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COUNTER-ARGUING AN ONLINE PEER:

THE INFLUENCE OF DISTRUST AND MESSAGE CONTENT ON

ACCEPTING ONLINE RECOMMENDATIONS

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ABSTRACT

The present paper investigates the influence of distrust on message processing. Notions of trust and distrust are powerful influences on the persuasiveness of messages. It was expected that the way of presenting the message source (trustworthy or untrustworthy) would alter not only acceptance but also how the message is processed. Processing can differ in its complexity, hence in its amount of thoughts about the message. A specific part of this complexity is counter-arguing. Here, incongruent thoughts are added to the processing, which reflect the opposite of what the message source has claimed. Complexity of processing and specifically counter-arguing were expected to reduce acceptance of the message, especially when thoughts on the message are related to relevant outcomes. Two experiments were carried out to investigate this mechanism. The first one was conducted in a laboratory setting and the second one online. Both experiments used peer recommendations as messages wherein notions of trust and type of message content were manipulated. Other than effects of trust on counter-arguing and acceptance, moderating roles of message content were investigated. Study 1 found that distrust increases complexity of processing and subsequently resistance to the message, if message content is relevant to the reader's goal. Counter-arguing was found to explain part of this mechanism. Study 2 showed that distrust leads to counter-arguing if message content is ambiguous. Counter-arguing then leads to less favorable product attitudes, which is moderated by perceived relevance of the arguments. Analyses of moderated mediation however did not show entirely satisfying results, which prove the need for future research about the mechanism of counter-arguing.

1. INTRODUCTION

The internet is viewed as today's system for communicating, gathering knowledge and purchasing products, but it also faces users with complexities. While the internet offers unlimited information and ease of purchasing, customers are faced with problems of anonymity of other users (Sobel, 2000) and transaction risks (Schoenbachler & Gordon, 2002). Furthermore when considering products on the internet, consumers often order before having experienced the product. Online consumers therefore often experience uncertainty (Pavlou, Liang, & Xue, 2007). To reduce this uncertainty, consumers use the accessible information to get advice from different sources. Manufacturer descriptions, advertisements and test reports offer information about the product, which can be used to ease the decision process. How consumers rely on this information however depends on their willingness to trust the source (Hassanein & Head, 2004).

A source of information which is found to be trusted by consumers (Dayal, Landesberg, & Zeisser, 1999) and seen as powerful in influencing consumers decisions (Smith, Menon, & Sivakumar, 2005) are "peer recommendations", messages written by other consumers who have used the product of interest before. Independence from profit and presence of personal information generally lead consumers to trust peers and therefore follow their advice (Dayal, Landesberg, & Zeisser, 1999).

However what happens if readers do not trust the peer? Due to anonymity and non-transparency of online information, consumers might suspect connections to sellers. Or if personal information is provided, readers might perceive it as unfavorable. De Vries and Pruyn (2007) showed that if peers are not perceived as trustworthy, distrust occurs and impairs the persuasiveness of the message. Persuasiveness is often limited because distrust induces readers to protect themselves from misleading information (Fein, Hilton, & Miller, 1990). Common knowledge predicts that in cases of distrust, messages remain ignored (e.g. Priester & Petty, 2003). Several research findings however suggest that, instead of ignoring the message, distrusting readers increase their amount of thoughts about the message (e.g. Sagarin & Cialdini, 2004) and hence come up against the threat with more complex processing of the message. Schul, Mayo and Burnstein (2004) found that when consumers are faced with a

message they feel not inclined to trust, they mentally turn positive information into negative, in order to test incongruent alternatives. In this counter-scenario processing, also termed *counter-arguing*, consumers ask themselves what would happen if the opposite of what the peer recommendation claims, was true (cf. Schul, Mayo, & Burnstein, 2004). Hence instead of being ignored, distrusted messages probably evoke additional processing mechanisms in form of thoughts about alternative outcomes. The main focus of this research is therefore on the process evoked by distrust. Are distrusted messages processed in a different way than trusted messages, and is the difference established in the complexity of thoughts about the message? And if so, is counter-arguing part of this mechanism, accounting for increased complexity in processing? These questions will be examined by means of peer recommendations presented in either trustworthy or untrustworthy ways.

Research so far has investigated effects of distrust on processing of persuasive information (e.g., Priester & Petty, 1995, 2003), also specific for peer recommendations (e.g., De Vries & Pruyn, 2007; Smith, Menon, & Sivakumar, 2005; Gefen & Straub, 2004). However the component of counter-arguing has not been considered in this relation. Therefore an important and interesting issue to investigate is the precise manner of how distrusted messages are processed and subsequently influence acceptance of these messages.

If trust has an impact on processing, and subsequently on acceptance, another question arises, namely whether this mechanism applies to all kinds of message content. Some messages might be more prone to counter-arguing and some might not be affected by levels of trust. For ambiguous messages, for example, it might be easier to spontaneously imagine other details than those explained in the message, than for non-ambiguous messages (cf. Chaiken & Maheswaran, 1994; Ziegler, Dobre, & Diehl, 2007). While irrelevant message content might not affect resistance to a message, relevant arguments might affect acceptance especially when incongruent alternatives have been considered. Incongruent thoughts might then be crucial to acceptance, as they represent negative outcomes for the consumer.

Both for consumers and organizations insight into this process would be valuable. Organizations knowing about the type of processing can use techniques for enhancing persuasiveness for their products. Consumers would be aware of environmental factors which

manipulate their message processing by notions of trustworthiness. It will be important to know for both of them which type of message content is especially prone to these influences.

TRUST AND DISTRUST IN MESSAGE SOURCES

Trust is defined as a social complexity-reducing mechanism which is particularly important in online environments and electronic commerce (e-Commerce), where uncertainty and social complexity are high (Luhman, 1979; Gefen & Straub, 2004). In the context of e-Commerce, trust deals with the assessment that the vendor is trustworthy and will fulfill its commitments (Gefen, 2000). Consumers are motivated to develop trust in writers of peer recommendations when they perceive heightened risk associated with the online experience, combined with decision uncertainty resulting from numerous choice alternatives (Smith, Menon, & Sivakumar, 2005).

Trust in the writer however depends on how the writer is perceived. Research by De Vries and Pruyn (2007) shows that individuating cues (peer images) generate different levels of trust, which in turn affects the persuasiveness of peer recommendations. A peer recommendation could evoke suspicion, for example if the peer or the website do not seem trustworthy. First, if a picture of the peer is presented, face-trustworthiness can determine if the reader will trust or distrust the person (Oosterhof & Todorov, 2008). It seems that facial cues give rise to inferences about a person's intentions (harmful versus harmless). Other than facial cues, suspicion of an ulterior motive affects the level of trust or distrust in a person (Fein, Hilton, & Miller, 1990). A reader could suspect a peer of not being independent from the seller, and therefore not giving adequate advice about the product. Second, if no personal cues are presented, distrust can still arise due to different situational factors. Anonymity and hazards (e.g. fear of online fraud) of the internet create an untrustworthy environment (Dayal, Landesberg, & Zeisser, 1999) and are likely to induce distrust. Messages where distrust arises from external circumstances, like presentations of the writer will in the following be called *distrusted messages*, as opposed to *trusted messages*, where no external influences give rise to distrust.

PROCESSING TRUSTED AND DISTRUSTED MESSAGES

An important basic assumption is that trusted messages differ from distrusted messages in being processed less extensively. As trust is known as a complexity-reducing mechanism (Luhman, 1979), distrust as its opposite should be defined by high levels of complexity, which become reduced by notions of trust. When a reader trusts the source of the message, the effortful task of scrutinizing the message becomes unnecessary, which leads readers to unthinkingly accept the conclusion as valid (Priester & Petty, 2003). For distrusted messages however it cannot be known whether the conclusion is valid, therefore the amount of attention might be increased. Priester and Petty (2003) tested the processing of trusted and distrusted sources in persuasive contexts and found that participants listed more thoughts about the product when the endorser of the message was low in trustworthiness. The product attitude then correlated with the product-related thoughts whereas under conditions of trust the source trustworthiness served as a simple cue to accept the information.

Their findings are in line with the Elaboration Likelihood Model (ELM) which holds that under some conditions (when motivation, opportunity and ability are present) messages are elaborated more than in others (Petty & Cacioppo, 1986). Distrust would thereby increase the motivation to scrutinize the message carefully. Likewise Sagarin and Cialdini (2004) found that respondents resisted persuasion attempts by a cognitive form of counter-arguing. When respondents were induced to think of being persuaded, they subsequently listed more negative thoughts in reaction to the message than other respondents who were not induced.

Hence it can be stated that distrust increases the processing complexity. It is suspected that if the increase is tangible enough, it might lead to rejection of the message. This phenomenon is explained by the theory of processing fluency, which holds that stimuli that can be easily processed are generally evaluated in positive terms and inspire favorable attitudes (Reber, Schwarz, & Winkielman, 2004; Winkielman et al., 2006). Readers prefer stimuli that can be easily processed because they indicate a positive state of affairs of the world (Reber et al., 2004). Contrastingly, when the amount of thought is increased, attitudes are impaired by a feeling of a negative state of affairs. Acceptance of the message is then lowered, in terms of not being convinced that everything is as positive as described.

COUNTER-ARGUING

Previous research findings confirm that distrusted messages are accompanied by increased complexity and therefore more likely to be rejected. These findings are expanded by Schul, Mayo and Burnstein (2004), who specify the increased complexity into a mechanism called counter-scenario processing, or *counter-arguing*. According to their research distrust evokes not just any sort of additional thoughts, but very specifically the incongruent form of what is being said in the message. In their research, participants were presented with faces eliciting either trust or distrust and then had to provide associations to target words. It could be shown that respondents spontaneously thought about concepts incongruent with the target words if presented with an untrustworthy face. The message is hence encoded in two different ways, once as if it was true, but simultaneously as if its opposite was true (based on findings by Schul, Burnstein, & Bardi, 1996).

What is different to research findings described above, which mainly follow the ELM, is that Schul et al. consider the processing of distrusted messages as a low-level mechanism. This means that the processing is not necessarily defined by a higher level of elaboration. They show that counter-arguing occurs even when distrust is unrelated to the message and when readers are unable to “prepare a strategic response” (Schul et al., 2004, p.678). Hence when distrust is triggered, readers engage in type of processing which is constituted by thoughts about the opposite of what is claimed in the message. The mechanism of distrust rendering the processing more complex is therefore specified by counter-arguing. Thoughts about incongruent outcomes are expected to explain how the complexity increases, namely by specific thoughts about the opposite of what is claimed in the message. The overall mechanism following distrust is hence expected to be the following:

Notions of source trustworthiness affect the complexity of processing, in that untrustworthiness increases thoughts about the message, specifically thoughts about incongruent outcomes. These thoughts then restrain the reader from accepting the message, which also restrains the reader from holding the writer’s positive attitude toward the product.

Hence the overall mechanism expected in this study is comparable to the mechanism predicted in ELM approaches. However it remains to be tested whether this (automatic) form of

resistance has the same effect on persuasiveness as the more general form, which is constituted by an overall increase in complexity, described in the approaches following the ELM. Further differences might be found if types of message content are included in the mechanism.

EFFECTS OF ARGUMENT RELEVANCE

Lavine and Snyder (1996; 2000) found that users perceive those messages as more valid and more persuasive, which contain functionally relevant information. Relevance is defined as the success in giving means to something's purpose (Gorayska & Lindsay, 1993).

Effects of relevance were only found among recipients who processed the message effortfully. According to approaches following the ELM, relevance therefore has a general positive effect on persuasiveness of the message. However, previous research findings suggest also that readers build up resistance if they fear a mistake, as the false accepting of a message and consequently the irrational purchase of an improper product. As the cost of making a mistake increases, people seek more relevant information and examine it more carefully (Kruglanski & Mayseless, 1987). Hence when a peer recommendation is suspected of not being truthful, additional attention to the relevance of arguments might occur. Furthermore it is found that when outcomes are important, hence relevant, the impact of trust on decision outcomes is increased (Moorman, Zaltman, & Deshpandé, 1992). Taken that the message delivers positive arguments about a product, what would happen if the argument contains information relevant to the reader?

According to the approach by Schul et al. (2004) the reader would think of the negative form of the argument, thus consider a negative event about the product to occur. If this event is not relevant to the reader, it should not have much impact on the reader's decision whether or not to buy the product. However if the event is highly relevant to the reader, the negative outcome is also important to the reader's decision. It is expected that in this case the message is more easily rejected, as the risk of making a mistake becomes increased again.

In this example the disparity with ELM approaches becomes visible. ELM approaches would predict relevance of positive arguments to lead to higher acceptance. In this research however it is expected that relevance increases resistance if the reader has thought about the opposite version of the message content.

EFFECTS OF MESSAGE AMBIGUITY

Another moderating factor in the processing might be found in message ambiguity, which is the possibility to interpret the information in more than one way (Hamilton, 2005). The connection to counter-arguing is easy to see, as counter-arguing is defined by thoughts about the message in a different way. Ziegler, Dobre and Diehl (2007, p.271) claim ambiguous message content to be more “amenable to different interpretations”, which gives reason to expect that the possibility to counter-argue depends on whether the message type allows to think in an incongruent way. But does this imply that non-ambiguous statements cannot be thought about in a different way? It is expected that they can, as non-ambiguous information might as well be turned into negative. However it is expected that in this case the incongruent version does not come to mind as easily as it does when the information has to be chosen to be interpreted in one way or the other.

Whether or not the information is thought about in congruent ways however should depend on notions of trustworthiness. As argued earlier, the need to process the message in a complex way is eliminated when the reader trusts the source. When he distrusts the source however, processing is rendered more complex, and thoughts are added to the process. Whether these thoughts contain thoughts about incongruent outcomes then should depend on the easiness of thinking about alternative ways, hence message ambiguity.

Support for this moderating effect comes from Chaiken and Maheswaran (1994), who conducted an experiment wherein source trustworthiness, message strength, message ambiguity and task importance were manipulated. Participants were presented a mix of strong and weak arguments in the ambiguous condition. By listing thoughts and measuring attitudes toward a telephone answering machine, the authors found that processing of messages was only biased by source trustworthiness when persuasive messages were sufficiently ambiguous. When participants were presented with only strong arguments, the unambiguous condition, reactions were more favorable regardless of source trustworthiness.

Hence it is expected that when message content is ambiguous, distrust is more likely to induce counter-arguing, whereas effects diminish when message content is non-ambiguous and therefore more difficult to counter-argue on.

2. CURRENT RESEARCH

The uncertainties in online interactions generate a need to explore how distrust affects the processing of messages. The current research uses conditions of trust and distrust to test how readers of peer recommendations process the message under different conditions. It should be noted that the research takes into account positively formulated arguments only. Hence acceptance means that a reader will adopt the same positive attitude toward the product as is described in the peer recommendation. If readers are however reluctant to base a decision on the message, and hence are resistant, acceptance is considered to be low. A set of hypotheses is formulated in order to guide the research about trust effects. The estimated overall relationship between the constructs is illustrated in figure 2.1.

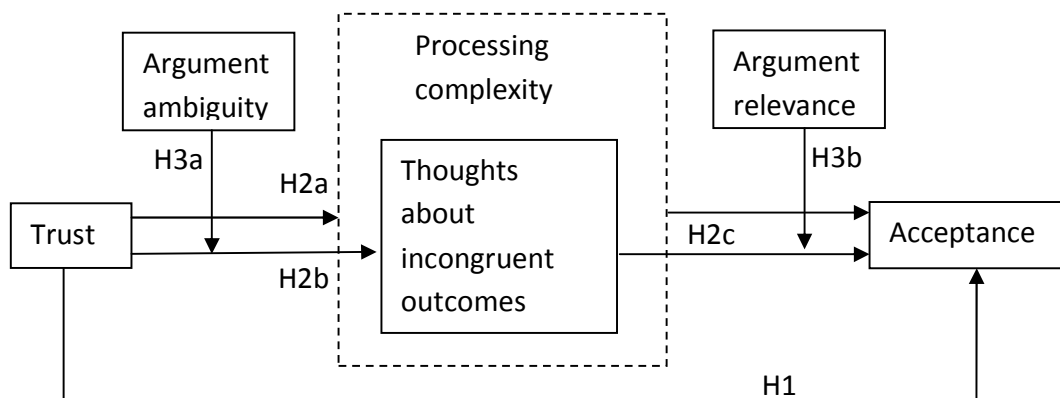


Figure 2.1. Research model with hypotheses

The following hypotheses are formulated with respect to the main question, how trust affects the processing of messages like peer recommendations. Before defining the process by mediating and moderating variables, the overall relationship between trust and acceptance should be taken into account, in order to investigate if there is a positive effect.

H1. A condition of trust increases the acceptance of the message, whereas a condition of distrust decreases the acceptance.

The main effect of trust on acceptance of message content, and respectively the effect of distrust on resistance to message content, is expected to be mediated by a form of

processing marked by more complexity. This is a general mechanism which is specified by the addition of the concept counter-arguing. Counter-arguing is expected to work in the same mechanism as complexity, but it is also expected to give further explanation to the process, by defining *which* kind of thoughts are rendering the processing more complex. Both complexity and counter-arguing are therefore added in the mechanism and are expected to explain why distrusted messages are more likely to be resisted than trusted messages.

H2a. *In a condition of distrust, the message is processed with more complexity, than in a condition of trust.*

H2b. *In a condition of distrust, the message is processed with more counter-arguing, hence message-incongruent thoughts, than in a condition of trust.*

H2c. *Effects of distrust on acceptance are mediated by processing complexity and counter-arguing, both increasing the likelihood of rejecting the message.*

The influence of trust on acceptance is further expected to be moderated by message content in form of ambiguity and relevance. Ambiguity is seen as a precondition for trust to be effective; therefore distrust-induced counter-arguing should only occur when messages are ambiguous and hence susceptible to different interpretations. Notions of personal impact for readers leads to the hypothesis that more relevant information induces readers to be more careful, hence thinking about negative outcomes should have more impact when the information is relevant.

H3a. *The effect of distrust on counter-arguing is moderated by ambiguity, with more counter-arguing toward ambiguous information than to non-ambiguous information in a condition of distrust.*

H3b. *The effect of counter-arguing on acceptance is moderated by relevance, with counter-arguing to relevant arguments decreasing acceptance more than counter-arguing to irrelevant arguments.*

Two studies are conducted in order to investigate the relations between the constructs empirically.

3. STUDY 1

An experiment was conducted which manipulated levels of trust by prime conditions, in order to affect subsequent processing of the message, and levels of relevance. Manipulation of relevance was based on a functional matching effect of information matching versus mismatching the reader's goal (Lavine & Snyder, 1996). The reader's goal might either be related to an individual's value system (Snyder & DeBono, 1985), or to the functions of an object (Shavitt, 1989). Peer recommendations are read when the functionality of the product cannot be known from the distance, therefore the functions of an object are more relevant to a reader of peer recommendations, than for example information related to an individuals' value system. Therefore the reader should perceive information as more relevant, which contains arguments about rewards and punishments (Snyder & DeBono, 1985). By manipulating relevance of message content the relationship between distrust and message acceptance could be investigated with focus on whether relevance increases or decreases acceptance when distrust has led to counter-arguing. This study was further set up in order to investigate the general mechanism of distrust evoking more complex processing which leads to decreased acceptance. The role of counter-arguing was of special interest in this study in order to test whether it is able to explain the mechanism to a more specific degree.

PILOT STUDY

A pilot study was conducted in order to verify assumptions on relevance of peer recommendations, among Dutch and German-speaking participants (N = 20, 8 men, 12 women, $M_{age} = 24$, $SD = 2,38$, minimum = 21, maximum = 29). No significant differences between languages were found. The purpose of the pilot study was to assemble arguments that are relevant (resp. irrelevant) for the given peer recommendation scenario. According to the functional matching effect (Shavitt, 1990) relevance could be achieved by offering information about the usability of the product, as this matches a recommendation reader's goal. Therefore a scenario was used in the introduction which induced respondents to take usability as a starting point for evaluating the product.

The pretest revealed that arguments in line with value-expressive functions (e.g. 'The camera is in line with the latest trend') are perceived as irrelevant ($M = 1.96$, $SD = .75$), whereas arguments containing objective information (e.g. 'The camera offers best quality pictures') are perceived as relevant ($M = 4.54$, $SD = .53$). Those arguments perceived as most relevant and those that were perceived as least relevant were used as manipulation material in the following study. The arguments are presented in table 3.1.

PARTICIPANTS

A total of 125 individuals (61 men, 64 women, $M_{age} = 25.34$, $SD = 8.39$, minimum = 18, maximum = 64) participated in the main study. German and Dutch participants were recruited (89 German, 36 Dutch), most of whom were students at Twente University in the Netherlands. They were rewarded with a small amount of money (3 Euro).

DESIGN AND PROCEDURE

Participants were randomly assigned to one of six experimental conditions in a 2 (argument relevance: high vs low) x 3 (subliminal prime: trust vs distrust vs no-prime) between-subjects design.

For the experiment a program in Macromedia Authorware was written. Participants were guided to the experiment setting and introduced to the program. German students received a German version of the program and Dutch students a Dutch version, in order to ensure that participants fully understood the material and could respond to it without language barriers. Each version started with an introduction and a scenario. The scenario was the same as in the pilot study, thus participants were told to imagine being searching for a new digital camera. They were instructed to consider a peer recommendation on the internet to check whether the camera fulfilled demands of usability.

The participants then were exposed to a message which was framed as a peer recommendation on the internet. The peer recommendation contained a picture, which was blurred so that participants could not detect personal information. In the first 0.1 seconds of seeing the peer recommendation website, the blurred picture of the peer was replaced by a subliminal prime. Hence instead of the blurred face an either trustworthy or untrustworthy face

was seen. Then the first of six arguments was shown. By clicking further participants read six arguments about the camera in total.

After having finished reading the (ir)relevant arguments in the peer recommendation, participants answered a series of questions related to acceptance. Then they took part in a decision task, wherein they had to indicate as quickly as possible whether sentences reflecting opposites of previously read arguments were possible outcomes of using the camera. As manipulation checks, a scale about relevance and favorability of arguments, a suspicion probe and attitude toward the peer were included. Finally demographic data about age and gender were collected.

INDEPENDENT VARIABLES

Prime condition. To influence the processing of the messages in terms of trust or distrust, participants were primed subliminally before reading the peer recommendation. A picture of trustworthy face (or untrustworthy face or no face) appeared for 0.1 seconds in the framework of the peer recommendation. Then the prime face was replaced by a blurred face. To ensure that the prime was not missed, a countdown clock was shown on the spot where the prime appeared afterwards. The faces were adapted from a range of faces on the trustworthiness dimension of Oosterhof and Todorov (2008). The most untrustworthy and the most trustworthy face were chosen (see figure 3.1).



Figure 3.1 Faces rates as most untrustworthy (a) and most trustworthy (b) on trustworthiness dimension of Oosterhof and Todorov (2008).

Relevance condition. In the relevant condition six arguments were shown which were tested on being highly relevant in the pilot study. In the irrelevant condition the same occurred with six arguments rated as highly irrelevant. The relevant and irrelevant arguments were shown in a

box representing the peer's message. Participants read the arguments one after another by clicking further between the arguments.

DEPENDENT VARIABLES

Message acceptance. The dependent outcome variable message acceptance was measured by means of two constructs, employed by Hallahan (1999) to assess how convincing and likeable the reader finds the message. Message credibility was measured on a 7 point Likert scale ($\alpha = .86$) including five items (e.g. 'informative versus not informative' and 'inaccurate versus accurate'). Attitude toward the message used a 7 point Likert scale ($\alpha = .94$) composed of five items as well (e.g. 'I find the message boring' versus 'I find the message interesting' and 'I find the message attention-getting' versus 'I find the message not attention-getting').

Attitude toward the product. To assess message effects, attitude toward the product was measured; conform to other studies in persuasive contexts (e.g., Priester & Petty, 2003; Gefen & Straub, 2004). This construct ($\alpha = .89$) was composed of items like 'I find the camera favorable' versus 'I find the camera unfavorable' and 'I find the camera desirable' versus 'I find the camera undesirable'.

Resistance. The construct resistance was added to determine the readiness or reluctance of a participant to base a purchase decision on the peer recommendation. Resistance was measured by a 5-item scale ($\alpha = .82$). The construct included the items 'I hesitate to believe this recommendation', 'I rather not trust this recommendation', 'I would base my decision on this recommendation', 'I feel constrained to believe this recommendation', 'I feel I can rely on this recommendation'. Resistance was considered to be the opposite of acceptance toward the message.

Complexity. As a general measure for the complexity with which the message was processed, a scale for perceived processing fluency (based on Reber, Schwarz, & Winkielman, 2004; Van Rompay, De Vries, & Van Venrooij, 2010) was added. Participants rated on a 7 point Likert scale how easily they could form an image of the camera. The construct was measured by a 5-item scale ($\alpha = .80$), composed of items like 'I found it difficult to get a clear image about the camera' and 'I quickly formed an image of the camera'.

The scale was supplemented by a measure of reading times. For each argument read in the peer recommendation the time it took participants to read the argument was measured. The moment from exposure to clicking further to the next argument was captured in time. Reading times were taken as additional measurement for complexity, as it might take readers more time to click to the next sentence, when incongruent thoughts have to be considered additionally.

Counter-arguing. The amount of counter-arguing was measured by a 'sentence recognition task'. In order to know whether respondents have added a thought about the opposite of what is said in the peer recommendation, the peer recommendation's positive arguments are turned into negative and presented to the respondents. Then the respondents had the possibility to indicate "possible" or "not possible" to the negatively formulated version of the argument. Indicating "possible" meant that respondents considered the negative outcome to be possible, and hence had thought about the opposite of the peer's argument.

To be able to compare the data of respondents counter-arguing the message to those where the message is processed without thoughts about opposite outcomes, two additional measurements were included. First, response times were measured for further testing whether respondents had formed concepts in mind, which are incongruent to what has been stated in the peer recommendation. As this design resembles other decision tasks wherein activation of concepts is measured by fast positive or negative reactions to words (Aarts, Dijksterhuis, De Vries, 2001; Neely, 1991), the design allowed to test whether incongruent concepts had been formed in mind while reading the peer recommendation. Fast positive reactions to negative outcome sentences were supposed to reflect activation of that concept.

Second, not only reactions to sentences seen before were measured, but also reactions to sentences not seen before. This design was necessary to allow comparisons between indications of counter-arguing, which can only be taken when the sentences have been seen before, and reactions to negatively presented arguments whose positive counterpart has not been seen before. If reactions to arguments seen before are more negative than to sentences not seen before, this can be taken as support that counter-arguments have been formed while reading the message, and not just when reading the negatively presented sentences. The whole design contained 12 sentences (6 relevant and 6 irrelevant) but each participant had only seen

half of those, either the relevant or the irrelevant ones. In the sentence recognition task however they were also exposed to negative forms of sentences not seen before (refer to table 3.1.). Thus if they had read a relevant peer recommendation, negative outcome sentences about social desirability of the camera was new to them.

Table 3.1. Arguments in Peer recommendation and in Sentence Recognition Task

	Peer recommendation	Sentence Recognition Task
Relevant	<ol style="list-style-type: none"> 1. The camera offers high quality pictures 2. There are no long waiting times between taking pictures 3. The camera is very stable 4. Despite many functions the camera is easy to understand 5. Using the camera doesn't lead to frustrations 6. The camera is very easy to use 	<ol style="list-style-type: none"> 1. The camera does not offer high quality pictures 2. There are long waiting times between taking pictures 3. There camera is not very stable 4. The camera has too many functions to be understandable 5. You get frustrated from using the camera 6. The camera is not easy to use
Irrelevant	<ol style="list-style-type: none"> 1. The camera is in line with the latest trend 2. With the camera it's easy to become accepted 3. The camera looks very nice 4. The camera's layout implies real professionalism 5. The camera offers outstanding design 6. The camera expresses valuation of modernity 	<ol style="list-style-type: none"> 7. The camera is not trendy any more 8. The camera is not adequate as means to be accepted 9. The camera doesn't look nice 10. The camera's layout says nothing about professionalism 11. The camera's design is not that great 12. Valuation of modernity is not expressed by the camera
Visible to participants	6 (either relevant or irrelevant)	12 (all arguments are seen in the Sentence Recognition Task, although only six of them have been seen previously in the peer recommendation)

MANIPULATION CHECKS

It was tested whether the prime remained unrecognized and at the same time succeeded in influencing participants' perceptions of the peer. A suspicion probe tested whether respondents were unaware of being primed subliminally. Participants were asked whether they had caught a glimpse of the peer recommender's identity. If so, they were tested on whether their perception was conform to the face they had actually seen. This was achieved by showing four different faces, from which they had to choose the one they thought to have seen. The four faces represented the actual two prime faces (trustworthy and untrustworthy), a neutral face (Oosterhof & Todorov, 2008) and a blank face.

Influence of primes on perception of the peer was tested by a 7 point scale measuring attitude toward the peer. The scale consisted partially of the trait dimension scale developed by Todorov et al. (2005). Items like corrupt versus incorruptible and likable versus not likable were used in this scale ($\alpha = .81$).

To test whether differences in relevance entailed differences in favorability towards the product, an additional 7 point scale was added. Each of the six previously read arguments in both relevant and irrelevant conditions were shown again. Respondents indicated first how relevant they perceived the argument in terms of gathering information about the camera's usability. Second respondents indicated how favorable the argument was considered in terms of evaluating the camera.

RESULTS

Data were analyzed using a two-way ANOVA for effects of independent variables (prime condition and relevance condition) on dependent variables (message acceptance, attitude toward product and resistance) and on variables which are suspected to be mediating variables (counter-arguing and processing fluency). Mediation was analyzed using linear regression analysis, following the three steps of Baron and Kenny (1986). Independent sample t-tests were included for manipulations checks.

Trust manipulation. By means of statistical analysis it was found that trust primes remained unnoticed but were effective in influencing perceptions of the peer. A suspicion probe revealed

that those participants primed with a face were not able to detect those faces primed with ($t(82) = 0.59$, n.s.). Of the 40 respondents who had seen a trustworthy face, only 7 were able to detect the face as the trustworthy one. Of the 44 respondents who had seen an untrustworthy face, also only 7 indicated the untrustworthy face as the one they believed to have seen.

Attitude measures toward the peer revealed that under distrust participants held a more negative attitude toward the peer ($M = 3.41$, $SD = .14$) than under trust ($M = 4.02$, $SD = .15$) or neutral prime conditions ($M = 3.68$, $SD = .15$). This effect was found to be significant ($F(2, 118) = 4.40$, $p < .01$).

Relevance manipulation. Argument manipulation was checked on being relevant by comparing the group of irrelevant arguments to the group of relevant arguments in an independent sample t-test. In line with the results of the pilot study, there was a difference in perceiving arguments as relevant or irrelevant ($t(123) = -10.97$, $p < .01$). Irrelevant arguments were perceived as significantly less relevant for getting to know the usability of the camera ($M = 3.27$, $SD = 1.36$) than relevant arguments ($M = 6.18$, $SD = 1.59$).

Other manipulation effects. Relevance manipulation showed to have additional side effects. First, relevance showed to influence favorability. Irrelevant arguments scored significantly lower ($M = 4.81$, $SD = 1.43$) than relevant arguments ($M = 6.56$, $SD = 1.29$) on being perceived as favorable for accepting the peer recommendation ($t(123) = -7.20$, $p < .01$). Manipulation in terms of relevance therefore also leads to a more favorable impression of the camera. On basis of these findings favorability is in the following analysis used as a covariate, in order to reduce to effects of relevance manipulation rather than favorability.

Second, relevance showed to influence attitude toward the peer ($F(1, 118) = 5.15$, $p < .03$). Relevance interacted with manipulations of trust ($F(2, 118) = 4.51$, $p < .01$), irrelevant arguments decreasing attitude toward the peer to a mean of 3.45 ($SD = .22$) even in conditions of trust. Relevant arguments in conditions of trust resulted in a much more positive attitude toward the peer ($M = 4.60$, $SD = .22$), than relevant arguments in conditions of distrust ($M = 3.37$, $SD = .21$) (see figure 3.2).

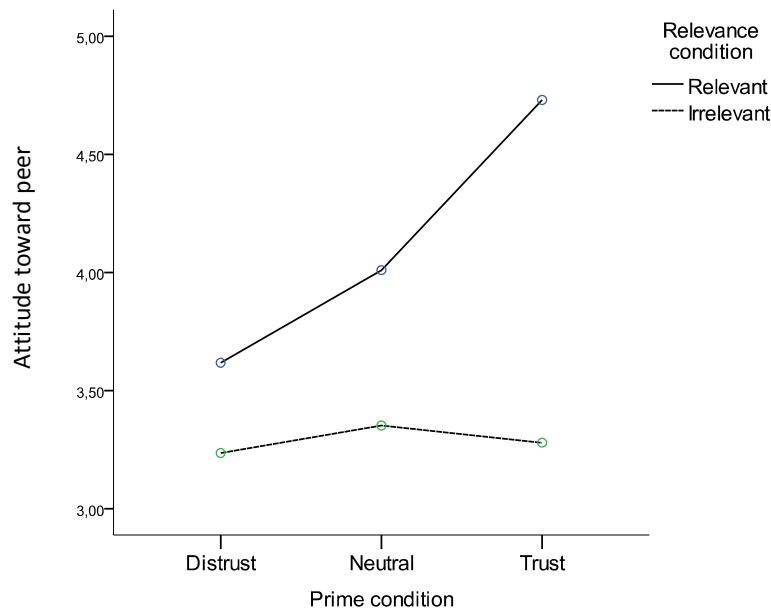


Figure 3.2. Interactions of trust and relevance on attitude toward peer

MESSAGE ACCEPTANCE

Main and interaction effects of trust and relevance on two different acceptance constructs were measured by means of univariate analysis of variance (two-way ANOVA). Results are presented per construct.

Message Credibility. Main effects of trust on message credibility did not reach significance ($F(2, 118) = 0.93$ n.s.). However data revealed a main effect of relevance on message credibility ($F(1, 118) = 22.97$, $p < .01$). Relevant arguments perceived as more credible than irrelevant arguments ($M_s = 4.20$, $SD = .15$ vs. 3.10 , $SD = .15$). No interaction effect between trust and relevance was found ($F(2, 118) = 0.24$, n.s.). Hence for message credibility, the interaction of distrust condition and relevant arguments did not weaken acceptance of the message.

Attitude toward Message. As with message credibility, expectations of main and interaction effects concerning trust were not confirmed. Trust did not show to have a main effect on attitude toward message ($F(2, 118) = 0.77$ n.s.). For relevance however a main effect on attitude toward message was found ($F(1, 118) = 30.18$, $p < .01$). Relevant arguments influenced the attitude held toward the message more positively ($M = 4.30$, $SD = .16$) than irrelevant arguments ($M = 2.93$, $SD = .16$). Contrary to expectations trust conditions did not increase this

effect, as no interaction effect of trust and relevance on attitude toward message was found ($F(2, 118) = 0.41, n.s.$).

ATTITUDE TOWARD PRODUCT

Effects concerning trust on attitude toward product did not meet expectations. No main effect of trust was found ($F(2, 118) = 0.30, n.s.$) but data revealed a main effect of relevance on attitude toward product ($F(1, 118) = 4.75, p < .03$). When relevant arguments were used, attitude toward the camera was higher ($M = 4.73, SD = .14$) than when irrelevant arguments were used ($M = 4.26, SD = .14$). Further a main effect of favorability as covariate was found ($F(1, 118) = 17.74, p < .01$). No interaction effect of trust and relevance was found ($F(2, 118) = 0.05, n.s.$). Expectations that products are considered less positive when distrust is high and arguments relevant are not confirmed.

RESISTANCE

Two-way ANOVA revealed significant effects of trust and relevance on resistance, confirming expectations. First, a main effect of trust on resistance was found ($F(2, 118) = 5.59, p < .01$), indicating that respondents primed with trustworthy faces resisted the message less ($M = 4.31, SD = .18$) than when primed with untrustworthy ($M = 5.12, SD = .17$) or neutral faces ($M = 4.88, SD = .18$). These results give support to Hypothesis 1.

No main effect of relevance on resistance was found ($F(1, 118) = 0.62, n.s.$), but a covariate effect of favorability was found ($F(1, 118) = 9.12, p < .01$). Results indicate an interaction effect of trust and resistance on relevance ($F(2, 118) = 5.19, p < .01$). Hereby it is found that resistance is not affected by trust primes in the irrelevant conditions ($F(2, 118) = .37, n.s.$) but well in relevant conditions ($F(2, 118) = 10.36, p < .01$). As expected resistance was lowest when participants were in conditions of trust and arguments were relevant ($M = 3.85, SD = .26$). More importantly expectations were met by results indicating that participants in conditions of distrust receiving relevant arguments showed higher resistance than participants in neutral ($M = 4.72, SD = .26$) or trust conditions ($M = 5.45, SD = .26$) (see figure 3.3). In distrust conditions resistance to relevant arguments was hereby found to be higher than to irrelevant arguments ($M = 4.79, SD = .25$), although this effect failed to reach significance ($F(2, 118) =$

0.37, n.s.). Means and standard deviations as well as contrasts between the interaction effects are presented in table 3.2.

Table 3.2. Interactions of trust and relevance on Resistance

	Relevant <i>M(SD)</i>	Irrelevant <i>M(SD)</i>	Total <i>M(SD)</i>	Contrasts (1) <i>F</i>
Distrust	5.45 (.26)	4.79 (.25)	5.12 (.17)	3.08
Neutral	4.72 (.26)	5.04 (.25)	4.88 (.18)	0.74
Trust	3.85 (.26)	4.77 (.26)	4.31 (.18)	6.01*
Total	4.67 (.16)	4.86 (.16)	23.90 (6.26)	5.59*
Contrasts (2) <i>F</i>	10.36**	0.37	0.62	

Note. * $p < .05$. ** $p < .01$. Judgments were made on 7-point scales. (1) *F* tests for prime conditions are based on the linearly independent pairwise comparisons among the estimated marginal means of relevance. (2) *F* tests for relevance are based on the linearly independent pairwise comparisons among the estimated marginal means of prime conditions.

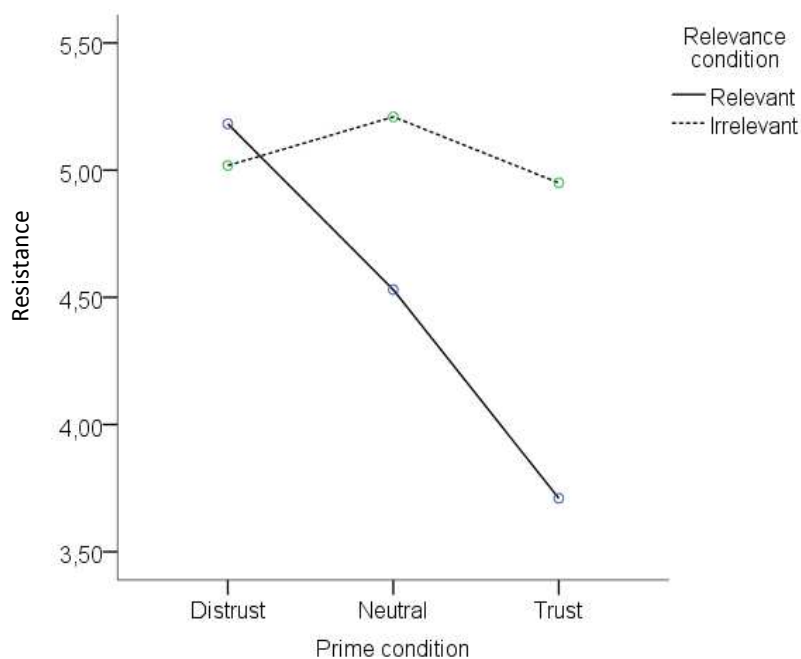


Figure 3.3. Interactions of trust and relevance on resistance.

PROCESSING FLUENCY

Ease of image formation. Data revealed a main effect of trust on ease of image formation ($F(2, 118) = 6.61, p < .01$). In trust conditions image formation was significantly perceived as easier ($M = 3.64, SD = .18$) than in neutral conditions ($M = 3.04, SD = .17$) or distrust conditions ($M = 2.78, SD = .17$). Mean differences of distrust to neutral remained insignificant, but were significant when compared to trust conditions ($p < .01$). These results confirm hypothesis H2a.

Moreover significant main effects of relevance on ease of image formation were found ($F(1, 118) = 7.70, p < .01$). Relevant arguments significantly increased ease of image formation ($M = 3.48, SD = .16$) as opposed to irrelevant arguments ($M = 2.82, SD = .15$). However no interaction effect of trust and relevance on ease of image formation was found ($F(2, 118) = .03, n.s.$), although it was expected that under conditions of distrust, relevant arguments should have been hardest for participants to process.

Reading time. The periods of time it took participants to click further to the next argument while reading each separate argument in the peer recommendation, were transformed with a logarithmic transformation. Then these were computed into one variable displaying the mean of all logarithmic reading times. Reading times did not show significant effects of trust ($F(2, 118) = 1.98, n.s.$) or significant interaction effects of trust and relevance ($F(2, 118) = 0.87, n.s.$). Only significant effects for relevance were found ($F(1, 118) = 8.26, p < .01$), indicating that irrelevant arguments are read faster ($M = 0.48, SD = .03$) than relevant arguments ($M = 0.59, SD = .03$).

COUNTER-ARGUING

SRT answers. The counted variable "SRT" was constructed of how many times a 'reverse outcome sentence' was indicated as possible outcome by clicking 'possible'. Amount in SRT hereby indicates how often a reverse outcome sentence is considered as possible outcome, which conforms to our definition of counter-arguing. Means and standard deviations as well as contrasts between the interaction effects are presented in table 3.3. A main effect of trust on counter-arguing with only marginal significance was found ($F(2, 118) = 2.73, p = .07$). No effect of relevance ($F(1, 118) = 1.27, n.s.$) and no interaction effects of trust and relevance ($F(2, 118) = 2.13, n.s.$) were found. However within comparisons of relevant and irrelevant conditions an

effect of relevant arguments on counter-arguing was found ($F(2, 118) = 4.32, p < .05$). In conditions of distrust, participants more often indicated to consider the opposite of an argument seen in the peer recommendation ($M = 2.61, SD = .29$), than when they were in neutral conditions ($M = 1.96, SD = .29$) or conditions of trust ($M = 1.46, SD = .29$). These results confirm expectations that distrust leads to thinking about alternative outcomes, confirming Hypothesis 2b. However this effect only applies to relevant arguments. In conditions of irrelevant arguments trust has no effect on counter-arguing. Results are illustrated in figure 3.4.

Table 3.3. Means and standard deviations for SRT

	Relevant M(SD)	Irrelevant M(SD)	Total M(SD)	Contrasts (1) F
Distrust	2.61 (.29)	1.83 (.28)	2.22 (.19)	3.33
Neutral	1.96 (.29)	1.48 (.28)	1.72 (.20)	1.32
Trust	1.46 (.29)	1.20 (.29)	1.63 (.20)	0.66
Total	2.01 (.18)	1.70 (.18)	1.86(1.32)	1.27
Contrast (2)				
F	4.32**	0.51	2.73	

Note. * $p < .05$. ** $p < .01$. Numbers represent frequencies. (1) F tests for prime conditions are based on the linearly independent pairwise comparisons among the estimated marginal means of relevance. (2) F tests for relevance are based on the linearly independent pairwise comparisons among the estimated marginal means of prime conditions.

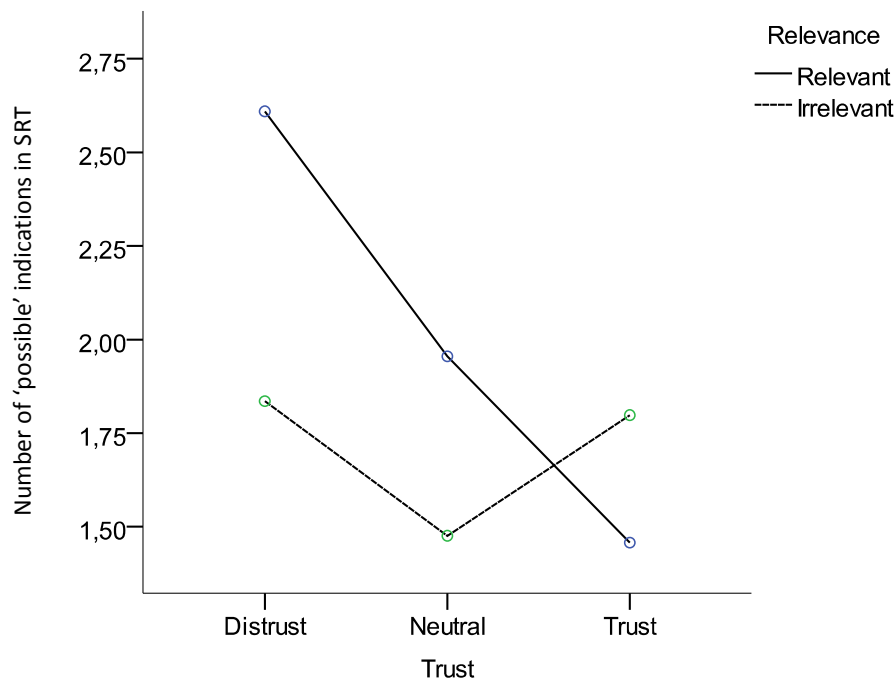


Figure 3.4. Interaction effects of trust and relevance on SRT answers

SRT response times. In addition to counting how many times reverse outcome sentences were indicated with 'possible', response times were measured to those sentences indicated with 'possible'. Contrary to expectations those revealed no significant effects. Effects of trust for relevant arguments ($F(2, 59) = 1.26$, n.s.) were not significant.

MEDIATION

A stepwise regression analysis is conducted in order to get to know underlying mechanisms for distrust to evoke resistance to message content. The three-step procedure proposed by Baron and Kenny (1986) was followed to assess the proposed mediator effects. According to the first step the predictor variable (distrust) was significantly related to the mediator variables ease of image formation ($F(1, 123) = 10.11$, $p < .01$) and counter-arguing ($F(1, 123) = 3.87$, $p < .05$). The second step prescribes that the predictor should be related to the dependent variables, which was the case for distrust and resistance ($F(1, 123) = 8.28$, $p < .01$). The third step prescribes the mediators (ease of image formation and counter-arguing) to be related to the dependent variable (resistance), under the condition that the predictor is included in the equation. For (partial) mediation to occur, however, the relationship between the predictor and the

dependent variable in the third step should be significantly reduced. Effects of step 2 and 3 can be seen in a stepwise regression analysis including three models. The first model included only distrust in the relationship with resistance. The second model added ease of image formation, next to distrust, to the relationship. The third model included all three variables, distrust, ease of image formation and counter-arguing. The effect of distrust on resistance was reduced to a non-significant level when ease of image formation and counter-arguing were added to the relationship (see figure 3.5). This effect remained when counter-arguing was added to the equation. In total the coefficient for determination R^2 was changed by .26 when ease of image formation and counter-arguing were added, indicating that the mediators account for effects of distrust on resistance. Results are presented in table 3.4.

In order to determine whether the paths from trust to resistance via counter-arguing and ease of image formation are significant, a method suggested by Sobel (1982) was conducted. It confirmed the path from distrust to resistance via counter-arguing ($z = -1.73$, $p < .05$), and the path via ease of image formation ($z = -2.88$, $p < .01$) to be significant. Hypothesis 2c is hereby confirmed.

Table 3.4. Stepwise regression analysis of the factors distrust, ease of image formation and counter-arguing on resistance.

Variable	Model 1		Model 2		Model 3	
	b	t	b	t	b	t
Distrust	.25	2.88**	.12	1.45	.09	1.20
Ease of image formation			-.49	-6.18**	-.45	-5.65**
Counter-arguing					.19	2.43*
R^2		.06		.29		.32
R^2 change		.06		.22		.03
F		8.28		24.49		18.95
F change		8.28**		38.20**		5.89*

Note. * $p < .05$. ** $p < .01$. Standardized beta coefficients and t values of the analysis are presented. Model 1 included Distrust, Model 2 included Distrust and Ease of Image Formation, Model 3 included Distrust, Ease of Image Formation and Counter-arguing.

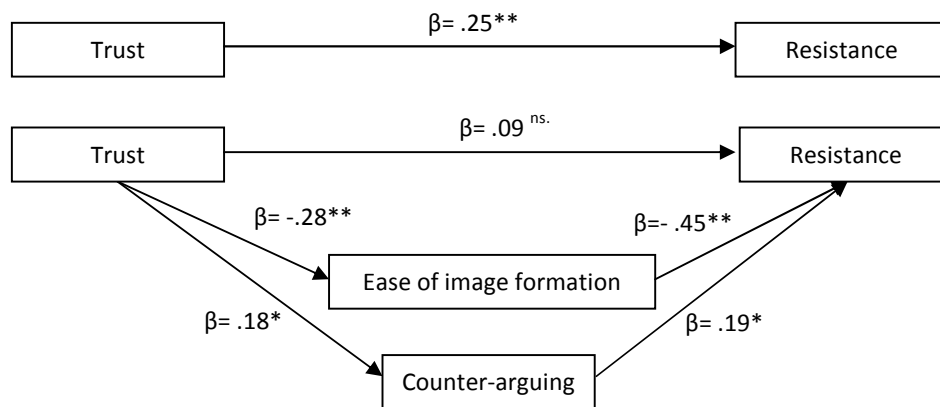


Figure 3.5. Analysis of ease of image formation and counter-arguing as mediators for the effect of distrust on resistance.
 Note: ** $p < .01$, * $p < .05$.

CONCLUSIONS

Results obtained by this study succeeded in confirming a couple of expectations, as the predictions made in hypotheses 1, 2a, 2b and 2c. It could be shown that distrust affects processing of messages, by increasing the complexity of processing. It was found that distrust weakens the acceptance of the message, in that resistance is increased. Processing fluency appeared to be an important mediator in that relation, showing that when readers distrust the message source, complexity of processing becomes increased, which subsequently leads readers to distance themselves from accepting the message. Counter-arguing, as a specific form of increased complexity, appeared to mediate the relation between distrust and resistance in the same way; however its effect remained much weaker. From this can be interpreted that thinking about incongruent alternatives affects resistance to the message, but that the increased complexity is not necessarily restricted to these kinds of thoughts. Rather it is possible that distrusting readers are induced to think more about the message in general, which impairs processing fluency and subsequently acceptance. Despite its limitations, the concept of counter-arguing could be supported by this study. It showed to be part of a way of processing, which is marked by increased complexity and ends in a reluctance to accept the message.

Significant effects on resistance were found for readers of relevant arguments only, which confirmed that the relationship between trust, counter-arguing and resistance is to a remarkable extent dependent on relevance. Hence relevant messages increase the weight of alternative outcomes thoughts, leading to a stronger urge to resist the message. The moderating role of relevance could hereby be confirmed.

However relevance also showed to interfere with notions of trust. It seemed as if relevance was used as information to base decisions about the product on, with relevant information as strong and irrelevant information as weak, which affected the attitude toward the product. Therefore irrelevant arguments did not show any significant effects in interaction with trust. This is in line with trust literature suggesting that trust only plays a role when a certain risk or vulnerability is involved (Deutsch, 1962; Doney & Cannon, 1997). As irrelevant arguments do not interfere so much with the reader's goal, the reader is not vulnerable to the peer and therefore does not need to base evaluations on trust toward the peer. To the contrary, results indicate that irrelevant arguments can even *evoke* distrust. A possible explanation for this effect is that irrelevant arguments might be seen as incongruent with the reader's expectations and goal of knowing the usability of the product. Research shows that information incongruence leads readers to discredit the source of the message (Osgood & Tannenbaum, 1955). As incongruence of meaning can influence consumer distrust in internet advertisements (De Vries & Van Rompay, 2009), incongruence between reader's expectations and message content possibly evokes distrust as well.

Furthermore no effects for message credibility and attitude toward the message could be found, which threatens the notion that distrust can impact message acceptance. Also no effect on attitude toward the product could be found. Acceptance is still found to be limited, as resistance gets affected by distrust and mediating variables, but a direct effect on how the described product is viewed, is missing.

Finally response times measured in the sentence recognition task did not show any effects. Comparable results from lexical decision tasks show that for a concept to be activated, response times would be faster than for concepts not thought about before (Neely, 1991). Therefore support for the existence of counter-arguing is strongly limited in this research. It is possible that the missing effect is due to limitations of the method for testing counter-arguing.

After having read positive sentences about camera aspects, respondents were exposed to negative versions of the same sentences. They had to indicate whether they considered these negative outcomes as possible outcomes. Advantage of this method was to measure whether those persons who had already thought about the negative outcome to happen would indicate “possible”, comparable to indicating “yes” to real words in lexical decision tasks. Despite being used to lexical decision tasks (95 percent of respondents being students who most likely have taken part in psychological studies before) respondents were unfamiliar with responding to negative versions of sentences. Responding “not possible” to negative sentences implied a double negative which might have caused some confusion under respondents (De Vellis, 2003). This limitation might account also for times it took respondents to indicate “possible” or “not possible” to negative sentences. Response times remained insignificant and were therefore unable to support the notion of alternative sentences being activated in mind.

Hence despite the support found for different ways of processing under trust and distrust, concerns arise from this study with respect to (1) the measurement of counter-arguing and (2) the nature of the message, which seems to be more susceptible to evaluations in terms of relevance and irrelevance rather than to notions of trust. It is suspected that the message is too non-ambiguous and hence created no need for trust. Doney and Cannon (1997) found that for trust to be operative, purchase decisions must involve some level of risk or uncertainty (cf. Moorman, Zaltman, & Deshpandé, 1992). Hence if the message was too non-ambiguous for outcome uncertainty to arise, trust would have little effect. These concerns are taken into the development of a second study which aims at replicating results of the first study and giving support to the remaining two hypotheses.

4. STUDY 2

A second study was conducted to replicate findings of study 1, while at the same time addressing the concerns that emerged from study 1. In study 1 it was found that distrust increases complexity and evokes counter-arguing with subsequent effects on resistance to the message; product attitudes however remained unaffected. It is suspected that the effect is missing due to concreteness of the message, which leaves too little outcome uncertainty for trust to be operative. Therefore study 2 aims at controlling the concreteness or ambiguity of message content to be able to show stronger effects of trust on subsequent processing. Furthermore study 2 uses an experience product rather than a search object (categorization from De Vries & Pruyn, 2007). Experience products in peer recommendations show to be more susceptible to trust and distrust than search and credence products.

PARTICIPANTS, DESIGN AND PROCEDURE

Participants. A total of 338 individuals (120 men, 218 women, $M_{\text{age}} = 27.73$, $SD = 10.18$, minimum = 18, maximum = 67) participated in this study. The experiment was conducted among Dutch (80) and German (258) participants. Due to incomplete data, 76 of the participants had to be excluded from the analysis. Durations of participations which exceeded the limit of 30 minutes led to 4 more participants to be excluded, which resulted in a remaining sample size of 258.

Procedure. Participants were assembled via the internet to an online survey. When entering the survey they were randomly assigned to one of six experimental conditions in a 2 (message content: ambiguous vs. non-ambiguous) x 3 (subliminal prime: trust vs. distrust vs. no-prime) between-subjects design.

The survey was spread in two languages, Dutch and German. In the survey participants were introduced to the study, asked about demographic data, and requested to fill in the current time at their watch or computer clock. Then participants were told that the study was composed of two parts, which were independent from each other. Belonging to the first part, participants were asked about personal preferences in the field of vacations. Aspects included

location, atmosphere, style, type of food and activity, but also filler aspects about budget, company and type of destination.

An unrelated filler task about holiday destinations was given, and then participants were exposed to the Instructional manipulation check (Oppenheimer, Meyvis, & Davidenko, 2009). This test consisted of a few lines of text and a series of sports which could be checked. By reading the text carefully participants knew that they had to ignore the sports and continue with a neutral question. When skipping the text participants were allured to check those sports they were interested in.

The second part consisted of a peer recommendation in form of a short video. Participants first read a text containing explanation about the use of peer recommendations, a scenario and instructions for activating the film. The scenario included the search for a hotel. Participants were told that they knew only few facts about a hotel from the internet and wanted to be informed about actual experiences of visiting the hotel. The film showed the peer recommendation split into five separate arguments. Participants were told that the purpose of the manner how the peer recommendation was shown, was that the researcher wanted participants to give equal attention to every separate aspect mentioned in the peer recommendation. Five arguments reflecting five different aspects of a hotel experience were shown separately on the background of a peer recommendation website. The background included an unrecognizable picture, representing the person who had written the peer recommendation and a white box where the separate arguments could appear in. The unrecognizable picture was replaced by a prime right before each separate argument appeared. Hence participants were primed with a trustworthy or untrustworthy face each time before they read an argument (except for neutral condition). The prime appeared for 0.1 seconds.

After the film participants were asked what they expected from visiting the hotel. Expectations were recruited for the five aspects of the hotel, mentioned in the peer recommendation arguments. These expectations included location, atmosphere, furnishing, type of breakfast and type of swimming pool. Subsequently participants had to fill in a couple of scales about attitude toward the product, resistance to the message, relevance of aspects and attitude toward the peer. Finally it was tested whether participants were suspicious about the prime and participants again had to fill in the current time at their watch or computer clock.

INDEPENDENT VARIABLES

Prime condition. The same trust manipulation as in study 1 was used. Thus a trustworthy or an untrustworthy face (Oosterhof & Todorov, 2008) appeared for 0.1 seconds in the place of the unrecognizable picture of the “peer”, the person who apparently has written the peer recommendation. Location of face and text are presented in figure 4.1. To make sure that the prime was not missed, the text appeared very close to the picture and disappeared for 2 seconds before the next prime was shown.

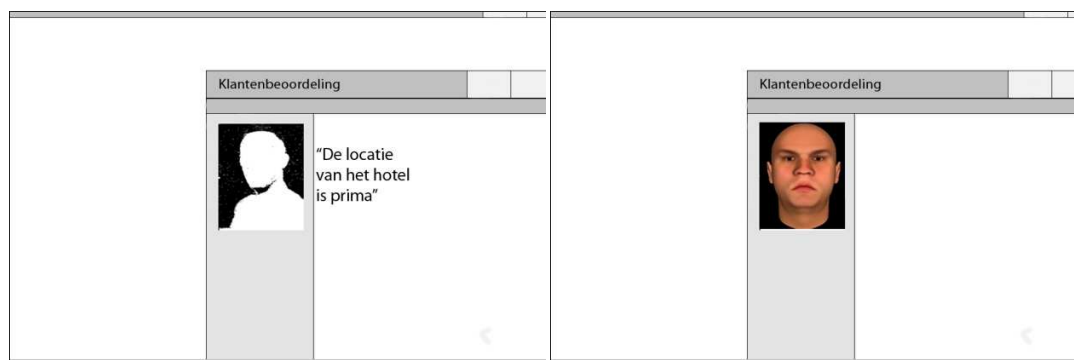


Figure 4.1 (a) Peer recommendation background with an ambiguous argument and the unrecognizable picture, which gets replaced by (b) untrustworthy face for 0.1 seconds.

Ambiguity. Message content of the peer recommendation was manipulated in being ambiguous versus non-ambiguous. Five aspects about the hotel (location, atmosphere, furnishing, type of breakfast and type of swimming pool) were given either in an ambiguous form, using subjective and unspecific information (“The hotel offers a good breakfast”) or in a non-ambiguous form, using more objective and specific information (“The hotel offers a healthy breakfast”). The specific arguments are presented in table 4.1.

Table 4.1. Ambiguous and non-ambiguous message content

Ambiguous	Non-ambiguous
1. The hotel’s location is great	1. The hotel is located centrally
2. The hotel has a pleasing atmosphere	2. The hotel has a professional atmosphere
3. The rooms are set up nicely	3. The rooms have a modern setup
4. The hotel offers a good breakfast	4. The hotel offers a healthy breakfast
5. The hotel has a nice pool	5. The hotel has a pool which invites for active swimming

DEPENDENT VARIABLES

Counter-arguing. It was tested whether expectations about the hotel differ from preferences indicated in part 1 of the study. Preferences were measured in the beginning of the survey for vacations in general. Ten aspects with each two oppositional items of vacations were offered. Participants had to choose on a 7 point Likert scale, which of the two oppositions they preferred. Five of the ten aspects were used as filler items to prevent that participants link their preferences to expectations afterwards. The remaining five aspects measured preference for location, atmosphere, style, type of food and activity level.

Additional distraction was created by a filler item about holiday destinations. The Instructional manipulation check was also positioned between measures of preferences and measures of expectations for the same purpose.

Expectations were measured directly after the peer recommendation film. Again participants had to choose on a 7 point Likert scale between two oppositional items. Five oppositions were presented about the aspects location, atmosphere, furnishing, type of breakfast and type of swimming pool which matches the aspects indicated in the first part. The difference was that in the second part participants had to indicate specific expectations about the hotel rather than general preferences for vacations. This design allowed to check whether expectations about the hotel differed from preferences after having read the peer recommendation.

Attitude toward the product. Like in study 1, attitude toward the product was measured on a 7 point Likert scale. Five items were included in the scale ($\alpha = .86$).

Resistance. As in study 1 resistance was measured by five items on a 7 point scale. Item three ('I would base my decision on this recommendation') however needed to be deleted in this study in order to achieve satisfying reliability of the scale ($\alpha = .81$).

Manipulation checks. It was measured whether the prime had not been seen consciously by participants but nonetheless had been successful in influencing perceptions of the peer. Therefore the scale for attitude toward the peer ($\alpha = .86$) including five items on a 7-point Likert scale, and the suspicion probe from study 1 were used again.

As the study was conducted online, with less control over participants' behavior, an Instructional manipulation check was added to test for participants' attentiveness while reading texts and instructions. This check was necessary to detect those participants who skip through instructions without having read instructions like the scenario. Adapted from (Oppenheimer, Meyvis, & Davidenko, 2009) participants saw a couple of sports and a headline which asked to check those sports of interest. However the instruction text above told participants to ignore the sports and click on 'no response' instead. Finally a time check controlled whether participants conducted the study in a normal time range and did not for instance walk away in between. Participants had to indicate the time at their watch or computer clock in the beginning of the survey and in the end again.

RESULTS

As in study 1, data were analyzed using a two-way ANOVA for effects of independent variables (prime condition and ambiguity) on dependent variables (attitude toward product and resistance) and on variables which are suspected to be mediating (counter-arguing). Relevance was taken up as an expected additional moderator in the two-way ANOVA analyses, as interacting with counter-arguing on attitude toward product. Comparisons were made between ambiguous and non-ambiguous arguments, in order to investigate effects of trust on different message content. Mediation was analyzed using linear regression analysis and Independent sample t-tests were included for manipulations checks.

Trust manipulation. Significant effect of primes on attitude toward peer ($F(2, 252) = 11.65, p < .01$) were found. When primed with trustworthy faces attitude toward the peer was more positive ($M = 4.33, SD = .10$) than when primed with untrustworthy faces ($M = 3.65, SD = .10$). This effect is to be found both in ambiguous and in non-ambiguous conditions, as no interaction effect between trust and ambiguity was found ($F(2, 252) = 0.55, n.s.$). Effects for both ambiguous and non-ambiguous arguments are illustrated in figure 4.2.

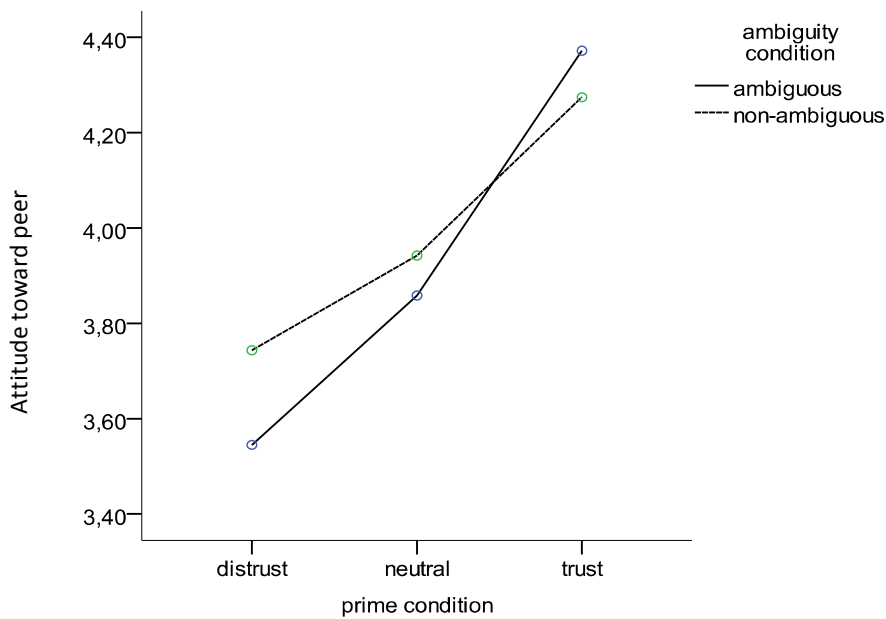


Figure 4.2 Interactions of trust and ambiguity on attitude toward peer

A suspicion probe revealed that the primes remained unnoticed. Those participants who indicated to have seen a face were tested on being able to indicate the correct face having been exposed to. Data revealed that participants in trust and distrust conditions were not able to detect the correct face ($t(70) = -0.92$, n.s.). Of the 93 respondents who had seen a trustworthy face, only 17 were able to detect the face as the trustworthy one. Of the 86 respondents who had seen an untrustworthy face, only 15 indicated the untrustworthy face as the one they believed to have seen.

Instructional manipulation check. It appeared that 177 (67.4 percent) participants had chosen the 'no answer' field and thereby passed the Instructional manipulation check. The remaining 32,6 percent not having passed the test, are not excluded from analysis as the immense decrease in sample size is suspected to limit generalizability of results more than the fact that one third of the participants were rather inattentive. This limitation will be approached in the discussion section of this paper.

Duration. The mean time of filling in the survey was 8 minutes ($SD = 4$ min). Four participants indicated a time span of more than 30 minutes from beginning to completing the survey, which

exceeds the realistic time for completing the survey without disruption, and were therefore excluded from the following analysis.

EFFECTS OF TRUST ON COUNTER-ARGUING

Outcome expectations measured after watching the video were subtracted from measures of personal preferences, taken in the first part of the survey, and formed into the variable counter-arguing. Data revealed a main effect of trust on counter-arguing ($F(2, 252) = 5.67, p < .04$). However the main effect does not support hypotheses. When trust manipulations were neutral, counter-arguing was found to be extremely high ($M = 2.05, SD = .09$), compared to trust and distrust conditions ($M_s = 1.75, SD = .09$ and $1.63, SD = .09$).

Also a main effect of ambiguity on counter-arguing was found ($F(1, 252) = 37.88, p < .01$). Results showed that non-ambiguous message content lead to more counter-arguing ($M = 2.12, SD = .07$) than ambiguous message content ($M = 1.49, SD = .07$).

However there was found an interaction effect of trust and ambiguity ($F(2, 252) = 8.32, p < .01$), which shows that more counter-arguing to non-ambiguous messages occurred under trust ($M = 2.19, SD = .12$) than under distrust ($M = 1.65, SD = .12$). For ambiguous messages, results show that less counter-arguing occurs under trust ($M = 1.30, SD = .12$) than under distrust ($M = 1.61, SD = .13$) and neutral conditions ($M = 1.57, SD = .13$). Contrasts between trust and distrust in ambiguous conditions were marginally significant ($p < .08$). Hence results gave support to expectations for ambiguous conditions but not for non-ambiguous conditions. Means and standard deviations, as well as contrasts between interaction effects are presented in table 4.2.

Table 4.2. Means and standard deviations for counter-arguing

	Ambiguous M(SD)	Non-ambiguous M(SD)	Total M(SD)	Contrasts(1) F
Distrust	1.61 (.13)	1.65 (.12)	1.63 (.09)	0.05
Neutral	1.57 (.13)	2.53 (.13)	2.05 (.09)	27.16**
Trust	1.30 (.12)	2.19 (.12)	1.75 (.09)	27.27**
Total	1.49 (.07)	2.12 (.07)	1.78 (.91)	
Contrasts (2) F	1.91	12.43**		

Note. * $p < .05$. ** $p < .01$. Judgments are made on a 7point scale. (1) F tests for prime conditions are based on the linearly independent pairwise comparisons among the estimated marginal means of ambiguity. (2) F tests for ambiguity are based on the linearly independent pairwise comparisons among the estimated marginal means of prime conditions.

EFFECTS OF TRUST ON ACCEPTANCE

Attitude toward product. Data revealed no significant main effect of trust on attitude toward product ($F(2, 252) = 1.47$, n.s.). However a significant effect of ambiguity was found ($F(1, 252) = 7.87$, $p < .01$). Reading non-ambiguous arguments resulted in a less favorable attitude toward the product ($M = 4.60$, $SD = .09$) than reading ambiguous arguments ($M = 4.96$, $SD = .09$). Furthermore an interaction effect of trust and ambiguity on attitude toward product was found ($F(2, 252) = 4.35$, $p < .01$). When exposed to ambiguous arguments, product attitudes were significantly more favorable under trust ($M = 5.19$, $SD = .14$) than under distrust ($M = 4.75$, $SD = .16$) ($p < .04$). They were also more favorable under trust than under neutral conditions ($M = 4.94$, $SD = .16$) but there no significant contrasts could be found. Results are illustrated in figure 4.3.

When exposed to non-ambiguous arguments no significant differences in prime conditions were found. Between non-ambiguous and ambiguous messages it is found that under distrust the attitude is more negative when exposed to ambiguous messages ($M = 4.75$, $SD = .16$) than when exposed to non-ambiguous messages ($M = 4.92$, $SD = .15$), though this effect fails to reach significance.

Table 4.3. Means and standard deviations for attitude toward product

	Ambiguous M(SD)	Non-ambiguous M(SD)	Total M(SD)	Contrasts (1) F
Distrust	4.75 (.16)	4.94 (.16)	4.83 (.11)	0.62
Neutral	4.94 (.16)	4.32 (.17)	4.63 (.11)	7.49**
Trust	5.19 (.14)	4.58 (.16)	4.88 (.11)	8.49**
Total	4.96 (.09)	4.60 (.09)	4.80 (1.04)	
Contrasts (2) F	2.19	3.72*		

Note. * $p < .05$. ** $p < .01$. Judgments are made on a 7point scale. (1) F tests for prime conditions are based on the linearly independent pairwise comparisons among the estimated marginal means of ambiguity. (2) F tests for ambiguity are based on the linearly independent pairwise comparisons among the estimated marginal means of prime conditions.

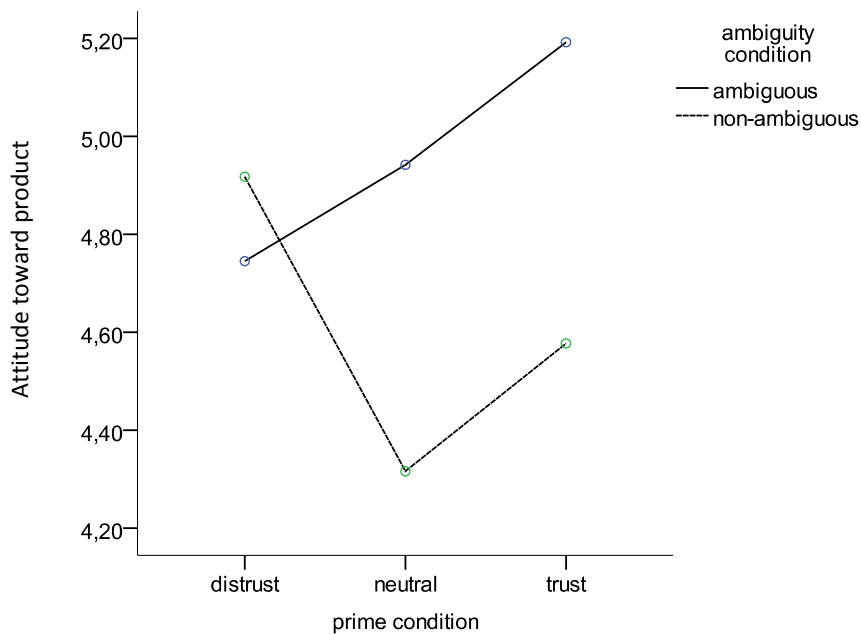


Figure 4.3 Interactions of trust and ambiguity on attitude toward product

Resistance. An effect of trust on resistance was found which was marginally significant ($F(2, 252) = 2.82, p < .06$). Under conditions of distrust ($M = 4.52, SD = .14$) resistance was higher than under trust ($M = 4.10, SD = .13$). No effect of ambiguity ($F(1, 252) = .97, n.s.$) and no interaction of trust and ambiguity on resistance could be found ($F(2, 252) = .21, n.s.$).

EFFECTS OF COUNTER-ARGUING ON ACCEPTANCE

Results of counter-arguing are analyzed by means of a median split in order to distinguish between groups of much counter-arguing and groups of little counter-arguing.

In a first step it is investigated whether the computed variable of counter-arguing has an effect on acceptance. Data reveal a main effect of counter-arguing on attitude toward the product ($F(1, 256) = 4.41, p < .04$). When respondents showed low amounts of counter-arguing, their product attitude is more favorable ($M = 4.94, SD = .09$) than when counter-arguing was high ($M = 4.67, SD = .09$).

The moderating role of relevance is in this study measured per aspect. Therefore a second step is included which considers the effect of counter-arguing on acceptance with relevance as possible moderating variable. Perceived relevance was measured per construct on a 7-point scale, for this analysis however a median split is created in order to distinguish between groups who perceived arguments as relevant and groups who perceived arguments as irrelevant.

Location. For the aspect location a main effect of counter-arguing on product attitude was found ($F(1, 254) = 6.56, p < .01$). When respondents engaged in low levels of counter-arguing, the hotel was perceived as more favorable ($M = 4.97, SD = .10$) than when much counter-arguing had occurred ($M = 4.61, SD = .10$). No main effect of relevance of the aspect was found ($F(1, 254) = .04, n.s.$). However an interaction effect of counter-arguing and relevance could be found ($F(2, 254) = 5.57, p < .02$). When respondents perceived location as irrelevant, no significant effect of counter-arguing on attitude toward product was found. However when respondents perceived location as relevant, product attitude was affected by the amount of counter-arguing. Engaging in high amounts of counter-arguing led to a significantly less favorable product attitude ($M = 4.44, SD = .17$) than low amounts of counter-arguing ($M = 5.12,$

$SD = .16$) ($p < .01$). As it was expected that counter-arguing had more effect on acceptance when arguments are perceived as relevant, these results (illustrated in figure 4.4) give partial support for hypothesis 3b.

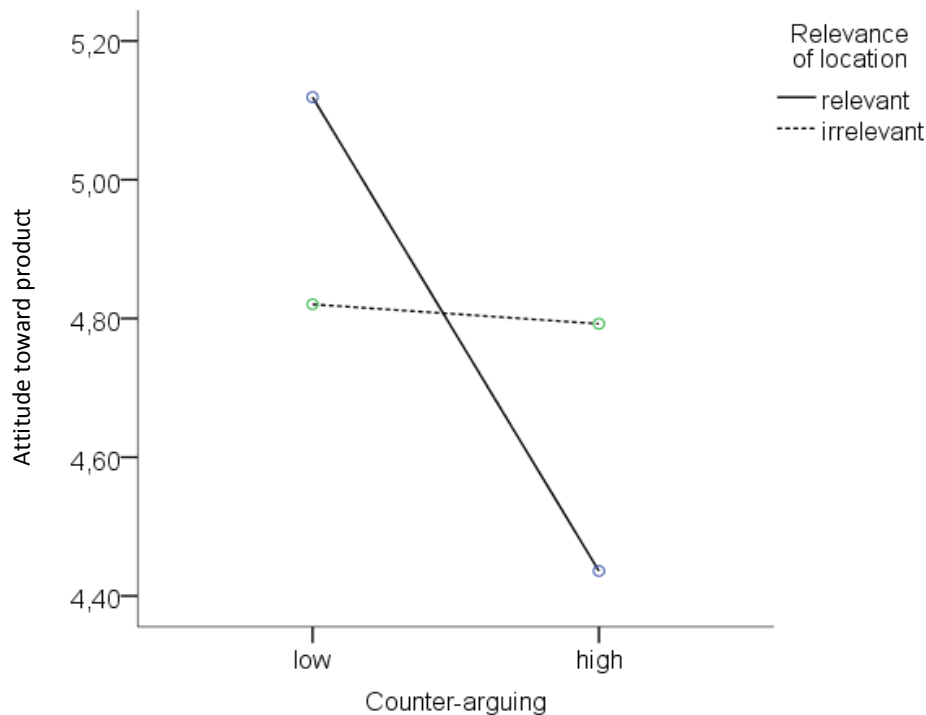


Figure 4.4. Interactions of counter-arguing and perceived relevance of location on attitude toward product

Atmosphere. For the aspect atmosphere effects of counter-arguing on attitude toward the product were not found to be significant ($F(1, 254) = 2.91$, n.s.). Also no main effect of relevance ($F(1, 254) = .14$, n.s.) and no interaction effect of counter-arguing and relevance could be found ($F(1, 254) = 1.73$, n.s.).

Style. Data revealed that low amounts of counter-arguing to the aspect of style lead to a more favorable product attitude ($M = 4.88$, $SD = .09$) than high amounts of counter-arguing to that aspect ($M = 4.65$, $SD = .09$). However significance of this effect was found to be only marginal ($F(1, 254) = 3.03$, $p < .08$). For relevance a significant main effect could be found ($F(1, 254) = 6.97$, $p < .01$). When style was perceived as irrelevant the product attitude was less favorable ($M = 4.59$, $SD = .10$) than when style was perceived as relevant ($M = 4.94$, $SD = .08$). No interaction effect between counter-arguing and relevance of the aspect could be found ($F(1, 254) = 1.59$, n.s.).

Food. No significant main effect of counter-arguing to the aspect food on product attitude was found ($F(1, 254) = .99$, n.s.). However relevance was found to significantly increase product attitude ($F(1, 254) = 7.36$, $p < .01$). When food was perceived as irrelevant for evaluating the hotel, attitude toward the hotel was less favorable ($M = 4.65$, $SD = .08$) than when food was perceived as relevant ($M = 5.00$, $SD = .10$). Also an interaction effect of counter-arguing and relevance on attitude toward the product was found ($F(1, 254) = 8.03$, $p < .01$). When food was perceived as irrelevant, counter-arguing did not affect product attitude significantly. However when food was perceived as relevant, the level of counter-arguing did influence attitude toward the product significantly ($p < .01$). When low amounts of counter-arguing to the aspect food occurred, the hotel was perceived as more favorable ($M = 5.25$, $SD = .14$) than when much counter-arguing occurred ($M = 4.76$, $SD = .14$). These results give further support for hypothesis 3b.

Activity. A main effect of counter-arguing the aspect activity on attitude toward the product is found ($F(1, 254) = 3.96$, $p < .05$). Low amounts of counter-arguing resulted in a more favorable product attitude ($M = 4.95$, $SD = .09$) than high amounts of counter-arguing ($M = 4.70$, $SD = .09$). Also a main effect of relevance of the aspect is found ($F(1, 254) = 9.86$, $p < .01$). When the aspect was perceived as irrelevant, less favorable product attitudes resulted ($M = 4.62$, $SD = .09$) than when the aspect was perceived as relevant ($M = 5.03$, $SD = .09$). The interaction between counter-arguing and relevance failed to reach significance ($F(1, 254) = 0.36$, n.s.), however it was found that if activity was perceived as relevant, a marginally significant difference between low and high amounts of counter-arguing appeared ($p < .07$). Low amounts of counter-arguing then resulted in a more favorable product attitude ($M = 5.19$, $SD = .14$) than high amounts of counter-arguing ($M = 4.86$, $SD = .13$).

MEDIATION ANALYSIS

Two mediation analyses were conducted in order to know relations between the concepts of distrust, counter-arguing and acceptance. The first mediation analysis was aimed at investigating the mediating role of counter-arguing. A second one was included to additionally investigate the moderating role of perceived relevance. Both analyses were conducted with

data of ambiguous messages only, as data of non-ambiguous messages contradict the hypotheses and cannot be explained in the framework of this research (see Discussion). Data for both analyses are presented in table 4.4.

Counter-arguing as mediator. As in study 1 a regression analysis is conducted in order to support the notion of counter-arguing as a mediating factor in the acceptance of trusted and distrusted messages. Again the three-step procedure proposed by Baron and Kenny (1986) was followed. In the first step it could be shown that the predictor variable (trust) was significantly related to the mediator variable counter-arguing ($F(2, 129) = 3.91, p < .05$). In the second step a significant relationship between trust and the dependent variable attitude toward the product was found ($F(2, 129) = 5.95, p < .03$). In the third step the mediator should be significantly related to the dependent variable and reduce the relationship between the predictor and the dependent variable. However, counter-arguing could not be found in the regression analysis to be significantly related to attitude toward the product. Also the change of the coefficient for determination R^2 was shown to be minimal (less than .01).

Relevance as moderator. To investigate whether results of counter-arguing as a mediator depend on the relevance attributed to the factor, a moderated mediation analysis is conducted. Relevance is measured per aspect; however most aspects did not show to be significantly related both to the predictor trust and dependent variable attitude toward the product, which is why the moderator analysis is conducted for the aspect food alone. Following the moderation approach by Preacher, Rucker and Hayes (in press) the mediator counter-arguing and the moderator relevance were multiplied, after being centered (Aiken & West, 1991). This new variable CR (standing for counter-arguing multiplied with relevance) was inserted in the equation illustrated one paragraph before.

However the new variable CR fails to be significantly related to trust, and is only marginally related to attitude toward product ($F(1, 129) = 2.86, p < .09$). The regression analysis reaches only a marginally significant effect for the moderation of CR on trust and attitude toward product ($p < .09$), and the path via CR is not significant according to Sobel ($z = .17, ns$). Therefore the notion that counter-arguing mediates the relation between trust and acceptance is only very weakly supported in this experiment.

Table 4.4. Regression analysis of the factors trust, counter-arguing and resistance on attitude toward the product.

Variable	Model 1		Model 2		Model 3	
	b	t	b	t	b	t
Trust	.21	2.44*	.20	2.27*	.20	2.33
Counter-arguing			-.07	-.77	-.04	-.40
CR					.14	1.56
R ²		.04		.05		.07
R ² change		.04		.01		.02
F		5.95*		3.26*		3.01*
F change		5.95*		0.59		2.44

Note. * p<.05. ** p<.01. Standardized beta coefficients and t values of the analysis are presented. Model 1 includes trust, model 2 includes trust, counter-arguing and resistance, and model 3 includes trust, counter-arguing and CR.

CONCLUSIONS

Results of this second study add to the first study by showing that not only resistance, but also the attitude toward a product can be affected by notions of trust and counter-arguing. This effect is found to depend on the ambiguity of the message.

It was expected that ambiguous messages would be more affected by trust than non-ambiguous messages, which could not be confirmed. One reason for this might be the contradictory results found for non-ambiguous messages. Neutral and trust prime conditions had remarkably high results on counter-arguing, whereas in distrust prime conditions, about the same level of counter-arguing was reached as in ambiguous message conditions. Attitude toward the product was found to be remarkably unfavorable in neutral and trust conditions, while at the same time, resistance was in these conditions about equally low as for ambiguous messages. Another explanation for results of non-ambiguous information being more counter-argued than ambiguous messages might be found in limitations of the measurement. Counter-arguing was measured by comparing vacation preferences to imagined outcomes of a hotel. When healthy food was preferred in general, expectations about a hotel serving opulent breakfast was considered as negative outcome expectation. Thus when several interpretations of the peer's arguments would have been possible, the reader chose to think about the outcome which he himself would find negative. The problem with non-ambiguous arguments

was presumably, that they are very specific. The reader might find them inconsistent with his preferences by definition, even without thinking about negative outcome possibilities. Therefore independent from notions of trust, non-ambiguous information might be counter-argued more than ambiguous information.

Even though hypothesis 3a could not be confirmed, an effect was found which supported expectations, namely that distrust operates in the expected ways for ambiguous arguments. When arguments leave the room to think of alternative outcomes, notions distrust leads readers to do so, much more than notions of trust.

Hypothesis 3b could be confirmed, by results of the two aspects location and food, amended by a third aspect, activity, which reached at least marginal significance. These aspects support the notion that the influence of counter-arguing on acceptance depends on relevance, as only counter-arguing to aspects perceived as relevant showed to affect the product attitude.

An effect of notions of trust on counter-arguing hence could be supported, as well as effects of counter-arguing on acceptance. However when the aspects are taken together in a mediation analysis, weaker results than expected are obtained. Again reasons might be found in measurement limitations, but the results also indicate that still much is left unknown about the precise processing style following distrusted and trusted messages.

4. DISCUSSION

The aim of this research was to investigate both the type of processing initiated by subtle hints of trust, and its effects on acceptance of persuasive messages. It has been shown that when readers of persuasive messages are primed with untrustworthy faces the processing becomes much more complex than when not primed, or primed with trustworthy faces. Processing fluency became considerably impaired and subsequently increased resistance to the message. Acceptance of the message could hence be shown to be to a great deal dependent on trust and ease of processing the message.

It was expected that counter-arguing could further explain this complexity, by showing how the message becomes more difficult to process. Study 1 succeeded in showing that at least part of the processing can be explained by counter-arguing. It could also be shown that counter-arguing operates in a similar way as complexity in processing. Notions of distrust increase both counter-arguing and complexity (shown by more negative results in processing fluency) and both concepts increase resistance to the message. It should be noted however that the mediation remained partial, which leaves the possibility of other mechanisms operating in this relationship as well.

Even though the overall process of notions of trust influencing acceptance via counter-arguing could not be entirely supported, interesting interaction effects between the constructs could be found. First of all very subtle hints of trustworthiness were able to influence the processing of messages, with very different outcomes for trusted and distrusted messages. When readers were primed with trustworthy faces, attitudes reflected the peer's position about the product. The reason would be, according to Fein et al. (1990), that notions of trust eliminate the need to protect oneself from misleading messages. Incongruent thoughts would then not need to be tested. When primed with untrustworthy faces on the other hand, an increase in complexity of processing was found, which supports findings like those by Priester and Petty (2003). More specifically these notions induced readers to add thoughts about incongruent alternatives, which supports findings of Schul, Mayo and Burnstein (2004). In line with the theory of processing fluency this increased complexity, partly defined by thoughts about

incongruent alternatives, impaired acceptance and lowered attitudes toward the products described in the message.

Next, the relations found were shown to be dependent on the type of message content. In study 2, distrust increased counter-arguing only when the message was ambiguous. Non-ambiguous messages might be counter-argued as well, but apparently for other reasons than distrust. One possibility is that non-ambiguous messages, as being very specific, depart from specific preferences easily. This and other possibilities should be investigated by future research projects. Ambiguous messages however are able to be interpreted in a different way, which includes the possibility to think of the message in a negative way. This seems to happen to a lesser extent when the message source is trusted. If the source is distrusted however, readers protect themselves by thinking about the ways in which product outcomes could mean harm for them.

In both studies relevance showed to be crucial for outcomes in counter-arguing and acceptance. Thinking about alternative outcomes seems to have impact on acceptance, especially when the outcomes thought about are important to the reader. In this case readers detect the harm product outcomes could mean for them and therefore act carefully by not accepting the message. These findings help disproving the myth that positive relevant arguments are beneficial for persuasiveness by definition. Relevance of arguments can also remind the readers of undesired product outcomes if information is turned into negative, which happens when reader counter-argue the message. In this case relevance is rather unfavorable for the persuasiveness of the message. Further research is also needed to investigate effects of other types of message content, like argument strength, formality and tone of the message, and amount of arguments.

Limitations. The studies maintained some practical limitations which restrict the generalizability of the results. While study 1 was conducted in a controlled setting where participants had to focus on the task, study 2 was conducted online where the only control for focus was by means of the Instructional manipulation check by Oppenheimer, Meyvis and Davidenko (2009). About one third of the participants however failed in this task, which points to the fact that not all instructions and text material had been read carefully enough. All analyses, especially the

manipulation checks, were conducted additionally with exclusion of these “inattentive” participants. However no differences could be stated, except that the results were weaker due to the reduced sample size. Furthermore it is assumed that readers of online messages are not always attentive in real world settings, but skip through different websites looking for adequate information. Therefore these participants are maintained in the analysis, however it is important to note that attentiveness of participants was weakly controlled.

Acceptance in this research has been treated as taking over the same positive attitude toward the product, as presented in the message. It was not tested what happens if the message presents negative arguments, dissuading from the product. Future research might focus on these variations of message content.

Furthermore the measurement of counter-arguing remained discussible. Whereas most research used listing of thoughts as measurement for cognitive processing (cf. Chaiken & Maheswaran, 1994; Priester & Petty, 2003) the present research focused on detecting incongruent thoughts without the requirement that participants actively list them. It was suspected that counter-arguing is an unconscious process, which can better be detected by recognition than by recall (Merikle & Reingold, 1991). In the first study this problem was addressed by using the Sentence Recognition task. This method however was found to be problematic among the target group. Participants had problems understanding the task of responding to negatively formulated sentences by clicking “possible” or “not possible”. Therefore a method was used in the second study which measured personal preferences and later expectations about the product. This method seemed to be much better understandable by the target group. When expectations departed from the preferences, this was considered to be an incongruent thought. Information which might have been interpreted in a positive way, was interpreted in a negative way, hence as incongruent outcome. This method failed however to test the spontaneous activation of incongruent thoughts, which according to Schul et al. (2004) occurs automatically and directly after exposure to the message. Furthermore this measurement allowed participants to express personal preferences, which are not necessarily to be viewed as arguments turned into negative. Also the second study based measurements on self-report. As counter-arguing is described as an automatic and unconscious process, self-report has its limitations for the purpose of measuring mental reactions to separate arguments.

Future research is therefore advised to use neuro-imaging methods, as these can reflect positive and negative reactions to statements immediately after exposure. Measurements of trust influence on ambiguous and relevant message content should be replicated by future research projects to gain more generalizable knowledge about the processing of distrusted messages.

Limitations in measurement might account for limitations in results about attitude toward message and about counter-arguing as underlying variable. Study 1 found results for counter-arguing on resistance, but failed to show effects on attitude toward message. However these results stress the importance of looking for underlying mechanisms in the processing of message content, even when attitudes are not affected.

Implications. One of the main findings of this project was that subtle hints of source trustworthiness succeed in affecting the processing of persuasive messages. While primes remained unrecognized by participants, they were shown to be very powerful in manipulating not only how readers perceive the peer, but also how careful they treat the message. These findings do not only add to theories of subliminal priming, but also emphasize the susceptibility of readers to notions of trustworthiness from the environment. Without even knowing about being influenced, readers base their product attitudes on these notions of trustworthiness. Protection mechanisms like counter-arguing are not activated unless environmental hints, like the prime faces used in this study, incline them to do so.

It is likely that other aspects evoking distrust have similar effects. For instance real life aspects like untrustworthy pictures or incongruent text elements on the peer recommendation's website might have similar effects as those shown by prime faces, as they all initiate thinking in terms of distrust. Results of these studies suggest that subtle cues of untrustworthiness should not be overlooked, even if they not necessarily lead to less favorable product attitudes. Findings of this research's first study reveal that even when the product attitudes are not affected, resistance to the message can arise when the writer carries signs of untrustworthiness. Results of the second study suggest that when messages are ambiguous, readers are tempted to even base their product attitudes to some part on the trustworthiness of the message writer. Now that it is known that readers are susceptible to subtle trust and

distrust cues, further research is needed which investigates ways to protect oneself from these influences.

Organizations on the other hand might want to know how to use reader's susceptibility to signs of trustworthiness for persuasiveness of their messages. In this research it is found that a combination of ambiguous message content and signs of untrustworthiness, even if not consciously noticed, is particularly disadvantageous for persuasiveness of messages, because readers then treat the message in a more complex way. If signs of untrustworthiness are present, it is not advisable to offer information which is particularly relevant to the reader. As the signs of untrustworthiness induce the reader to turn the information into negative, relevant information is more easily rejected because readers are then reminded about the negative outcomes that could happen by use of the presented object. Signs of untrustworthiness further affect the attitude toward the source of the message. Hence if an organization uses symbols, pictures or other content which might induce distrust on its website, the attitude toward the organization itself might be impaired. It is therefore recommended to check for distrust inducing signs very carefully, and if those cannot be removed to adjust message content to them by being unambiguous and not too relevant for the readers goals.

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