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Research Article

Popcorn in the cinema: Oral interference sabotages advertising effects

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Abstract

One important psychological mechanism of advertising is mere exposure inducing positive attitudes towards brands. Recent basic research has shown that the underlying mechanism of mere exposure for words, in turn, is the training of subvocal pronunciation, which can be obstructed by oral motor-interference. Commercials for foreign brands were shown in cinema sessions while participants either ate popcorn, chewed gum (oral interference) or consumed a single sugar cube (control). Brand choice and brand attitudes were assessed one week later. While control participants more likely spent money (Experiment 1, $N = 188$) and exhibited higher preference and physiological responses (Experiment 2, $N = 96$) for advertised than for novel brands, participants who had consumed popcorn or gum during commercials showed no advertising effects. It is concluded that advertising might be futile under ecological situations involving oral interference, such as snacking or talking, which ironically is often the case.

Keywords: Advertising; Embodiment; Persuasion; Marketing; Mere exposure

Introduction

The main purpose of marketing and advertising is to induce a more favorable brand attitude thereby increasing the likelihood of eventual brand choice (e.g., Baker, 1999; Elliott & Yannopoulou, 2007). A central psychological mechanism of the impact of advertising on brand choice is the mere exposure effect (for a review, see Grimes & Kitchen, 2007). This effect, well-established in experimental psychology (Bornstein, 1989), is the phenomenon that any sort of stimulus is preferred when it is repeatedly presented (Zajonc, 1968). This preference in turn is due to higher processing fluency, that is, increased efficiency of information processing, of repeated compared to novel stimuli (Reber, Winkielman, & Schwarz, 1998), with earlier research having shown that high fluency per se feels generally positive (Reber, Schwarz, & Winkielman, 2004; Topolinski, Likowski, Weyers, & Strack, 2009; Topolinski & Reber, 2010; Topolinski & Strack, 2009a, 2009c). In that sense, advertising is simply a method to repeat brands and thus increase the easiness and joy in mentally processing a brand name. Indeed, earlier research has shown that mere exposure of brands actually increases positive attitudes and the likelihood of eventual brand choice (e.g., Baker, 1999; Blüher & Pahl, 2007; Janiszewski, 1993; Lodish, Magid, Kalmenson, Livelsberger, & Lubetkin, 1995; Matthes, Schemer, & Wirth, 2007).

Recent basic research has shown that the causal mechanism of the mere exposure effect, in turn, is the fluency of covert stimulus-specific motor-simulations (Topolinski & Strack, 2009b). The underlying rational for this was the following. For words, for instance, each time a word is encountered, a covert simulation of pronouncing the word takes place (cf., Stroop, 1935). When the word is encountered repeatedly, this covert pronouncing simulation is also repeated and thus runs more fluently for repeated compared to novel words. This gain in oral motor-fluency triggers a positive feeling that drives mere exposure effects (see also Leder, Bär, & Topolinski, 2013;

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Moreland & Topolinski, 2010; Topolinski, 2010). However, when the oral motor-system is prevented from training such sub-vocalizations, for instance by merely chewing gum, there is no gain in pronunciation simulation fluency for old over novel words and thus no exposure effects for words (Topolinski & Strack, 2009b, 2010).

Testing this oral embodiment account of the mere exposure effect, Topolinski and Strack (2009b) presented nonsense words and Chinese ideographs (as a control condition) to participants — with a random half of these stimuli repeated — and asked how much the participants liked each of these stimuli. Crucially, two kinds of motor interference were implemented. A control group simply kneaded a ball as a manual interference. This should introduce some distraction but left the mouth free to covertly simulate the pronunciation of the names. A crucial experimental group, however, chewed gum during the presentation of the stimuli, which should prevent their mouth from simulating the words' pronunciation. The result was that the manual group preferred repeated over novel names, but the oral motor-interference group did not. In contrast, both groups preferred repeated over novel ideographs, obviously because neither the manual nor the oral secondary task interfered with the merely visual encoding of these images.

Moreover, Topolinski and Strack (2009b, Experiment 3) investigated a double dissociation between two sorts of stimuli and two sorts of simulation modality. Specifically, in another experiment they presented (partially repeated) words and tunes. While words are to be spoken, tunes are to be sung. Thus, it was hypothesized that a mere exposure of a tune leads to a singing or humming simulation in the vocal folds. Testing this, humming as a vocal interference was implemented that should prevent the vocal folds from covertly simulating the voice pitch variations of the tunes but leave the mouth free to simulate word pronunciations. In contrast, a tongue movement exercise was implemented as a purely oral interference that should (such as chewing gum) prevent the mouth from simulating word pronunciations but leave the vocal folds free to simulate the tunes. And that was actually what was found: participants in the vocal interference condition showed a mere exposure effect for words, but not for tunes, while participants in the oral interference condition showed a mere exposure effect for tunes, but not for words.

In sum, these recent findings support the notion that mere exposure effects hinge on the fluency of stimulus-related motor-simulations. Furthermore, since repetition is only one of many ways to increase processing fluency (Reber et al., 2004), the same should be expected for other fluency manipulations. For instance, Song & Schwarz (2009) presented relatively easy (e.g., Magnalroxate) or hard (e.g., Hnegripitrom) to pronounce names of ostensible food additives. In this case, the fluency does not stem from repetition but directly from pronunciation itself. They found that participants rated the easy-to-pronounce additives as being less harmful than hard-to-pronounce ones. Obviously, participants had based their judgments on the easiness of pronouncing a given name. Testing whether also this fluency is orally embodied, Topolinski and Strack (2010, Experiment 3) replicated the experiment under manual and oral interferences and found the pronunciation-easiness effect for manual interference only.

Although the multidimensionality of sources determining brand attitudes has long been researched (e.g., Keller, 2003) and there have been various recent advances into the underlying cognitive and affective mechanisms in brand attitude formation (e.g., Esch et al., 2012; Reimann, Castaño, Zaichkowsky, & Bechara, 2012; Schmitt, 2012; Venkatraman, Clithero, Fitzsimons, & Huettel, 2012) this embodied source of oral motor-fluency has not been considered to date.

Ironically, many everyday life situations involving advertising also involve continuous oral interference, such as nibbling snacks while watching TV, or eating popcorn in the cinema while watching the commercials before the main movie. Thus, it is likely that these settings also sabotage oral fluency gains from mere exposure. Because fluency effects play an important role in consumer choices (Alter & Oppenheimer, 2006; Novemsky, Dhar, Schwarz, & Simonson, 2007) we hypothesized that oral interference should also hamper the impact of exposure on brand attitudes and choice. The present experiments were designed to test this idea in controlled field studies.

Experiment 1

A cinema session involving eating candy during the presentation of commercials for competitive sets of unknown brands (body lotions, charity foundations) was held in a lecturing hall. The likelihood of spending money on the advertised brands (purchasing body lotions, donating for charity foundations) in an interbrand choice one week later was the dependent measure. Data collection was divided into two campaigns, each with different samples, one featuring popcorn and one featuring gum as oral interference. Each of these campaigns realized as between-subjects design an oral interference (popcorn or gum) condition and a control condition (always a sugar cube) and consisted of a study phase (the actual cinema session) and a test phase one week later. Gum was chosen as an additional instantiation of oral interference to rule out distraction: consuming popcorn does not only entail oral movements, but also taking the popcorn out of the bag and looking into the bag. Thus, if chewing gum would also block advertising effects, then the impact of eating popcorn could not be attributed to distraction. We predicted that participants in the control group would more likely choose advertised than novel options, while participants with oral motor-interference would not show such an advertising effect.

Method

Participants

$N = 197$ female psychology freshmen from a university in their first week of courses participated for course credit (mean age 21, $SD = 3$). Nine of them did not attend the test phase (see below), resulting in $N = 188$. Since the base rate of women is generally much higher in psychology courses, only female students were invited. Experiment 2 also involved male participants.