

## THE RELATION OF THEORY AND ANALYSIS IN EXPLANATIONS OF BELIEF SALIENCE: CONDITIONING, DISPLACEMENT, AND CONSTRUCTIVIST ACCOUNTS

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**I**N an earlier report, Delia et al. commented on the limitations of Cronen and Conville's operant conditioning analysis of the role of belief salience in attitude formation and change, and suggested in a footnote that an alternative chi-square analysis of Cronen and Conville's own data failed to support the conditioning explanation.<sup>1</sup> Cronen and Conville have recently defended their theoretic analysis and procedures.<sup>2</sup> Toward the end of clarifying the substantive issues surrounding our disagreement over how to segment a chi-square table, we offer several comments.

As Cronen and Conville make clear in their reply, since the chi-square test is so sensitive to the way the data are cast, the choice of categories must be consistent with one's theoretic rationale and hypotheses. This criterion is particularly important to the present dispute because Cronen and Conville's reply evinces a fundamental shift in their

position. Cronen and Conville's original 1973 article placed nearly exclusive reliance on operant conditioning as the mechanism underlying belief salience. By 1974 Cronen had moved to suggesting that while conditioning was still centrally important, the effects of conditioning could be overridden by conscious cognitive operations.<sup>3</sup> And in 1975 Cronen and Conville abandoned conditioning entirely; everything is now a cognitive-process story (though some processes are "higher-level," some "lower-level"). While acknowledging this change in position, Cronen and Conville maintain that our criticisms of their 1973 statistical procedures are unjustified. Briefly put, our claim is this: the 1973 statistical procedures are consistent with neither the 1973 conditioning rationale nor with Cronen and Conville's 1975 alternative.

Cronen and Conville's 1973 study investigated the effects of adverse situations (designed to induce frustration and mild anger) upon salient beliefs about high-involvement and low-involvement concepts ("Love" and "Rabbits," respectively). They hypothesized that under such conditions "more individuals will show an increase in the number of salient negative beliefs for the low involvement topic than for the high involvement topic."<sup>4</sup>

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<sup>1</sup> Vernon E. Cronen and Richard L. Conville, "Belief Salience, Summation Theory, and the Attitude Construct," *SM*, 40 (1973), 17-26; Jesse G. Delia, Walter H. Crockett, Allan N. Press, and Daniel J. O'Keefe, "The Dependency of Interpersonal Evaluations on Context-Relevant Beliefs About the Other," *SM*, 42 (1975), 10-19.

<sup>2</sup> Vernon E. Cronen and Richard L. Conville, "Belief Salience and Interpersonal Evaluations: A Reply to Delia et al.," *SM*, 42 (1975), 298-301.

<sup>3</sup> Vernon E. Cronen, "Task Requirements, Belief Salience, and Attitude: Beyond the Hullian Model," *Today's Speech*, 22 No 2 (1974), 11-17.

<sup>4</sup> Cronen and Conville, "Belief Salience, Sum-

The basis for this hypothesis was an operant conditioning account of belief salience.<sup>5</sup> Subjects faced with an adverse (affectively negative) situation were expected to produce more negative beliefs because of the conditioned associations purportedly underlying belief salience; subjects should show "acquiescence to the surrounding negative stimuli."<sup>6</sup> This, of course, should be true regardless of the level of involvement. To be sure, one might expect more changes with low-involvement concepts than with high-involvement concepts, but in both cases (by the conditioning rationale) negative beliefs should be added.

Thus, as we argued earlier, the appropriate chi-square test of the conditioning account is not Cronen and Conville's original chi-square (in which "more negative beliefs," "no change," and "fewer negative beliefs" are distinct alternatives), but our suggested chi-square ("more negative beliefs" vs. "no change or fewer negative beliefs"), since only our suggested partitioning pits subjects opposed to the conditioning rationale (i.e., subjects who deleted or showed no change in negative beliefs) against subjects supporting the conditioning account (i.e., those adding negative beliefs). This chi-square is, as we earlier reported, non-significant—indicating the inadequacy of the conditioning explanation.<sup>7</sup>

mation Theory, and the Attitude Construct," p. 20.

<sup>5</sup> The conditioning rationale can be discerned in the discussion of the work of Skinner, Green-spoon, and Taffel cited in Cronen and Conville's "Belief Salience, Summation Theory, and the Attitude Construct," pp. 24-25, n. 28, 31, and 32.

<sup>6</sup> *Ibid.*, p. 20, n. 19.

<sup>7</sup> The chi-square is 2.42 corrected for continuity ( $p > .10$ ). Indeed, if the conditioning rationale is separated from the hypotheses concerning the effects of involvement (by collapsing the chi-square table across levels of involvement, still combining the "no change" and "fewer negative beliefs" categories), a rather more direct test of Cronen and Conville's original conditioning explanation is possible. Here

In sum, Cronen and Conville's 1973 procedures did not give a direct test of the conditioning explanation they advanced, just because the partitioning of the chi-square data was inconsistent with the conditioning rationale. When the data are cast in a way that appropriately tests the conditioning explanation, that explanation is seen to be faulty. And that was our original claim: Cronen and Conville's analysis of the 1973 data led them to present the conditioning explanation as a viable account of the processes underlying belief salience, when in fact their data do not support such a conclusion.

But Cronen and Conville apparently now admit (for whatever reasons) the inadequacy of a conditioning explanation of belief salience.<sup>8</sup> They do suggest, however, that our emphasis on "higher-level" cognitive processes (tacit judgments of belief relevance) is somewhat misplaced, and that "lower-level" cognitive processes (e.g., displacement of aggression) are also important. Their current claim is that the 1973 data provide "direct evidence for the operation of a very low level cognitive process—displacement of aggression—in belief salience."<sup>9</sup> Specifically, they note that their Wilcoxon  $T$  test showed that for the uninvolved topic the increase in salient negative beliefs in the experimental (adverse situation) condition as opposed to the control condition was significant;

the chi-square is highly significant, with results directly opposed to the conditioning prediction (53 vs. 13, chi-square corrected for continuity,  $p < .001$ ).

<sup>8</sup> Notice that while Cronen and Conville were originally prepared to consider the verbal conditioning literature as support for their position, they now conveniently overlook Brewer's cognitive reanalysis of that literature which we cited in our original paper (Della, et al., p. 19, n. 27); see William F. Brewer, "There is No Convincing Evidence for Classical or Operant Conditioning in Adult Humans," in *Cognition and the Symbolic Processes*, ed. Walter B. Weimer and David S. Palermo (Hillsdale, N. J.: Erlbaum, 1974), pp. 1-42.

<sup>9</sup> Cronen and Conville, "Reply," p. 300.

the Wilcoxon *T* for the involving topic was not significant.

But this new displacement explanation is open to the same criticisms made of the conditioning account. If displacement of aggression is occurring, then for both the high and low involvement concepts, subjects should show an increase in negative beliefs; this increase might be more marked in the low-involvement condition, but in both cases (by the displacement rationale) salient negative beliefs should increase. But the Wilcoxon *T* evidence for displacement is mixed (since it was not the case that for both high- and low-involvement concepts salient negative beliefs increased). And again, the appropriate casting of the chi-square is one that pits subjects favoring the displacement account ("more negative beliefs") against subjects opposed to the displacement explanation ("fewer negative beliefs" and "no change"). Thus the evidence for displacement in Cronen and Conville's 1973 study is no better than the evidence for conditioning, just because the two accounts do not here make different predictions (both processes should produce the same effects, viz., increased negative beliefs regardless of level of involvement).

Given the inadequacy of displacement and conditioning accounts, we still prefer our own constructivist analysis which stresses the role of context-relevant beliefs in understanding action. While Cronen and Conville imply that utilization of the displacement explanation of the frustration and aggression effects can be successful while avoiding reference to context-relevant beliefs, Heckhausen and Weiner note that "there is a growing literature which suggests that hostile feelings and aggressive behavior are strongly affected by cognitive processes," and especially conclude that "cognitions [beliefs] concerning the

cause of frustration and beliefs about one's internal state mediate between frustrating events and the likelihood of aggressive expression."<sup>10</sup> Hence it seems that something like our emphasis on context-relevant beliefs will be required if an adequate explanatory framework is to be obtained.

Our own constructivist orientation explains belief salience in terms of tacit (nonconscious) judgments of belief relevance.<sup>11</sup> Within this view situational forces thus are not ignored, but are conceived as related to action only as constructed (albeit often tacitly) by individuals; "situational forces" are not conceived as producing any "direct pressure" of the environment upon the individual, but rather are conceptualized as operating through a system of cognitive processes. In the study in which we initially commented upon Cronen and Conville's research, in fact, we showed that individuals with more complex cognitive systems in the interpersonal domain were less influenced by the contextually "salient" beliefs. In other work, we and our coworkers have shown that various situational pressures (stress, interpersonal involvement, general autonomic arousal) may lead individuals to utilize less advanced cognitive operations than those of which they are cap-

<sup>10</sup> Heinz Heckhausen and Bernard Weiner, "The Emergence of a Cognitive Psychology of Motivation," in *New Horizons in Psychology* ed. Peter C. Dodwell (Baltimore: Penguin, 1972), II, 131.

<sup>11</sup> Cronen and Conville indict us, it will be recalled, for concentrating upon "higher" cognitive processes to the exclusion of "lower" cognitive processes. It is unclear, to us, however, exactly what Cronen and Conville see to be the distinguishing character of "higher" and "lower" cognitive processes. By "tacit judgments of belief relevance" we referred to a non-conscious cognitive process, something quite low in any hierarchy in which systematic conscious reasoning and weighing of alternatives and "higher order" processes. Our aim in theory development should be to find a single conceptual position that is comprehensive enough to encompass both deliberative and nonconscious cognitive processes. Our constructivist framework is, we suggest, just such a position.

able.<sup>12</sup> The advantage of the constructivist view, hence, is that it affords a perspective within which the role of situational factors, organismic characteristics, and higher and lower levels of cognitive functioning may be interrelated within a single conceptual framework.

Likewise, contrary to Cronen and Conville's suggestion, the constructivist analysis affords a perspective from which the problem of predicting belief relevancy can be approached. Cronen and Conville attack this problem through Miller, Galanter, and Pribram's cybernetic TOTE analysis.<sup>13</sup> But the TOTE framework only tells one that beliefs are checked (for relevancy) against some criterion. It does not provide any clue as

to what the criterion will be in any given situation, nor any clue as to which beliefs will pass and which will fail the relevancy test. By contrast, our constructivist view approaches this problem through an analysis of the content and organization of persons' systems of beliefs. In our initial study we drew a crude distinction between work-related and social-related beliefs about another person; while this distinction obviously is inadequate to predict perfectly which beliefs will be relevant in some particular situation, it at least gives one some clue about which beliefs will likely be deemed relevant.

Further, the allocation of different sets of beliefs to work and social contexts implies a more general approach to the problem of determining belief relevancy; presumably there are other contexts understood within relatively delimited sets of belief allocations. While some of these sets of beliefs, like those applicable to the work and social domains, may be generally shared by members of a culture, others should reflect the individual's idiosyncratic segmentation of his social world. Thus our analysis points to a general solution to the problem of determining belief relevancy through the development of procedures for ascertaining the individual's organization of his belief allocations in terms of varying domains. We thus continue to believe that the recognition that interpersonal evaluations and behavioral intentions are largely a function of whatever beliefs an individual implicitly judges to be relevant to a particular action context is an advance beyond conceptions relying only upon some generalized conception of affect or attitude as the precursor to action.

<sup>12</sup> The disorganizing effect of such factors as involvement, interpersonal similarity, cognitive sets, situational stress, and autonomic arousal on cognition is given special emphasis within Weimerian theory; the effects of some of these factors upon interpersonal cognition have been examined within our own framework; see Paul S. Rosenkrantz and Walter H. Crockett, "Some Factors Influencing the Assimilation of Disparate Information in Impression Formation," *Journal of Personality and Social Psychology*, 2 (1965), 397-402; Bert Meltzer, Walter H. Crockett, and Paul S. Rosenkrantz, "Cognitive Complexity, Value Congruity, and the Integration of Potentially Incompatible Information in Impressions of Others," *Journal of Personality and Social Psychology*, 4 (1966), 338-43; Dvora Rosenbach, Walter H. Crockett, and Seymour Wapner, "Developmental Level, Emotional Involvement, and the Resolution of Inconsistency in Impression Formation," *Developmental Psychology*, 8 (1973), 120-30; Jesse G. Delia, "Dialects and the Effects of Stereotypes on Interpersonal Attraction and Cognitive Processes in Impression Formation," *QJS*, 58 (1972), 285-97; and Allan N. Press, Walter H. Crockett, and Jesse G. Delia, "The Effects of Cognitive Complexity and of the Perceiver's Set Upon the Organization of Impressions," *Journal of Personality and Social Psychology*, 32 (1975), 865-72.

<sup>13</sup> Cronen and Conville, "Belief Salience and Interpersonal Evaluations: A Reply to Delia et al.," p. 300 n. 9; see George A. Miller, Eugene Galanter, and Karl H. Pribram, *Plans and the Structure of Behavior* (New York: Holt, Rinehart and Winston, 1960).

