Representative but Irrelevant Arguments in Advertising

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Abstract

A representative but irrelevant conditional is an if-then statement that implies, but does not logically establish, a link between evidence and a product claim. For example, in the argument "*If* kids are cramped, *then* they will start fighting. Model X has plenty of room. What's left to fight about?" the product claim (i.e., no fighting) does not follow from the conditional, which states what happens when there is a lack of space, but logically establishes nothing about what happens when there is plenty of space in a car. In a lab experiment, subjects exposed to an actual 30-second TV ad based their acceptance of the claim more on an irrelevant but representative conditional than on a conditional that logically linked the evidence to the claim.

Representative but Irrelevant Arguments in Advertising

Introduction

The research reported below examines conditional (i.e., if-then) statements in advertising that apparently establish a logical connection between substantiating evidence (i.e., in the "if" part of the conditional) and a product claim (i.e., in the "then" part of the conditional), but actually invite illogical reasoning by message recipients. Representative but irrelevant conditionals used in advertising are persuasive because the evidence is easy to imagine or visualise, seems plausible as a causal antecedent of the claim, and the scenario suggested by the argument is consistent with how message recipients are likely to remember previous consumption experiences. Hence, the mental scenario represented by the conditional comes to mind more easily than alternative scenarios that would expose the illogical structure of the argument.

For example, an actual 30-second television ad for LG washing machines shows a lone still washing machine surrounded by several violently shaking machines, with the voice over stating that: "A washing machine that shakes won't last. That's why LG have designed a direct drive system giving greater balance and durability." In this context the term "balance" refers to the absence of shaking and "durability" refers to lasting a long time, the underlying structure of this argument is:

> **Evidence:** LG washing machines don't shake.
> **Conditional:** If a washing machine shakes, it won't last.
> **Claim:** LG washing machines will last.

The claim that LG washing machines will last a long time does not follow from the evidence and conditional because washing machines can break down for reasons unrelated to shaking. The argument does not eliminate these possibilities. In terms of formal logic, the evidence states that the washing machine does *not* shake, whereas the conditional refers to what would happen if the machine *did* shake. Since shaking is the opposite of not shaking, the conditional cannot logically establish anything about the claim. However, the research reported below shows that consumers are vulnerable to accepting claims supported by representative but irrelevant conditionals. A theatre test of an actual 30-second television ad shows a direct relationship between the acceptance of a representative but irrelevant conditional and the product claim. This occurred even though message recipients were told to assess the logical structure of the argument, suggesting that consumers would be even more prone to this kind of illogical reasoning in a natural viewing context.

Mental Models and Illogical Reasoning

Johnson-Laird (1986) suggests that people generate "mental models" or scenarios of the various possibilities suggested by an argument when assessing its validity. The LG ad evokes four mental models: (1) shakes and does not last, (2) shakes and lasts, (3) does not shake and does not last, and (4) does not shake and lasts. Mental model 4 logically bolsters

this argument by affirming both the evidence and the claim. Message recipients can refute the argument (i.e., judge it as invalid) if they generate and consider mental model 3, which affirms the evidence and denies the claim. However, a considerable amount of research suggests that message recipients illogically consider mental models 1 and 2 to support and refute the argument, respectively (Areni, 2002). Since both of these mental models deny the antecedent (i.e., state what happens to machines *that shake*), there is no logical conclusion that can follow if the LG Intellowasher *does not shake* (Johnson-Laird, 1986).

However, by stating the antecedent "shakes", the ad directs message recipients toward mental models 1 and 2 and away from models 3 and 4. Shaking is a salient characteristic of washing machines (i.e., a noticeable aspect of their operation), and plausible as cause of a breakdown (i.e., as an indication of loose belts or other machine parts). Moreover, the time-frame for the consequent "not lasting" is ambiguous. How long after the onset of the antecedent "shaking" does a washing machine have to function to refute mental model 2? If a shaking machine functioned perfectly for 49 loads, only to fail on the 50th, it is likely to be remembered as an instance of mental model 1 not 2. So focusing attention on the first two mental models results in a persuasive, if invalid, argument because mental model 1 is more accessible than mental model 2.

But why not present a valid argument by explicitly stating the relevant conditional (i.e., "a washing machine that doesn't shake will last")? This has the effect of focusing attention on mental models 3 and 4, the two conditionals involving washing machines that do not shake. Since mental model 4 is likely to be the most typical outcome of using a washing machine (i.e., in most episodes a machine does not shake or breakdown), it is relatively easy to generate. However, message recipients might also find it easy to generate model 3. They can imagine scenarios where washing machines break down when there are other symptoms besides shaking, such as stalling mid-cycle, excessive leaking, failing to drain after the cycle, unusual noise during the main cycle, etc. According to the mental models framework, these kinds of scenarios would render the argument invalid because the evidence (i.e., not shake) is affirmed but the consequence (i.e., last) is denied.

So stating the representative but irrelevant conditional may be more effective than stating or implying the relevant conditional because it directs message recipients toward the mental models that make it difficult to refute the argument and away from the models where refutation would be easier. Of course, a rival hypothesis is that consumers are logical in processing advertising claims. Along these lines, the research reported below tests the competing hypotheses.

H$_1$: Acceptance of the LG advertising claim is driven by the acceptance of the representative but irrelevant conditional having no logical connection to the evidence.

H$_2$: Acceptance of the LG advertising claim is driven by the acceptance of the conditional that logically establishes a connection between the evidence and the claim.

Method

One hundred and sixteen post-graduate business students from a major Australian university, with ages ranging from 24 to 45, were placed in three groups of 30-40 in a theatre setting. Respondents were instructed that they would be presented with an actual 30-second television ad for a durable consumer product. They were told to focus on the argument supporting the key claim, and to determine whether the evidence presented logically justified the claim. Questionnaires containing the independent and dependent measures were then distributed. After exposure to the ad, respondents were instructed to open the questionnaire and were given 2 minutes to complete the items.

The experimental stimulus was the actual 30-second television advertisement for the LG Intellowasher, which was shown on a large screen at the front of the theatre. The advertisement begins with a 30-35 year old male in a white lab coat entering a large open space with 7 washing machines sitting atop 20 foot columns. Six of the washing machines are shaking noticeably, but the one in the middle remains still. A male voiceover then states that "a washing machine that shakes won't last." At this point, all 6 shaking machines begin to topple from their columns leaving only the one in the middle. The actor in the lab coat shakes his head and begins making notes on his clip board. The voiceover continues "That's why LG have designed a direct drive system giving greater balance and durability," at which point the actor looks up at the remaining washing machine and smiles. The voiceover concludes with the slogan "LG – life's good." The basic structure of this ad is typical of evidence-based TV commercials (see Preston, 1977).

All of the subjective probability measures were contained on a single page. As demonstrated above, the copy from the ad was decomposed into the fundamental claim, evidence, and conditional comprising the argument. Each proposition was then presented as a questionnaire item. The item corresponding to the claim stated "The LG Intellowasher will last a long time", the item related to the evidence stated "The LG washing machine will not shake," and the item to the representative but irrelevant conditional was "If a washing machine shakes, it won't last". In order to measure agreement with the corresponding relevant conditional, the contracted negation in the consequent of the irrelevant conditional (i.e., won't) was moved to the antecedent (i.e., doesn't), resulting in the statement "If a washing machine doesn't shake, it will last". Respondents reported their acceptance of each proposition by circling the appropriate number on 11-point scales anchored by "Not at all likely" (0) and "Extremely likely" (10), as used by Wyer for similar research into logical and illogical reasoning in response to arguments (Wyer, 1970; Wyer and Goldberg, 1970). The order of the propositions was altered to create six versions of the questionnaire. Preliminary analyses revealed that question order did not influence acceptance of the four propositions, so results were aggregated over the six versions.

Results, Analysis, and Conclusion

Respondents generally accepted the propositions corresponding to LG ad. As shown in Table 1, the means for the acceptance of the evidence (M = 7.52), the claim (M = 6.45), the representative but irrelevant conditional (M = 5.90) and the relevant conditional (M = 5.63) were all above the mid-point of the scale, although only slightly so in the case of the two

conditionals. Paired comparisons revealed little or no mean difference in acceptance of the two conditionals ($t_{1,115} < 1$). In order to test hypotheses 1 and 2, multiple regression analysis was conducted. Acceptance of the evidence, the relevant conditional, and the representative but irrelevant conditional were the predictors in the model and acceptance of the claim was the dependent variable. As shown in Figure 1, acceptance of the evidence was not significant as a predictor of claim acceptance ($\beta = 0.09$, $t_{1,112} = 1.33$, $p < .19$, partial $R^2 = .02$). In other words, acceptance of the claim that the washing machine will last was not driven by how much recipients believed it did not shake. This may, in part, reflect the limited range of the responses. All of the respondents rated acceptance of the evidence at 6 or higher on the 0 – 10 scale. However, acceptance of the representative but irrelevant conditional was predictive of claim acceptance ($\beta = 0.43$, $t_{1,112} = 5.44$, $p < .0001$, partial $R^2 = .25$), supporting hypothesis 1, and acceptance of the relevant conditional was not ($\beta = .04$, $t_{1,112} < 1$), refuting hypothesis 2.

Table 1 - Means and Standard Deviations for the Beliefs Related to the LG Intellowasher Argument

Proposition	Corresponding Statement	Mean	Standard Deviation
Evidence	"The LG Intellowasher will not shake"	7.52	2.47
Claim	"The LG Intellowasher will last a long time."	6.45	2.13
Irrelevant Conditional	"If a washing machine shakes, it won't last."	5.90	2.90
Relevant Conditional	"If a washing machine doesn't shake, it will last."	5.63	3.06

Figure 1 - Regression Results Showing which Beliefs Predicted Claim Acceptance

Evidence
"The LG Intellowasher will not shake."

$\beta = 0.09$, $t_{1,112} = 1.33$, $p < .19$, partial $R^2 = .02$

Irrelevant Conditional
"If a washing machine shakes, it won't last."

$\beta = 0.43$, $t_{1,112} = 5.44$, $p < .0001$, partial $R^2 = .25$

Claim
"The LG Intellowasher will last a long time."

Relevant Conditional
"If a washing machine doesn't shake, it will last."

$\beta = 0.04$, $t_{1,112} < 1$, partial $R^2 = .00$
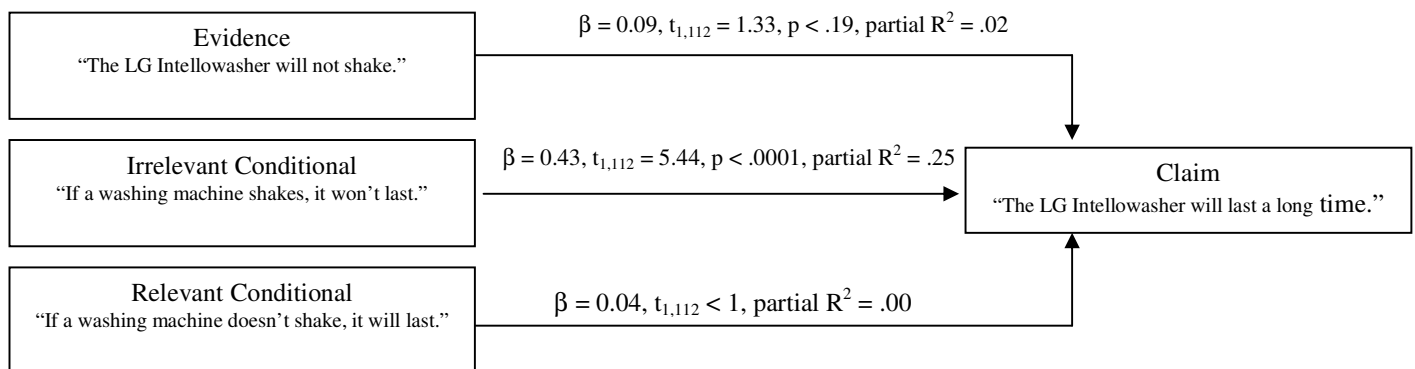
These results indicate that respondents based acceptance of the claim that the machine will last on acceptance of the representative but irrelevant conditional. This occurred even though they were told to "determine whether the evidence presented logically justified the

conclusion", and they were presented with a relevant conditional establishing a logical relationship between the evidence and the claim. The representative but irrelevant conditional was not any more believable than the relevant conditional; it was simply relied on more heavily to determine acceptance of the claim.

Although much advertising relies on implicit forms of persuasion involving simple associations, symbolism, imagery, humour, figures of speech, and music, some advertising is argument-based (Areni, 2002), with aspects of the execution designed to facilitate acceptance of a key product claim. The research reported above suggests that consumers may be limited in their ability to evaluate arguments in advertising, and that copywriters understand and exploit these shortcomings. Keep in mind that the copywriters could have constructed a logical argument using the relevant conditional that "a washing machine that doesn't shake will last". Indeed, the visual elements of the argument demonstrate both conditionals – the washing machines that shake do not last, and the washing machine that does not shake lasts. All other elements in the ad could have remained exactly the same, with the relevant conditional uttered by the voiceover instead of the representative but irrelevant conditional. This research suggests that the copywriters made a wise decision and offers an explanation for why this is the case.

However, there are at least two alternative explanations for the results reported above, both of which stem from the use of an actual 30-second television ad featuring a well-known brand in a familiar product category. First, respondents could have based their acceptance of the claim on previous experiences and word-of-mouth regarding LG washing machines, other LG products, and washing machines in general. So, acceptance of the claim might be driven by the belief that LG makes reliable products, or that washing machines in general last a long time, rather than anything said in the ad. The second explanation for these results is an extension of the first. Rather than reasoning solely from prior knowledge, respondents may have integrated the stated propositions with existing knowledge to generate new propositions (Cherubini et al., 1998; Moore, 1986). This seems particularly likely in an advertising setting, where message recipients assume that they are to expand on what is actually said in evaluating product claims (Preston and Scharbach, 1971). So, for example, the "direct drive" mechanism referred to in the ad implies the absence of belts. If a respondent believed that shaking stems from loose belts, then the evidence should be quite persuasive. But if a respondent linked shaking to the timing mechanism, then the implied absence of belts would not necessarily lead to acceptance of the evidence.

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