

## **Deciphering the effect of government public communications on citizens' trust: the roles of information and symbols**

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### **Abstract**

Effective public communications have been proposed as a remedy for citizens' distrust in government. The studies that explored the effectiveness of government communications have focused mainly on the extent to which they provide substantive information about bureaucracies' actions. However, these studies have largely overlooked the effect of *symbolic elements*, entangled in these communications (e.g. logos, images and celebrities). This study aims to enhance our understanding of the different psychological effects of substantive information and symbolic elements, and the relations between them. Building on the Elaboration Likelihood Model (ELM) from social psychology, I theorize that citizens will be more susceptible to substantive information (as opposed to symbols) when they perceive the policy issue in the communication as having personal relevance for themselves, which enhances their motivation to invest in elaborate processing. To test this expectation, I design two survey experiments, focusing on the responses of Israeli citizens to the Environmental-Protection Ministry's communication of its policy plan in relation to the air pollution in the Haifa Bay area. To account for personal relevance, I compare between citizens from the polluted Haifa Bay area and others. The results of Experiment 1 do not support the hypotheses. However, it tentatively suggests that symbolic elements reduce the effect of substantive information, and thus enhance citizens' trust in ill-conceived government policies. These findings will be conceptually replicated and reexamined in experiment 2.

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### **Introduction**

Public administration scholars are often concerned about the implications of citizens' low trust in government, and their undervaluation of public-service performance. One of the main remedies which has been proposed for this problem is effective communications with citizens. Studies have suggested that government organizations' public communications (e.g. advertising, social networks, and e-government tools) can increase citizens' trust in government organizations and their policies, under certain conditions ([Baekgaard and Serritzlew 2016](#); [Grimmelikhuijsen and Meijer 2014](#); [Grimmelikhuijsen et al. 2013](#); [Hvidman and Andersen 2016](#); [James and Moseley 2014](#); [James and Van Ryzin 2017a, 2017b](#); [James](#)

2011; Marvel 2015a; Nielsen and Moynihan 2016; Olsen 2017).<sup>1</sup> These studies have focused mostly on the informative aspects these communications, whereby government organizations provide citizens with substantive explanations about their policies and actions, and evidence about their performance. At the same time, a few recent studies demonstrated the influence of *symbolic elements* entangled in public communications, such as brand logos, figures, images and celebrity endorsements (Alon-Barkat and Gilad 2017; Karens et al. 2016). These symbolic elements are strategically designed to evoke citizens' positive associations and emotions. The psychological mechanism through which these symbolic elements effect citizens' attitudes differs from that of substantive information. Their processing requires relatively little cognitive effort, and is often unconscious and automatically activated without much thinking. Accordingly, the effect of symbolic elements can be regarded as irrational. Scholars even suggested that symbolic elements can elicit citizens' undue trust in poorly performing organizations and in ill-conceived policies, and thereby to manipulate and distort citizens' views of governments (Alon-Barkat and Gilad 2017).

However, we still lack understanding of the relations between the effects of substantive information and symbolic elements in public communications. Specifically, when citizens are more susceptible to variations in substantive information, and when are they more responsive to symbolic elements? Are symbolic, as opposed to informative aspects, likely to be more effective with respect to certain people, or policy issues?

Based on the Elaboration Likelihood Model (ELM), which has been developed in social psychology (Petty and Cacioppo 1986), I expect that citizens will be more susceptible to substantive information, when they perceive the policy issue in a communication as having greater *personal relevance* for themselves. Conversely, when citizens who do not perceive the policy issue in the communication as personally relevant, they are more likely to rely on symbolic elements in the communication. The theoretical rational underlying these expectations is that personal relevance enhances people's *motivation* to invest in elaborate processing of the communication, and scrutinizing its substantive content.

To test these expectations, I design two survey experiments, in a fairly realistic setting. The experiments will examine the responses of Israeli citizens to the Environmental Protection Ministry's publication of its strategic plan in relation to the air pollution in the Haifa Bay area. I account for variation in perceived personal relevance, by comparing between citizens from the polluted Haifa Bay area, and citizens from selected cities in the Shfela area, which were selected due to their similar profile. In the first experiment, the communication (i.e. the strategic plan) is displayed to subjects under varying conditions of substantive information (effective vs. ineffective policy plans) and symbolic elements (the appearance of the ministry's

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<sup>1</sup> Behavioral public administration studies highlight the limitations of citizens' rational processing of information due to motivational reasoning and other cognitive biases.

logo and the green color), a methodology used by previous ELM studies (Petty, Cacioppo, and Schumann 1983a).

The results of this survey experiment do not lend support for my hypotheses. Haifa-Bay residents were not more likely respond to differences in substantive information of the communication. Likewise, Shfela residents were not more likely to respond to symbolic elements in the communication. At the same time, the results indicate that information and symbols may interact with each other. They suggest that symbolic elements mitigate the effect of substantive information, and thus – enhance citizens' trust in ill-conceived government policies. These findings, if generalizable, carry normatively disturbing implications. Governments may strategically use symbolic elements to make people ignore problematic information they are obliged to publish. To validate the findings of the first experiment, and put the new, retrospective explanation to additional test, I design a second experiment. Experiment 2 [which was yet to be conducted], will be a conceptual replication of the first experiment.

The paper proceeds as follows. First, I discuss the theoretical framework and present my hypotheses. Thereafter, I describe the empirical case study, and outline the methodology of the first experiment. Thereafter, I present the results of the first experiment and discuss those results. Finally, I present the proposed design of the second experiment, which was yet to be conducted.

## **Symbolic Elements in Government Public Communications and their Influence on Citizens' Attitudes**

A symbol can be defined as "*any object used by human beings to index meanings that are not inherent in, nor discernible from, the object itself*" (Elder and Cobb 1983, 28-29). For instance, colors are physical categories, derived from the spectrum of light, interacted with the eye receptors. Yet, they are also symbols, in the sense that people assign them with meanings (e.g. the gendered associations of blue versus pink nowadays). Symbols are social constructs, embedded in cultural and social contexts. They exist in people's collective imagination, and are created and shaped in an interactive and dynamic process. In this study I focus on those symbols, which are strategically used by government organizations in their public communications, and are designed to evoke associations and emotions that stimulate audiences' positive affect towards organizations and their operations. Empirically, as detailed below, I focus on brand logos, colors, and the use of celebrity endorsements, which are frequently used by government organizations in their public communications.

By comparison with the abundant research on citizens' responses to performance information and other informative elements in public communications, public administration

literature has devoted relatively little attention to the effect of symbolic elements. Recently, however, a few experimental studies tackled the issue. Marvel (2015b) analyzed citizens' responses to the United States Postal Services' television advertisement, which involved various symbolic elements, including the organization's logo, images of its workers, and upbeat background music. His study shows that participants who watched the advertisement evaluated the organization's performance more positively. Still, this study did not disentangle the effects of the symbolic and informational elements of the ad on participants' attitudes. In fact, Marvel himself theorizes the effect of the advertisement as if it merely involved "performance information," while overlooking its symbolic value. Karens et al. (2016) primed subjects from three European countries with the European Commission's logo. The results indicated that exposure to the promotional symbol enhanced participants' trust in the EC policies. Accordingly, the authors conclude that brand logos can elicit citizens' positive attitudes towards government organizations and their policies. Finally, Alon-Barkat and Gilad (2017) explored the effect a prominent symbol of the Israel Electricity Corporation, a state owned company. Their findings suggested that citizens' exposure to the cartoon figures which were used in the organization's public campaigns increased their trust in the organization. Moreover, they found that the exposure to this symbol compensated for citizens' personal experience of poor performance.

While the aforementioned studies tend to suggest that symbolic elements may have an effect of citizens' evaluations, they did not consider the relations between these symbolic elements and people's internalization of substantive information in communications. Congruently, in their empirical designs, they manipulated the symbolic elements in communications without varying their substantive information. Therefore, public administration literature still lacks comprehensive theory and empirical evidence about the psychological mechanisms underlying the effects of these different dimensions of government communications, and the relations between these mechanisms.

## **The Elaboration Likelihood Model (ELM)**

The Elaboration Likelihood Model (ELM), which has been developed in the social psychology literature to explain attitudinal responses to persuasive communication (Petty and Cacioppo 1986, 1996; Petty et al. 2008) provides a comprehensive theoretical framework for investigating citizens' responses to elements in government public communication messages.<sup>2</sup> According to ELM, communication may affect peoples' attitudes via two distinct routes or processes: the central route and the peripheral route. The central route is characterized by elaborate processing of the content of the message and involves critical and thoughtful scrutiny of the

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<sup>2</sup> The Heuristic Systematic Model (HSM), developed by Shelly Chaiken and colleagues (Chaiken 1980), suggests similar theoretical expectations, using a different terminology.

arguments central to the merits of the issue. The peripheral route, on the contrary, is characterized by quick processing, relying on accessible cues, which can affect attitudes without scrutinizing the message arguments. Some peripheral cues affect attitudes by triggering inferences or heuristics (e.g. 'experts are correct'), while others work by eliciting emotions that become associated with the assessed aspect via primitive psychological processes like classical conditioning.

In light of the latter conceptualization of ELM, substantive information in government public communications represent message arguments, which can be critically evaluated based on their content, or argument quality (central route). Conversely, symbolic elements can be regarded as potential peripheral cues, which can affect attitudes by evoking emotions and associations attributed to government organizations and their policies (peripheral route).

The ELM further postulates that there is a tradeoff between the central and peripheral routes to persuasion. That is, the more people rely on the central route (scrutinizing arguments central to the issue), the less they are likely to rely on the peripheral route (making shortcuts based on cues). In addition, people are more likely to elaborate and to rely more on the central rather than on the peripheral route when as they are motivated and when they have the ability to do so. Congruently, ELM studies have linked between peoples' tendency to respond to arguments versus peripheral cues, and a series of factors related to motivation and ability to elaborate, including perceived personal relevance, intrinsic enjoyment to think, external distraction, and issue-relevant knowledge (For a review of motivational and ability factors affecting likelihood to elaborate see [Petty and Cacioppo 1986](#); [Petty and Wegener 1998](#)). In this study, I focus on the moderating effect of the perceived personal relevance of the policy issue central to the communication, as explained in the next section.

## **The Moderating Role of Perceived Personal Relevance on Responses to Communication**

Perceived personal relevance of an issue (or "issue involvement") has been considered the most important determinant of motivation to process a message ([Petty and Briñol 2011](#); [Petty, Priester, and Brinol 2002](#)). It refers to the extent to which people perceive the issue central to the communication as having significant consequences for their own lives ([Petty and Cacioppo 1986, 81](#)). For instance, car ads have higher personal relevance for those who are currently interested in buying a new car. The perceived personal relevance of policy issues may vary both at the policy level and the individual citizen's level. Some issues may remain relatively high in personal relevance for many people over a long period of time (e.g. income tax), while others may have personal relevance for a more limited period and/or audiences (e.g. childcare services).

According to the ELM, people are more motivated to process the issue-relevant arguments presented in the communication inasmuch as they perceive the issue as more personally relevant. Because the consequences of being incorrect are greater, it becomes more important for people to form a veridical opinion, and therefore people are more inclined to engage in the cognitive work necessary to evaluate the true merits of the proposal. Accordingly, personal relevance is likely to increase people's tendency to rely on the central route, and decrease their tendency to rely on the peripheral route.

This latter postulation has been empirically tested by a series of ELM based experimental studies published in social psychology and marketing (Johnson and Eagly 1989; Petty, Cacioppo, and Goldman 1981; Petty, Cacioppo, and Schumann 1983b; Petty and Cacioppo 1979, 1990). For instance, in a study by Petty, Cacioppo, and Schumann (1983), undergraduates were asked to express their attitudes about a new product, a disposable razor, after being exposed to a magazine ad, which contained either strong or weak arguments about the product, and involved either a non-famous endorser or a celebrity endorser (peripheral cue). To manipulate the personal relevance of the product, subjects were either told that the advertisement and the product would soon be test-marketed in other areas of the country (low personal relevance condition), or that it would be soon tested in their local area (high personal relevance condition). The results showed that the differences between the effects of the strong and weak arguments were significantly higher for the high personal relevance group, whereas the differences between the celebrity and non-famous endorsers were higher among the low personal relevance group. In other words, subjects who perceived the product as having high personal relevance were more likely to rely on the central route and to scrutinize the arguments, whereas the subjects who perceived the product as having low relevance tended to prefer the peripheral route, and were more affected by the symbolic peripheral cue (i.e. the celebrity endorser).

In summary, building on the ELM, I expect that citizens' responses to the symbolic elements (as opposed to the substantive information elements) in government communication messages will depend on the extent to which they perceive the policy issue in the communication as having personal relevance. Citizens who perceive a policy issue as personally relevant will be more motivated to scrutinize the communication, and therefore they will be more likely to be affected by its substantive information (i.e. by variation in its argument quality). Conversely, citizens who do not perceive the policy issue as personally relevant, are likely to be more affected by the symbolic elements entangled in the message (peripheral cues).

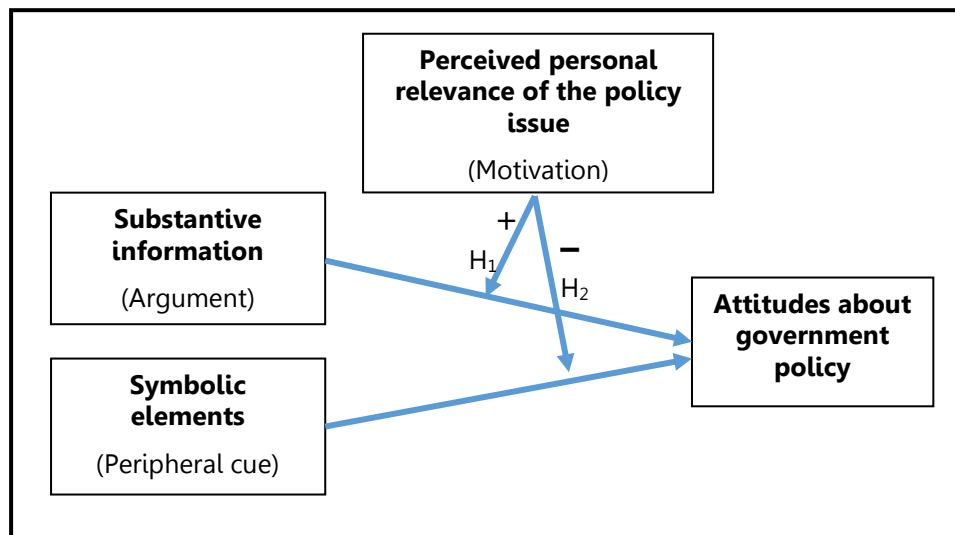
The hypotheses are formulated as follows:

*H<sub>1</sub> – The more (less) citizens perceive a policy issue as having personal relevance for themselves, the more (less) they will be susceptible to substantive information in a communication regarding this issue.*

*H<sub>2</sub> – The more (less) citizens perceive the policy issue as having personal relevance for themselves, the less (more) they will be susceptible to symbolic elements in a communication regarding this issue.*

These theoretical expectations are graphically displayed in Figure 1.

Figure 1: Theoretical model – Effects of government communications on citizens' attitudes



To empirically test the abovementioned hypotheses, I designed two survey experiments. These experiments focus on the responses of Israeli citizens to the Environmental Protection Ministry's publication of its annual strategic plan in relation to the air pollution in the Haifa Bay area. The experimental design aims to simulate the effects of variations in substantive information and symbolic elements in public communication, and their moderation by perceived personal relevance. In what follows, I describe the empirical case, and the methodology and results of the two experiments.

### **Empirical case background: The Israeli Environmental Protection Ministry's policy towards the air pollution in the Haifa Bay area**

The Haifa Bay area, located on the Mediterranean coast of northern Israel, is characterized by relatively high levels of air pollution, mainly due to the concentration of heavy industry in that area (including large oil refineries, power plants, and chemical factories). Beginning in the late 2000s, the Ministry of Environment protection has been implementing policy programs to monitor and reduce the high levels of pollution in the area. Among others, to reduce the levels of air pollution, the ministry has established new, stricter, regulations for some of the factories in that area, increased its supervision on their levels of air pollution, and



took measures to reduce the amount of highly polluting vehicles in the area ([The Ministry of Environment protection 2015a, 2015b](#)).

The policy issue of the pollution in the Haifa Bay area offers a case of natural variation in citizens' perceived personal relevance, not strongly confounded with other explanatory variables. Normally, comparing between existing groups of citizens that differ in their personal relevance towards a policy issue, will confound personal relevance with other variations between the groups. For instance, if we were to compare responses to communication about childcare regulation among young parents versus others, we would not have been able to effectively isolate the distinct effect of personal relevance. Comparing between the two groups would have raised two serious concerns. First, the groups are likely to differ with respect to demographic, psychological, and political characteristics, which may also shape citizens' attitudes and/or responses to the communication. Second, the high personal relevance group (young parents) would be advantaged in terms of their knowledge of the specific issue, mainly based on their direct personal experience.

These two main concerns can be avoided, or at least significantly attenuated, in the case of the Haifa Bay pollution. The concern that the high and low personal relevance groups would be associated with other, demographic and socio-economic, variables, can be addressed by matching the subjects from the Haifa bay cities with subjects from cities with similar demographic profile. As for the second concern, in the particular case of the Haifa Bay air pollution, the targeted citizens who perceive the issue as highly relevant (i.e. those who reside in the area), have very little (if any) direct personal experience of the policy, and its outcomes. Most residents of Haifa Bay are not likely to see any workers or facilities of the Ministry of Environment Protection, and are probably unable to sense an increase or decrease in the level air pollution by themselves. In addition, since understanding the status of air pollution, its causes and implications, requires scientific knowledge and skills, most of the Haifa Bay residents are likely to have no better knowledge of the issue, compared with other citizens. Altogether, I believe that these circumstances are likely to attenuate the differences between the high and low personal relevance groups, concerning their levels of knowledge and direct personal experience.

## **Methodology – experiment 1**

### **Sample selection and recruitment**

I conducted the first experiment on May 2017. The survey was distributed online via an internet panel company (*ipanel*) through Qualtrics software. I sampled citizens from major cities in the Haifa bay area (*Haifa, Nesher, Qiryat Hayyim, Qiryat Bialik, Qiryat Mozkin, Qiryat Ata and Qiryat Yam*), and coupled them with three cities located at the Shfela area at center of Israel, which are characterized by similar socio-economic profile (*Natania, Petach Tikva and*



*Rishon Lezion*). The latter group of cities will be henceforth referred to as Shfela. The survey was completed by 880 subjects, of which 386 are from the Haifa bay area and 494 are from Shfela.<sup>3</sup> Of these 880 observations, I screened out 262 observations (29.8%) who failed in one or more of the filtering tests.<sup>4</sup> Thereafter, I was left with a sample of 618 observations, of which 282 are from the Haifa Bay area and 336 are from Shfela.

### Experimental manipulation

Subjects are presented with a summary of two policy plans of the Ministry of Environmental Protection. The first of these plans or communication messages is a filler (which relates to the reduction of waste) and the second relates to the air pollution in the Haifa Bay area. Both plans were derived from the publication of the government's annual work plan for 2017-8<sup>5</sup> (and were presented to the subjects as such). Each policy includes the title the policy (i.e. "reducing the levels of air pollution in the Haifa bay"), and two measures which are aimed at fulfilling the policy goal (30-50 words each).

To examine the distinct effects of substantive information and symbols, I manipulate the substantive information and the appearance of symbols in these communications. This methodology is based on the ELM studies that explored the determinants of central and peripheral routes for persuasion, and their moderation by personal relevance (Petty, Cacioppo, and Goldman 1981; Petty, Cacioppo, and Schumann 1983b; Petty and Cacioppo 1979). The subjects are randomly assigned to one of 6 conditions, in a 2 (substantive information) × 3 (symbolic elements) factorial design, as follows.

To vary the substantive information elements in these communications, subjects are presented with policy measures which are either relevant or irrelevant to achieving the policy (representing strong vs. weak arguments). The relevant policy measures were taken from the policy, as displayed in the ministries' work plan, whereas the irrelevant measures were derived from other sections in the work plan (i.e. referring to other policy goals). The relevant policy measures for the Haifa bay pollution policy, are "increasing the supervision on factories" and "reducing diesel smoke emissions by vehicles", whereas the irrelevant measures are "reducing the ministry's burden of regulation", and "the establishment and operation of a unified environment service center". The full texts of the the two conditions is displayed in appendix B.

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<sup>3</sup> Initially, I pursued a sample of 300 from Sharon and 300 from Shfela. However, while following the data collection, I noticed, unexpectedly that there is a significant over-representation of women in the sample. Therefore, I asked ipanel to extend the sample to reach at least 150 men in each area.


<sup>4</sup> Multiple entries from the same IP (n=18); respondents under the age of 18; failure in an Instructional Manipulation Check (n=99) ; submitting the survey in less than 3 minutes or more than 30 minutes (n=47) ; answering the 6 outcome variables questions (trust in air pollution policy) in less than 10 seconds (n=75); repetition of the same value (except 4) in the battery of elaboration questions (which include two reversed items, on a scale of 1 to 7) (n=68).

<sup>5</sup> The annual work plan publication is available at: <http://plans.gov.il>

To manipulate the symbolic elements in the messages (which are potential peripheral cues), the subjects are randomly assigned to a treatment ("symbols") and two control conditions ("no symbols" and "fake symbols"). In the treatment condition, the ministry's unique logo will be displayed at the top of the page and the background will include the green color, which symbolizes care for the environment. Both of these symbolic elements have been frequently used in the Environmental Protection Ministry's communications.<sup>6</sup> In the control "fake symbols" condition, the real logo will be replaced by a fake logo, and the background will include the blue color. Those "fake" symbols are designed to be aesthetically equivalent in terms of elaborateness, naturalness and symmetry (Henderson and Cote 1998), yet they are not familiar symbols and are neither recognized with the Ministry nor with environment issues, and hence are not likely to activate strong emotions and associations which will be attached to the government ministry and its policy (Alon-Barkat and Gilad 2017). In the control "no symbols" condition, the communications will be displayed without any logo, and the design will be minimal and include only black and white colors. The three conditions of symbolic elements are displayed in Figure 2.

Figure 2: Illustration of manipulation of symbolic elements

**a. Treatment ("symbols")**




**יעד המדיניות: הפחתת זיהום האוויר במפרץ חיפה**

משימות מרכזיות להגשמת היעד:

<p><b>הגברת הפיקוח על מפעלים במפרץ חיפה</b></p> <p>חלק ניכר מזיהום האוויר במפרץ חיפה נובע מהפעילות התעשייתית הנרחבת באזור. על מנת לצמצם את זיהום האוויר יפעל המשרד להגנת הסביבה להגברת הפיקוח על המפעלים. בתוך כך, המשרד יעלה בכא"מ את מספר סיורי הפיקוח וירחיב את השימוש בביקורות פתע.</p>	<p><b>הפחתת פליטות עשן דיוז מכלי רכב במפרץ חיפה</b></p> <p>חלק מזיהום האוויר באזור נובע מפליטות מזהמים מכלי רכב, ובעיקר מרכבי דיוז. על מנת להפחית את הזיהום מרכבי דיוז, יוביל המשרד להגנת הסביבה התקנה של מסנני חלקיקים בכסס רכבים באזור, ויפעיל "אזור אוויר נקי" המגביל כניסת כלי רכב מזהמים.</p>
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**b. Control ("fake symbols")**



**יעד המדיניות: הפחתת זיהום האוויר במפרץ חיפה**

משימות מרכזיות להגשמת היעד:

<p><b>הגברת הפיקוח על מפעלים במפרץ חיפה</b></p> <p>חלק ניכר מזיהום האוויר במפרץ חיפה נובע מהפעילות התעשייתית הנרחבת באזור. על מנת לצמצם את זיהום האוויר יפעל המשרד להגנת הסביבה להגברת הפיקוח על המפעלים. בתוך כך, המשרד יעלה בכא"מ את מספר סיורי הפיקוח וירחיב את השימוש בביקורות פתע.</p>	<p><b>הפחתת פליטות עשן דיוז מכלי רכב במפרץ חיפה</b></p> <p>חלק מזיהום האוויר באזור נובע מפליטות מזהמים מכלי רכב, ובעיקר מרכבי דיוז. על מנת להפחית את הזיהום מרכבי דיוז, יוביל המשרד להגנת הסביבה התקנה של מסנני חלקיקים בכסס רכבים באזור, ויפעיל "אזור אוויר נקי" המגביל כניסת כלי רכב מזהמים.</p>
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**c. Control ("no symbols")**

**יעד המדיניות: הפחתת זיהום האוויר במפרץ חיפה**

משימות מרכזיות להגשמת היעד:

<p><b>הגברת הפיקוח על מפעלים במפרץ חיפה</b></p> <p>חלק ניכר מזיהום האוויר במפרץ חיפה נובע מהפעילות התעשייתית הנרחבת באזור. על מנת לצמצם את זיהום האוויר יפעל המשרד להגנת הסביבה להגברת הפיקוח על המפעלים. בתוך כך, המשרד יעלה בכא"מ את מספר סיורי הפיקוח וירחיב את השימוש בביקורות פתע.</p>	<p><b>הפחתת פליטות עשן דיוז מכלי רכב במפרץ חיפה</b></p> <p>חלק מזיהום האוויר באזור נובע מפליטות מזהמים מכלי רכב, ובעיקר מרכבי דיוז. על מנת להפחית את הזיהום מרכבי דיוז, יוביל המשרד להגנת הסביבה התקנה של מסנני חלקיקים בכסס רכבים באזור, ויפעיל "אזור אוויר נקי" המגביל כניסת כלי רכב מזהמים.</p>
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<sup>6</sup> Examples are available in the Ministry's official website [www.sviva.gov.il](http://www.sviva.gov.il)

## Procedure

To disguise the purpose of the study, the survey is presented to the participants as a study about citizens' attitudes about environmental policies in general. The survey begins with a series of questions about trust in Israel's government ministries and their policies, and participants' political ideology. Participants are also asked about their interest in environmental issues, evaluation of current government policies on environmental issues, and preference for more/less government investment in environmental policy. Thereafter, subjects are told that they will be presented with two government policy plans regarding environmental issues. The participants are then assigned to one of the 6 experiment conditions. The symbolic element condition is relevant for the two policy plans (i.e. both plans will have identical appearance). The information manipulation regards only to the Haifa Bay air pollution plan (i.e. the first plan regarding waste reduction will include relevant information for all subjects). Each policy plan will be followed by questions about trust in the policy. The subjects are also asked about their perceived level of elaboration on the second policy, which regards to the Haifa Bay air pollution, and about its personal relevance. They are also asked three questions to assess their knowledge about the air pollution in the Haifa Bay. Thereafter, I included an instructional manipulation check item, which aims to assess participants' diligence. After a set of demographic questions, I conducted a manipulation check, in which I asked the participants whether they recognize the Ministry's logo, and whether they associate it and the green color with positive or negative thoughts. Those who were assigned to the control fake logo group are asked similar questions about the fake symbols. Finally, the participants are debriefed, and explained about the manipulations, and the possible deception.

## Operationalization of variables

My main outcome variable is citizens' trust in policy (or the perceived trustworthiness of the policy). This variable is measured in the survey using a battery of six items regarding the three dimensions of trust, developed in organizational literature: perceived competence, perceived benevolence, and perceived honesty (Mayer, Davis, and Schoorman 1995). The items are adopted and slightly modified from validated scales used by previous public administration studies on trust in government (Grimmelikhuijsen and Meijer 2014; Grimmelikhuijsen et al. 2013; Karens et al. 2016; Porumbescu 2016). This index has fairly strong reliability and internal consistency (Cronbach's  $\alpha = 0.94$ ). In addition to directly examining participants' attitudes about the policy, I also evaluate their cognitive response to the communication. To do I use three measures: First, I include an index of perceived elaboration which consists of 5 items, adopted from previous ELM studies (Cacioppo et al. 1986; Wheeler, Petty, and Bizer 2005). This index has fairly good reliability and internal consistency (Cronbach's  $\alpha = 0.81$ ). Second, I measure the time participants spent on scanning these policy plans (hereafter – reaction time or RT). In the analyses below, I log transformed

the reaction time which, on order to reduce skewness. Third, evaluate participants' knowledge of the content of those communications via a memory test. The operationalization of the outcome variables is presented in APPENDIX A.

My key independent variables are the symbolic elements and variation in substantive information in the communication, as described above, and personal relevance (with regard to the Haifa-Bay policy). The latter was coded according to respondents' reporting on residence, work or studying in one of the cities which are located in the Haifa-Bay area. Of the 688 subjects in the final sample, 315 were coded Haifa-Bay and 373 were coded Shfela.

## **Results – experiment 1<sup>7</sup>**

The assumption that the policy issue of the air pollution in the Haifa Bay area is perceived as more personally relevant to Haifa Bay residents, compared with Shfela residents, is confirmed by the data. The subjects were asked “To what extent did you feel that the policy plan and its consequences concern you personally? (1 = very little; 7 = very much)” The mean score among Haifa residents was 5.59 [95% confidence intervals are 5.43, 5.75] compared with 4.04 [3.87, 4.21] among Shfela residents. The validity of manipulation of symbolic elements relies on the empirical assumptions that the Environmental Protection Ministry's logo is recognizable, and has a positive affect, whereas the fake logo is unrecognizable and neutral. To assess these assumptions, subjects were asked by the end of the survey whether they recognize the logos and whether these logos evoke positive or negative feelings. The real logo is fairly recognized. 26.4% of subjects reported that they do not recognize it (compared with 55% in the fake logo). In addition, subjects in the “no logo” condition were asked by the end of the survey to select the logo from four different government logos which were presented to them, and 62.2% correctly selected the ministry's logo. The real logo also had a fairly positive affect. 63.6% of subjects reported that the real logo evoked positive associations, and only 6% of subjects reported that the logo had negative associations (compared with 34.5% and 15.1% for the fake logo, respectively). In my robust analyses, I exclude those who did not recognize the logo, or reported that the logo has a negative affect.

Finally, as a manipulation check for the substantive information manipulation, I confirmed that the policy plan with irrelevant information is perceived as less effective, compared with the real policy plan (i.e. with the relevant information). To do so, I relied on the first item of the trust scale: “I believe that the measures in the policy plan will assist in fulfilling the policy goal” (1=“weakly agree”; 7=“strongly agree”). The mean for the relevant information condition is 4.15 [3.97, 4.32] compared with 3.73 [3.56, 3.89] for the irrelevant information condition.

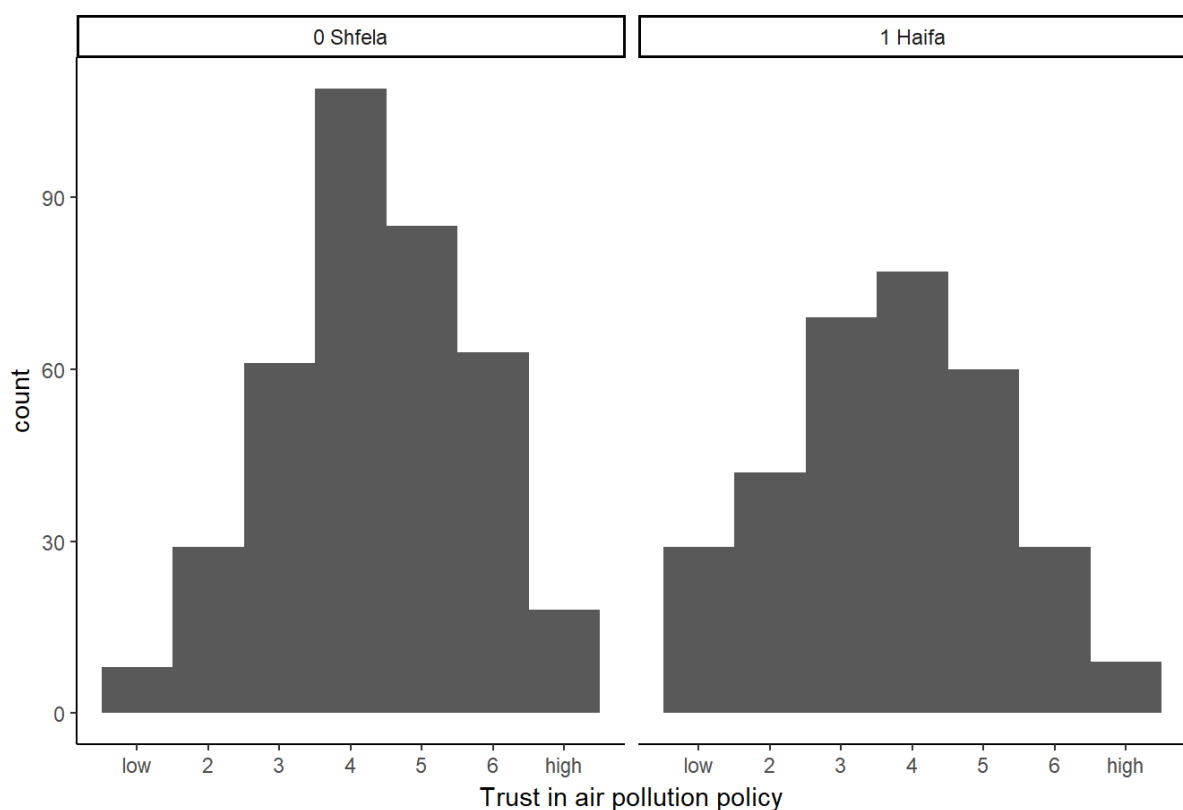
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<sup>7</sup> R scripts for data analysis area available at:

<https://www.dropbox.com/sh/2ckqailm4zpfiftn/AADe3EyInnTitW0JNuIqW36Ua?dl=0>

My main dependent variable is trust in the ministry's policy for reducing air pollution in the Haifa Bay area, which is a composite index of six items. Haifa bay subjects expressed lower level levels of trust in the policy with an average of 3.77 [3.61, 3.93], compared with 4.4 [4.27, 4.54] among Shfela subjects. In Figure 3, I show the distribution of the trust index across the two areas. Trust in the air pollution policy is also associated with participants' trust in government in general, which is in line with previous studies. It is also strongly associated with participants' trust in the first policy plan which regards to the reduction of waste.

Figure 3: Trust in Air pollution policy across areas.

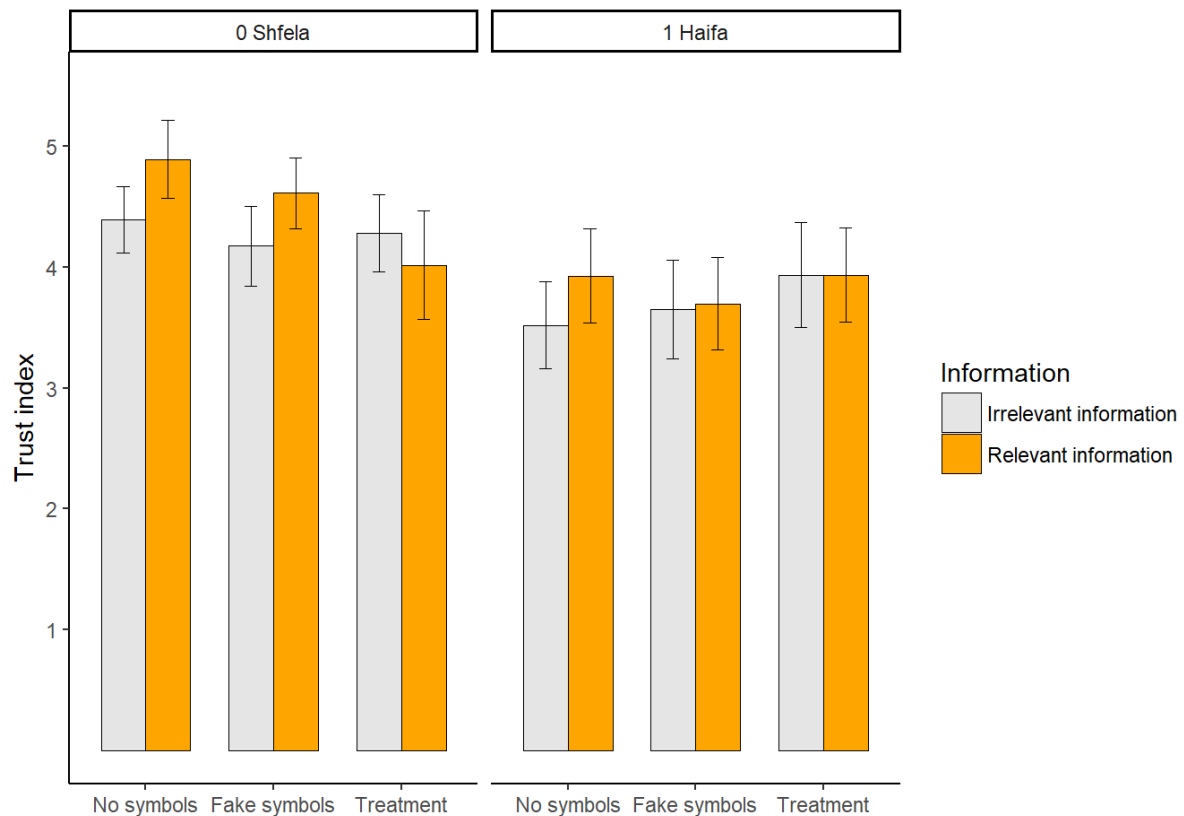


The experimental conditions are balanced with regard to demographic variables, and other controls, including interest in environmental affairs and following environmental issues in media, evaluation of government performance, and knowledge about the issue of the Haifa-bay pollution. Those who were assigned to the symbol and irrelevant information conditions reported relatively lower levels of trust in government. These differences are significant or marginally significant compared to most of the other groups. [TBA full randomization check table in online appendix]. Therefore, in my robust analyses, I also control for this variable.

I now turn to test my two research hypotheses. According to my first hypotheses, I expect that Haifa-bay subjects will be more affected by the substantive information manipulation. According to my second hypotheses, I expect that Haifa-bay subjects will be

less affected by the symbolic elements manipulation. In figure 4, I display the descriptive comparison of means between the experimental conditions across the two areas.

Figure 4: descriptive comparison of trust in policy across areas and experimental conditions



This comparison does not seem to support neither of my initial hypotheses. In contrast with my first hypothesis, the differences between the strong and weak policy plans were not greater among the Haifa-bay subjects. The results also do not support my hypothesis, that the symbolic elements will have a more positive effect on the Shfela subjects. In table 1 I analyze these results via OLS regression analysis. In model 1, I regress the outcome variable on the two manipulations. Thereafter, in model 2, I add a dummy variable for the Haifa-bay area. In model 3, I add the interactions between the Haifa-bay area and each of the two manipulations. Finally, in model 4 I also control for trust in government. The latter is essential due to its lack of balance between the groups with regard to this covariate. These analyses suggest that there is a positive main effect for the information manipulation, yet there is no significant interaction between information and the areas. With regard to the symbolic elements manipulation, models 3 and 4 suggest that the symbols had no significant effect among the Haifa bay subjects, and a marginally significant negative effect among Shfela subjects.

Table 1 - Trust in Haifa-Bay air pollution policy

	Trust in policy			
	(1)	(2)	(3)	(4)
Relevant information	.202*	.211**	.239*	.278**
	(-.011, .415)	(.003, .420)	(-.044, .522)	(.016, .541)
control (fake symbols)	-.123	-.140	-.229	-.179
	(-.381, .135)	(-.392, .112)	(-.570, .111)	(-.495, .137)
Treatment (symbols)	-.153	-.154	-.460**	-.295*
	(-.417, .111)	(-.412, .103)	(-.812, -.108)	(-.622, .033)
Haifa-Bay Area		-.636***	-.864***	-.714***
		(-.845, -.427)	(-1.277, -.452)	(-1.097, -.330)
Trust in government				.379***
				(.309, .449)
Relevant information x Haifa-Bay			-.083	-.038
			(-.501, .335)	(-.426, .349)
control (fake symbols) x Haifa-Bay			.180	.214
			(-.325, .685)	(-.254, .682)
Treatment (symbols) x Haifa-Bay			.658**	.423*
			(.143, 1.173)	(-.057, .902)
Constant	4.106***	4.398***	4.512***	3.192***
	(3.895, 4.317)	(4.171, 4.626)	(4.234, 4.790)	(2.836, 3.547)
N	688	688	688	688
Adjusted R <sup>2</sup>	.003	.051	.056	.188

Table entries are nonstandardized OLS-regression coefficients. 95% confidence intervals are given in parentheses. The reference category for the symbolic elements manipulation conditions is the control (no symbols).

\* $p < .1$ ; \*\* $p < .05$ ; \*\*\* $p < .01$

Whereas these results do not support my initial theoretical hypotheses, they do reveal a different, unexpected interaction - between the relevant information and the symbolic elements manipulations. The descriptive comparison presented in Figure 3 shows that the differences between the levels of trust under relevant and irrelevant information conditions are mitigated under the symbols treatment condition. In other words, those who saw the policy without symbols or with the fake symbols were affected by the differences in the substantive information, whereas those who saw the real symbols were not affected by those differences. Below, in table 2, I analyze this interaction in a series of regression models, controlling for the areas, the interactions between the manipulations and the areas, and trust in government. In all those models, the simple effect of relevant information is positive and significant, and the interaction between relevant information and the symbols treatment (which I highlighted) is negative and significant (in model 5, the interaction is significant compared with the control no symbols, but not compared with the fake symbols). The differences between the two symbolic elements control groups and their interactions with relevant information are not significant in any of those models. In other models, not shown here, I also tested a three-way interaction, which was shown to be insignificant, which means that this pattern is prevalent in both areas.



Table 2 - Trust in Haifa-Bay air pollution policy

	Trust in policy			
	(1)	(2)	(3)	(4)
Relevant information	.441** (.084, .798)	.493** (.087, .899)	.454** (.098, .810)	.491*** (.161, .822)
control (fake symbols)	-.059 (-.414, .296)	-.145 (-.570, .280)	-.143 (-.568, .281)	-.041 (-.436, .354)
Treatment (symbols)	.117 (-.246, .479)	-.184 (-.607, .240)	-.184 (-.608, .239)	-.100 (-.494, .293)
Haifa-Bay Area	-.628*** (-.837, -.418)	-.876*** (-1.288, -.464)	-.917*** (-1.273, -.560)	-.744*** (-1.077, -.412)
Trust in government				.376*** (.305, .446)
Relevant information x control (fake symbols)	-.167 (-.671, .336)	-.191 (-.693, .311)	-.189 (-.691, .313)	-.283 (-.750, .183)
Relevant information x Treatment	-.545** (-1.059, -.031)	-.599** (-1.113, -.085)	-.598** (-1.112, -.085)	-.423* (-.902, .055)
Relevant information x Haifa-Bay		-.082 (-.499, .335)		
control (fake symbols) x Haifa-Bay		.198 (-.306, .702)	.197 (-.306, .701)	.220 (-.248, .687)
Treatment (symbols) x Haifa-Bay		.704*** (.189, 1.219)	.702*** (.187, 1.217)	.453* (-.027, .934)
Constant	4.282*** (4.016, 4.549)	4.393*** (4.084, 4.702)	4.411*** (4.116, 4.706)	3.102*** (2.734, 3.470)
N	688	688	688	688
Adjusted R2	.054	.061	.062	.191

Table entries are nonstandardized OLS-regression coefficients. 95% confidence intervals are given in parentheses. The reference category for the symbolic elements manipulation conditions is the control (no symbols).

\* $p < .1$ ; \*\* $p < .05$ ; \*\*\* $p < .01$

In table 3, I further test the robustness of the above findings, by filtering out those 119 subjects who did not recognize the Ministry's logo. The results from the main models remain intact, and the interaction term "Relevant information x Treatment" is negative and significant (again, in model 5, the interaction is significant compared with the control no symbols, but not compared with the fake symbols).

Table 3 - Trust in Haifa-Bay air pollution policy (robust subset)

	Trust in policy			
	(1)	(2)	(3)	(4)
Relevant information	.610*** (.221, .999)	.712*** (.271, 1.153)	.634*** (.244, 1.024)	.657*** (.290, 1.024)
control (fake symbols)	.014 (-.356, .384)	-.099 (-.536, .338)	-.094 (-.531, .343)	.027 (-.385, .439)
Treatment (symbols)	.249 (-.157, .655)	.014 (-.460, .488)	.011 (-.463, .484)	.096 (-.350, .542)
Haifa-Bay Area	-.722*** (-.945, -.500)	-.891*** (-1.346, -.437)	-.979*** (-1.370, -.588)	-.816*** (-1.186, -.447)
Trust in government				.334*** (.258, .410)
Relevant information x control (fake symbols)	-.345 (-.863, .174)	-.372 (-.891, .147)	-.369 (-.887, .150)	-.443* (-.931, .045)
Relevant information x Treatment	-.705** (-1.287, -.123)	-.744** (-1.327, -.161)	-.739** (-1.322, -.157)	-.606** (-1.155, -.057)
Relevant information x Haifa-Bay		-.169 (-.614, .276)		
control (fake symbols) x Haifa-Bay		.256 (-.265, .777)	.260 (-.261, .781)	.270 (-.220, .760)
Treatment x Haifa-Bay		.563* (-.023, 1.149)	.571* (-.014, 1.157)	.340 (-.213, .893)
Constant	4.255*** (3.962, 4.549)	4.326*** (3.989, 4.662)	4.362*** (4.040, 4.684)	3.169*** (2.761, 3.577)
N	569	569	569	569
Adjusted R2	.077	.079	.079	.185

Table entries are nonstandardized OLS-regression coefficients. 95% confidence intervals are given in parentheses. The reference category for the symbolic elements manipulation conditions is the control (no symbols).

\* $p < .1$ ; \*\* $p < .05$ ; \*\*\* $p < .01$

I further analyzed the effects of the areas and manipulations on the measures of elaboration. The abovementioned findings regarding the interaction between symbolic elements and substantive information might suggest that exposure to the familiar symbol decreases the subjects' inclination to elaborate on the communication. Congruently, it might be the case that subjects who are exposed to a familiar symbol tend to pay less attention to the content of the communication. In regression table 4, I show two of regression models for each of the three measures for elaboration: perceived elaboration index, reaction time, and memory test score. For each of the three measures, I examine the effects of the Haifa-bay area, and the symbolic elements and information manipulations. Models 2, 4 and 6 relate to the robust subset.

Residing/working in the Haifa-bay area had a positive but not sufficiently significant effect on all elaboration measures. Relevant information also had a positive and significant effect on perceived elaboration and memory test, and a negative effect on reaction time. As for the symbolic elements manipulation, the symbols treatment group had lower levels of all

measures of elaboration on average, compared with the no logo control group, yet these differences are sufficiently significant only for the perceived elaboration, and only when limiting the analyses to those who recognize the logo. There are no significant differences with the fake logo group. Therefore, at best, these analyses lend partial support the expectation that exposure to the symbols decreased subjects' elaboration.

Table 4 - Elaboration of the Policy Plan

	Perceived elaboration		Reaction time (log)		Memory test	
	(1)	(2)	(3)	(4)	(5)	(6)
Haifa-Bay Area	.125 (-.056, .306)	.131 (-.064, .327)	.108 (-.031, .247)	.121 (-.035, .277)	.121 (-.035, .278)	.109 (-.062, .280)
Relevant information	.244*** (.064, .423)	.244** (.052, .437)	-.198*** (-.336, -.060)	-.186** (-.341, -.032)	.739*** (.583, .894)	.785*** (.616, .954)
control (fake symbols)	-.050 (-.267, .168)	-.122 (-.349, .104)	-.156* (-.323, .011)	-.188** (-.369, -.007)	-.037 (-.225, .151)	-.107 (-.305, .091)
Treatment (symbols)	-.092 (-.314, .130)	-.238* (-.492, .016)	-.102 (-.273, .069)	-.170 (-.373, .033)	-.076 (-.269, .116)	-.166 (-.388, .057)
Trust in government	.026 (-.039, .091)	.007 (-.064, .077)	-.009 (-.059, .041)	-.023 (-.080, .033)	.030 (-.027, .086)	.006 (-.056, .067)
Constant	4.791*** (4.495, 5.088)	4.921*** (4.593, 5.248)	3.005*** (2.777, 3.233)	3.070*** (2.808, 3.332)	.954*** (.698, 1.211)	1.079*** (.793, 1.366)
N	688	569	688	569	688	569
Adjusted R2	.007	.012	.013	.014	.110	.128

Table entries are nonstandardized OLS-regression coefficients. 95% confidence intervals are given in parentheses. The reference category for the symbolic elements manipulation conditions is the control (no symbols).

\* $p < .1$ ; \*\* $p < .05$ ; \*\*\* $p < .01$

In other models, not shown here, I use mediated moderation analysis to test whether elaboration underlies the interaction between the two manipulations. These analyses suggest that the negative interaction between the symbols and the information manipulations is not mediated by lower levels of elaboration.

## Discussion – experiment 1

The results confirm that subjects who reside or work in Haifa-Bay area reported significantly higher levels of perceived personal relevance with regard to the Environmental Protection Ministry's policy about the Haifa-Bay air pollution, compared with subjects from the Shfela area. However, despite their higher levels of personal relevance, Haifa bay subjects were not more susceptible to the variation in the substantive information of the policy (i.e. argument quality). The information manipulation had a relatively weak effect on both groups.

Likewise, Shfela subjects were not more likely to respond to the symbolic elements in the communication – the Ministry's logo and the use of green color (which are potential peripheral cues). The symbolic elements did not have a positive and significant effect neither on Haifa-Bay subjects nor on Shfela subjects. Surprisingly, however, the results reveal an interaction between the symbolic elements and information manipulations. The symbolic elements, entangled in the communication of the policy plan, mitigated the effect of variation in substantive information. Stated otherwise, those who saw the symbolic elements, did not reported lower levels of trust in the ineffective policy, compared with the effective one.

How could these findings be explained? One possible explanation is that the two manipulations are too subtle. Congruently, perhaps if we were to use more salient symbolic element with greater affect, and a more prominent expression of bad policy, we could have observe the hypothesized mechanisms. Still, that explanation does not explain the interaction between the two manipulations. A plausible theoretical explanation is that although Haifa-bay residents were more motivated to elaborate on the communication (due to its high personal relevance), their level motivation was still moderate, and not high enough in order to process the communication via the central route. Perhaps, their motivation is moderate because the issue of the air pollution represents a continuous threat that they got used to for years, as opposed to a new threat that is likely to attract high attention. Therefore, both groups are eventually located somewhere in the middle of the elaboration-likelihood continuum (whereby the Haifa-bay subjects are located only slightly higher). Petty and Cacioppo (1986) proposed that under moderate levels of motivation, potential peripheral cues may also function as factors influencing people's motivation to think about the message.

*"[W]hen the personal consequences or prior knowledge are moderate or unclear, people may not be sure whether the message is worth thinking about. Under these circumstances, characteristics of the message source can help a person decide if the message is worth (or needs considering)."*

-- Petty and Cacioppo 1986: 206.

Congruently, Petty, Cacioppo and Shumann (1983b) found that the famous endorser in the advertisement (compared with non-famous citizen endorser) had mitigated the effect of the quality of the arguments in favor of the product. Stated differently, those who saw the ad with the celebrity endorser (a symbolic element) were less likely to pay attention to the substantive information provided by the communication. Those findings are presented in (Cacioppo et al. 1986, 147).

Returning to my study, one can argue that the symbolic elements in the Environmental Protection Ministry's policy plan may have led people to believe that the policy was designed in a professional manner, and that it reflects an honest attempt to

design a good policy plan. Therefore, people are less likely to invest in thinking much about it and scrutinize it. If this explanation holds, then it entails that symbolic elements may lead people to ignore substantive information in communications. Accordingly, symbols may compensate for information on poor performance, and weak arguments supporting future policy plans. These findings are also consistent with the findings of Alon-Barkat and Gilad (2017), that the Israel Electric company's symbol compensated for citizens' experience of prolonged power outages. Nonetheless, this tentative retrospective explanation is not supported by my analysis of the mediating role of elaboration, as measured by three different indicators. These analyses do not support the expectation that the symbolic elements reduce elaboration, and that this mechanism underlies the interaction between relevant information and symbol.

To substantiate the findings of the first experiment with regard to the main hypotheses, and to further test the unexpected finding regarding the interaction between symbols and information, I design a second experiment, which will be a conceptual replication of the first experiment (Walker, James, and Brewer 2017). Experiment 2 will focus on the same empirical case study of the Environmental Protection Ministry, and will be based on a similar experimental structure. Yet, in this experiment I will use more extreme manipulations for information and symbolic elements. I will enhance the manipulation of symbolic elements by adding images from the Ministry's previous public campaigns, featuring two familiar celebrities (Tal Friedman and Ido Rosenblum). The control fake symbols condition will display similar images, featuring unfamiliar people. To enhance the substantive information manipulation, I will use fake measures, which are not part of the Ministry's activity (as opposed to using real measures from other plans in the control condition, as I did in the first experiment). I will select measures that are likely to be perceived as bad policy measures *per se*. I will also increase the differences in perceived personal relevance (between the two areas) by priming all subjects with questions about their area of residence, and the environmental issues that concern/disturb them personally. Finally, I will also manipulate the information in the first policy plan. This will enable to test the interaction between the two manipulations with regard to two different policy plans, and to provide a more rigorous test for the proposed theory.

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## APPENDIX A: Translation of policy plan (relevant vs. irrelevant information)

Relevant measures	Irrelevant measures
<p><b>The goal: <u>reducing air pollution in the Haifa Bay</u></b></p> <p><b>Main measures:</b></p> <ul style="list-style-type: none"> <li>• <b>Increasing the supervision on factories in the Haifa Bay area:</b> A large part of the air pollution in the Haifa Bay is caused by the extensive industrial activity that takes place in the area. In order to reduce air pollution, the ministry of Environmental Protection will act to increase its supervision on local factories. The ministry will increase the number of inspection visits and extend the use of unannounced inspections by 30%.</li> <li>• <b>reducing diesel smoke emissions by vehicles in the Haifa bay:</b> A large part of the air pollution in the Haifa Bay is caused by the pollutant emissions by vehicles, most prominently by diesel vehicles. In order to reduce pollution from diesel vehicles, the Ministry of Environmental Protection will lead to the installation of particulate filters in proximately 700 vehicles in the area, and will establish a "clean air area", which restricts the entry of polluting vehicles.</li> </ul> <p><b>The Ministry of Environment Protection   Work plan for years</b></p>	<p><b>The goal: <u>reducing air pollution in the Haifa Bay</u></b></p> <p><b>Main measures:</b></p> <ul style="list-style-type: none"> <li>• <b>the establishment and operation of a unified nation-wide environment service center:</b> In order to improve the efficiency of the service to the public, the Ministry of Environmental Protection will work to establish a nationwide environment service center, which will coordinate the handling of all public inquiries in the Ministry's headquarters and districts. The Ministry has set the goal of increasing the rate of immediate handling of requests by the service center by 50% in 2017.</li> <li>• <b>Reducing the ministry's burden of regulation:</b> Compliance with the ministry's regulatory requirements entails various costs on business in Israel, which may lead to the ministry's unnecessary involvement in the market. In order to reduce the regulatory burden, the ministry will examine cases of unnecessary regulatory requirements in 6 main areas, and will implement a procedure for assessing the social and economic impacts of new regulations.</li> </ul> <p><b>The Ministry of Environment Protection   Work plan for years 2017-8</b></p>

## APPENDIX B: Operationalization of variables:

Trust in policy:

Please indicate your level of agreement with the following statements, between 1 (weakly agree) and 7(strongly agree):

<i>Perceived competence</i>	<ul style="list-style-type: none"> <li>• I believe that the measures in the policy plan will assist in fulfilling the policy goal (reducing air pollution in the Haifa Bay).</li> <li>• I believe that the measures in the policy plan were designed in a professional manner.</li> </ul>
<i>Perceived benevolence</i>	<ul style="list-style-type: none"> <li>• I believe that the policy plan is in the interest of citizens.</li> </ul>

	<ul style="list-style-type: none"> <li>• I believe that the policy plan reflects a genuine attempt to improve the well-being of citizens.</li> </ul>
<i>Perceived honesty</i>	<ul style="list-style-type: none"> <li>• I believe that the Ministry of Environmental Protection made an honest attempt to design a good policy plan.</li> <li>• I believe that the Ministry of Environmental Protection aims to keep its commitments in that policy plan.</li> </ul>

Elaboration of communication:

The following statements describe the manner in which you have read the third policy plan ("reducing air pollution in the Haifa Bay "). Please indicate your level of agreement with each of the statements (from 1 to 7):

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| <ul style="list-style-type: none"> <li>• I paid much attention to reading the content of the measures in the policy plan.</li> <li>• I skimmed the measures in the policy plan.</li> <li>• I tried to thoroughly understand the measures in the policy plan.</li> <li>• I tried to think to what extent do the measures assist in promoting the policy goal (reducing air pollution in the Haifa Bay)</li> <li>• While going through the policy plan I was thinking about other things which are not related to it.</li> </ul> |
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