordinate category. However, they cannot be included in representations formed of other exemplars, reflecting that lateral categories are mutually exclusive. Accordingly, exemplars elicit assimilation effects on judgments of their groups, but contrast effects on judgments of their peers (with exceptions discussed in the section on category structure).

These diverging effects give rise to diverging interests between individuals and their groups. For example, in the domain of public opinion, individual politicians suffer from the accessibility of a respected star, but benefit from the accessibility of a suspected crook. Conversely, the political class as a whole, and the exemplar's party, benefit from respected stars, but suffer from suspected crooks (e.g., Bless et al., 2000; Schwarz & Bless, 1992b; Stapel & Schwarz, 1998). Similarly, the high accessibility of Martin Luther King, Jr. during Martin Luther King Day celebrations in the United States improves perceptions of African-Americans as a group, but hurts perceptions of individual African-American leaders (Konrath & Schwarz, 2005).

The same process is at the heart of numerous asymmetries in public opinion. For example, Americans distrust congress in general, but trust their own representative (e.g.,

Erikson, Luttbeg, & Tedin, 1988) and support capital punishment in general, but are less likely to apply it in any specific case (e.g., Ellsworth & Gross, 1994). Moreover, members of minority groups consistently report severe discrimination against their group, yet also report that their own personal experiences were more benign. These asymmetries are to be expected when we assume that some extreme instances of dishonesty, crime, and discrimination are chronically accessible and likely to come to mind when a relevant question is asked. When the question pertains to the general class, these instances are included in the representation formed, resulting in assimilation effects; when the question pertains to other instances, they serve as standards of comparison and result in contrast effects. Accordingly, common asymmetries in public opinion do not reflect the use of different information but the diverging effects of using the same information.

### **Stereotype Change**

Social psychologists have long assumed that exposure to favorable members of a negatively stereotyped group will elicit stereotype change through inclusion of the exemplar in the representation formed of the group (for a review see Rothbart, 2001). Presumably, this would benefit the group as well as its members. The IEM offers a less optimistic prediction, highlighting differential interests of the group and its most favorable members. On the one hand, inclusion of a positive exemplar in the representation of a negatively stereotyped group does indeed improve the perception of the group. On the other hand, however, it imposes the negative attributes of the group on the perception of the exemplar, resulting in less favorable evaluations of the exemplar. In short, the assimilation effect elicited by inclusion of the exemplar in the group works both ways, which benefits a negative group, but hurts a positive exemplar (e.g., Bless et al., 2001). Conversely, excluding a favorable exemplar from the representation of the group increases the negativity of the group stereotype, but benefits the perception of the exemplar, which is now evaluated against the standard of the group (e.g., Bless et al., 2001). Again, contrast works both ways, here hurting the group but benefiting the exemplar.

In combination, these findings highlight that stereotype change involves trade-offs between the exemplar and the group: What is good for the group is bad for the exemplar,

and vice versa. Unfortunately, we can't improve the perception of one entity without hurting the perception of the other.

### **Brand and Product Line Extensions**

The same principles apply in the non-social domain, as an example from marketing research may illustrate. Marketers often introduce new products as an extension of an existing respected brand, hoping that the positive brand evaluation would “transfer” to the new product. This “transfer” is best conceptualized as an assimilation effect and successful extensions are assumed to require a high feature overlap between the brand and the extension (e.g., Aaker & Keller, 1990; Boush, et al., 1987). However, from the perspective of the IEM, feature overlap is only one of many variables that determine the emergence of assimilation effects and the IEM draws attention to opportunities as well as risks in brand extension.

First, while marketers cannot easily change the actual features of the brand or extension, they can apply a number of other strategies to influence the categorization process to facilitate assimilation effects. For example, superficial similarities in product names have been found to facilitate assimilation (Wänke et al., 1998) and questions that evoke different categorizations can override the impact of actual features (Wänke et al., 1999).

Second, marketers often assume that the worst case scenario is a simple failure of the intended transfer – the brand doesn't help the product. However, the IEM suggests a worse case: A positive brand may not only fail to help the new product, but may actually hurt the new product by giving rise to a contrast effect. This is to be expected when the positive brand serves as standard of comparison, relative to which the new product is evaluated less positively than it would be evaluated without the brand association. Wänke and colleagues (1998) showed that superficial dissimilarities, like a product name that does not match the naming tradition of the brand, are sufficient to elicit such backfire effects.

Finally, our discussion of the differential impact of context information on the evaluation of superordinate and lateral categories draws attention to an even worse case: the new product may hurt all other products of the brand. For example, a new and better product may serve as a highly positive standard of comparison, relative to which all other

products of the brand are evaluated less positively (see Wänke et al., 2001, for an example), paralleling the inter-exemplar contrast effects discussed earlier. At the same time, the new product will have a favorable impact on the evaluation of the brand as a whole, given that the brand as a superordinate category invites its inclusion. Which of these two alternative effects drives a consumer's choice will depend on the choice situation. For example, when a consumer considers one of the older products of the brand in isolation, the positive impact of the new product on the brand as a whole may transfer to the old product, making it more attractive. But when the old and new products are considered in combination, the new product will hurt the attractiveness of the previous one. The IEM specifies the processes underlying these exemplar-category assimilation and exemplar-exemplar contrast effects and identifies numerous variables that can be used to manage them.

### **Concluding Remarks**

As our review indicates, the inclusion/exclusion model provides a parsimonious account of the emergence and size assimilation and contrast effects. First, representations of targets and standards are constructed on the basis of accessible information. Second, information used to form a representation of the target results in assimilation effects, whereas information used to form a representation of the standard results in contrast effects. Third, the size of both effects can be predicted by applying the set size principle to the respective representation.

To many readers, this summary may seem at odds with the enormous complexity of the empirical results that have been accumulated in decades of research (for a comprehensive review see Biernat, 2005). From our perspective, this complexity merely reflects that a myriad of different variables can influence whether information is used in constructing a representation of the target or of the standard. It is the diversity of these variables, rather than the diversity of the underlying processes, that results in the complexity of empirical research into assimilation and contrast effects.

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