

SUPPORTING SINGLE CAUSE INFERENCES WHEN MULTIPLE CAUSATION IS IMPLIED

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Participants drew causal inferences about interpersonal and achievement events, and ranked the information aspects on their importance in reaching the inference. High information was ranked most important for drawing a stimulus inference, low distinctiveness information was most important for drawing a person inference, and low consistency information was most important for drawing a circumstance inference.

Keywords: single cause inferences, multiple causation, implications.

Students of causal attribution typically focus on three possible causes of an event – the person (P) acting, the stimulus (S) the person is responding to, and the particular circumstances (C) present at the time. Individuals determine the causes by examining information on whether all or no other persons act the same way (consensus), whether all or no other similar stimuli are responded to in the same way (distinctiveness), and whether the person has or has not responded in the same way to the stimulus in the past (consistency). Certain combinations of these information categories lead to either a P, S, or C causal attribution. This study examines how individuals deal with information that leads to at least two of P, S, or C being possible causes for the event.

Orvis et al. (1975) note that for a given event (e.g., “George criticized Tom’s tennis”) P can be the cause only if distinctiveness is low, S only if consensus is high, and C only if consistency is low. If only one of these is present, participants draw consistently the appropriate single cause inference (e.g., McArthur, 1972, 1976; Orvis et al., 1975; Ruble & Feldman, 1976). However, if more than one of these is present, so that the subject knows, for example, that “George criticizes everyone’s tennis” (low distinctiveness) and also that “Everyone criticizes Tom’s tennis” (high consensus), Orvis et al. predict that the participant will consider the implications of all of the information and draw a multiple cause inference, in this case PS. However, they found that (except for PS) participants rarely drew multiple cause inferences that were components of the multiple cause (e.g., from information predicting SC, participants drew S or C). Participants appear to use information differentially to draw an inference following from only part of the information.

This study explores the participant’s behavior after he has reached a single cause inference when other information implies another cause. It is hypothesized that participants will subjectively emphasize the importance in reaching an inference of the information that implies it. The emphasis will follow from the unique inferences implied

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by low distinctiveness, high consensus, and low consistency; that is, participants will emphasize the importance of these information categories in drawing, respectively, a F, S, or C inference.

METHOD

PARTICIPANTS

The participants were 160 undergraduates in introductory psychology who participated voluntarily for extra course credit.

MATERIALS AND PROCEDURE

The materials and procedure were adapted from Orvis et al. (1975). Sixteen single-sentence event statements (eight interpersonal, eight achievement) were devised. Each event statement was followed by either high or low consensus, distinctiveness, or consistency information about that event. Each participant received all 16 event statements. Across participants the information associated with each event statement was randomly varied. Each participant received the eight possible full information sets represented twice, once each for interpersonal and achievement events. The order of consensus, distinctiveness, and consistency information was varied randomly across event statements and information values (Ruble & Feldman, 1976).

After each event statement, the participant was asked to infer its cause, by choosing from four alternatives. Responses were coded following the format used by McArthur (1972) and Orvis et al. (1975); the first three alternatives were coded, respectively, as F, S, or C, and the fourth ("Other-Specify") was coded as PS, PC, SC, or PSC, depending on which combination of the first three the participant indicated.

Finally, appearing on the same page was the instruction "Rank order (with 1, 2, and 3) the information as to how important each part was in reaching your decision on what caused the event."

Participants were given the booklets and the experimenter delivered instructions orally, using a sample event and information to demonstrate the proper procedure. The experimenter provided an example of each of the seven possible inferences (F, S, C, PS, PC, SC, PSC). After the experiment, the participants were debriefed as to its purpose.

RESULTS

Percentages of inferences were averaged across interpersonal and achievement events, since there were no significant differences between them. The majority of participants gave the predicted P, S, or C inference when the information implied only one of these. Seventy-five percent of the participants gave a P inference to the appropriate information; of these, 53% ranked distinctiveness information as most important in reaching the inference. Likewise, 75% gave the predicted S inference; of these, 57% ranked consensus information as most important. In addition, 57% gave the predicted C inference, of which 55% ranked consistency information as most important.

Table 1 is a contingency table of inferences and information ranked most important for those information categories leading to P and/or S and/or C inferences.

When PS is predicted, more participants give this inference (33%) than give single cause inferences. However, only a small percentage of participants gave predicted PC (12%), SC (15%), and PSC (8%) inferences. Table 1 shows that in each case that participants gave a single cause inference, they supported P, S, or C inferences by ranking distinctiveness, consensus and consistency information as respectively most important in drawing the inference.

DISCUSSION

The hypotheses were supported. Participants who gave F, S, or C inferences ranked, respectively, distinctiveness, consensus, and consistency information as being most important in drawing the inference both when F, S, or C were the only inferences predicted, and when some combination of P, S, and/or C was predicted. In general, the data suggest that after an inference is drawn, participants

TABLE 1
CONTINGENCY TABLES OF INFERENCE AND INFORMATION RANKED MOST IMPORTANT

Information distinctiveness	Inference	Consensus	Consistency	Total
HLH (PS)				
P	12	48	34	24
S	48	21	31	29
LLL (PC)				
P	25	45	30	37
C	27	10	63	29
HHL (SC)				
S	42	24	34	26
C	17	24	59	20
HLL, LHH (PSC)				
P	17	53	30	25
S	49	30	21	25
C	18	30	52	22

Note: Letters at top of subtables are the values (H = high, L = low) of consensus, distinctiveness, and consistency information, respectively. Predicted inference (P = Person, S = Stimulus, C = Circumstance) is in parentheses. Table interiors contain conditional row probabilities [P (information ranked first inference)]. Totals are P (inference). Do not view the information categories in the same objective equivalence in importance as they are initially presented.

The more interesting aspect of these results is the participant's response when the information predicts that more than one of F, S, or C is the cause of the event. The present results closely replicate those of Orvis et al. (1975) in the low incidence of all multiple cause inferences except PS. These results do not provide information on why there is a low incidence of multiple cause inferences; it is possible that participants in general have a priori causal theories that favor a single cause, and multiple causes do not occur because the individual is not entertaining the possibility of a multiple cause. However, by emphasizing post hoc the importance of information that clearly supports the inference they draw, participants are consistent in supporting their choice of a single cause inference, when information is also present supporting another cause.

This study did not use motivation-increasing instructions, which Kassin and Hochreich (1977) have shown to increase the number of multiple cause attributions. However, Kelley's (1972, 1973) covariation and discounting principles may also explain why the individual may not choose a multiple cause inference. The covariation principle states that a possible cause is a factor with which an effect uniquely covaries. The discounting principle states that a possible cause can be discounted if other plausible causes are also present. The three levels of information – low distinctiveness, high consensus, and low consistency – give covariation information on, respectively, P, S, and C, and also discount other possible causes. For example, for the event “George criticizes Tom’s tennis”, low distinctiveness information (George criticizes everyone’s tennis) identifies George (P) as a possible cause, but also discounts Tom’s tennis (S) as a cause since George responds similarly to everyone’s tennis. On the other hand, high consensus information (Everyone criticizes Tom’s tennis) identifies Tom’s tennis (S) as a possible cause but discounts George (P) as a cause since everyone responds similarly to Tom’s tennis. To reach a PS inference, the individual may experience some conflict, since information suggesting P or S as a cause also discounts the possibility of the other being a cause. This suggestion would require further study.

As a final note, recent researchers (Nisbett & Wilson, 1977) have suggested that individuals may have little direct access to higher cognitive process, and that in certain situations they are unaware of the stimulus influencing a response or of the relationship between a stimulus and a response. The present study does not contradict these assertions, since consistently supporting a decision is not necessarily higher cognitive process. However, to the extent that a priori causal theories influence what information is processed, the salience of both the inference and the possible causes, and the clear juxtaposition of their relationship, could lead to correct reports about information processing in causal inference.

REFERENCES

- Kassin, S., & Hochreich, D. (1977). Instructional set: A neglected variable in attribution research? *Personality and Social Psychology Bulletin*, 3, 620-623.
- Kelley, H. H. (1972). Attribution theory in social psychology. In E. E. Jones (Ed.), *Attribution: Perceiving the causes of behavior*. Morristown, NJ: General Learning Press.
- Kelley, H. H. (1973). The processes of causal attribution. *American Psychologist*, 28, 107-128.
- McArthur, L. (1972). The how and what of why: Some determinants and consequences of causal attribution. *Journal of Personality and Social Psychology*, 22, 171-193.
- McArthur, L. (1976). The lesser influence of consensus than distinctiveness information on causal attributions: A test of the person-thing hypothesis. *Journal of Personality and Social Psychology*, 33, 733-742.
- Nisbett, R., & Wilson, T. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, 84, 231-259.
- Orvis, B., Cunningham, J., & Kelley, H. H. (1975). A closer examination of causal inference: The roles of consensus, distinctiveness, and consistency information. *Journal of Personality and Social Psychology*, 32, 605-616.
- Ruble, D. N., & Feldman, N. S. (1976). Order of consensus, distinctiveness, and consistency information and causal attributions. *Journal of Personality and Social Psychology*, 34, 930-937.