



FlashReport

The effect of distance-dependent construals on schema-driven impression formation

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ABSTRACT

Two experiments examine how distance-dependent construal can affect trait aggregation in impression formation. We propose that, because higher- versus lower-level construals promote the tendency to impose schematic structure on information processing, higher-level construals should enhance schema-driven trait aggregation. We test this by examining a classic impression formation phenomenon: the primacy effect (Asch, 1946). Increasing temporal distance (Study 1a) and priming higher-level construals (Study 1b) led participants to form more favorable impressions of targets described initially as intelligent versus envious. Decreasing temporal distance and priming lower-level construals, in contrast, reversed the primacy effect. Thus, the distance of a target, with its associated construal, can impact the aggregation of traits and consequently impacts people's evaluations of others.

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We all form impressions of others frequently and with ease (Asch, 1946; Fiske, Cuddy, & Glick, 2007). These impressions are often based on bits of information, usually about a person's traits. Knowing, for example, that a person is intelligent yet impatient may be sufficient in creating a coherent (although not necessarily accurate) impression. Much of impression formation research examines how people combine trait information to form general impressions of others (Anderson, 1965; Asch, 1946; Hamilton & Zanna, 1974). This research indicates that trait aggregation processes are often schema-driven. That is, they begin with the activation of a schema, which guides subsequent information processing about target individuals. In this research, we examine a classic schema-driven trait aggregation phenomenon: the primacy effect. We propose that, as distance-dependent construal systematically impacts schematic versus piecemeal information processing, the primacy effect should be sensitive to changes in construal.

Primacy effect

The primacy effect refers to the tendency to form impressions that are more sensitive to the valence of the first (versus last) trait of a sequence. In classic studies by Asch et al. (Asch, 1946; Hamilton & Zanna, 1974), when positive traits (e.g., intelligent) were presented first followed by less positive traits (e.g., envious), participants formed a more favorable impression of the target than when the order was reversed.

Several accounts have been offered to explain the effect. According to a “change of meaning” interpretation (Asch, 1946), initially encountered traits establish a preliminary impression which then shifts the meaning of the other traits to be consistent with the meaning of the initial traits. Thus, when positive traits are presented first, they make the more negative traits that follow seem less negative, and when negative traits are presented first, they make the following positive traits seem less positive (Hamilton & Zanna, 1974). Another interpretation attributes primacy effect to inconsistency discounting (Anderson & Jacobson, 1965). Perceivers give lower weight to traits (e.g., envious) that are inconsistent with preceding traits (e.g., intelligent). A third interpretation suggests a progressive decrease in attention over traits presented in a series (Anderson, 1981; Dreben, Fiske, & Hastie, 1979). Once perceivers feel they have formed an accurate impression, they tend to pay less attention to subsequent information. Notably, this interpretation can also account for the reversed effect (i.e., recency effect)—when attention is drawn to each trait separately, people tend to be more sensitive to the last (versus first) trait (Hendrick & Costantini, 1970).

Although these three interpretations propose different cognitive processes, all imply that trait order effects in impression formation are schema-driven. Traits encountered initially create schematic expectations about targets (Brewer, Feinstein, & Harsty, 1999; Edwards & Weary, 1993; Taylor, Crocker, & D'Agostino, 1978; Schul, 1983; White & Carlston, 1983). These expectations further organize remaining traits into a coherent impression, imbuing meaning to these traits and shifting attention to some traits over others. Piecemeal processing, by contrast, proceeds by a “bottom-up” approach, leading to a more attribute-by-attribute analysis and better recall of traits encountered last. We propose that, as a schema-driven phenomenon, the primacy effect should be sensitive to distance-dependent construals.

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Construal levels and the primacy effect

We base our prediction on construal level theory (CLT; Trope & Liberman, 2010), which suggests that the psychological (e.g., temporal) distance of an object systematically changes how the object is mentally construed. Specifically, removing objects from one's direct experience (i.e., increasing psychological distance) increases reliance on more schematic, theory driven (i.e., high-level) construals and decreases reliance on more concrete and detailed (i.e., low-level) construals. Higher-level construal involves understanding objects and constructing mental representations through the application of knowledge from stored memory (i.e., schemas). For example, throwing a plastic bottle into the trash may be abstractly construed more positively as “preventing litter” or more negatively as “failing to recycle,” depending on the accessible schema (e.g., “cleanliness” versus “environmentalism”). Thus, the imposition of schematic knowledge imbues meaning to objects, dramatically shifting evaluation. According to CLT, increasing psychological distance increases this tendency to impose schematic structure on incoming information.

Initial support for the assertion that higher-level construals involve the imposition of structure comes from a research using the Gestalt Completion Task (GCT; Ekstrom, French, Harman, & Dermen, 1976). Participants in this task attempt to identify objects that are depicted in fragmented pictures. The GCT is widely considered a measure of schematic processing as it requires restructuring a stimulus set of seemingly random lines and dots into a coherent, meaningful representation. Though the lines and dots that comprise the test materials themselves have no inherent meaning, imposing an interpretative frame around them allows one to recognize more readily that they collectively depict a meaningful object (e.g., a sailboat). Research shows that participants performed better at a practice GCT when they thought the actual task would take place in the more distant future (Förster, Friedman, & Liberman, 2004) or was less likely to take place (Wakslak, Trope, Liberman, & Alony, 2006), suggesting an association between distance-dependent construals and schematic processing (see also Henderson, Fujita, Trope, & Liberman, 2006).

In the present work, we examine the implications of the relationship between distance-dependent construals and schematic processing for a more socially relevant phenomenon: impression formation. We propose that, because higher-level construals tend to impose structure on incoming information, those construing objects and events in higher-level terms should be more ready to fit traits into pre-existing schemas. The readiness with which people activate and use these schemas should then influence how they evaluate others.

An important implication of this line of reasoning for impression formation is that the order in which traits are processed would differentially impact impressions of others construed at higher- versus lower-level construals. When construing others in higher-level terms, traits encountered first should “set” the schema, and all subsequent processing of trait information should be guided by this schema. For example, with higher-level construals, encountering the trait “intelligent” before “envious” should prompt the activation and application of an “intelligent person” schema on subsequent information processing, leading to a more positive final evaluation of the target. Encountering the trait “envious” before “intelligent,” by contrast, at higher-level construals should prompt the activation and application of an “envious person” schema, leading to more negative final evaluations of the target.

How is trait aggregation affected by construing objects in lower-level terms? According to CLT, lower-level construals promote local information processing, with greater emphasis placed on specific attributes of the target rather than on the target as a whole. We propose that these lower-level construals will decrease reliance on schema-based information and promote piecemeal processing. Classic research indicates that such piecemeal processing reverses the primacy effect into a recency effect (Anderson, 1965; Stewart,

1965). This reversal is theorized to occur because piecemeal processing promotes more equal attention to each trait of a series (e.g., by having participants pronounce the trait words aloud; Hendrick & Costantini, 1970). Attention to later traits interferes with retention of earlier traits, leaving the last traits in the series more salient in memory. Thus, we predict that lower-level construals are likely to reverse the primacy effect.

Two studies test these predictions. We induced differences in construal using two methods: temporal framing (Study 1a) and procedural priming (Study 1b). We predicted that, irrespective of how construal levels were induced, higher-level construals would promote the primacy effect whereas lower-level construals would reverse the primacy effect.

Studies 1a and 1b: primacy (and recency) effect

Method

Study 1a procedure

Participants ($N=94$, Tel Aviv University undergraduates) were randomly assigned to conditions of construal level (temporally near versus distant) and order (positive versus negative traits first). Participants read a description of a job applicant adopted from Asch (1946). To manipulate construal level, the participants read that the job was to begin next week (six months from now). The description comprised six traits presented either from positive to negative (intelligent, industrious, impulsive, critical, stubborn, and envious) or from negative to positive (envious, stubborn, critical, impulsive, industrious, and intelligent). Participants then gave their impression of the applicant (1 = *extremely negative* to 9 = *extremely positive*).

Study 1b procedure

Participants ($N=110$, Ben Gurion University undergraduates) were randomly assigned to conditions of construal level (low versus high) and order (positive versus negative first). Higher- versus lower-level construals were primed by having participants consider questions as to why versus how they engaged in certain actions. Past research indicates that these procedures reliably induce differences in construal level (e.g., Freitas, Gollwitzer, & Trope, 2004). Participants next read a description identical to the one in Study 1a except for the time frame and reported their impression by rating the likelihood of making a hiring recommendation (0 = *not likely* to 100 = *extremely likely*).

Results and discussion

Parallel 2 (construal level: low versus high) \times 2 (order: positive versus negative traits first) ANOVAs on impressions did not yield any main effects for either Study 1a or 1b, $F_s < 1$. More importantly, there was a construal level \times trait order interaction in both Study 1a, $F(1, 90) = 6.21, p < .05, r = .25$, and Study 1b, $F(1, 106) = 9.41, p < .01, r = .29$. Participants' impressions at higher-level construals were more favorable of an applicant described with positive traits first than with negative traits first, Study 1a: $F(1, 45) = 3.30, p = .08, r = .19$; Study 1b: $F(1, 53) = 6.33, p < .05, r = .33$. However, at lower-level construals, participants' impressions were less favorable of an applicant described with positive traits first than with negative traits first, Study 1a: $F(1, 45) = 3.11, p = .07, r = .18$; Study 1b: $F(1, 53) = 3.49, p = .07, r = .29$ (see Figs. 1 and 2). Thus, irrespective of induction method, higher-level construals enhanced the primacy effect. In contrast, lower-level construals reversed the primacy effect into a recency effect.

Conclusions

These two experiments support our prediction that distance-dependent construals can influence the schema-driven trait aggregation

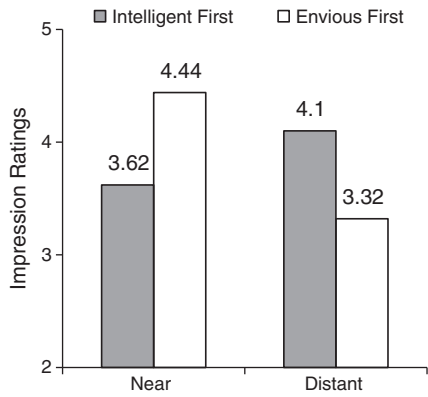


Fig. 1. Impression ratings as a function of order and construal level (Study 1a).

phenomena of primacy and recency: higher-level construals lead to a primacy effect whereas lower-level construals lead to a recency effect. We interpret this to suggest that those at higher-level construals evidenced a greater readiness to organize traits around pre-existing personality schemas, using whatever traits came first as an interpretive frame. This led participants to use pre-existing “intelligent person” versus “envious person” schemas, depending on trait order, which then influenced their subsequent impressions of the target. Those at lower-level construals, on the other hand, did not evidence a similar readiness to organize traits in a schema-driven way. Instead, they engaged in piecemeal processing that led them to give weight more equally to all traits in the sequence, subsequently resulting in a recency effect, in which the last trait dominates impression.

These findings build on a growing literature documenting the effects of construal levels on various person perception phenomena. Past research has shown that people base their inferences about an individual's behavior on higher-level personality traits rather than lower-level contextual factors (i.e., the correspondence bias) when the behavior is expected in the more distant future (Nussbaum, Trope, & Liberman, 2003; Rim, Uleman, & Trope, 2009; see also Henderson et al., 2006 for similar effects of spatial distance). These findings demonstrate that people are more likely to attribute behavior to abstract, trait-like representations than situation-specific contextual factors when construing events in higher-level terms. Inferring traits, however, represents only one step of the person perception process; the current studies are the first to examine the impact of distance-dependent construals on how people aggregate that trait information to form evaluations of others. The psychological distance of a target, and its corresponding construal, not only impact whether we are likely to make trait inferences but also how those traits are then aggregated to form general impressions.

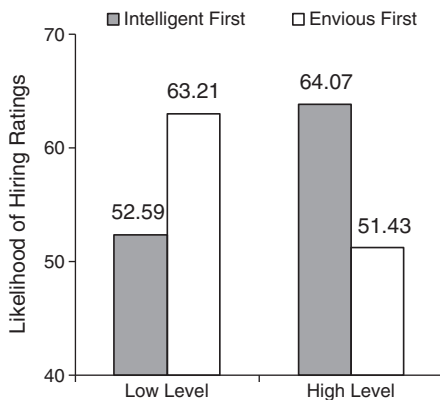


Fig. 2. Likelihood of hiring ratings as a function of order and construal level (Study 1b).

Note that, although related, the mechanisms by which higher-level construals influence trait inference and trait aggregation phenomena such as the primacy effect are distinct. Higher-level construals enhance trait inference by promoting the tendency to recognize a single behavior as representative of a broader class of actions or dispositional characteristics. Thus, higher-level construals impact trait inference by changing the manner in which behaviors are categorized. The primacy effect, however, does not necessarily entail a similar categorization process. Instead, construing a person in higher-level terms entails setting expectations, based on accessible schemas, which further organize incoming information. Higher-level construals promote a readiness to see structure in social information thus leading to coherent representations of people. Construing a person in lower-level terms, on the other hand, implies forming more ad hoc, less coherent representations. The coherence and structure of person representations play a critical role on how people evaluate others, particularly when traits are learned in sequence, as in the present studies. The imposition of structure by higher-level construals promotes a primacy effect, whereby the first trait processed greatly impacts one's final evaluation of a target other. In contrast, the lack of structure by lower-level construals promotes a recency effect, whereby the last trait greatly impacts one's final evaluation.

Our findings indicate that the level of construal may be a critical factor underlying the effect of trait order on impression formation. Distancing objects on any dimension of psychological distance should thus correspondingly enhance the primacy effect. For example, the primacy effect should be more prominent when forming impressions of people from a foreign versus one's own country, of out-group versus in-group members, and of those one is unlikely versus likely to meet. Beyond distance, any factor that promotes higher-level construals should promote the primacy effect, including visual perspective (Libby, Shaeffer, & Eibach, 2009), fluency (Alter & Oppenheimer, 2009), and mood (Gasper & Clore, 2002). Thus, the psychological context, to the extent that it impacts construal level, may be as important as who the target person is in impression formation.

References

- Alter, A. L., & Oppenheimer, D. M. (2009). Uniting the tribes of fluency to form a metacognitive nation. *Personality and Social Psychology Review*, 13, 219–235.
- Anderson, N. H. (1965). Primacy effects in personality impression formation using a generalized order effect paradigm. *Journal of Personality and Social Psychology*, 2, 1–9.
- Anderson, N. H. (1981). *Foundation of information integration theory*. New York: Academic Press.
- Anderson, N. H., & Jacobson, A. (1965). Effects of stimulus inconsistency and discounting instructions in personality impression formation. *Journal of Personality and Social Psychology*, 2, 531–539.
- Asch, S. E. (1946). Forming impressions of personality. *Journal of Abnormal and Social Psychology*, 41, 258–290.
- Brewer, M. B., Feinstein, A. S. H., & Harsty, A. S. (1999). Dual processes in the cognitive representation of persons and social categories. In S. Chaiken, & Y. Trope (Eds.), *Dual process theories in social psychology* (pp. 255–270). New York: Guilford.
- Dreben, E. K., Fiske, S. T., & Hastie, R. (1979). Independence of item and evaluation information: Impression and recall order effects in behavior-based impression formation. *Journal of Personality and Social Psychology*, 37, 1758–1768.
- Edwards, J. A., & Weary, G. (1993). Depression and the impression-formation continuum: Piecemeal processing despite the availability of category information. *Journal of Personality and Social Psychology*, 64, 636–645.
- Ekstrom, R. B., French, J. W., Harman, H. H., & Dermen, D. (1976). *Kit of factor-referenced cognitive tests*. Princeton, NJ: Educational Testing Service.
- Fiske, S. T., Cuddy, A. J. C., & Glick, P. (2007). Universal dimensions of social cognition: Warmth and competence. *Trends in Cognitive Sciences*, 11, 77–83.
- Förster, J., Friedman, R. S., & Liberman, N. (2004). Temporal construal effects on abstract and concrete thinking: Consequences for insight and creative cognition. *Journal of Personality and Social Psychology*, 87, 177–189.
- Freitas, A. L., Gollwitzer, P. M., & Trope, Y. (2004). The influence of abstract and concrete mindsets on anticipating and guiding others' self-regulatory efforts. *Journal of Experimental Social Psychology*, 40, 739–752.
- Gasper, K., & Clore, G. L. (2002). Attending to the big picture: Mood and global vs. local processing of visual information. *Psychological Science*, 13, 34–40.
- Hamilton, D. L., & Zanna, M. P. (1974). Context effects in impression formation: Changes in connotative meaning. *Journal of Personality and Social Psychology*, 29, 649–654.
- Henderson, M. D., Fujita, K., Trope, Y., & Liberman, N. (2006). Transcending the “here”: The effect of spatial distance on social judgment. *Journal of Personality and Social Psychology*, 91, 845–856.

- Hendrick, C., & Costantini, A. F. (1970). Effects of varying trait inconsistency and response requirements on the primacy effect in impression formation. *Journal of Personality and Social Psychology*, *15*, 158–164.
- Libby, L. K., Shaeffer, E. M., & Eibach, R. P. (2009). Seeing meaning in action: A bidirectional link between visual imagery perspective and action identification level. *Journal of Experimental Psychology: General*, *138*, 503–516.
- Nussbaum, S., Trope, Y., & Liberman, N. (2003). Creeping dispositionism: The temporal dynamics of behavior prediction. *Journal of Personality and Social Psychology*, *84*, 485–497.
- Rim, S., Uleman, J. S., & Trope, Y. (2009). Spontaneous trait inference and construal level theory: Psychological distance increases nonconscious trait thinking. *Journal of Experimental Social Psychology*, *45*, 1088–1097.
- Schul, Y. (1983). Integration and abstraction in impression formation. *Journal of Personality and Social Psychology*, *44*, 45–54.
- Stewart, R. H. (1965). Effect of continuous responding on the order effect in personality impression formation. *Journal of Personality and Social Psychology*, *1*, 161–165.
- Taylor, S. E., Crocker, J., & D'Agostino, J. (1978). Schematic bases of social problem solving. *Personality and Social Psychology Bulletin*, *4*, 447–451.
- Trope, Y., & Liberman, N. (2010). Construal level theory of psychological distance. *Psychological Review*, *117*, 440–463.
- Wakslak, C. J., Trope, Y., Liberman, N., & Alony, R. (2006). Seeing the forest when the entry is unlikely: Probability and the mental representation of events. *Journal of Experimental Psychology: General*, *135*, 641–653.
- White, J. D., & Carlston, D. E. (1983). Consequences of schemata for attention, impressions, and recall in complex social interactions. *Journal of Personality and Social Psychology*, *45*, 538–549.