

Priming and timing: a test of two perspectives

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Abstract

Supporting a 'stage' perspective of assimilation and contrast effects, and in contrast to an 'extremity' conceptualization, this study demonstrated that priming moderate person exemplars before the behaviour of an ambiguous target person had been encoded results in assimilation, whereas priming such exemplars after encoding results in a small contrast effect. © 1998 John Wiley & Sons, Ltd.

INTRODUCTION

When people form impressions, they are often influenced by the context in which they find themselves. Often they 'assimilate' their impressions to contextually activated information, but such information may also induce 'contrast'. To explain such assimilation and contrast effects, a recent approach, the 'stage' perspective (see Stapel, Koomen, & Van der Pligt, 1996, 1997), distinguishes an encoding and judgment stage in the impression formation process (see for similar distinctions Gilbert, 1989; Philippot, Schwarz, Carrera, De Vries, & Van Yperen, 1991; Schwarz & Bless, 1992; Wyer & Srull, 1989) and posits that contextually activated or primed information may be used as an interpretation frame in the *encoding* stage or as a comparison standard in the *judgment* stage of impression formation (Schwarz & Bless, 1992; Wyer & Srull, 1989).

In the encoding stage people form a rough representation of a stimulus, for example a person. If a person's behaviour is ambiguous, accessible and applicable information may guide the interpretation of this behaviour and assimilation will occur. For

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Contract grant sponsor: Dutch Science Foundation (Nederlandse Organisatie voor Wetenschappelijk Onderzoek); Contract grant number: 575-70-074.

example, Srull and Wyer (1979) used a priming task in which they exposed participants to behaviour descriptions so as to increase the accessibility of the trait concepts 'hostility' versus 'kindness'. After this task, participants judged a description of a target person (Donald) whose actions were ambiguous with respect to hostility. Results showed assimilation to the primed trait concepts.

Not only trait concepts but also person exemplars (e.g. 'Adolph Hitler', 'Dracula') may guide the interpretation of ambiguous stimuli because such exemplars are cognitively associated with the categorical dimension ('hostility') they exemplify. As Higgins (1996) notes with regard to explanations of knowledge accessibility effects, all accounts of these effects are in terms of associations that permit the activation of one knowledge unit to influence the activation potential of another. In other words, priming person exemplars ('Adolph Hitler') may increase the excitation level of exemplar-associated trait concepts ('hostility') that can be used to disambiguate the target person and bring about assimilation. Thus, both activated traits and exemplars may be used to *interpret* ambiguous target information. But what is the likely impact of traits and exemplars in the judgment stage of the impression formation process?

In the judgment stage, specific judgments of a stimulus ('Donald is friendly') are formed with respect to a particular comparison standard. Stapel, Koomen and their colleagues have demonstrated repeatedly that especially accessible information that is perceived as a relevant comparison standard and as sufficiently extreme may be used as an anchor with which targets can be contrasted. Thus, in the case of *person* judgments ('How friendly is Donald?'), activated *person* exemplars rather than activated traits concepts are similar to the target category (persons) and may thus be perceived as a relevant comparison standard. When sufficiently *extreme* (e.g. 'Hitler'), primed person exemplars may be used as a comparison standard against which the target person is *contrasted*. This contrastive comparison effect is likely to 'overrule' assimilative interpretation effects (Stapel *et al.* 1996, 1997).

From this 'stage' perspective it can be inferred that the time at which priming stimuli are presented (i.e. before or after encoding of the target stimulus) may determine whether assimilation or contrast will occur (cf. Srull & Wyer, 1980). Priming stimuli can only serve as an interpretation frame and result in assimilation in the encoding stage when they are presented *before* an ambiguous target is encoded. If the priming stimuli are trait concepts, assimilation will occur in the impression of ambiguous targets. Trait concepts lack comparison relevance and will therefore not be used in the judgment stage. Similarly, if the priming stimuli are moderately extreme person exemplars, assimilation will occur in the impression of ambiguous targets. Moderately extreme person exemplars are insufficiently extreme to serve as a comparison standard in the judgment stage that is strong enough to result in a contrast effect that negates the assimilative encoding effect. If the priming stimuli are extreme person exemplars, however, a contrastive comparison effect in the judgment stage is likely to 'overrule' the assimilative interpretation effect, as indicated above, and an overall contrast effect will obtain. Such a contrast effect will of course also occur when extreme person exemplars are primed *after* the encoding of the target, because in that case there will be no assimilative interpretation effect.

Stapel *et al.* (1997) recently reported a series of experiments in which these predictions were supported. One particularly interesting research question was left unanswered in the Stapel *et al.* investigation, however. It is still unclear what will happen to the impression of an ambiguous person description when *moderately*

extreme person exemplars are presented *after* encoding (but before judgment) of the target. According to the 'stage' perspective, when moderately extreme person exemplars are presented after the encoding of the target, they cannot serve as an interpretation frame in the encoding stage and thus no assimilation effect will ensue. Moreover, in the judgment stage the primed person exemplars could be used as a comparison standard and thus cause a contrast effect. This contrast effect will not be strong, however, because the primes are only *moderately* extreme. Thus, when moderately extreme person exemplars are primed after encoding, the 'stage' perspective predicts a small contrast effect rather than an assimilation effect, as it does for priming these exemplars before encoding.

Our predictions concerning the impact of the priming of moderately extreme person exemplars on judgments of an ambiguous person description are the more interesting, because another perspective on assimilation and contrast effects focusing on the distributional norm or 'extremity' of the contextually activated information (see Herr, 1986; Manis, Nelson, & Shedler, 1988; Sherif & Hovland, 1961) would result in a different prediction. According to Herr (1986), a protagonist of this 'extremity' perspective, when people are asked to evaluate an ambiguous target stimulus (e.g. 'Donald') along some dimension (e.g. 'How hostile is Donald?'), they will conduct a memory search for appropriate category membership. When specific category information has been cognitively activated, for example through the priming of names of well-known 'hostile' persons (e.g. 'Hitler'), the likelihood that this primed category is accessed first in the memory search is increased. When this primed category is accessed first, the features of this category are compared with the features of the target stimulus, and a judgment with respect to category membership is made. To the extent that this comparison results in matching or overlap, which will generally occur in the case of a moderate category and an ambiguous target, the target will be judged as an instance of the category. Evaluation of the target along the relevant dimension (e.g. 'How hostile is Donald?') will be made by selecting the average level of category members on the chosen dimension ('hostility'). Thus, priming moderately extreme exemplars is likely to result in an assimilation effect. In this 'extremity' perspective the degree of overlap between primed category and target stimulus is crucial, whereas the time at which the priming stimuli are presented seems to be inconsequential. Overlap will be the same whether determined before or after encoding.

Thus, the 'extremity' perspective predicts assimilation in judgments of an ambiguous target as a main effect of the priming of moderately extreme person exemplars independent of the time of priming, whereas the 'stage' perspective predicts an interaction effect between the priming of moderately extreme persons exemplars and the time of priming, holding that priming before encoding of the target will result in assimilation and priming after encoding will result in a small contrast effect.

METHOD

Participants and Design

Seventy-nine Dutch undergraduate students (mean age 21 years; 51 females and 28 males) participated in this study, and were distributed randomly across conditions

of a 2 (prime valence: hostile, friendly) \times 2 (prime time: preinformation, post-information) design. The study was conducted in groups of one to 16 persons.

Procedure

The general procedure followed in the present study has been described in Stapel *et al.* (1997) and will not be presented in detail here for reasons of space. Priming stimuli were presented as examples of specific information people are confronted with daily. They were presented either before ('preinformation') or after ('postinformation') participants had formed an impression of Donald on the basis of an ambiguous hostile/friendly description of Donald. The Donald paragraph that participants were about to read (in the preinformation conditions) or had just read (in the postinformation conditions) was then mentioned as an example of 'more elaborate information'. Finally participants were asked to indicate their impressions of Donald.

Priming Stimuli

The moderately extreme priming stimuli were those used in Study 4 of Stapel *et al.* (1997). The moderately hostile exemplars were 'Regilio Tuur' (a well-known Dutch boxer), 'Margaret Thatcher', and 'Napoleon'. The moderately friendly exemplars were 'Queen Beatrix', Robin Hood', and 'Robert Redford'.

Dependent Measure

Participants were asked to rate Donald on 10 unipolar trait dimensions that were adapted from Srull and Wyer (1979, 1980). Participants indicated their impressions by scoring five trait dimensions that implied either a high or a low degree of hostility ('hostile', 'aggressive', 'unkind', 'considerate', 'friendly') and five trait dimensions that are less related to hostility but have a rather strong evaluative loading ('selfish', 'fretful', 'intelligent', 'dependable', 'helpful'). Ratings were made along a scale from 1 ('not at all') to 9 ('extremely'). A reliability analysis of these 10 trait ratings provided a satisfactory Cronbach's alpha (0.82). In the present study participants' score on the combined trait ratings was used as dependent variable.¹

¹Some readers may object to our combining all trait ratings in one measure, because as shown by Higgins, Rholes and Jones (1977), priming effects are often limited to the specific dimensions that are primed, i.e. priming hostility will not influence ratings on hostility-nonrelated traits such as intelligent and dependable. However, more general effects of specific primes have been found (e.g. Stapel, Koomen, & Zeelenberg, in press). Also, the Donald stimulus used by Higgins *et al.* (1977) is a different one from the Donald used here (cf. Srull & Wyer, 1979). The present Donald is ambiguous in a general evaluative sense (Is he likeable/dislikeable?) rather than a specific descriptive sense (Is he adventurous/reckless?). In the terminology of Higgins (1996) the present Donald is 'vague', because no construct has more than weak applicability to the description. Further, others (e.g. Philippot *et al.*, 1991) using the present Donald also combined rather different trait ratings. Finally, we obtained similar patterns of results irrespective of whether we used the hostility-related or the other traits in the analysis (cf. also Srull & Wyer, 1979).

RESULTS AND DISCUSSION

Whereas the 'stage' perspective predicts an interaction effect between priming and time of priming, on the basis of the 'extremity' perspective a main effect of priming is predicted. For ratings of Donald an analysis of variance revealed the prime valence \times prime time interaction effect, $F(1,75) = 4.81$, $p < 0.05$, predicted by the 'stage' perspective, and no significant main effects. As can be seen in Table 1, the pattern of means reflects the predictions made by the 'stage' perspective.

Table 1. Mean ratings (*S.D.*) of Donald as a function of prime valence and prime time

	Prime valence	
	Friendly	Hostile
Prime time		
Preinformation	4.91 (1.25)	4.27 (0.78)
Postinformation	4.27 (0.66)	4.52 (0.81)

Note. Scale range is from 1 to 9. Higher scores indicate more positive ratings.

An assimilation effect was obtained in the preinformation conditions. Ratings of Donald were less negative ($M = 4.91$) when moderately friendly persons were primed and more negative ($M = 4.27$) when moderately hostile persons were primed, $t(75) = 2.24$, $p < 0.05$. In the postinformation conditions a contrast effect was obtained that was, as expected, rather weak and not significant. Ratings of Donald were more negative ($M = 4.27$) when moderately friendly persons were primed and less negative ($M = 4.52$) when moderately hostile persons were primed, $t(75) = 0.88$, n.s.

These results confirm the prediction derived from the 'stage' perspective on assimilation and contrast and they disconfirm the prediction derived from the 'extremity' perspective. As predicted by the 'stage' conceptualization the results showed an interaction effect between priming and the time of priming. Priming moderately extreme person exemplars before encoding of the target resulted in assimilation, whereas priming after encoding resulted in (small) contrast. Thus a main effect of priming (i.e. assimilation independent of time of priming) as predicted by the 'extremity' perspective was not found.

The assimilation results for moderately extreme primes in the preinformation priming conditions replicate results of Herr (1986), Herr, Sherman, and Fazio (1983), and Stapel *et al.* (1997). The processes underlying these results are, however, supposed to be different in Herr's 'extremity' and Stapel *et al.*'s 'stage' conceptualization. These different conceptualizations are put to the test in the postinformation priming conditions. Herr seems to suggest that in these conditions comparison of the features of the primed category and the target will also show matching and overlap, which will express itself in an assimilation effect. The 'stage' conceptualization, in contrast, posits that in these conditions the primes cannot serve as an interpretation frame for the target, because they are presented after the encoding stage and therefore assimilation will not ensue. In the judgment stage, however, these primes can serve as a comparison standard and provide a contrast effect. That effect will, however, be rather weak

because the primes are only moderately extreme. The results in the postinformation conditions support the 'stage' conceptualization.

In conclusion, the present study has demonstrated, as predicted by the 'stage' perspective on context effects, that for moderately extreme person primes, timing of priming can be an important moderator of whether assimilation or contrast occurs in judgments of an ambiguous person stimulus.

REFERENCES

- Gilbert, D. T. (1989). Thinking lightly about others: Automatic components of the social inference process. In J. S. Uleman, & J. A. Bargh (Eds), *Unintended thought* (pp. 189–211). New York: Guilford Press.
- Herr, P. M. (1986). Consequences of priming: Judgment and behavior. *Journal of Personality and Social Psychology*, **51**, 1106–1115.
- Herr, P. M., Sherman, S. J., & Fazio, R. H. (1983). On the consequences of priming: Assimilation and contrast effects. *Journal of Experimental Social Psychology*, **19**, 323–340.
- Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability, and salience. In E. T. Higgins, & A. W. Kruglanski (Eds), *Social psychology: Handbook of basic principles*. New York: Guilford.
- Higgins, E. T., Rholes, W. S., & Jones, C. R. (1977). Category accessibility and impression formation. *Journal of Experimental Social Psychology*, **13**, 141–154.
- Manis, M., Nelson, T. E., & Shedler, J. (1988). Stereotypes and social judgment: Extremity, assimilation, and contrast. *Journal of Personality and Social Psychology*, **55**, 28–36.
- Philippot, P., Schwarz, N., Carrera, P., De Vries, N., & Van Yperen, N. W. (1991). Differential effects of priming at the encoding and judgment stage. *European Journal of Social Psychology*, **21**, 293–302.
- Schwarz, N., & Bless, H. (1992). Constructing reality and its alternatives: An inclusion/exclusion model of assimilation and contrast effects in social judgment. In L. L. Martin, & A. Tesser (Eds), *The construction of social judgments* (pp. 217–245). Hillsdale, NJ: Erlbaum.
- Sherif, M., & Hovland, C. (1961). *Social judgment, assimilation and contrast effects in communication and attitude change*. New Haven/London: Yale University Press.
- Srull, T. K., & Wyer, R. S. (1979). The role of category accessibility in the interpretation of information about persons: Some determinants and implications. *Journal of Personality and Social Psychology*, **37**, 1660–1672.
- Srull, T. K., & Wyer, R. S. (1980). Category accessibility and social perception: Some implications for the study of person memory and interpersonal judgments. *Journal of Personality and Social Psychology*, **38**, 841–856.
- Stapel, D. A., Koomen, W., & Van der Pligt, J. (1996). The referents of trait inferences: The impact of trait concepts versus actor-trait links on subsequent judgments. *Journal of Personality and Social Psychology*, **70**, 437–450.
- Stapel, D. A., Koomen, W., & Van der Pligt, J. (1997). Categories of category accessibility: The impact of trait concept versus exemplar priming on person judgments. *Journal of Experimental Social Psychology*, **33**, 47–76.
- Stapel, D. A., Koomen, W., & Zeelenberg, M. (in press). The impact of accuracy motivation on interpretation, comparison, and correction processes: accuracy motivation \times knowledge accessibility effects. *Journal of Personality and Social Psychology*.
- Wyer, R. S., & Srull, T. K. (1989). *Memory and social cognition in its social context*. Hillsdale, NJ: Erlbaum.