

Instilling resistance to scarcity advertisement

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Abstract

This study examined the effectiveness of instilling resistance to scarcity advertisements among college students. Participants, who were undergraduate students enrolled in introductory psychology classes in their first year of college, were taught the distinction between legitimate and illegitimate uses of scarcity in advertisements through constructivist learning theory-based training. Following Constructivist Learning Theory which suggests that direct experience is a powerful learning tool, some participants had their vulnerability to deception demonstrated to them by unambiguously showing them that they had been misled by illegitimate scarcity advertisements. Other participants only read about how to distinguish illegitimate from legitimate uses of scarcity in advertisements. Results showed that participants with direct experience of demonstrated vulnerability found the advertisements to have manipulative intent and to be unpersuasive. Results suggest that Constructivist Learning Theory-based programs can effectively train students on identifying illegitimate scarcity advertisements; such training in schools and colleges may help students become critical thinkers.

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Have you ever purchased a product or service that you did not need because you saw an advertisement encouraging you to make this purchase? Most people would say that they have never done this but know people who have. This occurrence, popularly known as the illusion of invulnerability, can be clearly observed in risk-taking behaviour where people perceive themselves to be relatively immune from the negative consequences of their actions (e.g., even though I do not use condoms, I won't get AIDS) relative to their peers (e.g., other people are vulnerable to HIV infection after unprotected sex), (Aiken, Gerend, & Jackson, 2001). Consequently, efforts to decrease risky actions (e.g., driving while intoxicated) and increase preventative behaviour (e.g., designate a driver) tend to be difficult to instill because people believe that they are immune to disastrous consequences. Programs in schools and colleges designed to decrease such risky behaviour are unsuccessful for the same reason.

The illusion of invulnerability can also be observed in advertisements where people believe that others, but not themselves, will be misled by deceptive advertising.

While advertisers are in business of influencing people to purchase products and services, such persuasion tactics are not always used in an honest manner. Cialdini (2001) recognises various ways in which these persuasion tactics may be used unscrupulously to persuade others. For instance, advertisements may use authority figures to sell a product but the authority figure may not always be a true authority for the product. Similarly, a product marketed as scarce may actually be a limited edition that can be mass-produced if the manufacturer decides to do so. Researchers have also examined other influence techniques such as foot-in-the-door where a larger request follows a smaller request that was granted (Freedman & Fraser, 1966), door-in-the-face where a large request that is denied is followed by a smaller request in hopes that the smaller request will be granted (Cialdini et al., 1975), and low-balling where an initial low cost that is agreed on is denied and replaced by a larger cost (Cialdini, Cacioppo, Bassett, & Miller, 1978). This paper examines the illusion of invulnerability in print advertisements and investigates training as a possible way to instill perceptions of vulnerability to deceptive advertisements and to teach college students the distinction between legitimate and illegitimate persuasion tactics in advertisements. The training used in this study is informed by Constructivist Learning Theory, an approach that attempts to teach through experience so that learners integrate the information and can intuitively apply the information to other similar situations.

Constructivist learning theory

Constructivist Learning Theory belongs to the group of theories collectively known as “Learning Theories” that explicate how humans and animals learn. Learning theories encompass three major domains: behaviourism, cognitivism, and constructionism. Behaviourism, investigated by B. F. Skinner, is based on the idea that conditions in the environment determine learning and repetition of behaviour, either through reinforcement which ensure that behaviour is repeated or punishment which diminishes repetition of behaviour. Cognitivism, which replaced behaviourism, is based on the idea that there are mental processes and states that determine learning. Constructivism is a process whereby new ideas and concepts are built on existing knowledge. The learner goes through experiences which are integrated into a knowledge structure.

This study focuses on training students on illegitimate advertising techniques and on the illusion of invulnerability using Constructivist Learning Theory, which was first introduced by Jean Piaget. Constructivist Learning Theory is a process by which students learn through experiences and constantly build on experiences and existing knowledge. According to this theory, the learner assimilates new knowledge learned from active experiences into the existing knowledge framework. The learner may go through social experiences which are integrated into the learner’s existing body of knowledge. Gredler (1997) suggested that people learn through social experiences with others. The background and culture of the learner shape and give meaning to information that is learned. The constructivist approach features the instruction as facilitator and not teacher (Boursfeld, 1995). Facilitation creates meaningful exercises and events for the learner to experience. The learner goes through these experiences and integrates and processes information that is learned from these experiences. The learner is an intuitive thinker who is able to form connections and draw conclusions (Gredler). The learner uses intuitive thinking to apply learned knowledge to other similar events and situations. The learner is also a critical thinker who examines events and situations analytically. This approach can be taught to adults as it is a non-traditional method of learning.

Students in schools and colleges are constantly exposed to advertisements on billboards in school cafeterias or on television. They receive little to no training on how to critically evaluate persuasive attempts in advertisements, thereby making them vulnerable to false advertising. Those who are able to accurately decide when to be persuaded may have learned this through experiences of being misled into buying products and services that they either did not need or want or which did not live up to promises. Therefore, educating students on illusions of vulnerability and illegitimate advertisement tactics may help students critically evaluate advertisements through mock experiences in the classroom without going through such experiences in life. A training program built on Constructivist Learning Theory will enable students to discover, evaluate, apply, and build on existing knowledge structures of illegitimate and legitimate advertising tactics.

Learning theories are also linked to Maslow's Hierarchy of Needs which is a motivational perspective that suggests that people will seek to meet lower level needs first before attempting to meet higher order needs. Once needs for food, protection, shelter, and belonging are met, people may seek to meet cognitive needs. Maslow believed that humans have a need for knowledge and understanding; humans have a need to explore, discover, and learn and an innate curiosity to comprehend the world. This need develops during childhood and continues to grow throughout life. People may select to think, understand, and learn when faced with something puzzling. In this study, students faced with the vulnerability of being misled may have their cognitive needs aroused; this may propel them to learn and understand to reduce the chances of being misled in future.

Resistance to persuasion techniques

While tremendous research exists on persuasion techniques, little research is conducted to develop, test, and evaluate the effectiveness of resistance to persuasion training in learning environments such as schools and colleges. There have been three main techniques on instilling resistance to persuasion: a) forewarning (Papageorgis, 1968; Petty & Cacioppo, 1977, 1979), b) inoculation (McGuire, 1964), and c) explicit training (Sagarin, Cialdini, Rice, & Serna, 2002). However, only explicit training is dedicating to teaching students through experience. Additionally, only explicit training is an effective means to instill resistance to persuasion. Research on forewarning suggests that warning the target of an upcoming persuasive message may instill some resistance to persuasion in the target. However, other research suggests that forewarning is only effective in situations where the persuasive message bears personal relevance (Wood & Quinn, 2003). This indicates that students may use forewarning effectively only if they have learned about deceptive advertising from past experiences so that the message has personal relevance. Therefore, simply warning about a message is not helpful if the targets have not experienced an illegitimately persuasive message. Constructivist Learning Theory supports this finding and suggests that experiences are a powerful way to learn about deceptive advertisements. However, forewarning can only be used in cases of personal relevance or personal experience, rendering it difficult to use as a technique.

McGuire (1964) suggested that an effective way to instill resistance to persuasion is to inoculate the target by exposing the target to a weak argument and having the target generate counter-arguments to the message. This technique is analogous to biological inoculations where patients are administered a weakened form of a bacteria to rouse the biological system to produce antibodies in defense. McGuire

suggested that motivation to resist and ability to resist are necessary for successful inoculation. While this technique can be taught to students, it is difficult to instill motivation and ability to resist persuasion among students, especially if students have not been through personal experience or if the messages have no personal relevance. Therefore, students may have difficulty learning and applying this technique. In conclusion, neither forewarning nor inoculation is effective as a teaching tool to reduce the effectiveness of persuasion in advertisements.

A more recent technique to instill resistance comes from Sagarin, Cialdini, Rice, and Serna (2002). They examined the effects of illusions of invulnerability in the domain of interpersonal influence through advertisements. This study has strong relevance for Constructivist Learning Theory-based teaching and learning that could be implemented in schools and colleges with a focus on helping students learn how to identify deceptive advertising tactics. Participants were assigned to either the treatment condition or the control condition. Participants in the treatment condition were taught the distinction between legitimate authorities (i.e., experts speaking within their areas of expertise) from illegitimate authorities in advertisements (i.e., experts speaking outside their areas of expertise or non-experts dressed as authority figures such as a model wearing a lab coat and stethoscope). Participants in the control condition were taught to focus on the tone and colour of the ad. Within the treatment condition, participants either had their vulnerability to deception demonstrated to them, the distinction between legitimate and illegitimate authority asserted with inquiry or asserted without inquiry.

Participants in the demonstrated vulnerability condition were asked to examine an advertisement containing an illegitimate authority and to indicate how convincing they found the advertisement on a seven-point scale. Some participants were informed that if they had found the advertisement even “somewhat convincing” (the second point on the seven point scale), then they had been misled. Other participants were not told this. This method of informing participants provided them with the experience of being directly misled by an advertisement, thus dispelling the illusion that they are invulnerable to illegitimate advertising. Participants were asked to rate a set of ads and indicate the extent to which they found the ads persuasive and manipulative. Participants exhibited resistance to illegitimate authorities in advertisements only when their vulnerability to illegitimate authorities had been demonstrated by telling them that they had been misled.

Why would people maintain illusions of invulnerability, given their maladaptive effects? Research has shown that illusions of invulnerability serve an ego-protective function and facilitate an optimistic perspective (Fiske & Taylor, 1991; Taylor & Brown, 1988). Sagarin, Cialdini, Rice, and Serna (2002) dispelled participants’ illusions of invulnerability by unambiguously demonstrating that participants could be misled by an illegitimate authority in the advertisement. As a result, participants could no longer protect their egos by maintaining their illusions. Instead, it became more ego-protecting for participants to drop the illusion and learn to resist illegitimate influence, thus ensuring that they would not be misled in future. Similar Constructivist Learning Theory-based training techniques can be easily implemented in schools and colleges to dispel illusions of invulnerability and encourage students to critically think when exposed to advertisements. Once students realise that they have been misled by false advertising, they may experience a need to avoid being misled in future. This need may fuel deep learning and integration of learning and may foster critical thinking. This training can also be linked to the hierarchy of needs. Students, who have their basic physiological needs of food, shelter, protection, and belongingness fulfilled will

seek to fulfill their cognitive needs. Students who are shown that they are prone to being misled by false advertising will likely have their cognitive needs aroused and can be trained to understand and apply the difference between legitimate and illegitimate persuasion tactics. Training students who are in the cognitive needs stage will be more effective than training people who are at a different level in the hierarchy of needs. A demonstration of vulnerability may be sufficient to arouse the cognitive needs level and thereby facilitate learning.

Overview of the experiment

The purpose of this study was to instill resistance to illegitimate scarcity advertisements by teaching participants the rules discriminating illegitimate from legitimate scarcity appeals and providing personal and direct experience of illegitimate scarcity advertisements that attempt to deceive them. The underlying training principle is based on Constructivist Learning Theory which suggests that direct experiences are a powerful way to help students learn as they have personal relevance and are integrated into their existing body of knowledge. The distinction between illegitimate and legitimate advertisements was based on two rules. The first rule was that scarcity advertisements that deceive people into thinking a product is scarce when it is not scarce should be rejected. For instance, the large caption of an advertisement for an antique-looking table says that the table is from the early 1900s. However, the fine print of the advertisement says that the carving designs on the legs of the table were copied from the early 1900s. The second rule was whether the scarcity was genuine or manufactured. Genuine scarcity was considered to be legitimate and manufactured scarcity was considered to be illegitimate. Therefore, a product that cannot be created anymore has genuine scarcity (e.g., original coins from the 1800s are considered to be genuinely scarce as they cannot be manufactured today). However, a product that the manufacturer has decided to produce in limited quantities has manufactured scarcity since the manufacturer can always create more (e.g., a limited edition of an ornament can always be mass produced if the manufacturer decides to do so).

Participants in this study were assigned to either the treatment condition or the control condition. Participants in the treatment condition received one of three treatments: (1) demonstrated vulnerability, (2) asserted vulnerability, and (3) asserted vulnerability with inquiry. In the demonstrated vulnerability condition, participants received strong evidence that they had been susceptible to the persuasive impact of an illegitimate scarcity advertisement. Participants in the asserted vulnerability condition were taught the distinction between illegitimate and legitimate scarcity advertisements, and participants in the asserted vulnerability condition with inquiry were taught the same distinction and were then asked to rate how convincing they initially found the advertisement before receiving the distinction. Participants in the control condition learned about the use of tone and colour in advertisements. Participants in all four conditions then rated a different set of scarcity advertisements. Half the advertisements used scarcity appeals legitimately and the other half used scarcity appeals illegitimately. We expected an interaction effect of the treatment condition with the control condition such that participants in the treatment condition, relative to participants in the control condition, would find the illegitimate advertisements less persuasive and more manipulative. We also predicted that participants in the demonstrated vulnerability condition versus participants in the asserted or asserted with inquiry conditions would find the illegitimate advertisements least persuasive and most manipulative.

Method

Participants

Participants were 174 undergraduates enrolled in an introductory psychology course at Northern Illinois University. Ages ranged from 18 years to 42 years ($M=19.13$, $SD=2.07$).

Stimulus materials

Twelve full-page colour and black and white advertisements were selected from magazines and newspapers. Six advertisements were used for the training and six different advertisements were rated by participants. The training advertisements and rating advertisements were balanced to include equal numbers of legitimate and illegitimate scarcity advertisements. The three legitimate advertisements used for the training were: coins from the late 1800s and early 1900s, an antique table circa 1740–1775, and an original, un-restored portrait by painter Augustus Fuller (1815–1973). These advertisements met both rules for legitimate scarcity as they did not deceive people into thinking that these were scarce and cannot be manufactured again. These items were genuinely scarce. The three illegitimate advertisements used for the training were: a modern-day manufactured watch utilising an updated mechanical movement first designed in the 1920s, a limited edition of a Christmas Tree ornament, and a one-day only J C Penny sale. The watch deceived people into thinking it was scarce as the title that referred to the watch as from the 1920s but the fine print stated that only the mechanical movement of the watch was copied from the 1920s. The watch also can be manufactured in large quantities but is marketed as scarce. Similarly, the limited edition of a Christmas Tree ornament indicated that the ornament was scarce but the fine-print again indicated that a design was copied from an early 1900s Christmas Tree ornament. Also, the manufacturer decided to limit the number of Christmas Tree ornaments produced; however mass amounts of these ornaments could be produced in future. The J C Penny advertisement was considered as illegitimate scarcity advertisement since the advertisement was for a one-day only sale. However, J C Penny has had one-day sales since then.

The three legitimate advertisements used for the rating were: original sports memorabilia from the 1930s to 1970s, a historic house built in 1764 that retains some of its original features, and an original bookcase from 1890. The three illegitimate advertisements used for the rating were: a pair of earrings whose design was copied from 1910, Disney's limited edition DVDs, and a limited edition Cubs Christmas Bell. The advertisements were selected to clearly depict both rules of scarcity advertisements and to clearly fit the legitimate-illegitimate distinction.

Procedure

Participants were randomly assigned to either the treatment or control condition and received the respective packet of materials that contained the advertisements, treatment or control materials and rating scales. On completion, participants were thanked, debriefed, and dismissed.

Independent variables

This was a 4 x 2 factorial design with four between-subjects levels of treatment (tone and colour control condition, demonstrated vulnerability treatment condition, asserted vulnerability treatment condition, and asserted vulnerability with inquiry treatment condition) and two within-subjects level of legitimacy (legitimate and illegitimate scarcity advertisements). Participants were randomly assigned to one of these four conditions.

Tone and colour control. Participants were asked to focus on the use of tone and colour in creating attractive advertisements. Participants' focus on tone and colour ensured that they spent the same amount of time examining the advertisements as participants in the treatment conditions.

Asserted vulnerability condition. Participants were exposed to the distinction between legitimate and illegitimate scarcity advertisements as applied to the first training advertisement:

Take a look at advertisement #1. Did you find the advertisement to be even somewhat convincing? If so, then you got fooled. Unethical advertisements like this fool most people. But if we want to protect ourselves from manipulation, we need to know what makes an advertisement ethical or unethical.

Many advertisements, such as this one, use scarcity to sell a product. An advertisement uses scarcity when it claims that a product is rare or only available for a limited time. But not all advertisements use scarcity ethically. For scarcity to be used ethically, it must pass two tests. First, the advertisement should not try to deceive people into thinking a product is scarce when it is not. An example of this is an advertisement that pictures an antique-looking armchair from the 1900s. But on further reading, the reader finds out that the armchair was actually manufactured last year and it's only the carving design that was copied from an armchair from the 1900s.

The second test is whether the scarcity is genuine or manufactured. A product that cannot be created anymore has genuine scarcity. For example, tickets to the Superbowl would be considered genuinely scarce because there are only a limited number of seats. An example of manufactured scarcity would be a limited edition of an ornament. The manufacturer has decided to make only a few ornaments in order to make them appear scarce. However, the manufacturer can always make more ornaments.

Let us use these tests to examine advertisement #1. The title of the advertisement implies that the watch is an historical antique. However, on further reading, we discover that the watch they're selling isn't from 1922. It's a reproduction of a 1922 watch. So this advertisement fails the first test: The advertisement implies that the watch they're selling is an antique but it's not. When you looked at this advertisement, did you notice that the advertisement was trying to deceive you? Did you ask yourself whether the scarcity was real? If you did not, then you left yourself vulnerable to advertisers that are trying to manipulate you.

In all treatment conditions, this distinction was then applied to five other advertisements, following which participants were given the opportunity to rate a different set of six advertisements.

Asserted vulnerability with inquiry condition. Participants read the distinction of illegitimate and legitimate scarcity advertisements and the application of the distinction to the first advertisement, and then rated the extent to which they found the advertisement convincing on 7-point scale ranging from *not at all convincing* (0) to *extremely convincing* (6). Following this, participants received further training on the distinction by having the distinction applied to five other advertisements.

Demonstrated vulnerability treatment. Participants examined an illegitimate scarcity advertisement and rated how convincing they found the advertisement on a 7-point scale ranging from not at all convincing (0) to extremely convincing (6). Participants' vulnerability to the advertisement was demonstrated by the following statement, "Take a look at your answer to the first question. Did you find the advertisement to be even "somewhat convincing"? If so, then you got fooled. Unethical advertisements like this fool most people. But if we want to protect ourselves from being manipulated, we need to know what makes an advertisement ethical or unethical." Participants received the distinction between illegitimate and legitimate scarcity advertisements and the two distinctions were applied to the first advertisement. The remainder of the materials applied the scarcity distinction to another five advertisements.

Dependent variables

After reading the training materials for the six advertisements, participants rated six more advertisements, three of which utilised scarcity illegitimately and three which used scarcity legitimately. The ratings scales were adapted from Campbell (1995) and comprised an eight-item scale assessing persuasiveness of the advertisement and a six-item scale assessing undue manipulative intent. The 8-item advertisement persuasiveness scale consisted of four items measuring perceptions of the brand along the following dimensions: bad/good, pleasant/unpleasant, low quality/high quality, likable/dislikeable. One item measured the likelihood of future use of the product along the dimension extremely unlikely/extremely likely, and three items measured perceptions of the advertisement along the dimensions pleasant/unpleasant, bad/good, awful/nice. Participants responded to items on a 7-point scale. Exploratory factor analyses run using principal components analysis and the scree plot criterion indicated a single factor for advertisement persuasiveness. As a result, we combined the eight questions into a single advertisement persuasiveness scale (e.g., Cronbach's α for the book case advertisement = .87, for the DVD advertisement = .91). The 6-item perception of undue manipulative intent scale consisted of items such as "The way this advertisement tries to persuade people seems acceptable to me," and "The advertiser tried to manipulate the audience in ways that I do not like." Participants responded to items on a 7-point scale. As with advertisement persuasiveness, exploratory factor analyses suggested one factor, and the six questions were combined into a single manipulative intent scale (e.g., Cronbach's α for the book case advertisement = .88, for the DVD advertisement = .90).

Results

Descriptive statistics for persuasion and manipulative intent for the scarcity advertisements are shown in Table 1. Scores for the items for the advertisements were combined to create four composites (collapsed across advertisements): (a) persuasiveness of legitimate scarcity advertisements (Cronbach's α = .89), (b) persuasiveness of illegitimate scarcity advertisements (Cronbach's α = .90), (c)

manipulative intent of legitimate scarcity advertisements (Cronbach's $\alpha = .87$), and (d) manipulative intent of illegitimate scarcity advertisements (Cronbach's $\alpha = .90$). We ran two separate MANOVAs. The first model had treatment as the between-subjects factor and persuasion for legitimate and illegitimate scarcity as the within-subject factors. The second model had treatment as the between-subjects factor and manipulative intent for illegitimate and legitimate scarcity as the within-subjects factor.

The Treatment x Legitimacy interaction was significant only for manipulative intent, $F(3, 170) = 3.50, p < .02$, but not for persuasion, $F(3, 170) = 1.72, p > .17$. An examination of the simple effects within the Treatment x Legitimacy interaction for persuasion showed only one significant simple effect of participants in the demonstrated vulnerability condition perceiving the advertisements with illegitimate scarcity as less persuasive compared with participants in the control condition $F(1, 170) = 4.54, p < .04$. Participants in the asserted vulnerability with inquiry condition saw the illegitimate advertisements as less persuasive than participants in the control condition but this effect only approached significance, $F(1, 170) = 2.92, p = .09$.

The simple effects within the Treatment x Legitimacy interaction for manipulative intent showed that participants in the demonstrated vulnerability condition considered the illegitimate advertisements to be more manipulative than participants in the control condition, $F(1, 170) = 17.94, p < .001$. Participants in the asserted vulnerability condition found the illegitimate scarcity advertisements to be more manipulative than participants in the control condition, $F(1, 170) = 11.36, p < .001$. Finally, participants in the asserted vulnerability with inquiry condition found the illegitimate scarcity advertisements to be more manipulative than participants in the control condition, $F(1, 170) = 13.61, p < .03$. The only significant simple effect emerged for the legitimate advertisements for manipulative intent for the asserted vulnerability with inquiry participants who saw the legitimate scarcity advertisements as more manipulative than participants in the control condition.

Discussion

This study sought to instill resistance to persuasion and dispel illusions of invulnerability to advertisements using illegitimate scarcity tactics. The training provided to students to achieve these goals was based on Constructivist Learning Theory which suggests that providing students with direct experience of being misled by false advertisements is a powerful way to teach students. Such experiences are integrated into students' existing body of knowledge and enable students to think critically. This training can also be linked to Maslow's hierarchy of needs. Students who have the cognitive level needs after having their need for food, shelter, protection, and belonging satisfied, can be trained. This training is most effective after a demonstration of vulnerability as this may help arouse cognitive needs to understand why they were vulnerable and learn the distinction between legitimate and illegitimate advertising tactics so that they are not misled in future. The training, which was found to be effective in instilling resistance to persuasion can be taught to students in schools and colleges. It can also be extended to other domains of risky behaviour where possible. Findings from this research could encourage advertisers to be less deceptive and adopt honest and ethical techniques in advertising.

Participants were assigned to one of four conditions. Three conditions were treatment conditions and one condition was the control condition. Participants in

the treatment were assigned to either: a) the demonstrated vulnerability condition where they had their vulnerability to being misled by advertisements clearly shown to them, b) the asserted vulnerability condition where they were told that some advertisements use scarcity techniques illegitimately, or c) the asserted vulnerability with inquiry condition where they rated the extent to which they found an advertisement convincing and then read about how some advertisements use scarcity tactics illegitimately. Participants were provided two rules that clearly distinguished legitimate and illegitimate uses of scarcity in advertisements. Following this, participants were shown advertisements and were taught how to apply these rules to determine whether or not the advertisements used scarcity techniques legitimately. Advertisements for this study were selected to unambiguously embody both rules of scarcity. Participants in the control condition did not receive the distinction between illegitimate and legitimate scarcity advertisements and were asked to focus on the tone and colour of advertisements instead.

The Constructivist Learning Theory-based training was successful in making them resistant to illegitimate scarcity advertisements. Participants were exposed to illegitimate advertisements and were clearly misled by the advertisements. Placing students in such situations provided direct experience that they were vulnerable to deceptive advertisements. For persuasion, the demonstrated vulnerability condition created the strongest resistance to persuasion. For manipulative intent, all three treatment conditions were successful in instilling resistance, though the strongest effect was created by the demonstrated vulnerability condition. It is also evident that the treatment condition was successful in instilling resistance to only illegitimate scarcity advertisements and not to legitimate scarcity advertisements. Participants were able to see legitimate advertisements as more persuasive and less manipulative than illegitimate advertisements, which suggest that participants were able to make a successful differentiation between the two types of advertisements and adjust their position accordingly. This is an important aspect of critical thinking as students did not exhibit heightened wariness towards all advertisements but were able to critically examine advertisements and demonstrated resistance to only illegitimate advertisements.

Consistent with previous research, this finding lends support to the illusion of invulnerability of people believing themselves to be relatively immune from the misfortunes and gullibility that befall their peers. This is observed for participants in the demonstrated vulnerability condition who perceived advertisements with illegitimate scarcity to be more manipulative and less persuasive than participants in the other three conditions. This study also lends support to training students to identify whether or not to be persuaded. Participants in the control condition who did not receive this training found advertisements with illegitimate scarcity tactics to be persuasive and without strong manipulative intent. It seems that providing students with direct experience of being misled by clearly and forcefully providing evidence of their own susceptibility to dishonest persuasion and manipulation and subsequently training them on when to be persuaded may be a powerful way to instill students with techniques to resist such persuasive attempts in future. This type of training, based on the Constructivist Learning Theory, allows students to experience first-hand their vulnerability to deception. This direct experience may be powerful enough to garner their focus on distinguishing between legitimate and illegitimate authorities. Students may build on their experience of being misled by easily learning and applying the rules they were taught to new advertisements. This enables them to be critical thinkers who do not demonstrate resistance to all advertisements but only those attempting to influence them using illegitimate tactics.

This study contributes to existing research on Constructivist Learning Theory training techniques of providing direct experience and training to teach people to learn and apply the two rules of scarcity. Direct experience is clearly more powerful than reading materials as such experience bears personal relevance since it is first-hand. This is seen in the present study where the greatest resistance to persuasion and strongest manipulative intent to illegitimate advertisements was observed by the demonstrated vulnerability group participants who had direct experience of being misled. Participants who did not go through the experience of being misled did not perceive manipulative intent and did not demonstrate resistance to persuasion. Direct experience may also be easily interpreted and more intuitive than reading materials and fosters critical thinking.

There are some clear limitations to our study that future research could address and examine. First, our study did not examine the length of resistance to illegitimate persuasion. Participants may learn and remember the rules distinguishing between legitimate and illegitimate scarcity for a long time only if their vulnerability to being misled by such advertisements was clearly demonstrated to them. People may need to go through many experiences of being misled before they draw conclusions. People may also become defensive after being misled and draw incorrect conclusions. Alternatively, it is possible that people forget these rules once their participation in the study ends. Future studies could profitably examine whether the effects of such training is lasting. Second, the sample used comprised college students who may not have been exposed to many instances of being misled into purchasing unworthy or unwanted products and services. Older adults may automatically learn persuasion rules after going through experiences of being misled. Researchers studying this effect with adults in the workforce may observe greater resistance to persuasion regardless of the training than observed with college students.

Third, we did not obtain an independent measure of participants' ability to detect deception. Individual differences in the ability to detect deception may exist and these differences may influence people's ability (or inability) to detect deception. Fourth, the advertisements used in this study were carefully selected to meet both rules for scarcity. Most advertisements on TV or in magazines may not be clear. Advertisements often use a variety of persuasion tactics and not simply scarcity alone. It would be worthwhile for researchers to examine the effectiveness of persuasion training on advertisements in different media (e.g., on TV, on the radio, on the internet) as well as the effectiveness of training as applied to a combination of persuasion tactics. Despite these limitations, it is encouraging to observe that people who receive direct experience and training on distinguishing legitimate from illegitimate persuasion tactics are able to clearly identify advertisements using such tactics and resist being persuaded by them. Training in this Constructivist Learning Theory-based manner may create critical students who remember and apply what they have learned from direct experience.

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Table 1

Cell Means and Standard Deviations for Persuasion and Manipulative Intent

Condition	Persuasion		Manipulative Intent	
	M	SD	M	SD
Legitimate Scarcity				
Tone/Colour	3.68 ^a	.82	2.00 ^a	.80
Asserted vulnerability	3.62 ^a	.82	2.16	.85
Asserted vulnerability with inquiry	3.61 ^a	.72	2.36 ^b	.81
Demonstrated vulnerability	3.79 ^a	.89	2.08	.88
Illegitimate Scarcity				
Tone/Colour	3.75 ^a	.87	2.07 ^a	.95
Asserted vulnerability	3.45 ^b	.80	2.80 ^b	.95
Asserted vulnerability with inquiry	3.42 ^b	.87	2.89 ^b	1.04
Demonstrated vulnerability	3.35 ^b	1.00	2.99 ^b	1.11

Note. Advertisement persuasiveness was scored on a 7-point scale from 0 to 6, with larger scores indicating greater persuasiveness and more manipulative intent. Means within a column that do not share a superscript differ significantly from each other ($p < .05$).