
Attributions for Serious Illness: Are Controllability, Responsibility, and Blame Different Constructs?

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Abstract

We examined whether judgments of controllability, responsibility, and blame are distinct and sequential psychological constructs. Undergraduates read a brief description of a male with AIDS or lung cancer and rated his controllability, responsibility, and blame in relation to the illness. Participants considered him to be more responsible than blameworthy for his illness, but more in control than responsible for becoming ill. Although measures of participants' behavioural intentions, emotions, and social attitudes were correlated with controllability ratings, such associations were stronger for responsibility ratings and even stronger for blame ratings. Structural equation models provided additional evidence for an attributional hierarchy in which blame is the final step. Nonetheless, emotional and behavioural responses were more completely explained when attributions were considered jointly with personal and social attitudes.

Résumé

Nous avons tenté de savoir si les jugements relatifs à la capacité de contrôle, à la responsabilité et au blâme sont des construits psychologiques distincts et séquentiels. Des étudiants du premier cycle ont lu un court texte décrivant un homme atteint du sida ou du cancer du poumon et ont coté sa capacité de contrôle, sa responsabilité et le niveau de blâme par rapport à la maladie. Les participants considéraient que cet homme était plus responsable que coupable de sa maladie, mais qu'il avait une plus grande capacité de contrôle qu'il n'était responsable d'avoir contracté la maladie. Même si les mesures des intentions comportementales des participants, de leurs émotions et de leurs attitudes sociales étaient corrélées avec les notations accordées à la capacité de contrôle, de telles corrélations étaient plus marquées dans le cas des notations accordées à la responsabilité, et encore davantage à la notation du blâme. Les modèles d'équation structurelle ont fourni des preuves supplémentaires indiquant la présence d'une hiérarchie sur le plan de l'attribution, dont le blâme constituait la dernière étape. Néanmoins, les réponses émotionnelles et comportementales

étaient expliquées de manière plus complète lorsque les attributions et les attitudes sociales et personnelles étaient prises en compte simultanément.

Consider the following news story: "An aboriginal man rammed a police cruiser with his pickup truck. A high-speed chase through a northern Canadian city ensued. It ended with a police officer shooting and killing the perpetrator." People who hear or read the story typically try to understand what happened and whether the officer acted properly. Their personal theories of justice guide their analysis and interpretation of the events leading up to the shooting (Weiner, 1996). Because they are aware of the outcome, their attributions about the behaviour of both men are made in hindsight (Alicke & Davis, 1989).

When observers are asked to respond to events with negative outcomes (e.g., the shooting described above), their attributions about the event typically influence their interpretation of what happened and the emotional and behavioural responses that follow (Heider, 1958; Kelley & Michela, 1980). Judgments may follow a specific hierarchical pattern of assigning *controllability*, *responsibility*, or *blame* to the person associated with the negative event (i.e., the *agent*). Indeed, decision-stage models (e.g., Heider, 1958; Shaver, 1985; Weiner, 1995) suggest that attributions move from relatively objective judgments about association and cause to relatively subjective judgments stemming from moral values and beliefs about the agent's knowledge and intentions.

In the preceding example, observers may note that the police officer pulled the trigger on purpose, ultimately causing the other man's death. In other words, the officer could indeed control whether the victim died. This judgement of causal controllability is thought to indicate a relatively simple association between the agent and the event (Jaspars, Hewstone, & Fincham, 1983), which can be made if the agent was

clearly involved in the “final step” of the action that resulted in the negative outcome.

Assigning responsibility for the event is more complex. Judgments of responsibility are said to reflect the extent to which agents are held accountable for the outcomes of their actions (Fincham & Jaspars, 1980), taking into account perceived intentions as well as the circumstances (Ferguson & Rule, 1983; Heider, 1958). Although the police officer may have intended to kill the other man, the officer’s responsibility could be mitigated by the fact that he felt his life was threatened.

Shaver (1985) and Weiner (1995) believe that judgments of controllability are distinct from but a precondition for judgments of responsibility. For observers to make a judgement of responsibility, they must first believe that agents had causal controllability. Observers must also believe that agents knew about the potential consequences of their actions, that they intended to act, that they were acting without coercion, and that they were capable of understanding right from wrong. Hence, an attribution of moral responsibility is a social judgement based on personal ethical standards against which the agent’s behaviour is measured.

The final step in the sequence is considered to be the assignment of blame, which requires presuppositions of controllability and responsibility. Assigning blame is a function of what observers believe – based on their personal values – the officer “should” have done (Harvey & Rule, 1978; Heider, 1958; McGraw, 1987; Rule & Ferguson, 1984). For example, the public may be aware of racial tensions in the city and blame the officer because they believe that the shooting was rooted in prejudice rather than issues of personal safety. Consideration of these extra-situational factors makes the specific characteristics of the context in which the shooting occurred less salient. Stronger judgments of blame lead to calls for harsher punishment of the officer (Critchlow, 1985; Kroger & Wood, 1998).

Blame and judgments of responsibility are both psychological activities involving interpretations of the event, but blame also takes into account relevant excuses or justifications for the event. Such justifications can mitigate levels of blame. For example, a woman who killed her husband while he was sleeping is almost definitely going to be held responsible for his death, but she may be blamed less (or not at all) if she explains that her husband sexually abused her and her children. If observers do not accept the justifications, however, attributions of blame can become stronger. Assigning blame after all excuses have been considered is thought to determine the resulting response

(i.e., behaviours rather than cognitions). In sum, the sequence of judgments leading to a response is: causal controllability → responsibility → blame → behavioural response.

Controllability, Responsibility, and Blame in Attribution Research

Despite the semantic differences and theoretical distinctions, researchers (Fincham & Jaspars, 1980; Harvey & Rule, 1978; Shaver, 1996; Shaver & Drown, 1986; Shultz & Schleifer, 1983) have noted that controllability, responsibility, and blame are often treated interchangeably. For example, in one case (Schlenker, Britt, Pennington, Murphy, & Doherty, 1994), causality, controllability, answerability, and moral accountability were incorporated into a single construct referred to as responsibility. In other cases, responsibility was assessed with items that measured controllability and blame (Zucker & Weiner, 1993), or controllability was assessed with items that measured controllability, responsibility, and personal fault (Reisenzen, 1986; Schmidt & Weiner, 1988). In some circumstances all three constructs (i.e., controllability, responsibility, and blame) have been equated (Tennen, Affleck, & Gershman, 1986).

Even when researchers distinguish the judgments, evidence for the proposed sequence of controllability, responsibility, and blame is equivocal. In one study (Bell, Feraios, & Bryan, 1990), participants were equally likely to attribute responsibility for HIV-infection as for drug overdose, but they reserved blame for those who overdosed. In another study (Weiner, Perry, & Magnusson, 1988), ratings of responsibility and blame were equal for people with physical stigmas, but blame ratings exceeded responsibility ratings for individuals with “morally reprehensible” diseases (e.g., people with HIV/AIDS, child abusers, and injection-drug users). Critchlow (1985) found that ratings of blame and responsibility were equivalent for serious or criminal offences (e.g., vandalism), yet blame ratings were considerably lower for socially disapproved but noncriminal offences (e.g., verbal interruption). Finally, in two studies (Graham, Weiner, & Zucker, 1997; Shultz, Schleifer, & Altman, 1981), judgments of responsibility and blame were associated with intentions to punish, but judgments of controllability were not.

Noncognitive Influences on Blame Attributions

To summarize, the empirical literature supports the proposal that judgments of controllability do not have direct associations with behavioural intentions. Rather, such intentions appear to be influenced more by judgments of responsibility and blame. Evidence

for distinctions between responsibility and blame is less clear. Indeed, judgments of blame may be greater than, equal to, or less than ratings of responsibility, depending on the situation. Such variation could stem from the severity of the consequences, as Shaver (1985) suggests. Alternatively, prior beliefs, values, and attitudes may influence judgments of blame, which is consistent with the proposal that attributions are determined more subjectively and less objectively as reasoning about negative events proceeds.

Alicke (2000) describes explicitly how attributions become progressively less rational. He agrees that observers proceed consciously through the attribution stages in a more-or-less rational manner, but he also believes that observers unconsciously make decisions about the blameworthiness of the agent based on their pre-existing attitudes and biases. Observers who are disposed to blaming the agent could seek information retrospectively or exaggerate evidence to confirm their hypotheses about the event, which could lead them to make stronger attributions after the fact. Hence, observers' morals and values (e.g., prejudices, belief in a just world) may play a key role in influencing judgments of blame. For example, two observers of the shooting scenario described in the opening paragraph may make similar judgments of responsibility for the event and agree on the severity of the consequences. Nonetheless, they may differ in the degree to which they blame the police officer if one is more antiracist in orientation and believes that the shooting was motivated by systemic racism in the police force.

The idea that noncognitive factors directly influence blame, the key motivator of behavioural intentions following a negative event, has considerable implications for understanding clinical and legal decisions. For example, surgeons with divergent opinions on alcohol consumption may come to vastly different conclusions regarding liver transplants for patients who have been moderate or heavy drinkers. Similarly, jury members who hold strong pro- or antifeminist attitudes would likely ascribe similar levels of responsibility to an abused woman who killed her husband, yet they could have considerably different opinions about appropriate sentencing and whether she is blameworthy.

The Present Investigation

The present study was motivated by a lack of consensus regarding distinctions between controllability, responsibility, and blame. We examined whether these judgments are differentiated systematically in responses to negative events. We also tested whether controllability, responsibility, and blame judgments follow the sequence hypothesized by decision-stage

models. Finally, we considered the role of pre-existing personal attitudes.

We compared judgments of controllability, responsibility, and blame for males diagnosed with AIDS and lung cancer. Both diseases are serious illnesses that typically have a perceived behavioural component. Compared to people living with other serious illnesses, people with AIDS suffer additional stigma because of associations with homosexuality or drug use. In the early days of the AIDS epidemic, many people were unwilling to have social contact with people with AIDS (Crawford, Humfleet, Ribordy, Ho, & Vickers, 1991; Strasser & Damrosch, 1992), who were considered to be more responsible and blameworthy for their illness compared to people with cancer, heart disease, diabetes, or leukemia (Connors & Heaven, 1995; Crawford, 1996; Levin & Chapman, 1993; St. Lawrence, Husfeldt, Kelly, Hood, & Smith, 1990). Although attitudes toward people with AIDS and HIV have improved in recent years (Herek et al., 1998), attitudes toward people who suffer from the consequences of cigarette smoking have become more negative (Katz, 1997). Hence, it was unclear whether attributions would differ between diseases.

Nonetheless, we predicted that participants' judgments would depend on the perceived agency of the behaviours associated with the illness. For example, reactions to people with AIDS who are considered *blameworthy* for their infection because they engaged in "active" or nonnormative behaviours (e.g., homosexual sex, injection drug use) differ markedly from reactions to people with AIDS considered *blameless* because their infection was an inadvertent consequence of "passive" or "normal" behaviours (e.g., visiting the dentist, receiving a blood transfusion) (Bailey, Reynolds, & Carrico, 1989; Nisbet & McQueen, 1993; Schellenberg, Keil, & Bem, 1995).

Our participants read a scenario describing a male ("William") with AIDS or lung cancer and rated their perceptions of his controllability, responsibility, and blame in relation to the disease. Each attribution measured with multiple (i.e., 4) items. In some cases, William was "active" in acquiring the disease (e.g., through injection-drug use, sexual behaviour, smoking). In other cases, the disease was a result of "passive" behaviours (e.g., exposure to HIV through the blood supply, lung cancer in a nonsmoker). Participants were also asked to indicate their levels of sympathy and anger toward William, their willingness to personally help and to have social contact with William, and their support for institutional assistance for other people with William's particular illness.

In line with the decision-stage models (Heider, 1958; Shaver, 1985; Weiner, 1995), we predicted that:

TABLE 1
Scale Details

| Scale | Number of Items | End Points | Cronbach's Alpha | Mean | SD |
|--------------------------------|-----------------|------------|------------------|-------|-------|
| Controllability | 4 | 1–7 | .91 | 14.68 | 8.03 |
| Responsibility | 4 | 1–7 | .91 | 12.80 | 7.30 |
| Blame | 4 | 1–7 | .82 | 10.25 | 6.01 |
| Personal Help | 10 | 1–7 | .95 | 55.60 | 13.09 |
| Institutional Help | 2 | 1–7 | .80 | 12.42 | 2.22 |
| Social Distance | 5 | 1–7 | .73 | 9.91 | 5.27 |
| Anger | 4 | 1–7 | .71 | 9.64 | 4.72 |
| Sympathy | 3 | 1–7 | .71 | 18.17 | 3.14 |
| Right-wing Authoritarianism | 10 | 1–9 | .69 | 49.26 | 11.85 |
| Attitudes Toward Gay Men | 9 | 1–9 | .93 | 20.88 | 12.98 |
| Global Just World Beliefs | 7 | 1–6 | .81 | 20.70 | 6.29 |
| Humanitarianism-Egalitarianism | 10 | 1–6 | .83 | 49.24 | 6.90 |

(1) controllability, responsibility, and blame ratings would be strongly correlated, and (2) participants would nonetheless discriminate among the attributions, with blame being the final component in the sequence. Accordingly, the three judgments should differ in terms of magnitude. Because judgments of blame are possible only if responsibility has been assigned, and responsibility is assigned only if controllability is evident, we predicted that blame ratings would be lower than responsibility ratings, which, in turn, would be lower than controllability ratings. Moreover, although all three judgments are likely to be associated with emotional and behavioural responses, blame should be the best predictor of such responses.

We also examined the hypothesis that the attribution process is not simply rational, and that personal values directly influence blame, emotional responses, and behavioural intentions (Alicke, 2000). We predicted that blame ratings would exhibit stronger associations – compared to controllability and responsibility ratings – with the social attitudes that typically predict negative responding to people diagnosed with potentially fatal illnesses. For example, specific social attitudes that are associated with negative reactions to people with AIDS and HIV, such as antihomosexual prejudice (Anderson, 1992; Keil & Schellenberg, 1998), authoritarian attitudes (Keil & Schellenberg, 1998), belief in a just world (Bush, Krebs, & Carpendale, 1993), and opposition to humanitarian and egalitarian ideals (Feather, 1996), should be more strongly associated with judgments of blame than with judgments of responsibility or controllability. We also expected that social attitudes would exert influence on emotional and behavioural reactions over and above attributions of controllability, responsibility, and blame.

TABLE 2
Items Used to Measure Controllability, Responsibility, and Blame
(R = Reverse Coded)

CONTROLLABILITY

William's illness was under his personal control.
It was something that William did that caused his illness.
William could *not* have prevented his illness. (R)
William had *no* control over the cause of his illness. (R)

RESPONSIBILITY

William is responsible for his illness.
William is accountable for his illness.
William's illness is *not* a result of his own negligence. (R)
William should *not* be held personally liable for his illness. (R)

BLAME

William is to blame for his illness.
It is his own fault that William is ill.
William does *not* deserve what happened to him. (R)
William should *not* feel guilty for being ill. (R)

Method

Participants

Students registered in introductory psychology courses at the University of Windsor received partial course credit in exchange for voluntarily participating in the study. The sample ($N = 222$) was 64% female, 62% white, 21% people of colour, and 17% of unstated ethnic origin. Participants ranged in age from 18 to 45 years ($M = 20.23$, $SD = 2.63$). Most (91%) claimed to be exclusively heterosexual.

Measures

The measures (with Cronbach's alphas) are listed in Table 1. Scores on each scale were formed by summing responses to individual items. All measures had acceptable internal reliability.

Attribution variables. Controllability, responsibility, and blame were each measured with scales consisting of two positively and two negatively worded statements. The items were ordered randomly in the questionnaire. A list of these items is provided in Table 2.

Behavioural intentions. A measure of *personal willingness to help* comprised 10 items that assessed increasingly intimate acts of helping (from Dooley, 1995 – the least intimate form of help was assisting William with walking; the most intimate was helping William take a bath). The two-item measure of *support for institutional help* assessed the extent to which participants agreed that people with William's disease deserve help from governments and health professionals (e.g., *People like William deserve the best possible treatment by doctors, nurses, and all hospital staff*). *Social distance* was measured by adapting the scale used by Leiker, Taub, and Gast (1995). Two items were worded as social-distance statements (e.g., *I could refuse to attend a party at which William was also present*) and three were worded as social-acceptance statements (e.g., *I could become close friends with William*).

Emotions. The four items assessing *anger* included *anger, irritation, annoyance, and resentment*. The three items for *sympathy* included *sympathy, feel sorry for, and compassion*. For both emotions, one or two of the items were positively scored (e.g., *I have considerable sympathy for William*) and two were negatively scored (e.g., *I do not feel sorry for William*).

Social-attitude variables. Authoritarianism was measured with the short form (Zanna, 1994) of the Right-wing Authoritarianism Scale (Altemeyer, 1988). Herek's (1988) Attitudes Toward Gay Men scale was used to measure hostility toward homosexuals. Participants' belief in a just world was measured with the Global Belief in a Just World Scale (Lipkus, 1991). Finally, we used the Humanitarianism-Egalitarianism Scale (Katz & Hass, 1988) to measure participants' concerns for equality and social justice.

Scenarios. Participants responded to one of six scenarios, four of which described a male with HIV; the other two described a male with lung cancer. We included more HIV than cancer scenarios because HIV has more known transmission routes than lung cancer. The scenarios varied according to the implied manner in which the illness was contracted (HIV-infection: mother-to-infant, contact with blood products, homosexual sex, or injection-drug use; lung cancer: smoker or nonsmoker). For example, the scenario for illness contraction through homosexual sex was as follows:

William is 31 years old and is a bank employee. He has lots of friends and everyone at work likes him. He likes his job, but also enjoys relaxing in the evenings with his new partner, John, who is HIV-positive. They often watch old movies or go out for dinner. Recently, William has begun to lose weight and to feel tired all the time. He also has a dry, persistent cough, diarrhea, and a fever and has been waking up with night sweats. John took William to see his physician. William was told that he has tested positive for HIV, the virus that leads to AIDS.

Although the scenarios were not constructed in a factorial design, they represented two levels of *illness* (AIDS and lung cancer) and two levels of *agency* (*active*: homosexual sex, injection-drug use, or smoker; and *passive*: mother-to-infant, contact with blood products, and nonsmoker). For purposes of analysis, scenarios were combined accordingly in a 2 x 2 (Agency x Illness) design. There were 74 participants in both AIDS cells and 37 participants in both cancer cells. Preliminary analyses revealed that participants assigned to the two scenarios in the AIDS-passive or AIDS-active cells did not differ on any of the emotions or behavioural intentions.

Procedure

Participants were assigned randomly to one of the six scenarios ($n_s = 37$). They answered basic demographic questions (gender, age, ethnic origin, sexual orientation) and read the scenario. After they responded to questions about the scenario, they completed the behavioural measures, the attribution and emotion scales, and, finally, the social-attitude scales.

Results

Differences Among Attributions

Each of the three 4-item scales (i.e., controllability, responsibility, and blame) had good internal reliability (alphas $> .8$; see Table 1). Pairwise correlations among the three scales were high (controllability-responsibility, $r = .88$; controllability-blame, $r = .80$; responsibility-blame, $r = .87$, $ps < .001$), as predicted. In short, the measures were overlapping but not identical (i.e., the greatest shared variance was 77%).

Strong associations between judgments of controllability, responsibility, and blame do not preclude the possibility of differences in *magnitude* across the three measures, which were directly comparable (each had four items measured on a 7-point scale). A one-way repeated-measures analysis of variance (ANOVA, Greenhouse-Geisser correction) confirmed that scale scores differed in magnitude, $F(2, 440) = 126.59$, $p < .001$. As predicted, ratings for controllability ($M = 14.68$, $SD = 8.03$) proved to be significantly higher than

TABLE 3
Correlations of Attributions with Behavioural Intentions, Emotions, and Social Attitudes

| | Controllability | | Responsibility | | Blame | |
|-------------------------------|-----------------|-------------|----------------|-------------|----------------|----------------|
| Behavioural Intentions | | | | | | |
| Personal Help | <i>-.40***</i> | <i>-.01</i> | <i>-.44***</i> | <i>-.11</i> | <i>-.44***</i> | <i>-.12</i> |
| Institutional Help | <i>-.42***</i> | <i>-.01</i> | <i>-.45***</i> | <i>-.01</i> | <i>-.51***</i> | <i>-.23***</i> |
| Social Distance | <i>.38***</i> | <i>.00</i> | <i>.41***</i> | <i>.00</i> | <i>.48***</i> | <i>.23***</i> |
| Emotions | | | | | | |
| Sympathy | <i>-.48***</i> | <i>.05</i> | <i>-.54***</i> | <i>-.03</i> | <i>-.62***</i> | <i>-.36***</i> |
| Anger | <i>.45***</i> | <i>-.07</i> | <i>.52***</i> | <i>.05</i> | <i>.59***</i> | <i>.33***</i> |
| Social Attitudes | | | | | | |
| Authoritarianism | <i>.00</i> | <i>-.07</i> | <i>.02</i> | <i>-.06</i> | <i>.10</i> | <i>.17*</i> |
| Attitudes Toward Gay Men | <i>.22**</i> | <i>-.07</i> | <i>.26***</i> | <i>.00</i> | <i>.33***</i> | <i>.23***</i> |
| Belief in a Just World Belief | <i>.15*</i> | <i>-.10</i> | <i>.20**</i> | <i>.01</i> | <i>.26***</i> | <i>.20***</i> |
| Humanitarian-Egalitarianism | <i>-.19**</i> | <i>-.08</i> | <i>-.16*</i> | <i>.13</i> | <i>-.24***</i> | <i>-.19**</i> |

Note: Partial correlations are in italics.
* $p < .05$; ** $p < .01$; *** $p < .001$.

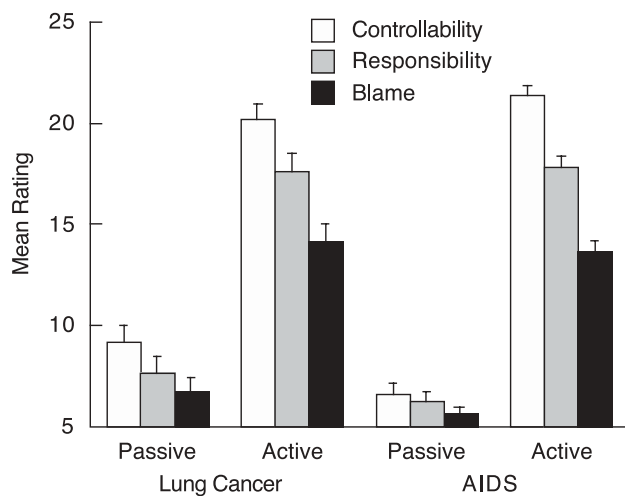


Figure 1. Mean ratings as a function of judgment, agency, and illness. Error bars represent standard errors. The figure illustrates three findings: (1) controllability ratings were higher than responsibility ratings, which were higher than blame ratings, (2) ratings for all three attributions were higher for “active” than for “passive” cases, and (3) response patterns were similar for both illnesses.

ratings of responsibility ($M = 12.80, SD = 7.30$) and blame ($M = 10.28, SD = 6.00$), $t_s(220) = 7.20$ and 13.62 , respectively, $p_s < .001$, and ratings of responsibility were significantly higher than ratings of blame, $t(220) = 10.44, p < .001$ (see Figure 1).

Effects of Scenarios

A series of between-subjects ANOVAs examined each of the three attributions separately as a function of two independent variables: illness (AIDS or lung cancer)

and agency (passive or active). For each attribution, a significant main effect of agency revealed that ratings of controllability, responsibility, and blame were higher among participants who read the active rather than the passive scenarios, $F_s(1, 217) = 230.53, 164.57,$ and 121.35 , respectively, $p_s < .001$ (see Figure 1). The main effect of illness was not significant in any case, and it did not interact with agency. In other words, although participants made higher attribution ratings when illnesses were acquired “actively” rather than “passively,” response patterns were similar for both diseases.

Associations Between Attributions and Other Variables

Table 3 provides correlations (in regular font) between the three attribution scales and the variables measuring behavioural intentions, emotions, and social attitudes. If judgments are distinct constructs that follow a specific sequence (controllability → responsibility → blame → response), the strongest correlations should be observed for blame, followed by responsibility, and then by controllability. The results are consistent with this hypothesis. Blame ratings had the highest correlations with all of the variables, and each of the responsibility correlations was higher than its controllability counterpart.

Partial correlations were used to examine the unique contribution of controllability, responsibility, and blame ratings in explaining behavioural intentions and emotional reactions toward the ill person. These analyses tested whether each attribution had a significant association when the other two were held constant. If blame is the final stage in the attribution sequence, blame should have the largest partial association. We also measured partial correlations between

TABLE 4
Results From Structural Equation Models Explaining Behavioural Intentions and Emotional Responses

| Model | χ^2 (3 df) | CFI | GFI | RMSEA |
|-------------------------|-------------------------|------|------|-------|
| PERSONAL HELP (PH) | | | | |
| C→R→B→PH | 10.76, $p < .05$ | .989 | .976 | .108 |
| B→R→C→PH | 17.32, $p < .001$ | .975 | .965 | .147 |
| R→C→B→PH | 98.44, $p < .001$ | .860 | .849 | .379 |
| B→C→R→PH | 94.99, $p < .001$ | .865 | .851 | .373 |
| C→B→R→PH | 101.53, $p < .001$ | .855 | .843 | .386 |
| R→B→C→PH | 111.54, $p < .001$ | .841 | .834 | .405 |
| INSTITUTIONAL HELP (IH) | | | | |
| C→R→B→IH | 6.14, $p = \text{n.s.}$ | .996 | .987 | .069 |
| B→R→C→IH | 28.91, $p < .001$ | .963 | .947 | .198 |
| R→C→B→IH | 93.82, $p < .001$ | .872 | .852 | .370 |
| B→C→R→IH | 109.27, $p < .001$ | .850 | .840 | .400 |
| C→B→R→IH | 115.81, $p < .001$ | .841 | .817 | .413 |
| R→B→C→IH | 112.13, $p < .001$ | .830 | .805 | .426 |
| SOCIAL DISTANCE (SD) | | | | |
| C→R→B→SD | 6.01, $p = \text{n.s.}$ | .996 | .987 | .068 |
| B→R→C→SD | 27.70, $p < .001$ | .965 | .949 | .193 |
| R→C→B→SD | 93.70, $p < .001$ | .870 | .853 | .370 |
| B→C→R→SD | 108.32, $p < .001$ | .849 | .840 | .399 |
| C→B→R→SD | 114.85, $p < .001$ | .840 | .817 | .411 |
| R→B→C→SD | 121.91, $p < .001$ | .830 | .807 | .424 |
| ANGER (A) | | | | |
| C→R→B→A | 6.10, $p = \text{n.s.}$ | .996 | .987 | .069 |
| B→R→C→A | 39.17, $p < .001$ | .950 | .932 | .234 |
| R→C→B→A | 93.79, $p < .001$ | .875 | .853 | .370 |
| B→C→R→A | 118.42, $p < .001$ | .841 | .833 | .417 |
| C→B→R→A | 124.95, $p < .001$ | .832 | .801 | .429 |
| R→B→C→A | 133.39, $p < .001$ | .821 | .787 | .443 |
| SYMPATHY (S) | | | | |
| C→R→B→S | 8.96, $p = .05$ | .992 | .981 | .095 |
| B→R→C→S | 47.27, $p < .001$ | .938 | .921 | .258 |
| R→C→B→S | 96.64, $p < .001$ | .869 | .846 | .376 |
| B→C→R→S | 116.78, $p < .001$ | .841 | .824 | .414 |
| C→B→R→S | 123.31, $p < .001$ | .832 | .797 | .426 |
| R→B→C→S | 141.49, $p < .001$ | .807 | .783 | .457 |

Note: C = Controllability, R = Responsibility, B = Blame.

the three attributions and the social-attitude variables. The results are provided in Table 3 (italics). In eight of the nine analyses (all but “personal help”), blame had a significant partial association. By contrast, controllability and responsibility were not significant in any instance. Hence, although controllability, responsibility, and blame were strongly related, only blame exhibited unique and consistent associations with behavioural intentions, emotional responses, and social attitudes.

Testing the Judgment Sequence

To test the sequence hypothesized by decision-stage models (Heider, 1958; Shaver, 1985; Weiner, 1995) (controllability → responsibility → blame → behavioural response) more completely, we conducted a series of

structural equation models using EQS (Version 5.7; Bentler, 1998). Each of the six possible orders of the three judgments was tested to determine the best sequence for predicting each behaviour (personal help, institutional help, social distance) and emotion (anger, sympathy). In each case, the model with the best fit according to four goodness-of-fit criteria was the hypothesized model that included blame as the final attribution (see Table 4). Specifically, all hypothesized paths were significant and in the predicted direction.

Nonetheless, the controllability → responsibility → blame sequence did not meet the criteria for a *good* fitting model in any instance (i.e., nonsignificant χ^2 , CFI and GFI close to 1.0 and RMSEA less than .06), which implies that additional variables are required to pro-

TABLE 5
Results From Hierarchical Multiple Regression Analyses

| | Personal Help | Institutional Help | Social Distance | Anger | Sympathy |
|-----------------------------|------------------|-----------------------|--------------------|----------|----------|
| BLOCK 1 | | | | | |
| Model R ² | .05** | .04** | .04** | .05** | .07*** |
| Agency | .05** | .04** | .04** | .05** | .07*** |
| BLOCK 2 | | | | | |
| Model ΔR ² | .16*** | .24*** | .22*** | .32*** | .34*** |
| Controllability | .01 | .01 | .00 | .00 | .00 |
| Responsibility | .00 | .00 | .00 | .00 | .00 |
| Blame | .01 | .05*** | .05*** | .08*** | .10*** |
| BLOCK 3 | | | | | |
| Model ΔR ² | .16*** | .10*** | .16*** | .07*** | .07*** |
| Humanitarian-egalitarianism | .06*** | .05*** | .04*** | .03** | .01* |
| Hostility toward gay men | .05*** | .01 | .06*** | .01* | .02** |
| Belief in a just world | .00 | .01* | .00 | .00 | .01 |
| Authoritarianism | .00 | .00 | .00 | .00 | .01* |
| FINAL MODEL | | | | | |
| R ² | .38 | .38 | .41 | .44 | .47 |
| F | 15.29*** | 15.83*** | 17.75*** | 19.93*** | 22.59*** |
| df | 8, 202 | 8, 205 | 8, 205 | 8, 201 | 8, 204 |

Note: The unique proportion of variance explained is indicated for each block of variables (R² or ΔR²) and for each regressor (sr²).

* $p < .05$; ** $p < .01$; *** $p < .001$.

vide a more complete explanation of the data. In subsequent analyses, we used hierarchical multiple regression to test whether social attitudes that are strongly associated with attitudes toward ill people (humanitarianism-egalitarianism, hostility toward gay men, belief in a just world, and authoritarianism) would improve our ability to explain behavioural intentions and emotional responding. For each outcome measure, the first step of the analysis included a dummy variable representing agency (active or passive) to account for differences in responding that resulted from reading the scenarios. On the second step, the three attributional judgments (controllability, responsibility, and blame) were entered as a block. On the third and final step, the four social-attitude variables were entered as a block. For each outcome variable, participants' pre-existing attitudes were expected to improve explanatory accuracy.

The results were consistent with our predictions. The agency variable (entered on Step 1) had a significant association with each outcome measure. The addition of the block of attribution variables (Step 2) was also significant in each case. In four of the five analyses, however, only blame made a unique contribution to the model at this step, which is again consistent with proposals that blame has the most direct association with emotions and behavioural intentions. The addition of the final, social-attitude block (Step 3) was also significant in each case. In other words, pre-

existing attitudes accounted for additional variance in the outcome measures over and above that accounted for by the scenarios and attributions.

Discussion

Participants in a laboratory context made relatively clear distinctions among judgments for a negative event that followed the hypothesized controllability → responsibility → blame sequence. Specifically, ratings of controllability were higher than ratings of responsibility, which, in turn, were higher than ratings of blame. Although ratings of blame were the lowest, blame was the only attribution that made unique and consistent contributions to explaining behavioural intentions and emotions. Blame was also the only judgement to exhibit partial associations with participants' pre-existing social attitudes when the other two judgments were held constant.

The present research provides support for the decision-stage models of attribution (Heider, 1958; Shaver, 1985; Weiner, 1995). In order to be perceived as blameworthy, agents must also be judged responsible. For agents to be responsible, they must have had some control over the event. As such, observers could believe that an agent had control over a negative outcome yet little responsibility for its occurrence, or be responsible without being blameworthy. Hence, blame is the judgement most closely associated with subsequent responding.

The results of the present study are consistent with other empirical findings. For example, Reisenzein (1986) found that blame, rather than controllability or responsibility, was the best predictor of refusing a stranger's request to change seats on a subway train. Similarly, Williams, Lees-Haley, and Price (1996) reported that blame was the best predictor of willingness to impose fines for causing injuries in traffic accidents. Nonetheless, response patterns we observed differed notably from patterns reported by Critchlow (1985), who found that for serious offenses, blame had higher ratings than responsibility, and responsibility had higher ratings than controllability. This discrepancy may be a consequence of Critchlow's focus on associations between alcohol consumption and blame for aggressive actions. When an agent is intoxicated or has a history of violence, observers *increase* their attributions of responsibility and blame for aggressive behaviour (Leigh & Aramburu, 1994).

Decision-stage models of attribution assume that observers are "naive scientists" (Heider, 1958), who determine causality for events before reacting and follow a rational decision process based on observable facts. In nonlaboratory contexts, however, people may not necessarily go through the stages in order (Shaver, 1985). Instead, they may focus on the blameworthiness of the agent, going backward through the stages to seek confirmation for their hypotheses and pre-existing personal bias (Alicke, 2000). Our results revealed that the attribution sequence became increasingly influenced by personal biases and social attitudes. Such biases and attitudes were also associated with emotional reactions and behavioural intentions, even after accounting for judgments of controllability, responsibility, and blame. These findings indicate that individual differences may influence all stages of judgement and responding, instead of simply setting the process in motion by influencing attributions of causality. It is important to note that our participants judged the agent after the fact, with full knowledge of the behaviours and consequences. Thus, in order to validate their beliefs about what should have happened (Alicke, 2000), they may have inflated their judgments of controllability and responsibility for some groups (e.g., those who were perceived to have been "active" in contracting their illness) through a process of counterfactual reasoning (Kahneman & Miller, 1986).

Our results are consistent with Alicke's (2000) culpable control model of blame, which posits that blame plays a central role in the attribution sequence, and that prior beliefs, values, and attitudes may exert effects independently of the cognitive (rational) hierarchy. Thus, for Alicke (2000), judgments are influenced

by pre-existing biases, which may increase levels of blame directly or indirectly. Observers disposed to blaming the agent may seek information retrospectively or exaggerate evidence to confirm their hypotheses about the event, which can lead them to make stronger attributions after the fact. Hence, observers' morals and values (e.g., prejudices, belief in a just world) are thought to play a key role in influencing judgments of blame. Our findings are consistent with this hypothesis.

We compared the natural transmission routes of two serious illnesses with perceived behavioural components. Future research could include other negative events and contexts to test further the decision-stage models and Alicke's (2000) culpable control model of blame. Such research would provide insight into how rational judgement processes interact with noncognitive processes in producing clinical and legal decisions. For example, when the court system is charged with determining responsibility, blame, and punishment for executives of organizations that have misrepresented their financial situation, it is important to understand how personal bias and values of the judges influence supposedly "rational" decisions.

Further research is also necessary to determine whether levels of blame differ for acts of omission or commission. Kanekar and Miranda (1998) suggest that agents who are physically removed from the cause of an event may be blamed even if they are judged as having less control over the event. When there are multiple agents associated with a negative event, however, the perceived responsibility and blameworthiness of each agent may be greatly reduced (Alicke, 2000). It also remains to be determined whether attributions for positive outcomes (i.e., controllability → responsibility → *credit* sequences) would exhibit patterns similar to those for negative outcomes.

The present findings highlight potential problems in using controllability, responsibility, and blame interchangeably in attribution research, dangers others have noted (Fincham & Jaspars, 1980; Harvey & Rule, 1978; Shaver & Drown, 1986; Shultz & Schliefer, 1983). For example, judgments of controllability and responsibility may be relatively impersonal (or intellectual) cognitive evaluations that do not inhibit positive responses, whereas blame may be more personally salient and more likely to motivate negative responding. Individual measures that combine controllability, responsibility, and blame may distort the association between judgments and measures of behavioural and emotional responses, thereby clouding our understanding of the richness of human behaviour and cognition. As Shaver and Drown (1986) note, indiscrimi-

nate use of these constructs in psychological research could mask differing motivations for reactions to negative events and make comparisons across studies difficult.

Our results suggest that the attribution process for negative events is akin to one of distillation, such as when one makes wine from grapes and brandy from wine. Reductions in size (overall quantity, magnitude of attribution ratings) are accompanied by increases in quality (alcohol content, predictive power) and greater contributions from personal biases and attitudes that are independent of the particular context.

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