

# Allocation of Responsibility for Injuries from a “Hidden” Hazard

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## Abstract

Safety researchers have investigated how people assign blame for injuries sustained during the use of or exposure to consumer products. In this study, we examine attributions made by people given product-use scenarios that describe a girl whose age is manipulated to be from 18 months to 16 years and who suffers serious brain damage after choking on marshmallows made available to her by her mother. Supplementary information intended to be either positive or detrimental to the manufacturer and its safety practices was either present or absent from the scenario. Approximately half of the participants in the positive frame condition also received sample product warnings purportedly developed and used by the manufacturer. In general, participants allocated more responsibility to the girl's parents than to the manufacturer. As predicted, allocation of blame to the girl varied directly with her age. The greater the age of the child, the greater the blame she received. Supplementary information that casts the manufacturer and the manufacturer's practices in a positive light shifted blame away from the manufacturer toward the girl and her parents. Conversely, supplementary information detrimental to the manufacturer shifted blame away from the girl and her parents and toward the manufacturer. The warnings had no measurable effect on allocation of blame. The implications of these results for consumers, legal professionals, and researchers are discussed.

## Introduction

Researchers have begun to investigate how people attribute blame in product liability and workplace injury cases (e.g., Laughery Lovvoll, and McQuilkin, 1996; Lovvoll Laughery, McQuilkin, and Wogalter 1996; Phoenix, Kalsher, and Champagne, 1997). Perceived responsibility is an important concern because it may shed light on consumers' perceptions of who is responsible for their safety. If consumers believe that product manufacturers bear most or all of the responsibility for product safety, they may not be careful while using the product. If manufacturers assume that consumers are responsible for their own safety, then safety-related features may not be incorporated into the design of the product, or materials (e.g., warnings and instructions) that accompany the product. Given either situation, the safety of consumers may be compromised. Therefore, it is important to learn how various entities associated with the production or use of consumer products view responsibility for safety.

The focus of earlier investigations of this topic has been on discovering the relative amounts of blame ascribed to consumers, employees, retailers, employers, and product manufacturers in fictitious cases involving injuries sustained from the use of consumer products. Laughery et al., (1996), for example, showed that people allocate very little responsibility to young children, but that the amount of blame assigned to them increases linearly with age. As one might expect, people generally do not expect young children to possess the level of maturity and judgment necessary to make safe choices with regard to the use of consumer products.

In a recent field investigation, Kalsher, Phoenix, Wogalter, and Braun (1998) examined how participants allocated blame in fictitious scenarios loosely based on the infamous McDonalds hot coffee case in which an elderly woman was scalded when she spilled coffee obtained from the drive-through window onto her lap. In the study, supplementary information intended to be either positive or detrimental to the manufacturer and its safety practices was either present or absent from the scenario. After they had read the scenario and the supplementary information (if it was provided), participants were asked to indicate the amount of responsibility (in percentage terms summing to 100%) that should be allocated to the woman and McDonalds, respectively. Participants attributed significantly less blame to the consumer when the scenario was accompanied by supplementary information that placed McDonalds' policies and practices in an unfavorable light, compared to when the same information was framed positively or when no supplementary information was provided.

The purpose of the present study is to build on previous research by investigating how people attribute blame for injuries sustained from the use of consumer products in which the hazards are either hidden or unknown. We did so by using the single-scenario approach used by Kalsher et al. (1998). In the present study, we created scenarios in which a girl (of varying ages) is severely brain-damaged as a result of choking on marshmallows. In addition, we provided a set of “relevant” facts (or did not) about the marshmallow manufacturer that cast the company in a positive or negative light. We chose marshmallows as the product of this study for the following reasons. First, the hazards are largely “hidden” since most people do not believe that marshmallows

are dangerous. Second, medical evidence suggests that marshmallows pose a special hazard to children under the age of 4 because they lack the physical coordination and judgment of older children (Stewart, 1992). Finally, marshmallows possess characteristics that make them especially dangerous to children: (1) they are sweet, and therefore attract children; (2) young children do not chew food completely before swallowing; (3) marshmallows appear soft, and therefore, innocuous to parents; (4) marshmallows swell when they contact the moisture present in the mouth; (5) an aspirated piece of marshmallow can be difficult to dislodge because it continues to expand after entering the airway, thereby obstructing airways, including the trachea; and (6) marshmallows are light and can therefore be easily inhaled into the respiratory system.

Based on the findings of previous research (e.g., Kalsher et al., 1998), we hypothesized that providing participants with no supplementary information would result in a high percentage of the blame targeted at the parents and (older) victim, and a low percentage toward the manufacturer because as mentioned above, the hazards of marshmallows are largely unknown and most people do not consider them dangerous. In contrast, when the information is provided and constructed to portray the marshmallow manufacturer's (Vantage Food Corporation) practices in an unfavorable light, we predicted a shift in participants' allocation of responsibility toward the company. Conversely, we predicted that the same information constructed to portray the manufacturer in a favorable light would actually shift participants' allocations away from company and toward the injured person or her parents, compared to the control (no supplementary information) condition. In addition, approximately half of the participants in the positive supplementary information condition also received information that described on-product warnings purportedly developed by Vantage Food Corporation and in use since 1991 (refer to Figure 1). We predicted that the inclusion of this information would enhance the effects of the positively framed information, shifting additional blame away from the manufacturer, and toward the injured person and her parents.

## Method

### Participants

A total of 225 individuals participated in the study: 138 were males (mean age = 22.2 years; SD = 8.5), and 86 were females (mean age = 24.0 years; SD = 10.5). 166 were undergraduate students at a private university in the northeast; the remaining 59 participants were volunteers from the surrounding community.

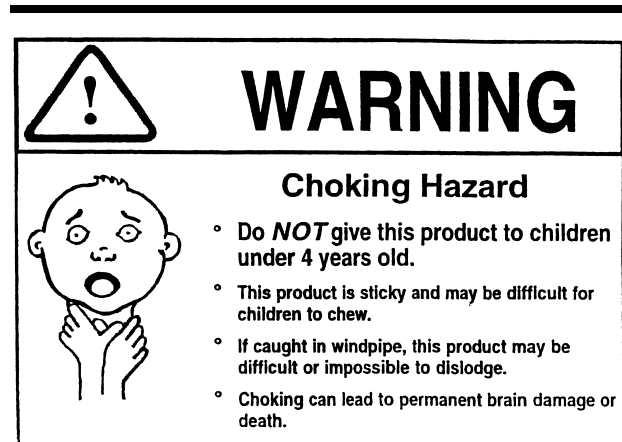


Figure 1. One of the warnings used to supplement the positive frame condition.

### Materials and Procedure

*Pre-Scenario Survey.* After they read and signed a consent form, participants were asked to complete a consumer product survey containing items that assessed their perceptions of the hazards associated with marshmallows. Participants were also asked to read a fictitious product-use scenario in which a young girl named Amy Lyons chokes on marshmallows given to her by her mother. The specific scenario is presented in Table 1. Despite efforts by her parents to dislodge the obstruction, it is not removed until the arrival of paramedics on the scene. The extended period of oxygen deprivation results in permanent brain damage. Upset by the incident, Amy's parents take legal action against the company. Several versions of the scenario were created that differed in the following ways. First, Amy Lyons is depicted as one of four ages: (a) as a 1 ½ year-old, (b) a 4-year-old, (c) an 8-year-old, or (d) a 16-year-old.

Second, supplementary information intended to alter how participants' allocated blame for the injury was either provided following the scenario or it was not. When present, the information cast Vantage Food Corporation and its practices in either a favorable or unfavorable light (positive vs. negative framing, respectively). The supplementary information was a separate section labeled "Relevant Facts" and it contained a number of statements about the special hazards associated with marshmallows, along with specific information about Vantage Food Corporation's safety practices. The positive and negative versions of the "Relevant Facts" are presented in Table 1.

**Table 1.** Scenario depicting the 18-month-old Amy and supplementary information framed positively and negatively.**Product Use Scenario**

An 18-month-old girl named Amy Lyons was playing with her brother in their yard and eating a small handful of marshmallows given to her by her mother. Suddenly, Amy clutched her throat as if she were choking on something and it was obvious to her brother that she was having difficulty breathing. Her brother ran to the house to tell their parents. Her parents immediately called 911 and attempted to dislodge the obstruction in Amy's throat by probing the back of her throat and also by attempting the Heimlich maneuver. (The Heimlich maneuver is an emergency procedure in which a sharp upward force is applied to the area just below the chest that is often successful in dislodging obstructions stuck in the windpipe).

Unfortunately, their efforts to remove the obstruction were unsuccessful and Amy began to turn blue. Paramedics arrived on the scene within minutes, and successfully dislodged a piece of marshmallow. Unfortunately, the extended period of oxygen deprivation resulted in permanent brain damage. Upset by the incident, Amy's parents decided to take legal action against the product's manufacturer. They felt that the manufacturer should pay for damages stemming from the accident.

**Relevant facts (Positive Frame)**

- **Vantage Food Corporation**, a leading manufacturer of marshmallows, provides a warning (see attached examples) on their marshmallow packages. Company officials' decision to create a warning was fueled initially by articles about food choking hazards that have appeared in established medical journals (e.g., *Journal of the American Medical Association*) during the past 20 years. The warnings were developed to address the following hazards associated with marshmallows:
  - (1) Medical evidence shows that infants and toddlers are at increased risk of choking on foods because they lack the physical coordination and judgment of older children; and (2) Foods most likely to cause severe effects from choking are round, soft, pliable, which makes them more likely to get stuck in the windpipe if a choking event occurs.
- Prior to implementation of a marketing plan that targets children (e.g., sponsoring certain Saturday morning TV shows), Vantage Food Corporation conducted a nationwide information campaign to increase parents' awareness of the choking dangers associated with marshmallows and similar foods. They did this in response to statistics showing that nearly 90% of food-related choking deaths occur in children under the age of 4.
- One purpose of Vantage Food Corporation's safety campaign was to alert parents, parents' groups, baby book writers, and medical associates to the hidden nature of the risks associated with marshmallows:
  - (1) They are sweet, and therefore, attract children; (2) Children do not chew food completely before swallowing; (3) They appear soft, and therefore, innocuous to parents, compared to other sweets, such as hard candy; (4) Marshmallows become stickier and slowly swell when they contact the moisture present in the mouth; (5) An aspirated piece of marshmallow can be very difficult to dislodge because it continues to expand after entering the airway and it can efficiently obstruct a large breathing passage—including the trachea; and (6) Marshmallows are light so can be inhaled easily into the respiratory system.

**Relevant Facts (Negative Frame)**

- Vantage Food Corporation, a leading manufacturer of marshmallows, does not provide a warning on its marshmallow packages, despite the fact that many articles highlighting the choking hazards associated with certain types of food have appeared in established medical journals (e.g., *Journal of the American Medical Association*) during the past 20 years.
- Medical evidence shows that infants and toddlers are at increased risk of choking on foods because they lack the physical coordination and judgment of older children.
- Foods most likely to cause severe effects from choking are round, soft and pliable, which makes them more likely to get stuck in the windpipe if a choking event occurs.
- Confidential company documents revealed that Vantage Food Corporation intended to market their product heavily to young children (e.g., sponsoring certain Saturday morning children's TV shows), despite their awareness of statistics showing that nearly 90% of food-related choking deaths occur in children under the age of 4.
- Marshmallows pose a special risk to children under the age of 4 years because the hazard is not readily apparent. In addition, marshmallows have the following risk-related characteristics: (1) They are sweet, and therefore attract children; (2) Children do not chew food completely before swallowing; (3) They appear soft, and therefore, innocuous to parents, compared to other sweets, such as hard candy; (4) Marshmallows become stickier and slowly swell when they contact the moisture present in the mouth; (5) An aspirated piece of marshmallow can be very difficult to dislodge because it continues to expand after entering the airway, it can efficiently obstruct a large breathing passage—including the trachea; and (6) Marshmallows are light so can be inhaled easily into the respiratory system.
- Vantage Food Corporation has not developed/distributed informational materials that warn of the hidden hazards associated with marshmallows.

*Post Scenario Survey.* After they had read the scenario and the supplementary information (if it was present), participants allocated responsibility for the injury (in percentage terms, summing to 100%) to each of five entities, including: (1) Amy Lyons, (2) Amy's parents, (3) Vantage Food Corporation, (4) Food Super Savers (the grocery chain whose stores sold the marshmallows), and (5) the paramedics who treated Amy. Participants who received the warning information were asked to complete items (on 7-point scales) to assess their perceptions of the warnings. Finally, items requesting demographic information were included. Upon completing the survey, participants were debriefed and thanked for participating.

## Results

### Risk Perceptions

Preliminary analyses were conducted to assess the extent to which participants perceived the product to be hazardous. Confirming our expectation, participants perceived low risk associated with eating marshmallows. The mean hazard rating (on a scale from 0 = no risk to 6 = high risk) was 0.98, and the mean expected severity of injury was 1.02 (on a scale from 0 = no injury to 6 = severe injury). Eighty-three percent of participants indicated that they would give marshmallows to their children, and 78% indicated that they would give marshmallows to someone else's children to eat.

### Allocation of Blame

Allocation of blame was analyzed using a 5 (Source of Blame: Amy, Amy's parents, the grocery store, the manufacturer, the paramedics) X 3 (Type of Supplementary Information: positive frame, negative frame, no information) X 4 (Age of Victim: 1 1/2 years, 4-years, 8-years, 16-years) mixed model design with Source of Blame as the within-subjects factor, and the others, as between-subjects variables. The means for this analysis are presented in Table 2. Results revealed a significant main effect of Source of Blame  $F(4, 800) = 144.97, p < .01, \eta^2 = .42$ , a significant Source of Blame X Type of Information interaction,  $F(8, 800) = 4.42, p < .01, \eta^2 = .04$ , a significant Source of Blame X Age of Victim Interaction,  $F(12, 800) = 5.45, p < .01, \eta^2 = .08$ , and a significant Source of Blame X Age of Victim X Type of Information interaction,  $F(24, 800) = 1.58, p < .05, \eta^2 = .045$ .

For the Source of Blame main effect, post hoc pairwise comparisons using modified Bonferoni procedures revealed that parents were held significantly more responsible ( $M = 51.29\%$ ) than all other parties; that the victim ( $M = 24.82$ ) was held significantly more accountable than the manufacturer ( $M = 18.57$ ); and that the victim and the manufacturer was held significantly more accountable than the grocery store ( $M = 3.61$ ) and the paramedics ( $M = 1.54$ ). The latter two did not differ from one another.

**Table 2.** Mean Responsibility Ratings (Percentages) by Source of Blame, Type of Supplemental Information, and Age of Victim.

POSITIVE INFORMATION					
Source of Blame	Age of Victim (years)				Mean
	1 1/2	4	8	16	
Amy (Victim)	17.26	5.77	21.48	39.00	20.85
Amy's Parents	68.11	65.92	55.18	33.69	55.84
Manufacturer	12.70	22.15	18.70	20.96	18.58
Store	1.00	3.46	1.30	2.65	2.08
Paramedics	0.93	2.69	3.33	2.73	2.42
NO INFORMATION (Control)					
Source of Blame	Age of Victim (years)				Mean
	1 1/2	4	8	16	
Amy (Victim)	17.00	31.25	33.50	59.29	36.81
Amy's Parents	63.00	52.08	50.00	31.07	47.84
Manufacturer	16.80	13.75	12.17	8.21	12.36
Store	3.20	2.91	4.33	0.71	2.78
Paramedics	0.00	0.00	0.00	0.71	0.20
NEGATIVE INFORMATION					
Source of Blame	Age of Victim (years)				Mean
	1 1/2	4	8	16	
Amy (Victim)	13.81	24.33	29.40	15.91	21.35
Amy's Parents	51.88	45.00	48.53	35.00	45.71
Manufacturer	29.02	21.53	15.20	34.55	24.31
Store	4.50	7.07	6.87	11.82	7.31
Paramedics	0.00	2.00	0.00	2.72	1.09

Post-hoc analyses of the Source of Blame X Type of Supplementary Information interaction revealed that this effect was due mainly to the difference in blame attributed to the manufacturer versus the victim and her parents across the information conditions,  $F(2, 213) = 6.60, p < .01, \eta^2 = .06$ . Consistent with our hypothesis, blame was shifted away from the victim and parent and toward the manufacturer in the negative information condition, compared to the control and positive information condition. Also, providing positive information about the manufacturer increased the blame placed on the parents relative to others. Contrary to predictions, providing sample warnings to participants in the positive frame condition had no effect on allocations of blame ( $p > .05$ ).

Post-hoc analyses of the Source of Blame X Age of Victim interaction revealed that the blame assigned to Amy and her parents significantly varied with age, whereas blame assigned to other parties was relatively constant across age. The responsibility assigned to Amy was a significant linear function of her age: percentage of blame increased linearly from 15.65% for the 18-month Amy to 36.95% for the 16-year

old Amy. The percentage blame assigned to Amy's parents showed a significant linear decrease with victim's age, from 62.65% for the 18-month Amy to 33.25% for the 16-year old Amy. The percentage blame assigned to the manufacturer did not significantly vary with victim's age.

Finally, post-hoc analyses of the three factor (Source of Blame X Age X Type of Supplementary Information Condition) interaction revealed that warning information provided to participants influenced their responsibility ratings to different parties across victim age. When no information was provided to participants, blame is placed primarily on the parents for the young Amy, on both the parents and Amy for the middle age conditions, and primarily on Amy for the oldest age condition. The manufacturer shoulders relatively little of the responsibility for the accident, especially for the older age conditions. By contrast, the manufacturer is held significantly more responsible for the victim's injuries in the negative information condition. Interestingly, the responsibility assigned to the manufacturer was highest ( $M_s > 29\%$ ) for the youngest (18 month-old) and oldest (16 year-old) Amy. The positive information had the effect of increasing relative responsibility placed on the parents for the young age conditions.

**Perceptions of the Warning**

Fifty-nine percent of the 98 participants in the positive frame condition received supplementary information that contained two sample warnings. Items used to assess their reactions to the warnings are included as Table 3.

**Table 3.** Items used to assess participants' reactions to the sample warnings (0 = Not at All; 6 = Extremely).

	<i>M</i>	<i>SD</i>
How noticeable are the warnings?	4.45	1.40
How likely is it that people will read them?	2.73	1.62
How effective are the warnings at depicting marshmallows as a choking hazard?	4.02	1.58
How effective are they in getting people to be cautious when eating marshmallows?	3.15	1.53
How effective are they in getting people to be cautious when giving marshmallows to children?	3.71	1.68
How adequately do the warnings inform consumers of the hazards of marshmallows?	4.46	1.60

**Discussion**

The main finding is that the way in which people allocate blame for consumer product injuries is shaped by circumstances of the situation. This finding supports previous research and is consistent with what is known about how people form causal attributions. When no supplementary information was provided, participants attributed the highest percentage of blame to Amy's

parents and significantly less to the product manufacturer. This finding suggests that when potential hazards are unknown and a product is generally believed to be harmless (e.g., marshmallows), people may tend to hold manufacturers blameless, and instead assign the majority of the blame elsewhere. In this case, they directed the blame toward the parents (at least for younger Amy's). In general, the percentage of blame affixed to Amy increased linearly with age, supporting previous research in this area (e.g., Laughery et al., 1996; Resnick & Jacko, 1998).

Providing participants with negative information (i.e., letting them know that the manufacturer did not act on knowledge that the product is potentially harmful) significantly increased the responsibility placed on the manufacturer, suggesting that people perceived the manufacturer as irresponsible in their practices. This finding supports the results reported by Kalsher et al. (1998) in which participants affixed more blame to McDonalds when they were portrayed in a negative light. However, in the present study, the positively framed information condition had a significant—and opposite—effect on participants allocations that did not occur in the Kalsher et al. (1998) study. Specifically, providing participants with positive information about the manufacturer's policies and practices shifted the blame toward the parents. It is possible that participants perceived the company as trying to promote safety by communicating the peculiar "hidden" hazards associated with marshmallows. Supplementing the positively framed information with sample warnings had no impact on allocations of blame. It is not clear why this happened, since participants' indicated that the warnings were noticeable and they perceived them to be effective at informing consumers of the hazards associated with marshmallows.

These results generally support previous research in this area, but point to a need for additional studies that focus on consumer products that contain "hidden" hazards. These findings may also provide the basis for persuading manufacturers that safety pays. Specifically, they show that when companies are perceived as making a "good faith" attempt to look out for the safety of their customers, their customers, in return, may be less likely to hold them responsible when injuries do occur.

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