

# How Do People Attribute Blame for Burns Sustained From Hot Coffee? The Role of Causal Attributions

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## Abstract

Safety researchers have begun to systematically examine how people assign blame for injuries sustained during the use of or exposure to consumer products. In this study we examine people's attributions in the context of product-use scenarios loosely based on the now famous incident in which a woman was scalded by hot coffee from McDonald's. Each scenario described a situation in which a person (driver or passenger) was burned when they spilled hot coffee on themselves while going to work. Supplementary information intended to be either positive or detrimental to McDonald's was either present or absent from the scenario. In general, participants allocated more responsibility to the consumer than to McDonald's. Depicting the consumer as the driver or passenger had no effect on participants' allocations. As expected, adding information that is detrimental to McDonald's shifted blame away from the consumer and toward McDonald's. Adding positive information had no corresponding effect. The implications of these results for consumers, legal professionals, and researchers are discussed.

## Introduction

Safety researchers have begun to systematically examine how people view responsibility for safety. Of particular interest is how people assign blame for injuries sustained through the use of consumer products. Perceived responsibility is an important concern in the area for several reasons. If a product manufacturer assumes that consumers are responsible for their own safety, for example, then safety-related concerns may not be incorporated into the design of the product and the accompanying instructions or marketing efforts intended to promote it. If, on the other hand, consumers view the manufacturer to be responsible for the safety of the product, they may not be careful while using the product. Given either scenario, safety may be compromised and personal injury and/or property damage might occur. Perceptions of responsibility are also an important consideration, given the increasingly litigious society in which we live. Thus, knowing how jurors form perceptions concerning who is responsible for product safety will be of interest to persons involved in product liability cases.

Some of the initial work in this area was conducted by Laughery and his colleagues. This research focused on how participants allocated responsibility for product safety among different entities (e.g., the consumer, a retailer, the product's manufacturer). Laughery, Lovvoll,

and McQuilken (1996), for example, asked participants to allocate responsibility for child safety during the use of or exposure to various consumer products. As predicted, participants allocated very little responsibility to very young children (e.g., two year olds) or to the retailer who sold the product. Instead, they assigned most blame to the child's parents and the product's manufacturer. With increasing age participants attributed more responsibility to the child and less responsibility to the parent. Interestingly, the percentage of responsibility assigned to the manufacturer remained high and constant. In a related study, Lovvoll, Laughery, McQuilken, and Wogalter (1996) examined how people allocate responsibility for the safe use of products in the work environment. The main finding in this study was that participants assigned the greatest responsibility for safety to product manufacturers and significantly less blame to the employee and his/her employer.

Researchers have also examined how attributions concerning blame are formed. Phoenix, Kalsher and Champagne (1997) used Kelley's theory of causal attributions (Kelley, 1972; 1973) as the basis for assessing how participants allocated responsibility for injuries sustained in a set of fictitious product-use scenarios. Consistent with Kelley's predictions, when participants were led to believe the injury stemmed from dispositional characteristics of the injured person, they

allocated more blame to the person and less to the product's manufacturer. Conversely, when they were led to believe the injury instead stemmed from aspects of the situation, participants tended to allocate more blame to the manufacturer and less to the injured person.

The present study builds on previous research in this area by systematically varying information pertaining to a fictitious product liability case and observing the extent to which this affects how people attribute blame. We did so in the context of a set of scenarios based loosely on the now famous (or infamous) McDonald's case. Our rationale for choosing this case as the vehicle for this research is reasonably straightforward. Most educated people have heard about this case, in part due to extensive media coverage. However, their knowledge of the case is usually limited to its outcome: that a very large award was given to a woman who was severely scalded after having received a cup of coffee from a McDonald's drive-through. The actual details of the case are not widely known. As a result, most people form internal causal attributions, believing that the woman is to blame for her injuries. Not surprisingly, they typically consider the judgement and award wholly unreasonable.

Based on prior research on causal attributions and on the observation that most people's knowledge of the facts of this case are at best sketchy, we predicted that participants would tend to assign a greater percentage of blame to the injured person than to McDonald's. In addition, we hypothesized that providing participants with additional information would tend to shift this blame in predictable ways. When the information is constructed to portray McDonald's practices in an unfavorable light, we predicted a shift in participants' allocation of responsibility toward McDonald's. Conversely, we predicted that the same information constructed to portray McDonald's in a favorable light would shift participants' allocations away from McDonald's and toward the injured person.

## Method

### Participants

Eighty-four individuals (44 males, mean age = 30.6 years,  $SD = 11.8$  and 36 females, mean age = 38.4,  $SD = 13.9$ ) participated. Four participants did not provide gender information. Twenty-eight of the participants were undergraduates at a private technical university and 56 were non-student volunteers from the surrounding community. Forty-two percent of respondents reported that they had received minor burns from hot coffee; the remaining 58% had not. Legal actions against companies and individuals were reported by one and five respondents, respectively. It is noteworthy that nearly all

of the participants reported that they had some familiarity with the McDonald's coffee case.

### Materials and Procedure

*Pre-Scenario Survey.* After they read and signed a participant consent form, volunteers were asked to complete a consumer opinion survey. The first part of the survey contained items that assessed participants' familiarity with the product (freshly brewed McDonald's coffee), their perceptions concerning the hazards associated with handling and consuming it, and the likelihood of being injured. Responses to these items were measured on Likert-type scales. An additional item asked participants to rate the severity of an injury that might result from the use of McDonald's coffee. The four possible response selections for this item ranged from "quite safe and very unlikely to lead to personal injury" to "a hazard that could result in severe personal injury." Table 1 summarizes the Likert-type items (and their anchors) used on the survey.

Items on the second part of the survey assessed participants' perceptions of the warning information contained on the McDonald's coffee cup. To aid them in their task, participants were given a sample cup (the six-ounce cup in which McDonald's currently serves its coffee) to examine. Three items shown on the bottom of Table 1 asked participants to rate the noticeability of the warning, the likelihood that people would read the warning, and the effectiveness of the warning in getting people to be more cautious when they handle the cup as it is served. Responses to these items were recorded on Likert-Type scales. Two additional items focused specifically on one feature of the warning, the phrase "Caution: Hot!" Participants were asked to estimate what they felt "Hot" meant, in two ways: (1) as an absolute judgement in degrees Fahrenheit (participants were reminded that water boils at 212° F); and (2) as a comparative judgement in relation to home-brewed coffee and coffee served by several other well-known fast-food restaurants in the area. Finally, participants were asked to estimate the probability they would be seriously burned if they were to spill coffee from each of these sources on themselves (from 0%, no chance of being burned to 100%, certain to be burned).

*Fictitious Scenario.* After completing the survey, participants were asked to read a fictitious product-use scenario in which a consumer sustains a burn injury while drinking hot coffee on the way to work. Six versions of the scenario were created that differed in the following ways. First, the person burned by the coffee was depicted either as the car's driver or as a passenger in the car. The distinction between driver and passenger was included as a manipulated variable to determine its impact on partici-

**Table 1. Questions and Likert-type scales in the Consumer Opinion Survey.**

**Items concerning the product (McDonald's coffee)**

Please indicate your familiarity with this product (McDonald's coffee)?	1 Not at All Familiar	2	3 Somewhat Familiar	4	5 Moderately Familiar	6	7 Very Familiar
During the past year, how often have you purchased and consumed coffee from McDonald's?	1 Never	2	3 Once or Twice	4	5 Several Times	6	7 Once per Week or more
How careful do you feel you must be when using this product?	1 Not at All Careful	2	3 Somewhat Careful	4	5 Moderately Careful	6	7 Very Careful
What is the likelihood that you would be injured while using this product (drinking McDonald's coffee from this cup)?	1 Not at All Likely	2	3 Somewhat Likely	4	5 Moderately Likely	6	7 Very Likely

**Items concerning the cup warning**

In your opinion, how noticeable is the warning on the cup?	1 Not at All Noticeable	2	3 Somewhat Noticeable	4	5 Moderately Noticeable	6	7 Very Noticeable
In your opinion, what is the likelihood that people will read the warning on the cup?	1 Not at All Likely	2	3 Somewhat Likely	4	5 Moderately Likely	6	7 Very Likely
In your opinion, how effective is the warning in getting people to be more cautious when they handle the cup as it is served?	1 Not at All Effective	2	3 Somewhat Effective	4	5 Moderately Effective	6	7 Very Effective

pants' allocations of blame. It was believed that participants might assign more blame to the driver than to the passenger, since consuming coffee while driving could be viewed as incongruent with the demands of maintaining control of one's vehicle.

Second, supplementary information intended to alter how participants' allocated blame for the injury was either present or absent. When present, there were two versions of supplementary information. These are shown in Table 2. One version was framed negatively, casting McDonald's in an unfavorable light; the other version was framed positively, casting McDonald's in a favorable light. The supplementary information was a separate section labeled *Relevant Facts* and contained statements concerning the temperature at which McDonald's serves its coffee, attributes of the warning on the cup, previous burn complaints leveled against McDonald's, and training methods used by McDonald's to prevent burn injuries.

*Post Scenario Survey.* After they had read the scenario and the supplementary information (if it was present), participants were asked to allocate responsibility for the injury (in percentage terms, summing to 100%) to

the person who spilled the coffee and to McDonald's. Other items of the survey requested basic demographic information. Upon completing the survey, participants were debriefed and thanked for participating.

**Results**

*Product Familiarity and Perception of Hazard*

Nearly all the respondents expressed some familiarity with McDonald's coffee (92%), but on average reported drinking it less than once or twice per year ( $M = 2.9, SD = 1.7$ ). On average, respondents reported a low likelihood of being injured by McDonald's coffee ( $M = 2.4, SD = 1.3$ ), but indicated that one must be moderately careful when drinking it ( $M = 4.5, SD = 1.9$ ). Fifty-five percent of respondents reported that the product was "safe and very unlikely to lead to/cause personal injury" while 41% indicated that the product posed "a hazard that could result in minor personal injury." Only three percent of the participants indicated that the product posed "a hazard that could result in severe personal injury."

**Table 2. The Relevant Facts: Framed Positively and Negatively.**

**Negative Frame**

Relevant Facts

- McDonald's coffee is served at approximately 180 - 185 degrees Fahrenheit, 40 degrees higher than home-brewed coffee and considerably higher than other fast-food restaurants. Severe (third degree) skin burns can result from just a few seconds of exposure to liquids at temperatures near or above 180 degrees Fahrenheit.
- There have been over 700 individual coffee-related burn lawsuits against McDonald's in the past 10 years.
- Despite numerous complaints and injuries, McDonald's has used the same basic warning (*Caution: Hot*) on its coffee cups, and has not decreased the temperature at which they serve hot coffee.
- To public knowledge, McDonald's has incorporated no new or more effective training methods to have its employees warn customers that the coffee it serves is potentially dangerous if spilled.

**Positive Frame**

Relevant Facts

- Recognizing that their coffee was being served approximately 40 degrees Fahrenheit higher than home-brewed coffee, McDonald's has decreased the serving temperature of its coffee.
- Over the past 10 years, there has been one coffee-related burn lawsuit for every 24 million cups of coffee served by McDonald's.
- As a result of injuries stemming from coffee spills, McDonald's has designed more effective warning materials on its coffee cups, and has significantly decreased the temperature of its coffee.
- McDonald's has recently implemented new and more effective training methods so that its employees warn customers that the coffee it serves is potentially dangerous if spilled.

*Evaluation of the Product Warning*

After viewing the coffee cup warning label, respondents indicated that the warning was moderately noticeable ( $M = 4.5$ ,  $SD = 2.0$ ) but that people would only be somewhat likely to read it ( $M = 3.4$ ,  $SD = 1.9$ ). Participants also indicated that the warning would only be somewhat effective in getting people to be more cautious when they handle the cup as it is served ( $M = 3.2$ ;  $SD = 1.7$ ). When asked to define the term "Hot" in degrees, the average reported temperature was 166.7 degrees Fahrenheit ( $SD = 32.0$ ).

*Temperature, Injury, and Coffee Sources*

A one-way within-subjects ANOVA performed on estimates of coffee temperature revealed significant differences across the six different coffee sources,  $F(5, 310) = 14.05$ ,  $p < .001$ . The lowest temperature was given for coffee brewed at home ( $M = 164.0$  degrees,  $SD$

$= 32.3$ ) followed by coffee brewed by Denny's ( $M = 170.0$  degrees,  $SD = 29.6$ ), Bruegger's ( $M = 175.0$  degrees,  $SD = 27.4$ ), Starbucks ( $M = 175.5$  degrees,  $SD = 29.4$ ), Burger King ( $M = 175.9$  degrees,  $SD = 27.3$ ), and McDonald's ( $M = 177.1$  degrees,  $SD = 27.0$ ). A Tukey's HSD test revealed that the estimated temperature of coffee brewed at home was significantly lower than that of coffee sold by all of the evaluated commercial establishments,  $ps < .01$ . Denny's coffee was also estimated to be cooler than that sold by the other businesses,  $ps < .02$ . Although estimated coffee temperatures varied significantly across sources, the perceived likelihood of injury did not. A one-way within-subjects ANOVA on the data was not significant,  $F(5, 350) = 1.82$ ,  $p > .05$ .

*Allocation of Responsibility*

Participants' allocation of responsibility estimates were analyzed using a 3 (Type of Supplemental Information: None, Positive Frame, Negative Frame) x 2 (Consumer: Driver, Passenger) between-subjects ANOVA. The analysis of the attribution data revealed a main effect of type of information,  $F(2, 76) = 6.77$ ,  $p < .002$ . Participants attributed significantly less responsibility to the consumer when a negative frame was provided ( $M = 69.3\%$ ,  $SD = 32.4$ ) than when either positive ( $M = 87.1\%$ ,  $SD = 15.7$ ) or when no supplemental information was provided ( $M = 90.4\%$ ,  $SD = 15.9$ ). The latter two, however, did not differ significantly. When contrasting the relative allocation of responsibility between the two parties, the consumer ( $M = 81.1$ ,  $SD = 24.1$ ) was allocated a significantly higher level of responsibility than McDonald's ( $M = 18.1$ ,  $SD = 24.2$ ),  $F(1, 82) = 139.64$ ,  $p < .0001$ . There was no significant effect of the driver vs. passenger manipulation ( $p > .05$ ).

**Discussion**

These findings highlight the important role of causal attributions when people are asked to allocate responsibility for injuries sustained during the use of or exposure to consumer products. When negative information was added to the basic scenario, participants diverted responsibility away from the consumer and toward McDonald's. It is important to point out this finding occurred among people who had limited knowledge of the actual facts of the case relative to the jurors at trial. The jurors in the real McDonald's coffee case were presented with much more information than is commonly known to people in the general population. Perhaps the additional negative information available to the jurors in the actual case helps to explain the relatively large settlement purportedly awarded to the plaintiff.

Although the scenario information was brief, it is reasonable to assume the information presented in the negative frame condition was similar to the “real” facts of the case. Perhaps if more information had been available and incorporated into that condition, the effects might have been even more dramatic, mirroring more closely the relatively large percentage of blame attributed to the defendant in the real McDonald’s case. Although this prediction is clearly speculative, it is supported by the fact that during the discovery and trial phases of product liability cases, many more facts than the ones given to our participants are presented.

It is noteworthy there was no difference in the patterns of allocation observed among participants in the positive frame condition and those who received *no* supplementary information. One possible reason for this outcome is that McDonald’s may already be viewed positively by most people. For example, the consistency and quality of their food generally meets people’s expectations and McDonald’s is well-known for their charitable work and active participation in local communities (e.g., Ronald McDonald Houses). In addition, the most famous clown that many people grew up with as children is Ronald McDonald, who may be associated with pleasant memories. Because of these, and other positive attributes, participants in the neutral (no frame) condition may have already assumed all of the statements offered in the positive version of the supplementary information, creating a ceiling effect of sorts and causing no difference between the neutral and positive frame conditions. This background of positive expectations may contribute to beliefs by many in the general public that the case about spilled coffee is frivolous, particularly since most details of the case (especially negative ones) have not been widely distributed to the general population.

Participants’ relatively low perceptions of the danger associated with this product (hot coffee) and the actual potential for injury (at 180-185 degrees Fahrenheit) suggests the presence of a “hidden” hazard. The hidden hazard is the substantial discrepancy between participants’ temperature estimates and the actual temperature at which McDonald’s serves its coffee. Although participants in this study correctly reported that McDonald’s coffee is hotter than coffee served by its competitors and home-brewed coffee, their estimates were still 13.3 – 18.3 degrees cooler than the actual temperature at which McDonald’s serves it. A one-sample t-test revealed this difference to be statistically significant,  $t(76) = 3.02$ ,  $p < .01$ . Perhaps more importantly, most consumers do not recognize the coffee McDonald’s serves can cause severe permanent scalding. Indeed, only 3 percent of the participants in our sample believed that spilling hot coffee on themselves can result in severe personal injury.

These results suggest a number of possibilities for future research. First, participants’ evaluation of the warning information currently present on McDonald’s coffee indicates it should be improved. Participants indicated that the warning was only “moderately” noticeable, that people would only be “somewhat likely” to read it, and that the warning would only be “somewhat effective.” One possible modification to the warning involves the signal word (“HOT”) currently found on the cups in which McDonald’s serves its coffee. Our results seem to indicate a need for a stronger word; one that connotes a level of hazard consistent with the unusually high temperature of freshly brewed McDonald’s coffee. Substituting “EXTREMELY HOT” or another similar variant may result in a better warning that increases consumers’ awareness of the potential severity of injuries associated with hot coffee. Second, future research might include additional parties relevant to cases like this one. In the scenarios developed for this research, we restricted participants’ choices to a consumer and McDonald’s as entities. We did not allow for the possibility that participants may view store owners and employees, among others, as partly to blame. Finally, there is a need for research to systematically investigate how defendants might be viewed if they were to take steps to decrease the likelihood and extent of injury, such as changes to the design of the container (e.g., to the cup and lid), more effective warnings, or better employee training practices. Such changes might impact people’s causal attributions, and in turn, alter the way in which they allocate responsibility for consumer product injuries.

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