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The Poison Parasite Defense:

A Strategy for Sapping a Stronger Opponent's Persuasive Strength

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Abstract

Relatively little work has examined procedures that produce resistance to the persuasive appeals of one's opponents. We sought to redress this imbalance by investigating the Poison Parasite Defense (PPD)—a technique that consists of two elements, one poisonous (strong counter information) and one parasitic (associative links between one's counter claims and the rival position). In three experiments, the combination of these two elements created enduring resistance to an opponent's message, even when that message was viewed more frequently. In contrast, even when effective immediately after their presentation, ads lacking one or both of these attributes were ineffective over time with subsequent presentations of the opponent's message. Discussion includes the potential use of the PPD (1) by poorly funded, underrepresented groups and (2) as an alternative to censorship.

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In well over a half-century of systematic investigation of persuasion and social influence, social scientists have focused almost exclusively on procedures that cause people to succumb to persuasive appeals. Indeed, several comprehensive reviews of the literatures on persuasion and social influence (Cialdini, 2001; Cialdini & Trost, 1998; Petty & Wegener, 1998; Pfau & Dillard, 2001) reveal a remarkable imbalance. With the exception of a pair of early research programs on forewarning (McGuire & Papageorgis, 1962; Papageorgis, 1968) and inoculation (McGuire, 1961, 1962, 1964), techniques that cause people to resist such appeals have been grossly understudied.

Furthermore, there has been somewhat of a disjunction between research on (a) the processes through which people are (or are not) persuaded by a message and (b) the specific content that makes a message more or less persuasive. That is, relatively few empirical studies have combined these approaches, advancing our knowledge not just about "how," but also about "what" makes for an especially effective resistance-eliciting strategy. A marriage between approaches that address process and content sets the stage for a more integrative view of persuasion.

Finally, an overview of the study of persuasion reveals another notable gap. With the exception of the early research on the sleeper effect (Hovland, Lumsdaine, & Sheffield, 1949) and message repetition (Cacioppo & Petty, 1979), investigations have been predominantly focused on immediate change and little attention has been devoted on persuasion processes over time. The importance of studying temporal persistence of persuasion effects has been well recognized (Eagly & Chaiken, 1993). Yet, longitudinal

experiments in this area remain rare, leaving unanswered many fundamental questions regarding factors that make the impact of a persuasive or a counter persuasive message lasting and strong.

The present research was designed to reduce these three important gaps in the literature on persuasion. First, we tested hypotheses aimed at exploring factors that might undercut the persuasiveness of a message, thereby strengthening one's resistance to persuasion. Second, we combined process- and content-based frameworks to produce what we hypothesized to be an effective resistance-eliciting strategy. Third, we examined the extent to which this approach produced resistance to persuasion that persists over time and in the face of multiple presentations of the opponent's message.

Creating Lasting Resistance to Persuasive Messages

To create resistance to an adversary's persuasive attempt, it is understandable that one would want to find a way to make countervailing material available to audience members when they encounter the opponent's communication. But, this is not easily accomplished. It requires that communicators somehow arrange for the audience to recall *their* points while focused on an opposing message—a focus that naturally renders the rival's arguments much more salient and accessible. The critical role of information salience in guiding responding has been demonstrated by its pervasive and powerful impact on attitudes, beliefs, judgments, inferences, and behavior (Baker, 2001; Chaiken, Liberman, & Eagly, 1989; Fazio, 1989; Kallgren, & Wood, 1986; Kallgren, Reno, & Cialdini, 2000; McGuire, 1960; Taylor & Fiske, 1978; Tversky & Kahneman, 1974).

This general problem of differential salience is compounded when a rival has better access to the audience, as repeated deliveries of the rival claims renders their

impact even stronger (Cacioppo & Petty, 1979). Whether by virtue of superior resources, an existing relationship, or closer proximity, when one's adversary possesses greater control over the channels of communication, it is very difficult to give the target audience equivalent cognitive access to one's counter claims. Such disparities are not uncommon: Incumbent candidates in political elections enjoy a substantial advantage over their challengers in reaching desired audiences; in commercial domains, the extensive marketing campaigns of established companies often drown out information about the products of new competitors; and poorly funded public health organizations must contend against the massive marketing budgets of corporate entities that produce unhealthy products. For example, in the year after the 1998 agreement between Big Tobacco and 46 state governments to limit various forms of cigarette advertising, cigarette manufacturers spent \$8.2 billion on advertising and promotion—a 22 percent increase over the previous year and the largest one-year total expenditure ever reported (Zuckerbrod, 2001).

An especially damaging form of informational inequity exists when one communicator is not only better able to reach a desired audience but is dishonest in the process. Under these circumstances, persuasion targets are likely both to be swayed by disproportionate exposure to one side of the case and to be guided toward mistaken choices. When the accomplishments of a political incumbent are overblown in incessant campaign rhetoric or when the high profile product claims of entrenched corporate entities are duplicitous, it is understandable that their disadvantaged challengers would feel frustrated by the inability to get a countervailing voice equally registered in the court of public opinion.

The purpose of the present research was to design and test a technique for inducing resistance to persuasion that could persist over time and in the conditions of information inequity. More specifically, it was to determine if and how it might be possible to undercut a rival's arguments—particularly those that are illegitimate or misleading—when 1) the audience is repeatedly exposed to the opponent message and 2) one is relatively deprived of access to the recipients. When an opponent has the wherewithal to deliver many more communications to an audience, what can be done with the limited persuasive opportunities that are available to: (1) redress the imbalance, (2) weaken the opponent's persuasive impact, and (3) win the day?

The Poison Parasite Defense

Earlier, we asserted that to neutralize an opponent's message one must ensure that recipients have ready access to effective information against it. Following the counsel of that conclusion requires that two issues be addressed. First, it is necessary to specify what constitutes effective counter information. Second, some way must be found to make this countervailing material prominent in consciousness at the time audience members receive and process the rival message. We consider each issue in turn.

Effective Counter Information. An overview of previously published studies suggests that, by far, the most effective way to confer resistance would be to give the influence target ready access to counterarguments against the persuasive message under consideration. Research stimulated by the cognitive response model of persuasion (Greenwald, 1968; Petty, Ostrom, & Brock, 1981) has demonstrated that counterarguments, whether self-generated or externally provided, typically blunt the impact of persuasive communications (Brock, 1967; Eagly & Chaiken, 1993; Eagly,

Kulesa, Brannon, Shaw, & Hutson-Comeaux, 2000; Killeya & Johnson, 1998; Osterhouse & Brock, 1970; Petty & Wegener, 1998). Indeed, second generation research on the traditional resistance-conferring techniques of forewarning and inoculation suggests that even these procedures are often successful because of the counterargumentation processes they engender (Petty, & Cacioppo, 1977, 1979; Romero, Agnew, & Insko, 1996; Wood & Quinn, 2001).

The typical counterargument contradicts an opponent's claim by demonstrating that the claim is erroneous. While such an attack may challenge that discrete claim, it leaves standing the evidence for other, unrelated points that an adversary may have made or may make in the future to support his or her position. The best counter messages, however, do more than merely undercut the reliability of rival assertions. They also undercut the credibility of the rival communicator—as a source of trustworthy information about the matter at hand and, indeed, about things in general. In so doing, along with proving counterarguments against the specific claims of the opponent, they infect all prior and future arguments that this communicator might make to win the audience.

Substantial evidence exists to show that the persuasiveness of a message can be decreased by undermining the credibility of the communicator. In fact, the role of the credibility of the source of the message has been subject to extensive research beginning from the Yale approach to attitude change (Hovland & Weiss, 1951; Hovland, Janis, & Kelley, 1953). Later research has revealed two important components of source credibility: expertise (Hovland, Janis, & Kelley, 1953; Petty, Cacioppo, & Goldman, 1981; Rhine & Sevarance, 1970; Wood & Kallgren, 1988) and trustworthiness (Priester

& Petty, 1995; Eagly, Wood, And Chaiken, 1978; Fein, McCloskey, & Tomlison, 1997; Mills & Jellison, 1967). Such investigations have provided consistent evidence that undermining either of these two elements can reduce the persuasiveness of a communicator.

Should we wish to create resistance to an adversary's persuasive attempt, then, the implication of the foregoing analysis appears clear: provide strong counterarguments that undermine the credibility of one's rival. How might a counter message achieve this effect? One way is to reveal a personal trait that renders all of the opponent's pronouncements suspect. Several traits might serve the purpose—general ignorance, pervasive bias, chronic poor judgment, shortsightedness, and so on. However, we chose to focus on one particular such trait, dishonesty, because it seemed especially suited to the goals of the present research.

That is, implicating the deceptiveness of a competitor's claims would fit well with our desire to instill resistance to misleading information. More importantly, evidence regarding dishonesty should have a particularly potent effect, as there appears to be an evolved sensitivity and aversion to signs that someone is being deceptive (Cosmides & Tooby, 1992; Fehr & Gächter, 2002; Trafimow, 2001). Once a ruse is recognized or revealed, individuals resist information associated with it and its perpetrator (Cialdini, 1996; Sagarin, Cialdini, Rice, and Serna, 2002). For example, although people tend to believe flattery and like those who provide it (Byrne, Rasche, & Kelly, 1974; Drachman, deCarufel, & Insko, 1978), ingratiation can backfire when it is clear that the flattery is a ploy designed to achieve ulterior goals (Jones & Wortman, 1973). In a related vein, pointing out a persuader's undue manipulative intent in a trial setting tends to render the

persuader's (otherwise convincing) message ineffective (Fein, McCloskey, & Tomlinson, 1997). Finally, in a marketing context, researchers have found that persuasive impact is undermined if the influence agent is perceived as using trickery (Campbell, 1995; Ellen, Mohr, & Webb, 2000; Lutz, 1985; MacKenzie & Lutz, 1989). In sum, then, one especially damaging form of counter information does not simply demonstrate that a rival's contentions are unfounded; it gives lie to those contentions and exposes the opponent's duplicity in seeking to advance them at all.

Counter information accessibility. We have suggested that to forge an enduring defense against a competitor's message, it is not sufficient to have identified and delivered effective information against the opponent; it is necessary, as well, to find a way to give audience members ready access to this information when, much later, they are processing the opponent's message (cf. Anderson, New, & Speer, 1985; Killeya & Johnson, 1998; Lord, Lepper, & Preston, 1984). After all, in contrast to typical laboratory experiments, rival communicators working in naturally occurring persuasion contexts such as commercial or political advertising campaigns send opposing messages that are received days or weeks apart.

Through what mechanism and by what device could we prompt people to recall one temporarily distant set of arguments while experiencing another? Our examination of the vast literature on memory uncovered a pair of promising candidates: Endel Tulving's (1983) "encoding specificity" mechanism and the use of retrieval cues as mnemonic devices. According to the encoding specificity principle, retrieval cues operate to increase the probability that a given memory will be recalled; and, the best retrieval cues are those stimuli that were present when the memory was formed (Tulving, 1983;

Tulving & Schacter, 1990; Tulving & Thomson, 1973). Considerable research has demonstrated that reinstating the retrieval cues that were present during encoding greatly facilitates recall (See Craik, 1981, Healy & Bourne, 1995, and Keller, 1991, for reviews).

There seemed to us an intriguing upshot of the foregoing analysis for constructing a defense against an opponent's illegitimate persuasive appeal: After designing an effective message against the opponent, one should build into this message, stimuli that are present in the rival appeal. That should have the consequence of causing one's points to be recalled (by virtue of the common retrieval cues) whenever audience members experienced the opponent's message. Not only should this strategy solve the problem of the differential salience that naturally occurs when the competitor's arguments are presented at a later point, it should also solve the problem of differential access to the audience's attention when one's adversary can reach the audience more often. That is, if one has arranged for one's own points to be raised to consciousness in audience members' minds each time the competitor raises his or her points, then the playing field of presentation opportunities will have been leveled.

We have labeled this maneuver the *Poison Parasite Defense* because it consists of two elements, one poisonous and one parasitic. The poisonous component is the presence of effective counter information that undercuts the opponent's assertions. The parasitic component is the presence of retrieval cues that bring the counter information to mind whenever recipients are exposed to those assertions. It is our hypothesis that both elements are necessary to instill forms of resistance stout enough to insulate one's audience against the more prevalent arguments of rival communicators. Without effective counter information to poison the adversary's position, that position will remain

viable. Without the parasitic retrieval cues residing in the body of the rival's message, those counter claims will not be activated to sap the strength of that message.

Study 1

In Study 1 we sought to test the hypothesized effectiveness of the Poison Parasite Defense (PPD) in the context of a political campaign. The election campaign represents a classic instance in which legitimate opposing voices are regularly underpowered in their attempts to gain the ear of the intended audience. Normally, because of such affordances as franking privileges, greater media coverage, and stockpiled campaign war chests, incumbents' access to the electorate greatly exceeds that of challengers; as a direct result of these larger expenditures and this superior exposure, incumbents experience greater election success (Grush, 1980). The disparity is of special concern for independent or minor party candidates or even for major party candidates at state and local levels where challengers can not rely on their political organizations to provide the resources required to redress the imbalance. Could a challenger employ the PPD to blunt the persuasive appeals of a political opponent with much greater access to the voters, especially one who was engaged in misleading campaign rhetoric?

Study 1 examined the persuasiveness of a campaign ad for an incumbent political candidate ("Stephen Pickett, The Pro-Education Candidate") when it was viewed two full days after it had been (1) initially presented to participants and (2) then assailed a few minutes thereafter by a counter ad. Depending on condition, the counter ad contained one or more of three components that might undermine the Pickett ad. One component was the presence of counter information pointing specifically to duplicity in the claims of the Pickett ad. A second component was the presence of mnemonic links (retrieval cues)

between the counter ad and the Pickett ad. We expected that when these two components appeared together—activating the poison parasite mechanism—they would significantly damage the impact of the Pickett ad. The third component was the use of source derogation that did not provide evidence for the duplicity in the claims of the Pickett ad. The inclusion of this component provided a control condition against which to test the effectiveness of duplicity-focused counter information.

Method

Participants were told that the experiment investigated the uses of color and language in advertising. In each session, they were instructed to page through a variety of print advertisements, the majority of which had been culled from current magazines, and to examine each until told to advance to the next. They were also told that they would be asked questions about the ads during the course of the session.

Participants

One hundred and twenty-five students participated as partial fulfillment of an Introductory Psychology course requirement.

Design

Participants were randomly assigned to one of five conditions. All participants initially saw a campaign ad advocating Stephen Pickett for the Greenville City Council, displaying his photograph, and proclaiming him “The Pro-Education Candidate.” The ad offered support for its pro-education contention by including information that Mr. Pickett had been a teacher for 10 years, had served as chairman of the county public school district, and had supported a 20% increase in school revenues in one year. Participants received subsequent information depending on experimental condition.

Poison Parasite (duplicity revealing counterarguments and mnemonic links). Participants viewed a counter ad that challenged the truthfulness of the pro-education characterization (thereby providing the poisonous component of the counter ad via information about the deceptiveness of the claims) on an exact replica of the original Pickett ad (thereby providing the parasitic component of the counter ad via linked retrieval cues). Aside from urging voters not to vote for Mr. Pickett, the counter ad punctured each of his pro-education credentials with countervailing information. For example, after Mr. Pickett's statement that he had devoted 10 years to education as a teacher, the counter ad elaborated "(but quit in mid-semester to take a better paying job)." Similarly, after Mr. Pickett's statement that he had served as chairman of the school district, the counter ad corrected the statement by adding that he had just been the "acting" chairman for only three weeks.

Links Plus Mere Derogation. Participants viewed the same counter ad as those in the *Poison Parasite* condition except that instead of revealing the deceptiveness of Pickett's claims, each of Mr. Pickett's pro-educational credentials was assigned an "F" grade in red ink (as if by a teacher's hand) and a dunce cap was superimposed on his photo. Thus, the message provided a personal attack without providing evidence for the duplicity of the claims.

Poison Parasite Plus Mere Derogation. Participants viewed the same counter ad as those in the *Poison Parasite* condition except that additional source derogation was injected by assigning "F" grades to his claims and superimposing a dunce cap on his head.

Mere Conterarguments. Participants viewed a different counter ad from that of the other experimental conditions. It did not simulate or link itself to the original Pickett ad in any fashion. Instead, against a ballot box backdrop, it urged voters not to vote for Stephen Pickett and offered a set of counterclaims to his candidacy that were not based on duplicity (e.g. that he lacked experience in city government, that he had a business bankruptcy in his past, and that he was appointed, not elected, to his current position). Pilot testing of this group of counter claims demonstrated that, compared to the group of counterarguments employed in the Poison Parasite condition of this study, they were perceived as equivalently negative, damaging, and able to reduce the likelihood of voting for Mr. Pickett (all t 's < 1).

Control. Participants viewed an ad for a different political candidate, Belinda Williams, for a different electoral race.

Procedure

Participants attended two separate sessions of the study. In the first session, they paged through four print advertisements that were encased in plastic sheaths within a 3-ring binder. The original Stephen Pickett ad was always the second ad they encountered. Participants were told that the ads came from a selection of newspapers and magazines from another region of the country. After examining each ad for 30 seconds, they responded to a series of questions regarding it and were then instructed to advance to the next ad. At this point, participants answered a set of filler questions, designed to distract them from the true focus of the study. These questions concerned the colors in the ads they had just seen, the number of women in the ads, and how many of the ads were for products versus services. Next, participants paged through a second set of four print ads.

In this instance, the second ad they encountered was one of the Stephen Pickett counter ads or the control ad, depending on experimental condition. Participants once again responded to a set of questions regarding each ad after viewing it for 30 seconds. In addition, they were instructed to list the thoughts they had had concerning each ad while viewing it.

In the second session of the study, conducted two days later, participants once again viewed the first set of ads they had seen, including the original Pickett ad. They answered the same set of questions as before and provided thought listings. At this point, participants were probed for suspicion and debriefed concerning the purpose of the study.

Dependent variables

The major dependent variables were assessed on a series of thirteen 7-point scales, which were labeled at their poles “Not at all (1)” and “Very (7).” Questions assessed 1) intentions to vote for the candidate featured in the ad, and 2) perceived honesty of the ad (the following items were included: perceived honesty of the ad and the ad sponsor, trustworthiness of the ad information and the ad sponsor, accuracy of the ad, fairness of the ad). An exploratory factor analysis (using the Principle Components method, Direct Oblimin rotation, and the Scree Plot method of determining the number of factors to extract) run on the 11 questionnaire items across the candidate-focused ads in Studies 1 and 2 separated the items measuring voting, honesty, and general ad characteristics in 3 distinct factors.

Cognitive responses were examined via a thought listing task (performed after viewing the ad) that gave participants two minutes to write down each of the thoughts they had while viewing an ad, including thoughts that were favorable, unfavorable, or

irrelevant to the ad. Scores were assigned as the number of favorable Pickett-ad-related thoughts minus the number of unfavorable Pickett-ad-related thoughts.

Results

In all conditions, participants' responses to their first viewing of the original Pickett ad were covaried from their responses to subsequent viewings of the original Pickett ad. Table 1 contains the covariate-adjusted means for our principle dependent variables across all three studies.

Effect of the PPD on voting. The poison parasite defense (PPD) includes two components: effective counter information against the claims of the original ad—in our case, the counter information sought to undermine the perceived honesty of those claims—and mnemonic links between the counter information and the claims of original ad. To test the effectiveness of procedures that incorporated these two elements, Analyses of Covariance (ANCOVAs) were conducted on planned contrasts that compared the experimental conditions containing these components (*Poison Parasite Alone* and *Poison Parasite Plus Mere Derogation*) to other conditions in the design. First, we tested the combination of the two PPD conditions against the *Control* condition on our primary dependent measure: likelihood of voting for Stephen Pickett. As predicted, relative to the control condition, exposure to the PPD conditions significantly reduced the effectiveness of the original Pickett ad when it was viewed two days later, $F(1,119) = 4.27, p = .041$. Next, we compared the combined PPD conditions to the combined set of conditions that did not constitute a PPD procedure (*Links Plus Mere Derogation*, *Mere Counterarguments*, and *Control*) because they lacked one or both of the requisite components of it. In support of the efficacy of the PPD, participants viewing

counter ads containing both requisite components, compared to participants viewing ads lacking one or both of these components, rated themselves as significantly less likely to vote for Stephen Pickett, $F(1,119) = 4.15, p = .044$ (See Figure 1).

Effects of the PPD on other variables. In addition, we examined the impact of the PPD conditions on two other variables besides voting intentions: perceived honesty of the original Pickett ad and cognitive responses toward the Pickett ad. As anticipated, compared to non-PPD participants, those in the PPD conditions perceived the Pickett ad as significantly less honest, $F(1,118) = 4.09, p = .045$. In addition, compared to non-PPD participants, PPD participants had more negative cognitive responses to the Pickett ad, $F(1,113) = 2.00, p = .16$. This effect, however, did not reach significance.

Despite the statistical support for our predictions regarding the superiority of the PPD on our primary dependent measure, one aspect of the data pattern did not align well with expectations: As can be seen in Figure 1, the *Mere Counterarguments* condition lowered voting intentions toward Stephen Pickett as much as the PPD conditions, doing so without the benefit of explicit retrieval cues linking its arguments to the Pickett ad. Indeed, contrasts comparing it against the combined PPD conditions revealed no differences on voting, perceived honesty, and cognitive response negativity (all $F_s < 1$). We will discuss and offer a test of a possible reason for this unexpected result subsequently.

Effects of Mere Derogation. Attacking Mr. Pickett without providing specific evidence for the deceptiveness of his claims in the *Links Plus Mere Derogation* condition did not have a significant negative impact on any of the variables of voting, perceived honesty, and negativity of cognitive responses, compared to the *Control* condition (all F_s

< 1). To examine whether this component increased the effectiveness of the PPD, a set of planned contrasts compared the *Poison Parasite Plus Mere Derogation* condition to the *Poison Parasite* condition. No significant effects were found on any of the variables of voting, $F(1,119) < 1$; honesty, $F(1,118) = 2.08$; $p = .152$; and negativity of cognitive responses, $F(1,113) < 1$.

Discussion

The results of Study 1 seem to support two important conclusions. First, the procedure we employed to attack the opponent without providing evidence for the duplicity of his claims had no appreciable effect on voting intentions or on any of the variables that may have influenced these intentions. That is, simply linking personal attacks to the Pickett ad by attaching derisive elements to its pronouncements did not damage the ad's effectiveness in any significant fashion. In addition, adding these derisive elements to the basic poison parasite (PPD) procedure did not enhance its effectiveness at all.

Second, although statistical tests indicated that the combined PPD conditions produced more resistance to the original Pickett ad than did the set of three non-PPD conditions, this was not the case for all of the non-PPD procedures. The *Mere Counterarguments* condition was just as effective at conferring resistance as the PPD conditions, even though it was not designed to include explicit links to the content of the original Pickett ad. Moreover, a close inspection of the data revealed that the effects of the *Mere Counterarguments* condition were nearly identical to those of the PPD procedures on each of our dependent variables. Indeed, the effects were so similar that we began to wonder if, through a set of nonobvious links, we had inadvertently turned

that condition into a PPD condition. The condition already contained one component of the PPD—a set of effective counter claims. We had assumed that, by excluding explicit connections to the *content* of the original Pickett ad, we had severed any mnemonic links between this counter ad and the Pickett ad. Upon examination of the relevant literature on memory, however, we recognized that our assumption may well have been mistaken. Effective retrieval cues are not limited to content elements; they also extend to context elements such as the time of day, place, and people at hand when a memory is formed and recalled (Costley, Das, & Brucks, 1997; Godden & Baddeley, 1975; Healy & Bourne, 1995; Schab, 1990; Smith, 1982; Tulving, 1983). In Study 1, the counter ad and the second exposure to the original ad were separated by 48 hours, but were linked by the fact that they were presented via the same medium, by the same experimenter, at the same time of day, in the same room.

If our suspicions were correct, these common context features created the mnemonic links necessary to generate an (unintended) additional PPD condition in our design. To test this possibility, we conducted a second study designed to disrupt these connections.

Study 2

Study 2 mirrored Study 1 in most respects, although we included an important procedural change designed to remove unintentional links between the first and subsequent experimental sessions. Unlike Study 1, when participants returned for a second session a week later (to view and rate the counter ad), they were met by a different experimenter and ushered to a different room than was the case when they experienced the original ad; in addition, the color and shape of the binders containing the

stimulus materials had been changed as well. Furthermore, participants returned for a third session in which they viewed and evaluated the original ad again. To assure that the amount of time separating the counter ad and this second exposure to the original ad would be sufficient to allow normal mnemonic connections to erode, we separated the two sessions by one week rather than two days.

Aside from allowing a test of our explanation for the single unpredicted outcome of Study 1, these procedural changes offered additional advantages. First, extending the time between the counter ad and the second exposure to the original ad provided the opportunity to determine if the PPD would remain effective through a considerably longer period than was the case in Study 1. Second, by removing some of the contextual commonalities imposed by the procedures of Study 1, we were able to assess the impact of the PPD under less artificial constraints. That is, it is unlikely that one would encounter a set of ads and counter ads within a campaign at the same time of day, in the same place, and in the presence of the same people. Accordingly, the elimination of some of these identical context elements offered a test of the PPD that was more in keeping with naturalistic experience.

Participants

One hundred and fifty-nine undergraduates participated in an experiment that replicated Study 1 in all respects except those previously described.

Results

Effect of the PPD on voting. As was done in Study 1, ANCOVAs were conducted on planned contrasts that compared the experimental conditions containing the two PPD conditions (*Poison Parasite* and *Poison Parasite Plus Mere Derogation*) to other

conditions in the design. First, we tested the combination of the two PPD conditions against the *Control* condition on our primary dependent measure, intention to vote for the advertised candidate, Stephen Pickett. As predicted, relative to the control condition, exposure to the PPD conditions significantly reduced the effectiveness of the original Pickett ad when it was viewed one week later, $F(1,153) = 3.71, p = .056$. Next, we compared the combined PPD conditions to the combined set of non-PPD conditions (*Links Plus Mere Derogation*, *Mere Counterarguments*, and *Control*). As was the case in Study 1, participants viewing counter ads containing both requisite components of the PPD rated themselves as significantly less likely to vote for Stephen Pickett compared to participants viewing counter ads lacking one or both of these components, $F(1,153) = 9.33, p = .003$. See Table 1 for the covariate-adjusted means relevant to these conditions.

In addition, as predicted and contrary to the pattern of Study 1, the PPD conditions were superior even to the *Mere Counterarguments* condition, $F(1,153) = 7.54, p = .007$, which did not differ from the other non-PPD conditions in generating resistance to the Pickett ad, $F < 1$ (See Figure 2). In addition, to test further our expectation that the *Mere Counterarguments* condition would be affected by the changes made to the procedures of Study 1, we conducted tests of the impact that this condition had on voting intentions across the two studies. The *Counter Information Alone* condition generated significantly less resistance to the Pickett ad in Study 2 than in Study 1, $F(1,273) = 8.37, p = .004$. But, none of the other conditions of the design differed significantly from Study 1 to Study 2 in this regard, (all $F_s < 1$).

Effects of the PPD on other variables. In keeping with the pattern of results for the voting measure, the combined PPD conditions proved different from the combined

non-PPD conditions on the variables of perceived dishonesty of the Pickett ad, $F(1,152) = 21.31, p = .001$ and negativity of cognitive responses toward the Pickett ad, $F(1,154) = 13.21, p < .001$.

Effects of Mere Derogation. As was the case within Study 1, mere source derogation had no significant impact on our dependent measures, neither when the *Links Plus Mere Derogation* condition was compared to the *Control* (all $F_s < 1.40$) nor when the *Poison Parasite Plus Mere Source Derogation* condition was compared to the *Poison Parasite* condition (all $F_s < 1$).

Mediational analyses. Because our theoretical account of the effectiveness of the PPD procedure relied heavily on the perceived honesty of the opponent's ad, we conducted mediational analyses to test the causal role of perceived honesty on participants' voting intentions. Furthermore, because much research has documented the influence of cognitive responses to a communication on susceptibility to the communication's message, we included an examination of the role of participants' cognitive responses to the original ad as a second potential mediator of voting intention.

The exogenous independent variable in the analyses was a contrast of the PPD conditions versus the non-PPD conditions. The endogenous variables were honesty, cognitive response, and voting intention, with cognitive response defined as the number of positive, content-related thoughts that referred to the original ad minus the number of negative, content-related thoughts that referred to the original ad. All endogenous variables corresponded to reactions to the original ad subsequent to viewing the counter ad. The honesty and voting variables consisted of the residuals of the corresponding items

in response to the second viewing of the Pickett ad regressed on the responses to the first viewing of the Pickett ad.

It was anticipated that the resistance-enhancing effect of the poison parasite on voting intentions would be completely mediated by reductions in perceived honesty of the Pickett ad, and that the effect of honesty on voting intentions would be partially mediated by cognitive responses. This model fit the data well according to a chi-square goodness-of-fit test, $\chi^2(2, N = 159) = 6.523, p = .038, CFI = .952$. See Figure 3.

Discussion

The outcomes of Study 2 were revealing in several respects. First, they provided clear support for the resistance-producing properties of the PPD, which proved superior not only to the control procedure but to other forms of attack such as mere source derogation or counter information alone. Further, this superiority remained in place a full week after participants had experienced a one-time exposure to the PPD procedures. Results of this sort would seem to offer real hope for creating lasting resistance to repeated pronouncements of duplicitous rivals.

Second, as before, we found no evidence for the effectiveness of attacking the source without providing evidence for the duplicity of the claims. Neither simply attacking Mr. Pickett nor attaching such personal attacks to the PPD procedures undercut the effectiveness of the Pickett ad to any extent on any of our measures.

Third, the one anomalous result of Study 1 was clarified in a fashion that appears to lend support to the logic of the PPD. That is, the pattern of findings across the two experiments suggests that in Study 1 the *Mere Counterarguments* condition had acted as an inadvertent PPD procedure by virtue of a variety of contextual links (e.g., similarities

of time, place, people, and stimulus presentation) that existed between exposure to the counterarguments in that condition and exposure to the target ad. When we eliminated these artificially imposed links in Study 2, we eliminated the effectiveness of the *Mere Counterarguments* condition as well. Thus, it appears that when effective counterclaims are linked to a competitor's message even by subtle contextual retrieval cues or by a minimal delay between the original and counter ad, the resultant combination does significant damage to the opposing message. Although this account provides a parsimonious and theoretically relevant explanation for the differing effects of the *Mere Counterarguments* conditions in Studies 1 and 2, we recognized that a replication of Study 2 would strengthen that account if it once again eliminated contextually-based retrieval cues and once again rendered a counterarguments only condition significantly less effective than the PPD conditions. To that end, we conducted a third study that provided a conceptual replication and extension of Study 2.

Study 3

Aside from again assessing the superiority of the PPD procedure relative to a counter information alone procedure, Study 3 had a number of other purposes. First, in Studies 1 and 2, the claims against the candidacy of Stephen Pickett that were employed in the *Mere Counterarguments* condition were not the same as those in the PPD conditions. Although the two sets of claims had been pilot tested to be equally damaging to Pickett's candidacy, they were not identical, thereby contributing causal ambiguity to comparisons between them. To eliminate this ambiguity, we constructed an ad context that allowed for the use of identical information in the PPD and a counterargument only condition. That is, in contrast to Studies 1 and 2, the counter claims in the PPD conditions

of Study 3 did not answer the arguments of the original target ad in a point-by-point fashion. Instead, the PPD conditions (as well as a counterargument only condition) offered a general challenge to the honesty of the target ad. In addition to removing the conceptual ambiguity we have previously described, the change in procedure had the advantage of testing whether the success of the PPD effect would extend from numerous, point-by-point refutations of a message to a unitary, general counterclaim regarding it.

A second goal of Study 3 was to test the efficacy of the PPD in a different paradigm than the political ad context of Studies 1 and 2. We have advanced the PPD as an especially useful strategy for communicators who are at a marked disadvantage relative to their rivals in the frequency with which they can reach the desired audience; and, we have argued that a contest between a political challenger and an incumbent represents one arena in which the PPD might redress the imbalance. We have also contended that a similar disadvantage applies to organizations concerned with public health and welfare in their battles against vastly better-financed corporate producers of potentially dangerous products. For example, in the face of government control attempts, tobacco companies have unleashed a relentless and unprecedented advertising salvo at potential customers, young and old (“Tobacco ads still target kids,” 2001; Zuckerbrod, 2001). In a related vein, the number of ads sponsored by drug companies greatly exceeds that of anti-drug agencies (Fedler, Phillips, Raker, Schefsky, & Soluri, 1994; “Study links ads, drug spending,” 2001). But, where this kind of disparity has perhaps gone most unrecognized is in the struggle between pro-environmental organizations and various corporate entities (e.g., oil, power, and chemical companies) whose products may threaten the environment. It is not uncommon to see ads depicting scenes in which a

company's activities have left the environment wholly unharmed or even better off than before. It is rare, however, to see counter ads from environmental organizations that directly challenge these self-serving and frequently incomplete presentations. Study 3 examined the impact of a single PPD-based counter ad in the context of an advertising campaign by a chemical company, Zelotec, which was petitioning to build a manufacturing plant in audience members' home area.

Finally, we wanted to use Study 3 to examine the power of the PPD to undercut a rival's arguments when exposure to the Poison Parasite message is followed by repeated presentations of the rival message. That is, Studies 1 and 2 demonstrated the effectiveness of the PPD when the opponent's ad was presented twice as often as the PPD ad, before the presentation of the PPD. Normally, a 2-to-1 communication disadvantage is formidable; and, success in the face of such a ratio is noteworthy. However, we have argued for the usefulness of the PPD when a communicator's situation is even more desperate. Could the PPD remain effective even when after the presentation of the Poison Parasite message the opponent continues to repeatedly deliver its message over an extended period of time? We sought to answer that question by designing a longitudinal experiment conducted over the period of one month.

Method

As in Studies 1 and 2 participants were told that the experiment investigated the use of color and language in advertising. In each session, they were instructed to view a variety of print advertisements, the majority of which had been culled from current magazines, and to examine each until told to advance to the next. Participants were also told that they would be asked questions about the ads during the course of the session.

Participants

Ninety four students participated as partial fulfillment of an Introductory Psychology course requirement.

Design

Participants were randomly assigned to one of three conditions. All participants initially saw a magazine ad promoting the environmental record of a chemical company, Zelotec. The ad depicted a pristine outdoor scene containing a bright blue sky, green foliage, and a waterfall feeding into a clear stream. The accompanying caption read “The Zelotec Corporation. An Unwavering Concern for the Environment for Over a Quarter Century.” At the outset of the session, all participants had been informed that Zelotec was planning a move to the area where participants lived and was petitioning to build a chemical manufacturing plant there. Participants received subsequent information, which differed by experimental condition.

Poison Parasite (duplicity revealing counterarguments and mnemonic links).

Participants viewed a counter ad that challenged the truthfulness of Zelotec’s characterization of its environmental record (thereby providing the poisonous component of the counter ad via information about the deceptiveness of the opponent’s claims). Specifically, the counter ad, sponsored by the Committee for the Primacy of Earth, stated, “The Zelotec Corporation wants you to believe that they protect the environment. But, what you can’t see in this promotional photo is that Zelotec pollutes the groundwater and contaminates the soil around its manufacturing plants, affecting all who live in the area.” The counterad also contained a reduced image of the original Zelotec ad (thereby providing the parasitic component of the counter ad via linked retrieval cues).

Counterarguments Only. Participants viewed an ad containing a photo of a high-rise glass and steel building, the caption for which read, “The Zelotec Corporation wants you to believe that they protect the environment. But, what you can’t see in this promotional photo of their corporate headquarters is that, Zelotec pollutes the groundwater and contaminates the soil around its manufacturing plants, affecting all who live in the area.”

Control. Participants viewed an unrelated ad sponsored by the Larson Juhl frames company promoting the Craig Ponzio picture frame collection.

Procedure

Participants attended four sessions each separated by one week. To ensure that there were no situational retrieval cues (other than the mnemonic link included in the Poison Parasite ad), the experimenter and the color/shape of the stimulus material binders differed from session to session. In addition, the second session of the study, in which the counter message was presented, was conducted in a different room than the rest of the sessions. During the first session participants viewed 9 ads the third and the fifth of which was the target Zelotec ad. During the second session participants viewed 7 ads, the second of which was the counter ad (in the *Poison Parasite* and the *Counterarguments Only* conditions) or the *Larson Juhl* ad (in the control condition). During the next two sessions participants viewed two more sets of seven ads among which was the target Zelotec ad (4th in session 3 and 2nd in Session 4. Along with the target ad, some of the filler ads were presented multiple times as well (see Figure 4 for an overview of the Design and Procedure).

Dependent variables

The major dependent variable of the study assessed favorability toward Zelotec by asking participants to indicate 1) their intentions to vote in a referendum for the Zelotec to move in the area, 2) the likelihood with which they would vote to approve the Zelotec move if they were members of the local city council as well as their perceptions of the extent to which 3) Zelotec is concerned for protecting the environment, 4) Zelotec protects the environment, and 5) Zelotec pollutes the environment (Cronbach's Reliability: $\alpha_{\text{session 1}} = .90$, $\alpha_{\text{session 2}} = .87$, $\alpha_{\text{session 3}} = .94$, $\alpha_{\text{session 4}} = .96$). We measured the perceived honesty of the target ad by asking participants to indicate the extent to which the ad was honest, truthful, trustworthy, believable, accurate, and unbiased. (Cronbach's Reliability: $\alpha_{\text{session 1}} = .91$, $\alpha_{\text{session 2}} = .88$, $\alpha_{\text{session 3}} = .94$, $\alpha_{\text{session 4}} = .91$). Finally, as in the previous studies, cognitive responses were reported in a thought listing task and coded by two independent raters (inter-rater agreement rate 82%).

Results

We first compared participants' responses immediately at Session 2 in which the PPD and the *Counterarguments Only* counterads were presented. A set of ANCOVAs, in which the ratings at the first session were included as covariates, revealed no significant differences between the *Poison Parasite* ad and the *Counterarguments Only* ad in their effect on the favorability toward Zelotec and perceived honesty of the counterad. According to these results, the two counterads were equally effective immediately at their presentation. However, we found significant differences between conditions after examining participants responses to the subsequent presentations of the Zelotec's ad. We review these differences in the following sections.

Favorability toward Zelotec at subsequent presentations of its ad. To examine the overall effectiveness of the PPD, an ANCOVAs was conducted with the average favorability toward Zelotec across sessions 3 and 4 as the dependent variable (including the initial ratings at session 1 as a covariate). The analysis revealed a significant effect of type of counter ad, $F(2,92) = 5.61, p = .005$. To test the specific hypotheses of the study, we conducted a set of planned comparisons. First, we contrasted the two non-PPD conditions (*Counterarguments Only* and *Control*). They did not differ from one another, $F(1,92) = 2.24, p = .138$. Next, we tested the PPD condition against the combined non-PPD conditions. That contrast was significant, $F(1, 92) = 8.59, p = .004$, indicating that the PPD generated greater resistance to Zelotec's ad (see Table 1).

Furthermore, Repeated Measures Analysis of Variance with the ratings of favorability toward Zelotec at session 1, session 3, and session 4 as the repeated measures factor and type of counterad as the between-subjects factor revealed a significant interaction, $F(3, 151) = 2.82, p = .036$ (Figure 4). To examine the nature of this interaction, we tested the effects of the repeated presentations of the Zelotec ad in each of the three conditions. The analysis in the Poison Parasite condition revealed a marginally significant effect of the repeated exposure, $F(2, 48) = 2.99, p = .069$. Specific contrasts comparing the rating at session 1 to the ratings at Session 3 and Session 4 revealed a marginally significant decrease in the favorability toward Zelotec at Session 3, $F(1, 29) = 3.55, p = .070$, and a significant decrease at Session 4, $F(1, 29) = 5.66, p = .024$. In the other two conditions, the effect of the repeated exposure was not significant ($F's < 1$). Only when participants were presented with the PPD, did the target ad become less effective with its subsequent deliveries.

Perceived honesty of the Zelotec ad at its subsequent presentations.

ANCOVA for the ratings of honesty across session 3 and session 4 controlling for the ratings at session 1 revealed a significant overall effect of the type of counterad, $F(2,93) = 5.22, p = .007$. Again, the two non-PPD conditions (*Counterarguments Only* and *Control*) did not differ from one another ($F < 1$) and the overall perceived honesty of the Zelotec ad was significantly lower in the PPD condition compared to the combined non-PPD conditions, $F(1, 93) = 10.23, p = .002$ (see Table 1).

Further repeated measures ANOVAs demonstrated that repeatedly presenting the Zelotec's ad had a different impact on its perceived honesty depending on the type of counterad previously seen, $F(4, 169) = 2.71, p = .035$. In the *Counterarguments Only* condition, repeatedly presenting the Zelotec's ad had a significant positive effect, $F(2, 56) = 5.24, p = .008$. In comparison to Session 1, there was a significant increase in the honesty ratings at both Session 3, $F(1, 28) = 7.38, p = .011$, and Session 4, $F(1, 28) = 7.64, p = .010$. When the counter ad did not contain mnemonic links to the target ad, the subsequent presentation of the target ad increased its perceived honesty. A similar pattern was observed in the *Control* condition where a significant positive effect of the repeated exposure was observed, $F(2, 61) = 4.19, p = .022$. Again, the Zelotec ad was rated as more honest at Session 3, $F(1, 33) = 8.09, p = .008$, and Session 4, $F(1, 33) = 5.28, p = .028$ than at its initial presentation. In the PPD condition, however, the repeated exposure of the ad did not increase its perceived honesty ($F < 1$). Only the Poison Parasite counter ad prevented the increasing perceptions of honesty of the Zelotec ad (see Figure 6).

Mediational analyses. Similarly to Study 2, we conducted mediational analyses to test the causal role of perceived honesty on participants' ratings of their favorability

toward Zelotec. Again, we also examined the role of participants' cognitive responses to the original ad as a second potential mediator. The exogenous independent variable in the analyses was a contrast of the PPD condition versus the two non-PPD conditions. The endogenous variables were honesty and cognitive responses. The honesty and voting variables consisted of the residuals of the corresponding items in response to the viewing of the Zelotec ad at Session 3 and Session 4 regressed on the responses to the first viewing of the Zelotec ad. The cognitive responses corresponded to reactions to the original ad at Session 3 and 4.

It was anticipated that the resistance-enhancing effect of the Poison Parasite strategy on favorability toward Zelotec would be completely mediated by reductions in perceived honesty of the Zelotec ad, and that the effect of honesty on favorability would be partially mediated by cognitive responses. This model fit the data well according to a chi-square goodness-of-fit test, $\chi^2(2, 94) = 4.448$, $p = .108$, CFI = .948. See Figure 7.

DISCUSSION

The outcomes of Study 3 were confidence-enhancing along multiple dimensions. First, they replicated the overall superiority of the PPD procedure in conferring resistance to persuasion. As in Studies 1 and 2, when compared to other approaches, the PPD rendered an opponent's message significantly less convincing. Moreover, this superiority was observed over the period of two full weeks after the viewing of a lone PPD-based counter ad that appeared in the context of a 4-to-1 frequency disadvantage relative to the opponent's ads.

Second, as was the case in Study 2, the PPD condition proved decidedly more potent than the *Counterarguments Only* condition. In keeping with the PPD formulation,

counter information that was linked to the opponent's message was significantly more efficacious than one that was not linked. This finding supports the view that the pattern of findings of Study 1, in which the *Mere Counterarguments* condition was equivalent to the PPD conditions, resulted from a set of artificial links (e.g., commonalities of place, time of day, experimenter, and stimulus presentation) between the *Mere Counterarguments* condition and the original ad presentation—a set of links that transformed the *Mere Counterarguments* condition of that experiment into an inadvertent PPD condition. When these artificial links were eliminated in Studies 2 and 3, so was the effectiveness of the *Mere Counterarguments* conditions.

Third, examination of the Zelotec's ratings directly after the presentation of the counter ad revealed no significant differences in the immediate effectiveness of the PPD-based message and the Counterarguments Only message. This result provides assurance that any difference in the impact of the two counter messages on the subsequent presentations of the Zelotec ad were due to the mnemonic links created by the PPD-based message. Moreover, it demonstrates the essential role of incorporating this component of the PPD in messages attempting to create lasting resistance. Without mnemonic links to bring the counter information to mind at the presentation of the rival message, even messages containing strong counter information may misleadingly seem effective initially. This effect, however, can quickly dissipate when the audience is presented with the opponent's claims at later points.

Fourth, the PPD not only proved successful in a different content domain than before (environmental advocacy versus political candidacy), it did so in a different form. That is, in Studies 2 and 3, the PPD took the form of linked, point-by-point refutations of

a rival's arguments. Study 3 demonstrated that such an exchange is not necessary for the PPD to be effective. In this experiment, a unitary, general counterclaim was sufficient, provided that it was linked via retrieval cues to the original claim. It is important to note that because this general counterclaim was identical in the PPD conditions and in the *Counterarguments Only* condition, Study 3 offered an especially rigorous methodological test of the PPD.

General Discussion

Researchers in the social influence arena have always devoted much more attention to the factors that lead audiences to accept rather than to deflect persuasive communications. As a consequence, we know relatively little about the processes that underlie resistance to change and even less about the specific procedures that generate such resistance (For related commentary see Ahluwalia, 2000; Eagly & Chaiken, 1993, 1995; Zuwerink & Devine, 1996). The three studies reported herein reduce this imbalance by providing insights into the nature of the most effective of those processes and procedures. They offer hope to communicators who must contend against the misleading or exaggerated claims of opponents whose superior resources afford them much greater access to desired audiences.

At the outset, we identified three factors that a review of previous research suggested might create effective resistance to an opponent's message: (1) counterarguments that discredit the honesty of the rival's claims, (2) attacks of the source of the message without discrediting the claims, and (3) mnemonic links between one's counter claims and the rival position. We hypothesized that the first and the third factor, when used in combination, would afford a communicator a potent procedure for creating

enduring resistance to a competitor's arguments, even when the adversary could reach the desired audience more frequently.

Evidence regarding the PPD

We labeled this combination the Poison Parasite Defense (PPD) because it consisted of two elements, one of which is poisonous (revealed deceptiveness) and one of which is parasitic (mnemonic links). We predicted that both would be necessary to produce stout and stable resistance to opposing messages over time. Evidence of the crucial importance of revealing the deceptiveness of the rival's claims can be seen in the results of Studies 1 and 2, which demonstrated that linked negative commentary regarding the rival position, absent specific claims for the deceptiveness of the claims, had no appreciable impact on the willingness of audience members to accept the rival's message. Furthermore, a mediational analysis offered support for the importance of revealing the deceptiveness of the rival's claims in that the effectiveness of the PPD was mediated by audience members' perceptions of the opponent as dishonest.

Should we conclude that without providing evidence for the deceptiveness of the message claims mere derogation is without value in the marketplace of ideas? That conclusion seems premature on the basis of only two studies and a single operationalization of the concept. It certainly remains conceivable that other forms of source derogation not tested in our studies can powerfully undermine a competitor's claims. At the same time, it might be the case that the specific type of derogation used in our studies, one in the form of simple mockery (for example, superimposing a dunce cap on a pro-education political candidate), may not be sufficient to sway an audience—nor might other forms of raw source derogation such as purely derisive or *ad hominid*

critiques. Subsequent research should be undertaken to investigate this possibility, which, if confirmed, might help raise the ethical standards of exchanges in political campaigns and the like.

Evidence of the crucial role of the other element of the PPD (mnemonic links) emerges clearly from the results of Studies 2 and 3. Both experiments demonstrated that, weeks after viewing the counter message, even strong counter information was ineffective unless it had been linked mnemonically to the opponent's position. But, when the links were present, the counter message had a ruinous effect on the opponent's position, even though the counter message was seen (just once) one or even two full weeks earlier and even though it was seen four times less often than the opponent's ad. More importantly, when the information about the deceptiveness of the rivals' claims was presented along with mnemonic links, repeatedly presenting the rival's own message resulted in a persisting decrease in the ratings of the opponent.

It is noteworthy that the power of the PPD became evident only after examining the evaluations of the opponent at the later presentations of the opponent's message. These results advocate the strength of the PPD as a strategy particularly effective in creating lasting resistance to rivals with better access to the audience. But, more generally, they point to the importance of studying persuasion processes not only by measuring the effect of the communication immediately after its delivery, but also by assessing the extent to which such an effect would remain over time and in the presence of competing information. Without such assessments, researchers may be misled by the immediate effectiveness of persuasive and counter persuasive strategies whose impact quickly disappears. By resembling more closely the way persuasion processes operate in

real world circumstances, a fuller approach including examining persuasion over time would certainly advance our theoretical understanding of these phenomena.

Besides offering information about psychological factors that confer lasting resistance to persuasion, these findings appear to have considerable potential practical value. They suggest that communicators can employ the PPD to contend successfully against their richer and more frequently heard rivals. Such goal, however, could be attained only provided that they have good counter claims to offer and can couple these counter claims to an opponent's claims. Without either one of these two components of the Poison Parasite Defense, it is likely that counterpersuasive communications would be ineffective if not immediately, then at later deliveries of the opponent's message.

A final implication with commentary on censorship

Earlier in this article we referred to a dilemma within our society. Tobacco companies, whose products are intrinsically unhealthy and frequently deadly, have had the resources to promote those products effectively for decades to millions of people. Historically, attempts at regulation of their efforts have proven problematic for a pair of reasons. First, these companies have always found ways to evade or overcome government strictures on their advertising campaigns. For instance, in the year after the 1971 ban of cigarette advertising from the airwaves in the United States, Big Tobacco simply shifted its marketing dollars from radio and TV to a range of other vehicles such as magazine ads, movie product placements, promotional giveaways, and sports sponsorships. Cigarette consumption rose 3% during that year in this country (Fritschler, 1975; McAlister, Ramierez, Galavotti, & Gallion, 1989). More recently, tobacco companies reached a "landmark" settlement in 1998 with 46 states to cut advertising,

especially to minors. But, in the following year, total expenditures were the greatest ever reported to the Federal Trade Commission, including many for ads aimed toward teenagers (“Tobacco ads still target kids,” 2001; Zuckerbrod, 2001).

In the face of regulatory circumvention and evasion of this sort, it is tempting to call for even stricter prohibitions. To do so, however, runs afoul of the second historic difficulty of regulation of information: Such controls involve censorship. For Constitutional, political, and ideological reasons, censorship has traditionally been invoked with great reluctance in the United States. Consequently, any proposal to limit speech, even in the form of commercial advertising, may create support for the tobacco companies from groups that under other circumstances would not choose to abet them. In addition, from the standpoint of persuasion science, censorship has long been known to be a problematic approach, as it frequently incites the response it is intended to suppress by lending the restricted information greater perceived desirability and validity (Bushman & Stack, 1996; Heilman, 1976; Worchel, Arnold, & Baker, 1975). Despite these difficulties, programs to restrict tobacco advertising have gone forward because no other corrective has seemed available to counter the incessant and misleading portrayals in the ads. But, dealing effectively with repeated, deceptive messages is precisely what the PPD is designed to do. Hence, the politically disagreeable and pragmatically dubious practice of censorship should no longer be considered the only remedy for leveling the playing field between pro- and anti-tobacco forces. Because the PPD would operate to activate counterarguments each time a tobacco ad appeared, the frequency-of-exposure disparity between the two types of messages should disappear. Similarly, the effect of the great budgetary advantage of the tobacco companies should evaporate as well.

Indeed, if properly deployed, the elements of the PPD should transform the advertising budget of Big Tobacco into the advertising budget of the anti-tobacco forces.

In keeping with the PPD formulation, counter ads should parody tobacco advertising by first presenting and then puncturing their images of attractiveness, strength, and freedom with evidence that, in fact, tobacco use creates the opposite conditions. Some support for such an approach already exists in a remarkable set of events that began in the mid-1960s when the Federal Communications Commission applied its “fairness doctrine” to the issue of tobacco advertising—decreeing that for every three tobacco ads that appeared on radio or TV, free air time had to be given to one ad espousing opposing views. This enabled the American Cancer Society to afford to run a series of counter ads—ads that specifically satirized and parodied those of Big Tobacco. From their first appearance in 1967, the counter ads began to undercut tobacco sales; after a quarter-century climb, per capita consumption dropped precipitously in that initial year and continued to sink during the three years that these anti-tobacco ads were aired. The majority of the decline has since been traced to the impact of the counter ads; moreover, when the ads ended, so did the attendant decrease in tobacco consumption (McAlister et al., 1989; Simonich, 1991; Warner, 1981). Such trends offer the potential for the success of government policies based not on censorship but on the assured presence of counter ads, in particular those designed to co-opt and then debunk—image for image—the duplicitous portrayals within advertising. Of course, because social policy issues are invariably complex, research designed to examine this possibility should be undertaken and all sides should be considered, including our own. In this regard, we concur entirely with American Psychological Society president, John Darley (2001), that

psychologists are ill-advised to remain mostly absent from debates affecting significant public policy decisions.

References

- Ahluwalia, R. (2000). Examination of psychological processes underlying resistance to persuasion. *Journal of Consumer Research*, 27, 217-232.
- Anderson, C. A., New, B. L., & Speer, J. R. (1985). Argument availability as a mediator of social theory perseverance. *Social Cognition*, 3, 235-249.
- Baker, W. E. (2001). The diagnosticity of advertising generated brand attitudes in brand choice contexts. *Journal of Consumer Psychology*, 11, 129-139.
- Brock, T. C. (1967). Communication discrepancy and intent to persuade as determinants of counterarguments. *Journal of Experimental Social Psychology*, 3, 296-309.
- Bushman, B. J., & Stack, A. D. (1996). Forbidden fruit versus tainted fruit: Effects of warning labels on attraction to television violence. *Journal of Experimental Psychology: Applied*, 2, 207-226.
- Byrne, D., Rasche, L., & Kelley, K. (1974). When "I like you" indicates disagreement. *Journal of Research in Personality*, 8, 207-217.
- Cacioppo J. T. & Petty, R. E. (1979). Effects of message repetition and position on cognitive response, recall, and persuasion. *Journal of Personality and Social Psychology*, 37, 97 – 109.
- Campbell, M. C. (1995). When attention-getting advertising tactics elicit consumer inferences of manipulative intent: The importance of balancing benefits and investments. *Journal of Consumer Psychology*, 4, 225-254.

Chaiken, S., Liberman, A., & Eagly, A. H. (1989). Heuristic and systematic processing within and beyond the persuasion context. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 212- 252). New York: Guilford.

Cialdini, R. B. & Trost, M. R. (1998). Social influence: Social norms, conformity, and compliance. In D. T. Gilbert, S. T. Fiske, & Gardner, L. (Eds.), *The handbook of social psychology* (Vol 2, pp. 151-192). Boston, MA: McGraw-Hill.

Cialdini, R. B. (2001). *Influence: Science and practice* (4th ed.). Boston: Allyn & Bacon.

Cialdini, R.B. (1996). Social influence and the triple tumor structure of organizational dishonesty. In D.M. Messick & A. Tenbrunsel (Eds.). *Behavioral Research and Business Ethics* (pp. 44-58). New York: Russell Sage.

Cosmides, L., & Tooby, J. (1992). Cognitive adaptations for social exchange. In J.H. Barkow, L. Cosmides, & J. Tooby (Eds.). *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 163-228). New York: Oxford University Press.

Costley, C., Das, S, & Brucks, M. (1997). Presentation medium and spontaneous imaging effects on consumer memory. *Journal of Consumer Psychology*, 6, 211-231.

Craik, F. I. M. (1979). Human memory. *Annual Review of Psychology*, 30, 63-102.

Darley, J. (2001, October). We fail to contribute to policy debates. *APS Observer*, 14, 3.

Drachman, D., deCarufel, A., & Insko, C. A. (1978). The extra credit effect in interpersonal attraction. *Journal of Experimental Social Psychology*, 14, 458-467.

Eagly, A. H., Wood, W., & Chaiken, S. (1978). *Causal Inferences About Communicators and Their Effect on Opinion Change*. *Journal of Personality and Social Psychology*, 36(4), 424 - 435.

Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, TX: Harcourt Brace Jovanovich.

Eagly, A. H., & Chaiken, S. (1995). Attitude strength, attitude structure, and resistance to change. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 413-432). Hillsdale, NJ: Erlbaum.

Eagly, A. H., Kulesa, P., Brannon, L. A., Shaw, K., & Hutson-Comeaux, S. (2000). Why counterattitudinal messages are as memorable as proattitudinal messages: The importance of active defense against attack. *Personality and Social Psychology Bulletin*, 26, 1392-1408.

Ellen, P. S., Mohr, L. A., & Webb, D. J. (2000). Charitable programs and the retailer: Do they mix? *Journal of Retailing*, 76, 393-406.

Fazio, R. H. (1989). On the power and functionality of attitudes: The role of attitude accessibility. In A. R. Pratkanis, S. J. Breckler, & A. G. Greenwald (Eds.), *Attitude structure and function* (pp. 153-179). Mahwah, NJ: Erlbaum.

Fedler, F., Phillips, M., Raker, P., Schefsky, D., & Soluri, J. (1994). Network commercials promote legal drugs: Outnumber anti-drug PSA's 45-to-1. *Journal of Drug Education*, 24, 291-302.

Fehr, E., & Gächter, S. (2002). Altruistic punishment in humans. *Nature*, 415, 137-140.

Fein, S., McCloskey, A. L., Tomlinson, T. M (1997). Can the jury disregard that information? The use of suspicion to reduce the prejudicial effects of pretrial publicity and inadmissible testimony. *Personality and Social Psychology Bulletin*, 23, 1215-1226.

Fritschler, A. L. (1975). *Smoking and politics*. Englewood Cliffs, NJ: Prentice-Hall.

Gooden, D. R., & Baddeley, A. D. (1975). Context dependent memory in two natural environments: On land and underwater. *British Journal of Psychology*, 66, 325-331.

Greenwald, A.G. (1968). Cognitive learning, cognitive response to persuasion, and attitude change. In A.G. Greenwald, T.C. Brock, & T.M. Ostrom (Eds.), *Psychological foundations of attitudes* (pp 147-170). San Diego, CA: Academic Press.

Grush, J. E. (1980). Impact of campaign expenditures, regionality, and prior outcomes on the 1976 Democratic presidential primaries. *Journal of Personality and Social Psychology*, 38, 337-347.

Healy, A. F., & Bourne, L. E., Jr. (1995). *Acquisition and retention of knowledge and skills*. Thousand Oaks, CA: Sage.

Heilman, M. E. (1976). Oppositional behavior as a function of influence attempt intensity and retaliation threat. *Journal of Personality and Social Psychology*, 33, 574-578.

Hovland, C. I., Janis, I. L., & Kelley, H. H. (1953). *Communication and persuasion: Psychological studies of opinion change*. New Haven, CT: Yale University Press.

- Hovland, C. I., & Weiss, W. (1951). The influence of source credibility on communication effectiveness. *Public Opinion Quarterly*, *15*, 635 – 650.
- Hovland, C. I., Lumsdaine, A. A., & Sheffield, F.D. (1949). *Experiments on mass communication*. Princeton, NJ: Princeton University Press.
- Jones, E. E., & Wortman, C. (1973). *Ingratiation: An attributional approach*. Morristown, NJ: General Learning Corp.
- Kallgren, C. A., & Wood, W. (1986). Access to attitude relevant information in memory as a determinant of attitude-behavior consistency. *Journal of Experimental Social Psychology*, *22*, 328-338.
- Kallgren, C. A., Reno, R. R., & Cialdini, R. B. (2000). A focus theory of normative conduct: When norms do and do not affect behavior. *Personality and Social Psychology Bulletin*, *26*, 1002-1012.
- Keller, K. L. (1991). Memory factors in advertising: The effect of retrieval cues on brand evaluations. In A. A. Mitchell (Ed.), *Advertising exposure, memory, and choice* (pp. 11-48). Mahwah, NJ: Erlbaum.
- Killeya, L. A., & Johnson, B. T. (1998). Experimental induction of biased systematic processing: The directed thought technique. *Personality and Social Psychology Bulletin*, *24*, 17-33.
- Lord, C., Lepper, M., & Preston, E. (1984). Considering the opposite: A corrective strategy for social judgment. *Journal of Personality and Social Psychology*, *47*, 1231-1243.

Lutz, R. J. (1985). Affective and cognitive antecedents of attitude toward the ad: A conceptual framework. In L. Alwitt & A. Mitchell (Eds.), *Psychological processes and advertising effects* (pp. 45-65). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

MacKenzie, S. B., & Lutz, R. J. (1989). An empirical examination of the structural antecedents of attitude toward the ad in an advertising pretesting context. *Journal of Marketing*, 53, 48-65.

McAlister, A. L., Ramirez, A. G., Galavotti, C., & Gallion, K. J. (1989). In R. E. Rice & C. K. Atkin (Eds.), *Public communication campaigns*. (pp. 291-307). Newbury Park, CA: Sage.

McGuire, W. J. (1960). Consistency and attitude change. *Journal of Abnormal and Social Psychology*, 60, 345-353.

McGuire, W. J. (1961). The effectiveness of supportive and refutational defenses in immunizing and restoring beliefs against persuasion. *Sociometry*, 24, 184-197.

McGuire, W. J. (1962). Persistence of the resistance to persuasion induced by various types of prior beliefs defenses. *Journal of Abnormal and Social Psychology*, 64, 241-248.

McGuire, W. J. (1964). Inducing resistance to persuasion: Some contemporary approaches. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 1, pp. 191-229). San Diego, CA: Academic Press.

McGuire, W. J., & Papageorgis, D. (1962). Effectiveness of forewarning in developing resistance to persuasion. *Public Opinion Quarterly*, 26, 24-34.

Mills, J., & Jellison, J. M. (1967). Effect on opinion change of how desirable the communication is to the audience the communicator addressed. *Journal of Personality and Social Psychology*, 56, 82 - 92.

Osterhouse, R. A., & Brock, T. C. (1970). Distraction increases yielding to propaganda by inhibiting counterarguing. *Journal of Personality and Social Psychology*, 15, 344-358.

Papageorgis, D. (1968). Warning and persuasion. *Psychological Bulletin*, 70, 271-282.

Petty, R. E., & Cacioppo, J. T. (1977). Forewarning, cognitive responding, and resistance to persuasion. *Journal of Personality and Social Psychology*, 35, 645-655.

Petty, R. E., & Cacioppo, J. T. (1979). Effects of forewarning of persuasive intent and involvement on cognitive responses and persuasion. *Personality and Social Psychology Bulletin*, 5, 173-176.

Petty, R. E., & Wegener, D. T. (1998). Attitude change. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.) *The handbook of social psychology* (4th edition, pp. 323-390). New York: McGraw-Hill.

Petty, R. E., Ostrom, T. M., & Brock, T. C. (Eds.) (1981). *Cognitive responses in persuasion*. Mahwah, NJ: Erlbaum.

Petty, R. E., Cacioppo, J. T., & Goldman, R. (1981). Personal involvement as a determinant of argument-based persuasion. *Journal of Personality and Social Psychology*, 41, 847 - 855.

Pfau, M., & Dillard, & Dillard, J. P. (2001). *The handbook of persuasion: Theory and Practice*. Newbury Park, CA: Sage.

Priester, R. J., & Petty, R. E. (1995). Source Attributions and Persuasion: Perceived Honesty as a Determinant of Message Scrutinity. *Personality and Social Psychology Bulletin*, 21(6), 637 – 654.

Rhine, R., & Severance, L. (1970). Ego-involvement, discrepancy, source credibility, and attitude change. *Journal of Personality and Social Psychology*, 16, 175 - 190.

Romero, A. A., Agnew, C. R., & Insko, C. A. (1996). The cognitive mediation hypothesis revisited. *Personality and Social Psychology Bulletin*, 22, 651-665.

Sagarin, B. J., Cialdini, R. B., Rice, W. E., & Serna, S. B. (2002). Dispelling the illusion of invulnerability: The motivations and mechanisms of resistance to persuasion. *Journal of Personality and Social Psychology*, 83, 526-541.

Schab, F. R. (1990). Odors and remembrance of things past: *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 16, 648-655.

Simonich, W. L. (1991). *Government antismoking policies*. New York: Peter Lang.

Smith, S. M. (1982). Enhancement of recall using multiple environmental contexts during learning. *Memory and Cognition*, 10, 405-412.

Study links ads, drug spending. (2001, November 25). *The Arizona Republic*, p. D1.

Taylor, S. E., & Fiske, S. T. (1978). Salience, attention, and attribution: Top of the head phenomena. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 11, pp. 249-288). San Diego, CA: Academic Press.

Tobacco ads still target kids. (2001, August 16). *The Arizona Republic*, p. A7.

Trafimow, D. (2001). The effects of trait type and situation type on the generalization of trait expectancies across situations. *Personality and Social Psychology Bulletin*, 27, 1463-1468.

Tulving, E. (1983). *Elements of episodic memory*. New York: Oxford University Press.

Tulving, E., & Schacter, D. L. (1990). Priming and human memory systems. *Science*, 247, 301-306.

Tulving, E., & Thompson, D. M. (1973). Encoding specificity and retrieval processes in episodic memory. *Psychological Review*, 80, 352-373.

Tversky, A. & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, 185, 1123-1131.

Warner, K.E. (1981). Cigarette smoking in the 1970's: The impact of the anti-smoking campaign on consumption. *Science*, 224, 729-731.

Wood, W., & Quinn, J. M. (2001). Forewarned and Forearmed? A meta-analytic synthesis of forewarning experiments. Manuscript submitted for publication.

Wood, W., & Kallgren, C. A. (1988). Communicator attributes and persuasion: Recipients access to attitude-relevant information in memory. *Personality and Social Psychology Bulletin*, 14, 172 - 182.

Worchel, S., Arnold, S. E., & Baker, M. (1975). The effect of censorship on attitude change: The influence of censor and communicator characteristics. *Journal of Applied Social Psychology*, 5, 222-239.

Zuckerbrod, N. (2001, March 15). Tobacco ads rise despite limits set in state suits. *San Francisco Chronicle*, p. B4.

Zuwerink, J. R., & Devine, P. G. (1996). Attitude importance and resistance to persuasion: It's not just the thought that counts. *Journal of Personality and Social Psychology, 70*, 931-944.

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Table 1

Covariate-adjusted means for Studies 1, 2, and 3

Condition	Perceived honesty	Voting intentions (Study 1 and Study 2) Favorability (Study 3)
<u>Study 1</u>		
Control (n=25)	3.52	3.32
Links plus mere derogation (n=26)	3.54	3.50
Mere counterarguments (n=27)	3.27	2.62
Poison parasite (n=25)	3.29	2.67
Poison parasite plus mere derogation (n=22)	2.90	2.68
<u>Study 2</u>		
Control (n=31)	4.00	3.33
Links plus mere derogation (n=30)	3.71	3.38
Mere counterarguments (n=33)	3.67	3.52
Poison parasite (n=31)	3.01	2.78
Poison parasite plus mere derogation (n=34)	3.16	2.92
<u>Study 3</u>		
Control (n=34)	2.65	2.83
Counterarguments only (n=29)	2.59	2.52
Poison parasite (n=31)	2.13	2.13

Note: Cell variables were scored on 7-point scales, with higher numbers indicating more positive ratings of the advertised candidate or corporation. The means for Study 3 are averaged across Session 3 and Session 4.

Figure Captions

Figure 1. Mean intentions to vote for Stephen Pickett in Study 1.

Figure 2. Mean intentions to vote for Stephen Pickett in Study 2.

Figure 3. Study 2: Mediation of the effectiveness of the Poison Parasite Defense by perceptions of honesty and cognitive responses. All paths have p 's < .05.

Figure 4. Procedure of Study 3.

Figure 5. Favorability toward Zelotec in Study 3.

Figure 6. Perceived honesty of the Zelotec ad in Study 3.

Figure 7. Study 3: Mediation of the effectiveness of the Poison Parasite Defense by perceptions of honesty and cognitive responses. All paths with asterisks have p 's < .05.

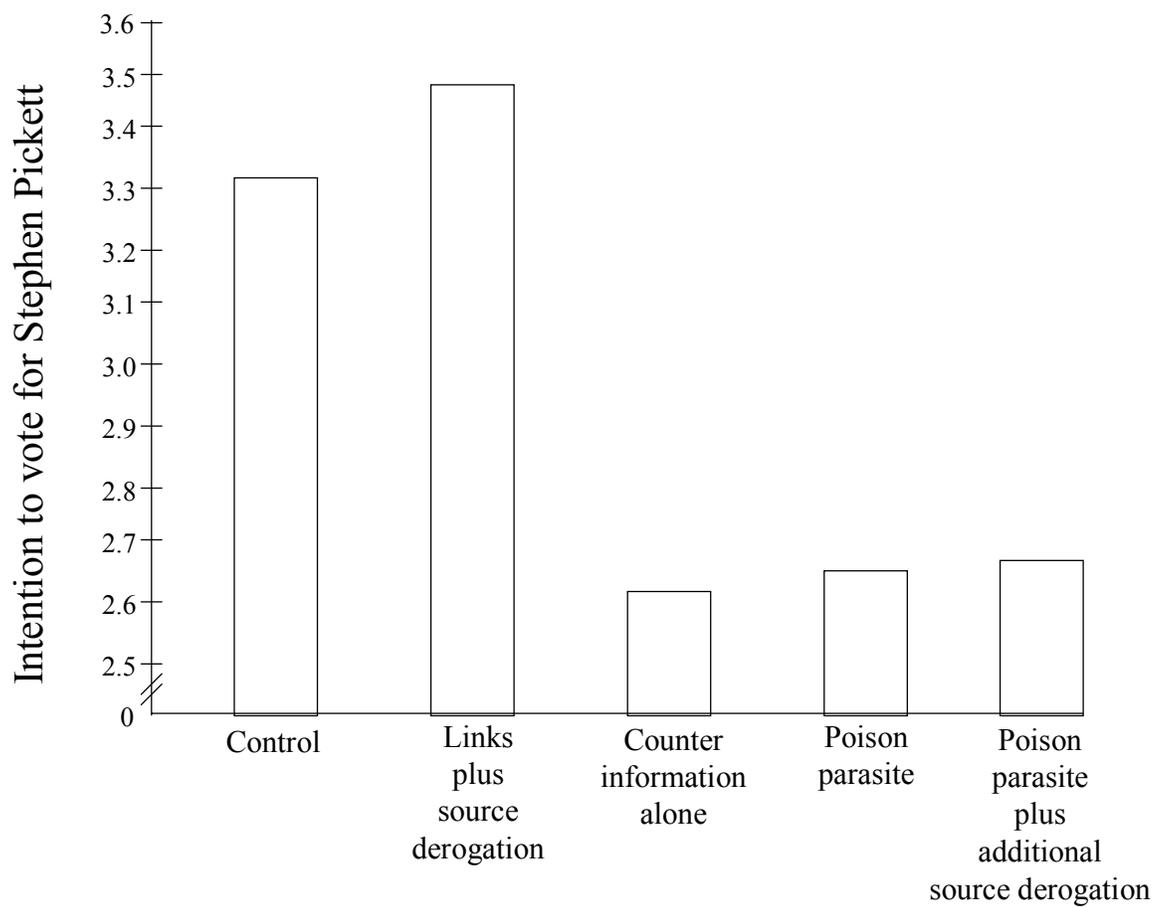


Figure 1

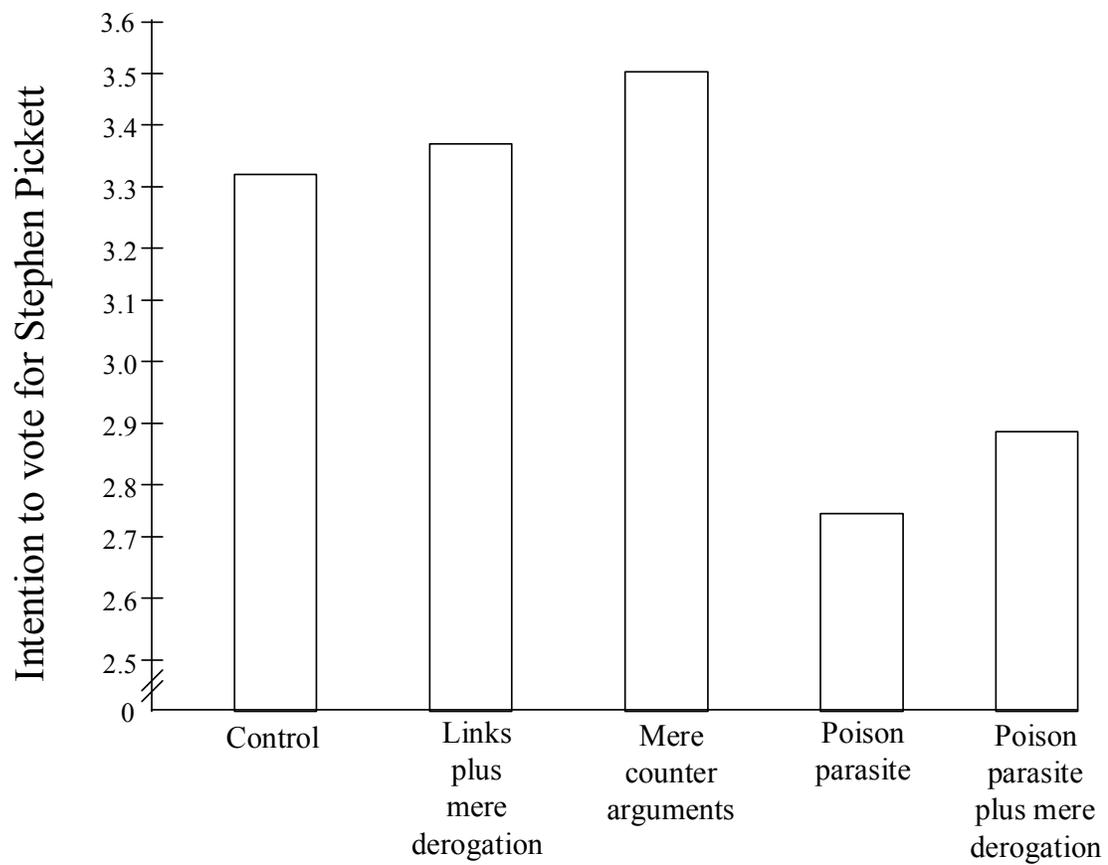


Figure 2

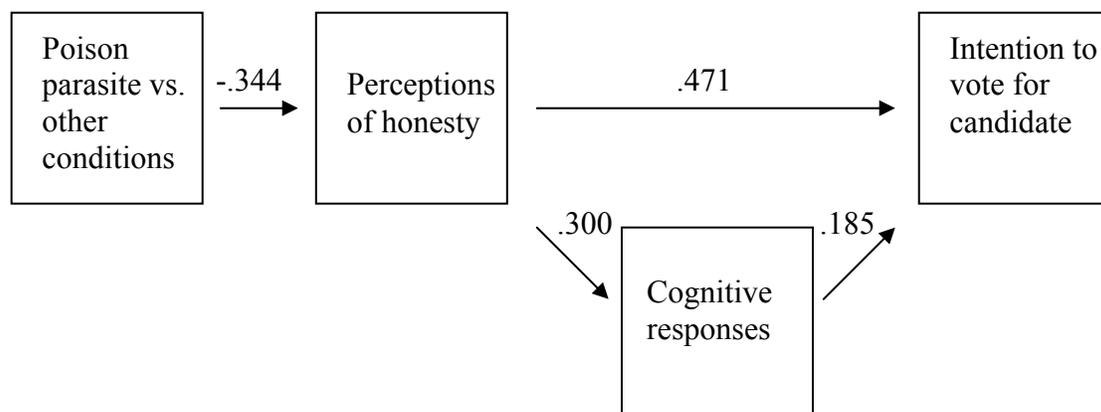


Figure 3

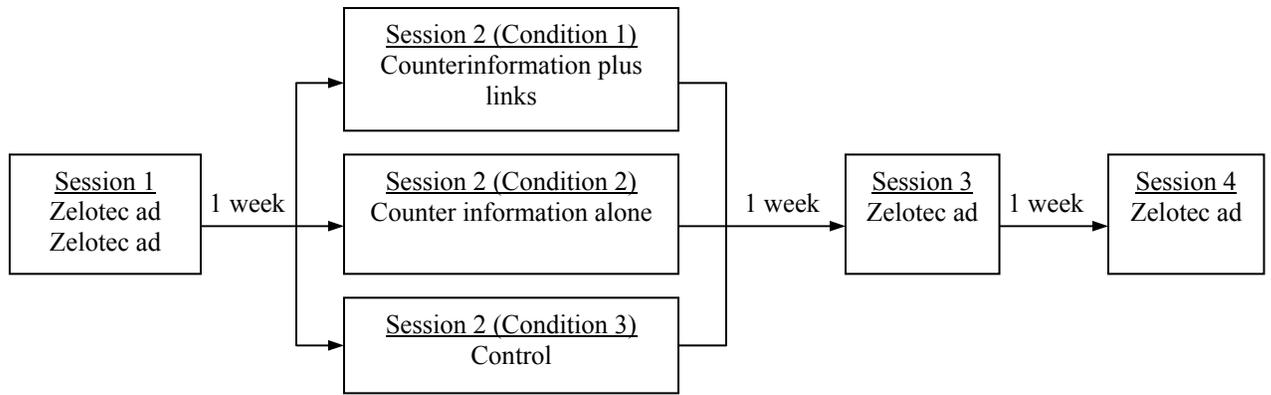
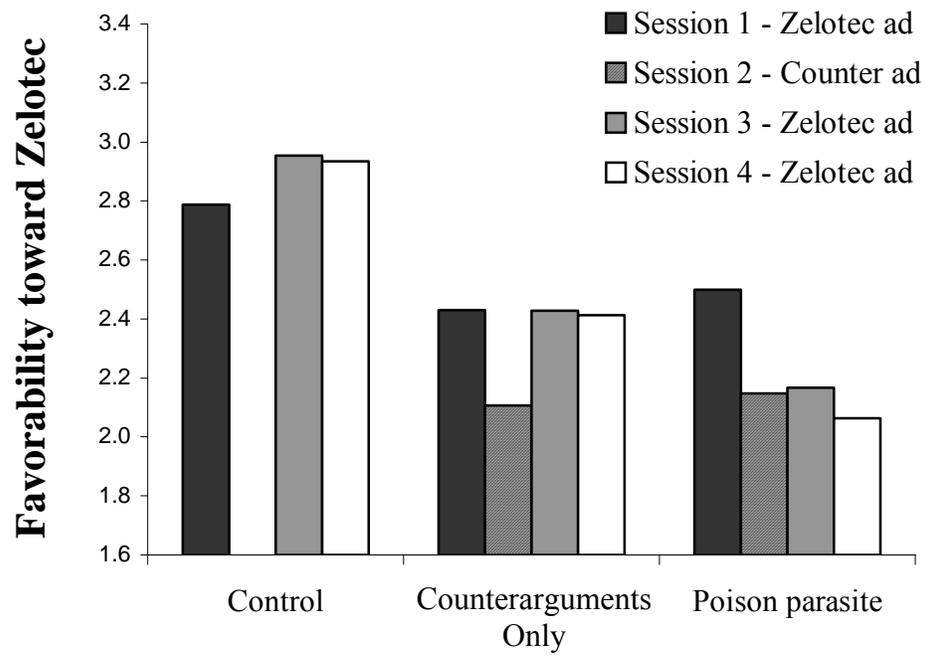


Figure 4



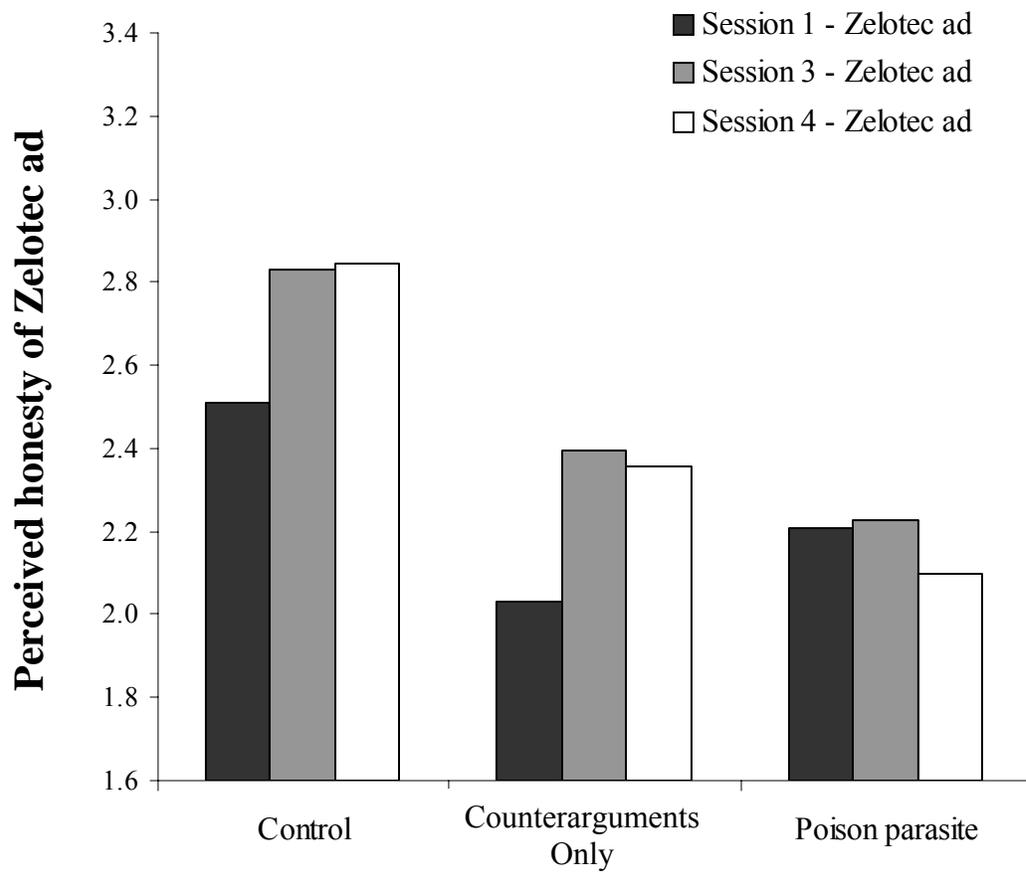


Figure 6

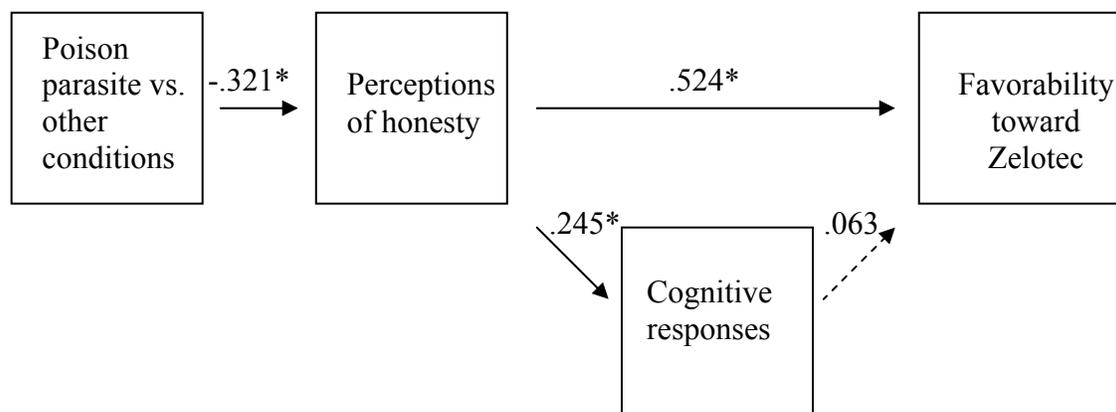


Figure 7