



The persuasiveness of message frames.

Under what conditions of issue Involvement, processing manner, mood and need for cognition are people more persuaded by message frames?

Student: Diana van Bommel

Supervisors: Lila San Roque and Anneke de Graaf

E-mail: d.vanbommel@student.ru.nl

Phone number: 06-54930476

Student number: s4373308

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Abstract

This study addresses the field of persuasive communication. A commonly used technique within persuasive communication is message *framing*. Although several attempts have been made to determine whether *gain* or *loss* frames are more persuasive, previous studies have not yet reached comprehensive, empirically tested conclusions concerning under what conditions which frame is more persuasive. Therefore the aim of this study is to explore factors that underlie framing effects. Message persuasiveness can be explained via the depth to what extent information is processed. The level of involvement regarding an issue influences *processing manner*. Moreover, *mood* and *need for cognition* are also important factors.

The current study presents an experiment in which both issue involvement and frame are manipulated. After presenting a stimulus, measurements were done on processing manner, intention and attitude (to measure the persuasiveness of the frame), mood and need for cognition. The results obtained in this study suggest that both gain and loss frames could evoke systematic processing. This contrasts with previous studies, which generally accept that loss frames stimulate systematic processing. Two other unexpected findings of this study are that low involvement leads to systematic processing, and that systematic processing shows signs of a better persuasiveness in terms of attitude when a gain frame is used. Moreover people are more strongly persuaded in terms of intention when gain frames are used, and, when they process information heuristically, regardless of their level of involvement. Thus, contrasting results were obtained. As a result, it remains relevant to explore the conditions under which framing effects appear.

Introduction

Ever wondered why you decided to buy that product you just saw an advertisement of? Or why you are so keen on applying sunscreen? Perhaps your decision was influenced by the way you were informed about that particular topic. Message designers within the field of marketing or health communication try their best to convince you to buy that product or apply sunscreen. They use persuasive communication.

Persuasive communication aims at persuading people to accept a certain opinion and/or make a change in behaviour. Examples of persuasive communication include direct mail, brochures, commercials or advertisements (Hoeken, Hornikx & Hustinx, 2012). In fact, persuasive communication is present on a daily basis.

A commonly used technique within persuasive communication is message *framing*. This means that important parts of the message are either emphasized or suppressed to ensure that certain aspects, which are important to the message designer, are highlighted (Entman, 1993).

Within framing a distinction can be made between *gain framing* and *loss framing*. Gain frames emphasize the positive result that receivers obtain when they adopt the opinion or change in behaviour as desired by the message designer. The term *loss framing* is used when negative aspects are emphasized when receivers would *not* adopt the opinion or behaviour (Rothman & Salovey, 1997). An example of a *gain frame* could be “If you wear sunscreen, you will maintain a healthier and beautiful skin”. An example of a *loss frame* could be “If you *do not* apply sunscreen, you will get sunburn”.

Gain and loss framed messages differ in their level of persuasiveness. According to research by Tversky and Kahneman (1979), this is explained by the fact that people respond differently to emphasizing gains than losses when being told to adopt certain behaviour. The decision whether or not to adopt the requested opinion or behaviour is therefore dependent on the frame receivers were exposed to (Tversky & Kahneman, 1981).

Thus, message designers are able to convince their receivers to adopt certain opinions or behaviours by applying framing. In fact, message designers apply this technique on a large scale on a daily basis. The way people process information helps understanding framing effects. Two types of processing are possible being either systematic (i.e., an in depth

processing, critical and thorough view towards given arguments) or heuristic (i.e., not paying attention to given arguments but to heuristic cues such as the use of experts). Processing manner itself is also affected by certain influencers such as issue involvement (i.e., the involvement towards certain issues), mood (i.e., the current state of feeling) and need for cognition (i.e., enjoy engaging in deep thought or not). In an attempt to better understand how and why the influence of framing is present, this study further explores the processes that underlie these 'framing effects'.

Theoretical background

Framing effects

How people respond to framed messages has been a topic of research for over twenty years. The literature study by Covey (2014) shows that the intention to engage in certain behaviour is generally higher when loss framed messages are used rather than gain framed messages. However, the persuasiveness of frames depends on several underlying factors such as individual differences among receivers. It is therefore impossible to state that loss frames are always more persuasive than gain frames. Which factors play an important role is further elaborated upon in this section. Based upon Covey's literature study the following factors are included: approach-avoidance motivation, regulatory focus, self-efficacy, depth of processing, issue involvement mood, and need for cognition.

Conclusive underlying factors of framing effects

The factor *approach-avoidance motivation* (i.e., taking action to avoid something unpleasant as opposed to seeking that what is causing happiness) obtains fairly consistent conclusions. Gain frames show a higher persuasiveness when people were 'approach motivated' and loss frames when people were 'avoidance motivated'.

The factor *regulatory focus* involves a promotion and prevention focus (i.e., being responsive to rewards as opposed to being responsive to punishment cues or security goals). Generally gain frames were more persuasive when a promotion focus was used and loss frames when a prevention focus was used.

Consistent findings were also present regarding the factor *self-efficacy beliefs* (i.e., whether one believes in their own capability of adopting the desired behaviour). Gain frames

were more persuasive for people with low self-efficacy beliefs and loss frames for people with high self-efficacy beliefs.

The three factors above show clear results of framing effects under the condition that certain requirements of the factors are met (e.g., if a promotion focus was used, a gain frame was more persuasive). However, the persuasive effect of gain frames still cannot be generalised.

Underlying factors of framing effects which are not conclusive yet

Less clear results of framing effects are present for other factors such as processing manner, issue involvement, mood and need for cognition. In particular, processing manner catches one's eye as research fails to produce consistent explanations when exploring framing effects. Processing manner is assumed to help to explain framing effects, and in order to understand how processing manner contributes in this matter, the concept is further elaborated upon below.

What is processing manner?

Two 'Processing Manner models' exist that suggest that people process information differently under different circumstances. Therefore the framing effect (i.e., a gain frame or loss frame being more persuasive in terms of engaging in the advocated behaviour) is different depending on how the subject processed the presented message (Eagly & Chaiken, 1993).

According to the first model, the Heuristic-Systematic Model (HSM) by Chaiken (1980), people process information either heuristically or systematically. Heuristic processing of information implies that one pays attention to simple, easy understandable cues in the text that enables one to determine whether they agree with the view or message as posed. A possible cue is the credibility cue: 'if an expert says it is good, it must be good'. Systematic processing occurs when one pays careful attention to the posed arguments to ensure a correct attitude regarding the message. One is mainly focused on the argument-strength and has a critical, rational and careful processing manner.

The second model, the Elaboration Likelihood Model (ELM) by Petty and Cacioppo (1986) is slightly different than the HSM model. This model refers to the two processing manners as central and peripheral route. The central route is similar to systematic processing, but the peripheral route includes more cues than in heuristic processing, such as being receptive to other non-argumentative traits such as music or colours.

A person is not either processing information systematically or heuristically. It is however the case that one processing manner is more dominant under different circumstances causing different framing effects to occur.

The relation between processing manner and framing effects

Maheswaran and Meyers-Levy (1990) pose that loss frames are more persuasive under the condition that people process the message systematically. Rothman, Martino, Bedell, Detweiler and Salovey (1999) support this and pose that when systematic processing is applicable, loss frames are more persuasive.

The type of behaviour that is advocated moderates their statement. Prevention behaviour causes careful attention to the message, which results in loss framed message to be more persuasive. The loss frame persuasive advantage is explained given that negative information is weighted more heavily than positive information through careful attention to the posed information. A gain framed message is more persuasive when people process the information more heuristically since more attention is paid to heuristic cues such as positive words.

In contrast to the results of 1990, Meyers-Levy and Maheswaran pose in 2004 that gain frames are more persuasive in general since people generally have a dominant preference to rely on heuristic information. Heuristic processing means that one hardly puts effort in processing the information in depth, which leads to a positive evaluation of the message. On the other hand, depth of processing must not be too minimal as that results in a lack of adequate processing to have any effect at all.

Instead of processing manner inducing framing effects, framing could also stimulate processing manner. Kuvaas and Selart (2004) conclude that loss framed messages stimulate systematic processing better than gain framed messages. Kuvaas and Selart explain their conclusion by referring to affect-cognition models that propose that negative affect informs about problematic conditions. To solve these perceived problems one processes information carefully and thoroughly. Positive affect on the other hand indicates that systematic processing is not necessary since there is no problem to be solved.

This view is supported by O'Keefe and Jensen (2008) who share a common finding in their literature review that loss frames induce more anxiety which evokes a greater message processing, in other words, systematic processing.

Influential variables of processing manner

It remains impossible to determine the exact relationship between processing manner and framing effects. Therefore it is meaningful to explore variables that influence processing manner to better understand how and when framing effects occur.

The type of processing manner is influenced by other variables. Broadly, a person must be both motivated and capable of processing information in order to have any processing manner at all. Motivation depends on personal traits of the receiver such as mood, need for cognition and issue involvement, that is, the relation between the recipient and the issue (Hoeken et al., 2012). Capability depends on pre-existing knowledge and on distraction. Although their influence is acknowledged, this study focuses only on the three motivational influencers as they are considered stronger influencers.

Mood

Mood is an important influencer for processing manner since it is easier to convince someone when being in a positive mood. "Mood refers to low intensity, relatively enduring states with no salient antecedents or consequences and little cognitive content (such as feeling good or feeling bad)" (Kuvaas & Kaufmann, 2004). According to Hullett (2005) a negative mood causes a more critical view towards the given arguments hence a systematic processing is present. This is supported by earlier research by Mittal and Ross (1998) who state that people in a negative mood, process information systematically and when being in a positive mood they process information heuristically. The latter are less susceptible to framing effects. This might be explained by the fact that heuristic processing requires less attention to the arguments given and a frame is reflected in words thus an argument. If one is not paying attention to the argument or to the message, one cannot be influenced by it.

Regarding the framing effects of mood, Wegener, Petty and Klein (1994) found that positive moods lead to more persuasive effects of gain framed than loss framed messages. This is supported by Yan, Dillard and Shen (2010) who conclude that a positive mood leads to gain frames being more persuasive. A negative mood leads to a loss frame advantage in terms of persuasiveness.

Need for cognition

Need for cognition is explained by Cacioppo and Petty (1982) as the individual's attempt to enjoy and engage in thought. Having a high need for cognition means one enjoys intellectual

challenges and prefers complex tasks. Carefully considering arguments is considered as a complex task, which implies that people with a high need for cognition will be motivated to carefully consider arguments. Information is processed systematically (Petty & Cacioppo, 1986).

Regarding framing effects of need for cognition, Simon, Fagley and Halleran (2004) pose that the level of need for cognition moderates framing effects depending on the level of processing. However, no clear directions of effects are present.

Issue Involvement

Issue involvement is the level of involvement regarding the relevant issue. It means that some issues or topics are more important to people than others. For instance when one buys a house, the issue in this case, one is more keen on establishing the correct attitude than when one buys toothpaste. When there is more at stake or when the decision is more difficult to make, one is likely to have high involvement. When the decision does not have much impact on the decision maker, involvement is likely to be low (Chaiken, Liberman & Eagly, 1989).

Chaiken et al. (1989) argue that when one is highly involved with the issue as presented in the message, one will be motivated to pay more attention to the arguments given, leading to systematic processing. When issue involvement is low, less attention is paid to the argument quality and heuristic processing is used. Issue involvement has been assumed to have a strong influence on processing manner, but little research has been devoted to directly testing this relationship

Possible direct effects of issue involvement on framing persuasiveness

The previous section indicated that different levels of issue involvement could lead to different processing manners. Consequently causing different framing effects. That is, issue involvement seems to have an indirect effect on framing outcomes. However several studies also support a possible direct effect of issue involvement in the persuasive advantages of gain and loss framing.

Maheswaran and Meyers-Levy (1990) presume that the level of involvement plays an important role in the persuasiveness of either loss or gain frames messages. In their study regarding the effects of framing and involvement regarding a health advocacy, loss frames were more effective than gain frames when issue involvement was high. The reverse was true

when issue involvement was low. The low involved subjects mainly picked up on the positive nature of the message rather than the quality of its arguments. This is explained by the negativity bias which states that negative information is usually more powerful than positive information. As a result a loss frame is expected to be more persuasive than a gain frame when message recipients are highly involved.

This view is supported by the figure-ground hypothesis that states that negative information is regarded salient in a positive world (Pechman, 1992; from Martin & Marshall, 1997). Martin and Marshall (1997) manipulated both issue involvement and frame in cell phone advertisements to measure the persuasiveness by means of a favourable intention and attitude. They conclude that negative frames, hence loss frames, lead to more favourable intentions and attitude for high involvement subjects. A gain frame leads to favourable attitude for low involvement subjects. However, they point out the importance of testing these results under different circumstances and with different issues as it has been an understudied topic.

Relevance and research questions

Given the research devoted to processing manner and variables that lead to possible framing effects, it remains unclear how message designers could best frame message to persuade their receivers. Contrasting results keep on appearing whether gain or loss frames are more persuasive generally. The suggestion has been made that individual factors that underlie framing effects play an important role. So important that it seems impossible to state that loss frame are always more persuasive. Processing manner is assumed to help understand framing effects. However, processing manner itself is also influenced by several factors such as issue involvement.

It remains unclear whether processing manner explains the apparent indirect effect of issue involvement on framing outcomes or whether this effect is direct. Moreover the effect of issue involvement on processing manner has rarely been studied directly, but is only theoretically assumed. Furthermore, the relation between processing manner and the persuasiveness of the framed message is studied in both directions, but rarely in relation to issue involvement. To address this gap, the following main research question is posed:

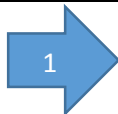
Under what conditions of issue involvement and processing manner are people more persuaded by gain or loss framed messages?

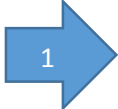
How issue involvement, processing manner and gain or loss framed messages are connected in terms of the persuasiveness of messages is further elaborated upon below. Along with the theoretic elaboration, the relevance of the research questions of the current study becomes clear as well.

The relationship between issue involvement and processing manner has been assumed but rarely empirically explored. The assumption exists that high involvement leads to systematic processing and low involvement leads to heuristic processing. Moreover, a gain framed message is expected to lead to systematic processing and a loss framed message leads to heuristic processing. Both assumptions of effects on processing manner are presented in table 1. Consequently the first research question is formulated as follows:

How do issue involvement and frame affect processing manner?

Table 1: The expected direct effects of issue involvement and frame on processing manner.

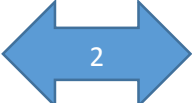
| Issue involvement | | Processing manner |
|-------------------|---|-----------------------|
| High involvement |  | Systematic processing |
| Low involvement | | Heuristic processing |

| Frame | | Processing manner |
|------------|---|-----------------------|
| Gain frame |  | Systematic processing |
| Loss frame | | Heuristic processing |

In addition, the expectation is that processing manner explains the effect of issue involvement on message persuasiveness therefore processing manner is also taken into consideration. Heuristic processing most likely leads to a higher persuasiveness when a gain framed message is presented. Whereas systematic processing most likely leads to a higher persuasiveness when a loss framed message is used. This theoretical assumption is presented in table 2. Although previous studies suggest a causal relationship, the current study focuses on the relation between processing manner and persuasiveness of a gain or loss frame instead. Processing manner will be measured, not manipulated. This results in the following research question.

What is the relation between processing manner and the persuasiveness of gain and loss framed messages?


Table 2: The expected relation between processing manner and message persuasiveness.

| Processing manner | | Persuasive advantage |
|-----------------------|---|----------------------|
| Systematic processing |  | Loss frame |
| Heuristic processing | | Gain frame |

When the direct effects of issue involvement and frame on processing manner are detected and the relation between processing manner and message persuasiveness is established, it can be compared to the direct effect of issue involvement on message persuasiveness. This is relevant since suggestions are made that high involvement leads to a higher persuasiveness of loss framed messages. Low involvement leads to a higher persuasiveness of gain framed messages. Although previous studies do not agree on the higher persuasiveness of frames in general, the direct effect of frame on persuasiveness is taken into consideration nonetheless. All assumptions are presented in table 3. This leads to the following research question:

How do issue involvement and frame affect message persuasiveness?

Table 3: The expected direct effects of issue involvement and frame on the message persuasiveness.

| Issue involvement | Processing manner | Persuasive advantage |
|-------------------|--|----------------------|
| High involvement |  | Loss frame |
| Low involvement | | Gain frame |

| Frame | Persuasive advantage |
|------------|----------------------|
| Gain frame | Less persuasive |
| Loss frame | More persuasive |

Lastly, the influence of mood and need for cognition is acknowledged, but these factors are examined as potential moderators rather than included as the main focus of this research. They will not be manipulated, but taken into consideration as control variables to detect whether any eventual effect might be present due to their influence. Since a natural involvement to the issue of this study might be present (in this particular case, whether one has a sedentary job) this is considered as a control variable as well. This leads to the following research question that is incorporated for each question above:

How do the individual characteristics of mood, need for cognition and personal relevance (having a sedentary job) affect the above?

Method

Research design

The experimental design developed to answer the research questions, was a 2x2 between subjects design with the variables Issue Involvement and Frame. Each of these variables had two levels being “high-low” for Issue Involvement and “gain-loss” for Frame. The four levels formed the basis of the stimuli in this research, which was a text concerning a health and wellbeing issue (see below). Every stimulus contained one level of Issue Involvement and one type of Frame. That led to four conditions hence four versions of the stimulus in total.

Every subject was randomly assigned to one of the stimuli. No control group was tested, but control questions were posed to verify the manipulated variables. After being exposed to the stimulus, some measurement questions were asked to detect the Processing Manner and Message Persuasiveness, that is, Intention and Attitude. Moreover, control questions were present regarding Mood and Need for Cognition since these two variables are assumed to affect Message Persuasiveness as well as suggested in the literature overview. It was beyond the scope of this research to manipulate Mood and Need for Cognition as well to detect their specific effects on Processing Manner and Message Persuasiveness. Before executing the actual experiment, a pre-test was done. The results of the pre-tests are discussed further on in this chapter.

Material

A summary of a research obtained from a magazine regarding science and technology (Kijk, 2016) formed the basis of the stimuli used in this experiment. Much of previous literature on gain and loss frame effects concerned health issues. To be able to compare the results of this study to previous literature, a health issue was chosen as a topic for the experiment. The stimuli mentioned the negative impact on one’s health when sitting down too much per day. The stimulus mentioned a research among 28 European countries and drew conclusions concerning the average amount of hours Europeans sit down on a daily basis.

The summary was shortened and altered which led to four different stimuli. The differences were based upon the required manipulations of Issue Involvement and Frame and are further elaborated upon, later on in this section. Due to the changes made, the stimuli did

not represent a factual research anymore, therefore pre-existing knowledge regarding the issue was brought to a minimum.

Another prerequisite for the stimulus was that it had to be a neutral topic that did not involve any prejudicial issues or constraints regarding gender or religion. The chosen topic was neutral. In order to prevent subjects from being biased towards giving certain kinds of responses subjects were not informed about the actual goal of the research (e.g., because they know the study is about whether gain or loss frames are more persuasive, and they might have pre-conceived ideas about this). Instead, the goal was kept more abstract and vague. This prevented subjects to give desirable rather than honest answers. An introduction was given, before the start of the experiment. It mentioned the following: the goal of this research is to discover how people interpret information. The exact factors under study are not explicitly introduced on purpose in order to obtain a more objective result.

The independent variables Issue Involvement and Frame had to be manipulated so that four different conditions were created. As a result both levels of both variables were present in the stimuli. Firstly Issue Involvement was manipulated by changing the degree of personal relevance. According to the study by Meyers-Levy and Maheswaran (2004) Issue Involvement can be successfully manipulated by a difference in degree of personal relevance to a topic. A high personal relevance indicated high Issue Involvement and a low personal relevance low Issue Involvement.

Accordingly, personal relevance was manipulated by proposing information in the stimulus that was either close to the subjects or further away. The original stimulus stated information about the Dutch. This was regarded as appropriate for a high involvement condition since the experiment was conducted in Dutch among Dutch people. To manipulate a low involvement condition, a country was chosen which was not a neighbouring country or culturally similar to the Netherlands. The choice was made to include Hungary in the text. Consequently in two conditions the Dutch were the ones that sat down the least and in the other two conditions the Hungarians sat down the most. The latter was conducive to low involvement as the personal relevance was lower.

Frame with the levels 'gain and loss' was manipulated by presenting a stimulus that contains either a gain framed or a loss framed message. In other words; in two stimuli the positive consequences of engaging in certain behaviour (in this case, moving more and sitting down less) were highlighted and in the other stimuli the *negative* consequences of *not*

engaging in this behaviour were highlighted. The Frame manipulation was visible in the following statements (among others): 'if we move more and sit down less, we increase the chance of a more satisfying life' (gain frame) and 'if we do not move more and sit down less, we increase the chance of a less satisfying life' (loss frame). All other aspects of the stimulus were kept the same, except for the adjustments made which were related to the manipulations. The rewritten summary of the stimulus and a full overview of the manipulations made per stimulus, is to be found in appendix 1.

Manipulation checks & pre-test

By applying the revised personal involvement scale by Zaichkowsky (1994) the manipulation of Issue Involvement was measured. After being exposed to stimulus, subjects were exposed to eight items of the personal involvement scale. This included answer categories on a 7-point semantic differential scale such as unimportant-important and irrelevant-relevant. In this experiment the internal consistency was good with a cronbach's alpha of $\alpha = .902$.

The positivity or negativity of the manipulated Frame was measured by asking two questions. First, whether the subjects believed that the stimulus evoked engaging in the advocated behaviour to be positive or negative. In this matter the advocated behaviour was adjusted accordingly to the type of frame that was applied in the stimulus. Thus, subjects who were in the gain frame condition had a gain framed statement in their manipulation check question being: 'If we move more and sit down less, we increase the chance of a more satisfying life'. The subjects in the loss frame condition had a loss framed statement: 'If we do not move more and sit down less, we increase the chance of a less satisfying life'.

Secondly, the extent to which the subjects stood to gain and to lose important benefits by engaging in the advocated behaviour was asked (Maheswaran & Meyers-Levy, 1990). The answers were given on a 7-point semantic differential scale. In this experiment the internal consistency between the two questions was good with a cronbach's alpha $\alpha = .711$ for gain Frame and almost good with $\alpha = .687$ for loss Frame. In addition, the subjects had to indicate whether they believed the text highlighted advantages, disadvantages or they could choose the option 'I do not recall'. This question served as an extra control question thought to be relevant, to verify the manipulation check of the frame used.

A pre-test was done in order to determine whether the experiment was designed appropriately. The subjects of the pre-test did not participate in the actual experiment. Nine subjects participated in the pre-test. The entire list of questions included in the experiment

was tested on structure, ease of understanding and possible flaws of the entire experiment. The original list of questions that was used for the pre-test is to be found in appendix 2. The manner of conducting the pre-test and the arguments for the adjustments that were made accordingly can be found in appendix 3.

To measure whether the manipulation of Frame was successful in the experiment a *t*-test was done. To do this *t*-test a new variable was created out of the gain and loss Frame check question called Frame Check. This measured whether subjects indicated the loss Frame as being negative and the gain Frame as being positive on a 7-point Likert scale with 1= not correctly recalled frame, 7 = yes correctly recalled frame. An independent *t*-test showed no significant difference between Frame and Frame Check ($t(127) = .85, p = .398$). This implies that all subjects indicated the negativity or positivity of the framed statement correctly. As a matter of fact all subjects were quite convinced when looking at the mean and standard deviation. Subjects in a loss frame condition scored $M = 5.25, SD = 1.51$ and subjects in a gain frame condition scored $M = 5.03, SD = 1.43$.

Alongside the adjusted gain and loss framed statements that checked whether the manipulation was successful, another question was posed: 'The text highlighted either: disadvantages, advantages, I do not recall'. Although a Chi-square test showed a marginally significant relationship between Frame and Frame Check ($\chi^2(2) = 5.57, p = .062$), it is noticeable that a slight majority of the subjects in the loss framed conditions mentioned the presence of disadvantages (78.1%) rather than advantages being present (12.5%). The subjects in the gain framed conditions also noticed more disadvantages (64.6%) than advantages (29.2%).

To measure whether the manipulation of Issue Involvement was successful a *t*-test was done. Issue Involvement is manipulated in the stimuli, but also measured afterwards. To avoid misunderstandings, the manipulated involvement is referred to as Issue Involvement and the measured involvement as Involvement. An independent *t*-test showed no significant difference between Issue Involvement and Involvement ($t(127) = 1.18, p = .239$). However the subjects in the high involvement condition did show a tendency to have a higher score on Involvement ($M = 5.16, SD = 1.04$) than subjects in the low issue involvement condition ($M = 4.92, SD = 1.22$). This means that the manipulation of Involvement was not completely successful. Nonetheless further analyses are done.

Lastly a one way analysis of variance between the factor Sedentary job and Issue Involvement was done to detect whether the level of Involvement was moderated by having a sedentary job or not. Sedentary job was included since that might indicate a higher involvement since the personal relevance of the topic might be higher for those with sedentary jobs. This showed no significant effect on Involvement ($F(1,127) < 1$). This means that sedentary job did not influence the level of Involvement.

Subjects

For each condition subjects were recruited via Facebook posts and personal email invitations from the researcher. In total 190 subjects started participation in the experiment. Of those, 61 subjects decided to stop during the experiment or did not answer all questions, and are therefore left out of this study. In total 129 subjects answered all questions of the experiment and were included. Subjects were randomly assigned to a condition being high-gain (34 subjects), high-loss (31 subjects), low-gain (31 subjects) or low-loss (33 subjects). Since some subjects did not complete the experiment, the subjects were not completely equally divided over the conditions.

The subjects that took part in this study were aged between 16 and 63, with an average of 29 years ($SD = 9$). In total 10.9 % had finished a MBO education, 41.1 % HBO, 41.1 % had University degree and 7 % had completed another level of education. In total 38.8 % of the subjects was male and 61.2 % was female. 71.3 % of all subjects had a sedentary job (e.g., such as working in an office) and 8.5 % had stand-sit tables at work.

- A Chi-square test showed no significant relationship between all conditions (high-low involvement and gain-loss frame) and Gender ($\chi^2(3) = .33, p = .954$).
- A Chi-square test showed no significant relationship between all conditions (high-low involvement and gain-loss frame) and Education ($\chi^2(3) = 11.10, p = .269$).
- A two-way analysis of variance with Issue Involvement and Frame as factors showed no main effect of Frame on Age ($F(1, 125) < 1$). Issue Involvement was also found not to have a main effect on Age ($F(1, 124) = 1.95, p = .165$). The interaction effect between Issue Involvement and Frame was not statistically significant either ($F(1, 125) < 1$).

- A Chi-square test showed no significant relationship between all conditions (high-low involvement and gain-loss frame) and Sedentary Job ($\chi^2 (3) = 2.59, p = .465$).
- A Chi-square test showed a significant relationship between all conditions (high-low involvement and gain-loss frame) and Stand-Sit tables ($\chi^2 (3) = 13.31, p < .05$). This can be explained by the fact that 91.5 % of all subjects did not have these types of tables at work. In other words not enough subjects had this type of tables at work to get a balanced distribution across all conditions. Subjects in the gain frame and low involvement condition most used this type of table as shown in table 4.

Thus in general the subjects were equally distributed across all conditions. The fact that this is not true for the variable Stand-Sit table is being disregarded since this control question was merely questioned to detect any bias towards the answers due to earlier experiences with the type of tables. A full overview of the distribution of control variables per condition is presented in table 4.

Table 4: Overview of frequencies in percentages of control variables (gender, age, education, sedentary job, sitting-standing tables) divided per condition (high-gain), (high-loss), (low-gain) and (low-loss).

| Variable | High-Gain | High-Loss | Low-Gain | Low-Loss |
|--------------------------|---------------|---------------|---------------|---------------|
| | <i>n</i> = 34 | <i>n</i> = 31 | <i>n</i> = 31 | <i>n</i> = 33 |
| Gender | | | | |
| Man % (n/N) | 38.2 % (13) | 38.7 % (12) | 35.5 % (11) | 42.4 % (14) |
| Woman% (n/N) | 61.8 % (21) | 61.3 % (19) | 64.5 % (20) | 57.6 % (19) |
| Age in years (SD) | 27 (8) | 28 (9) | 29 (8) | 30 (10) |
| Education | | | | |
| MBO % (n/N) | 11.8 % (4) | 12.9 % (4) | 12.9 % (4) | 6.1 % (2) |
| HBO % (n/N) | 41.2 % (14) | 32.3 % (10) | 51.6 % (16) | 39.4 % (13) |
| WO % (n/N) | 41.2% (14) | 38.7 % (12) | 29 % (9) | 54.5 % (18) |
| Other % (n/N) | 5.9 % (2) | 16.1 % (5) | 6.5 % (2) | 0 % (0) |
| Sedentary job | | | | |
| Yes % (n/N) | 70.6 % (24) | 61.3 % (19) | 74.2 % (23) | 78.8 % (26) |
| No % (n/N) | 29.4 % (10) | 38.7 % (12) | 25.8 % (8) | 21.2 % (7) |
| Stand-Sit tables | | | | |
| Yes % (n/N) | 8.8 % (3) | 0 % (0) | 16.1 % (5) | 9.1 % (3) |
| No % (n/N) | 82.8 % (31) | 100 % (31) | 83.8 % (26) | 90.9 % (30) |

Instruments

- Processing manner was measured in this study by the thought listing and recall method as applied by the research of Maheswaran and Meyers-Levy (1990), with some personally made additions regarding measurement. In their study, subjects first had to complete a cognitive response task that asked them to list all the thoughts that had occurred to them while reading the stimulus. The recall task requested that they had to write down as much of the advocated statement as they could. Message related thoughts and recall served as an indication for systematic processing whereas simple, non-related thoughts were an indication for heuristic processing. Two independent judges coded all thoughts into: total number of thoughts, positive thoughts, negative

thoughts, message related-thoughts and simple evaluative thoughts. Further information on the method lacks presence. Therefore their method merely served as a basic guideline for measurement in this study, but a different twist was given.

This was done by asking the same questions as Maheswaran and Meyers-Levy (1990) being: please indicate all thoughts that occurred to you while reading the text and please write down everything you recall from the main message of the text. When analysing all the thoughts listed, it appeared that all thoughts could be categorised into six categories being: i) Agreeing with the main message, ii) Surprised about the main message, iii) Reflective towards own behaviour, iv) Critical towards main message, v) No interest in main message and vi) Repeating information. Examples of thoughts that fitted into each category can be found in table 5. These thoughts are translated to English as the experiment was conducted in Dutch.

The categories differ from the method by Maheswaran and Meyers-Levy as these were thought to better fit the thoughts of subjects within this experiment. To measure it afterwards, at first new variables were made for each category. This enabled creating an overview per subject whether or not each of the six 'thought-categories' was indicated. Secondly the presence or absence of each thought category was manually indicated per subject. Subsequently, the total number of critical thoughts and total number of thoughts were counted. These two types of thoughts were in line with Maheswaran and Meyers-Levy (1990) and served as indications for systematic processing. Therefore they were included in this research as well and the other categories were not.

A similar measurement approach was used for recalling the main message. When analysing the thoughts it appeared the answers could be categorised as wrong, partly complete or fully complete. Complete conclusions were present when the frame statement was repeated, that is, it included a part about 'moving more or sitting down less' and it included a part about 'being happier in life or being more satisfied in life'. If only one of the two parts was mentioned, the thought was considered as partly complete. If no part was mentioned but for instance 'results of research about sitting down behaviour', then the thought was listed as wrong. This measurement was developed by the researcher of this study.

Table 5: Examples of thoughts indicated by subjects per category, presented in Dutch and English.

| Category | English translation of thought | Original thought, in Dutch. |
|--|---|---|
| i 'Agreeing with the main message' | Completely true and I agree. | Helemaal waar en eens. |
| ii 'Surprised about the main message' | Surprising | Verrassend |
| iii 'Reflective towards own behaviour' | Recognizable, I sit down more than 7.5 hours per day as well. | Herkenbaar, ik zit zelf ook langer dan 7.5 uur per dag. |
| iv 'Critical towards main message' | Do we really sit down that much? I can hardly imagine that. | Zitten wij echt zoveel? Kan ik me bijna niet voorstellen. |
| v 'No interest in main message' | What a research. If I had only lived in Spain. | Wat een onderzoek. Woonde ik maar in Spanje. |
| vi 'Repeating information' | Research in Europe. Hungarians sit down the most. | Onderzoek in Europa. Hongaren zitten het langst. |

Alongside the method as applied by Maheswaran and Meyers-Levy (1990), this study also included the recall method that was used by Kuvaas and Kaufmann (2004). By applying both methods, a more complete picture of Processing Manner appears. To prevent misleading interpretations, the method by Maheswaran and Meyers-Levy was being referred to as Thought Listing and the method by Kuvaas and Kaufmann as Recall.

Kuvaas and Kaufmann (2004) included open-end questions regarding pieces of factual information such as numbers and comparisons that were included in the text. Afterwards each answer was scored on a scale from 0 to 10 on correctness. However that method still has certain deficiencies regarding validity. The interpretation of the level or correctness of the researchers (whether or not a question is answered correctly enough or not) can be biased. This might lead to less objective results. Since Kuvaas and Kaufmann used open end questions an answer should have either been correct or not. It is unknown where they drew the line of considering an answer correct 6 out of 10 points. Therefore a different measurement method was applied in the

current research. To further diminish the validity issue of Kuvaas and Kaufmann, multiple-choice questions were posed. For instance 'How many European countries were investigated in this research? (18-24-28-I do not recall)' and 'What is the highest percentage of sitting down hours noted in this research? (18-16-22-I do not recall)'. Subject either answered the questions correctly or not, no scale of correctness was included.

Based upon the total number of correct answers to the Recall method, indications for heuristic or systematic processing could be given. If the subjects answered three or four of the questions correctly, this indicated systematic processing and two or less correctly answered questions indicated heuristic processing.

- Message Persuasiveness was measured by asking subjects about their intentions to engage in- and their attitude towards the advocated behaviour. This method of measurement concluded that both intention and attitude are predictors for specific behaviour (Fishbein & Ajzen, 2010). Since it is beyond the scope of this research to measure actual behaviour, intention and attitude were measured instead.

Attitude was measured by five items on a 7-point semantic differential scale with answer categories such as 'good-bad' and 'interesting-uninteresting' based upon Fishbein and Ajzen (2010). The cronbach's alpha was good with $\alpha = .791$.

Intention was measured by four statements regarding the advocated behaviour on a 7-point semantic differential with answer categories a such as 'I plan to move more and sit down less in the next year: definitely yes-definitely no' and 'I am willing to move more and sit down less in the next year: not true-true' based upon Fishbein and Ajzen (2010). The cronbach's alpha was very good with $\alpha = .899$.

- At this point in the experiment, the subjects were informed that the upcoming questions were no longer related to the text, but regarded some personal traits. The first control variable, Mood, was measured by applying the Mood Short Form scale of Peterson and Sauber (1983). Questions that were asked for example were: 'Currently I am in a good mood' and 'At this moment I feel edgy or irritable'. This has been evaluated by a 5-point Likert scale with 1 = strongly agree 5 = strongly disagree.

The cronbach's alpha was $\alpha = .622$ but if the first item 'After reading the stimulus I felt cheerful' was removed the alpha was $\alpha = .696$. Since that alpha is almost good, the first item of mood was left out in this study. Mood was now only measured

by the items 'For some reason I do not feel comfortable right now', 'At this moment I feel slightly irritated' and 'At this moment I am in a good mood'. A possible explanation for the initial low reliability is that the first item was the only item referring to mood directly related to reading the stimulus. The other items referred to the current mood in general.

- The control variable Need for Cognition was measured by five items of the short form Need for Cognition Scale of Cacioppo, Petty, and Kao (1984). Originally this scale contained 18 items, however only 5 items were incorporated in this research. The five items that were judged to be the most concrete and the briefest were chosen. This was done due to the following reasons. Firstly, using the full 18-item scale would considerably lengthen the experiment, which could lead to fatigue among subjects. Indeed, the pre-test indicated a strong demotivation towards filling out 18 items among subjects. A shorter form of the scale avoided this problem and was thought to be acceptable. The purpose of incorporating Need for Cognition was not to be a main concept in this study, but merely to explore its possible influence on the results of the central research question.

All five statements were answered on a 5 point Likert scale in which 1 = strongly agree and 5 = strongly disagree. Examples were 'thinking is not my idea of fun' and 'I prefer life to be filled with puzzles I must solve'. The Cronbach's alpha was not reliable enough with $\alpha = .614$. However since an unreliable scale was used due to the selection of 5 items, the Cronbach's alpha level was not as low as expected. As the purpose of this question was merely to give indications towards the possible influence of Need for Cognition, all 5 items were therefore included in the Need For Cognition variable.

- Lastly, other control questions were asked regarding demographics such as gender, age, level of education, type of occupation (sedentary job or not) and whether subjects have stand-sit tables at work or not. The latter two questions were included since the stimulus related to that particular topic. Sedentary job was considered a possible influencer of the level of Issue Involvement. That is, because if the topic of the stimulus it might be possible that a natural high involvement is present for subjects who have a sedentary job, regardless the Issue Involvement condition subjects were in. It was therefore taken into consideration in the results section as well. Stand-Sit tables was

not included as a possible influencer since only 8.5 % of the subjects had these type of tables at work.

- The officially used introduction, an example of each stimulus and all questions included in the experiment can be found in Dutch in appendix 4. For an English translation see appendix 5.

Procedure

The experiment was conducted online using Qualtrics, an online survey tool. Before any questions were presented, a brief introduction text was presented in a clear way in an effort to manage expectations. The introduction informed subjects about the length, the fact that all answers were considered anonymously, that they could quit the experiment at any time, and that they were in no way obliged to participate in the experiment. On the other hand no reward was given for participation. Since the experiment was carried out online it was difficult to measure any external factors that might influence the results such as distraction throughout answering the questions. Moreover there were no special indications that the task would be challenging or potentially disturbing (e.g., the stimuli did not concern a sensitive topic and there were no mood manipulations) so an ethics review was not thought to be necessary. Throughout the experiment, subjects were guided via informative and/or supportive sentences such as 'You are almost done, this is the last question' and 'The following questions regard the text you have just read. It is okay to give incorrect answers, that is not the purpose of this study'. Moreover a timeline was to be seen at all times, indicating the process of the experiment, that is, how far along were subjects in completing the experiment.

Statistical treatment

To answer the research questions the following tests were applied: a chi square for gender, a *t*-test for the other demographic information, a two-way analysis of variance was used multiple times to either verify the effects of the manipulated variables on Processing Manner, Intention and Attitude or to verify the effects on the Thought Listing and Recall method. Lastly a regression analysis is used to measure the relation between Processing Manner and Message Persuasiveness. If significant effects were reported or it was theoretically interesting, similar analyses were done with the variables Mood, Need for Cognition and Sedentary job to detect whether they explained the results.

Results

Before all results are listed, it seems appropriate to emphasize the different terminology applied in this study once more. Involvement is an important factor in this research. It is once manipulated in the stimulus which is referred to as Issue Involvement. It is also measured after subjects were exposed to the stimulus which is referred to as Involvement.

Moreover, whenever a main effect of Issue Involvement is found, further analyses were done at all times with regards the control variables Mood, Need for Cognition and Sedentary job. Control variables might explain the found effects. If no main effects were found, only Mood and Need for Cognition were further analysed. This was theoretically interesting to analyse since Hullett (2005) suspected that negative mood leads to systematic processing and Petty and Cacioppo (1986) that a high need for cognition leads to systematic processing, Yan, Dillard and Shen (2010) also suggested that a positive mood leads to persuasive advantage when a gain frame is used and a negative mood when loss framed messages are used. No research is known regarding Sedentary job, but as this was a relevant factor in this study, this was included in the further analyses as well. The reason for further analysis was also that interaction effects might occur regardless the absence of main effects. That implies that the fourth research question (How do the individual characteristics of mood, need for cognition and personal relevance (having a sedentary job) affect the above?) was incorporated in every other research question when relevant.

1. How do Issue Involvement and Frame affect Processing Manner?

Processing Manner was measured through two methods, Thought Listing and Recall. The results of both methods were split and treated separately.

Processing Manner Method 1 | Thought Listing

The Thought Listing method consisted of two parts. Subjects were asked about their thoughts in general and thoughts specifically related to the main message. This was referred to as 'Categories' and 'Recollect the main message'.

Thought Listing part 1 | Categories

All 'general' thoughts were categorised into six categories. Every subject either did or did not recall a thought in the category at stake, hence all categories became yes or no questions. Since all thoughts were designated as belonging to a certain category a Chi-square test was done to detect any significant differences among the four conditions. The test was done for all categories with Issue Involvement and for all categories with Frame.

The Chi-square test showed no significant relationships between Issue Involvement and Frame and all categories belonging to the Thought Listing method (i; Agreeing with the main message, ii; Surprised about the main message, iii; Reflective towards own behaviour, iv; Critical towards main message, v; No interest in main message and vi; Repeating information). The highest Chi-square result was found for Frame and Agreeing with the main message: ($\chi^2 (1) = 2.93, p = .067$). All other Chi-square results were less significant.

Although all categories were turned into yes or no questions, some categories are measured differently. For instance the 'Total number of thoughts' and the 'Total number of *critical* thoughts' which is the fourth category. It appeared that some subjects had more than one thought and/or more than one critical thought. The goal of this research question is to detect an effect on Processing Manner. Having more than one thought might mean that one thought about the message more, that is, a systematic processing is in order. Measuring total number of (critical) thoughts as Processing Manner is in line with the study by Maheswaran and Meyers-Levy (1990). Being critical towards the message is a sign of systematic processing, therefore in this study the 'Total number of critical thoughts' and 'Total number of thoughts' in general were taken as an indication of systematic processing. The other variables have not been identified as proper indications, therefore no further analysis was done on those variables. An overview of the means and standard deviations can be found in table 6.

Table 6: Overview of means and standard deviations of total number of (critical) thoughts.

| | <u>Low involvement</u> | | <u>High involvement</u> | |
|-----------------------------------|------------------------|-------------|-------------------------|-------------|
| | Gain frame | Loss frame | Gain frame | Loss frame |
| Total number of critical thoughts | 0.71 (1.35) | 1.30 (1.67) | 0.24 (0.78) | 0.61 (1.69) |
| Total number of thoughts | 2.97 (1.56) | 2.82 (1.65) | 2.65 (1.45) | 2.55 (2.05) |

[What is the influence of Issue Involvement and Frame on 'Total number of thoughts'?](#)
A two-way analysis of variance with Issue Involvement and Frame as factors showed no main effect of Issue Involvement on 'Total number of thoughts' ($F(1, 125) < 1$). Frame was also found not to have a main effect ($F(1, 125) < 1$). The interaction effect between Issue Involvement and Frame was not statistically significant either ($F(1, 125) < 1$).

A two-way analysis of variance with Need for Cognition and Mood as factors showed no main effect of Need for Cognition on 'Total number of thoughts' ($F(1, 125) = 1.29, p = .258$). Mood was found not to have a main effect ($F(1, 125) < 1$). The interaction effect between Need for Cognition and Mood was not statistically significant either ($F(1, 125) = 1.28, p = .260$).

[What is the influence of Issue Involvement and Frame on 'Total number of critical thoughts'?](#)
A two-way analysis of variance with Issue Involvement and Frame as factors showed a main effect of Issue Involvement on 'Total number of critical thoughts' ($F(1, 125) = 5.48, p < .05$). Subjects in the low involvement condition had more critical thoughts ($M = 1.02, SD = 1.54$) than subjects in the high involvement condition ($M = 0.42, SD = 1.30$). Frame was found not to have a main effect ($F(1, 125) = 3.81, p = .053$). Since it was however marginally significant, an indication towards a possible effect was that subjects in the loss frame condition had more critical thoughts ($M = 0.97, SD = 1.70$) than subject in the gain frame condition ($M = 0.46, SD = 1.05$). The interaction effect between Issue Involvement and Frame was not statistically significant ($F(1, 125) < 1$). Since Issue Involvement had a main effect, and Frame was marginally significant, further analyses were done.

What is the influence of Mood?

A two-way analysis of variance with Issue Involvement and Mood as factors showed no main effect of Mood on 'Total number of critical thoughts' ($F(1, 125) = 3.11, p = .080$). The interaction effect between Issue Involvement and Mood was also not statistically significant ($F(1, 125) < 1$).

A two-way analysis of variance with Frame and Mood as factors showed a marginally significant effect of Frame on 'Total number of critical thoughts' ($F(1, 125) = 3.87, p = .052$). Mood however was not significant ($F(1, 125) = 2.80, p = .097$). The interaction effect between Frame and Mood was not statistically significant either ($F(1, 125) < 1$).

What is the influence of Need for Cognition?

A two-way analysis of variance with Issue Involvement and Need for Cognition as factors showed no main effect of Issue Involvement on 'Total number of critical thoughts' ($F(1, 125) = 3.24, p = .075$). Need for Cognition was also found to have no main effect ($F(1, 125) = 1.09, p = .298$). The interaction effect between Issue Involvement and Need for Cognition was not statistically significant either ($F(1, 125) < 1$).

A two-way analysis of variance with Frame and Need for Cognition as factors showed a main effect of Frame on 'Total number of critical thoughts' ($F(1, 125) = 4.25, p < .05$). Subjects in the loss frame condition had more critical thoughts ($M = 0.95, SD = 1.71$) than subjects in the gain frame condition ($M = 0.42, SD = 1.05$). Need for Cognition was found to have no main effect ($F(1, 125) = 2.44, p = .121$). The interaction effect between Frame and Need for Cognition was not statistically significant either ($F(1, 125) < 1$).

What is the influence of Sedentary job?

A two-way analysis of variance with Issue Involvement and Sedentary job as factors showed no main effect of Issue Involvement on 'Total number of critical thoughts' ($F(1, 125) = 1.95, p = .165$). Sedentary job was also found to have no main effect ($F(1, 125) < 1$). The interaction effect between Issue Involvement and Sedentary job was not statistically significant either ($F(1, 125) = 2.86, p = .093$).

A two-way analysis of variance with Frame and Sedentary job as factors showed a main effect of Frame on 'Total number of critical thoughts' ($F(1, 125) = 4.67, p < .05$). Subjects in the loss frame condition had more critical thoughts ($M = 0.97, SD = 1.70$) than subjects in the gain frame condition ($M = 0.46, SD = 1.11$). Sedentary job was found to have no main effect ($F(1, 125) < 1$).

1). The interaction effect between Frame and Sedentary job was not statistically significant either ($F(1, 125) < 1$).

Thought Listing part 2 | Recollect the main message

The second part of the Thought Listing method indicated whether subjects were able to correctly recollect the main message. Subjects could not recollect, partly recollect or completely recollect the main message as discussed in the method section.

A two-way analysis of variance with Issue Involvement and Frame as factors showed a main effect of Issue Involvement on 'Recollect the main message' ($F(1, 125) = 4.74, p < .05$). Subjects in the low involvement condition recollected more correct information about the main message ($M = 2.42, SD = 0.64$) than subjects in the high involvement condition ($M = 2.14, SD = 0.83$). Frame was found not to have a main effect ($F(1, 125) < 1$). The interaction effect between Issue Involvement and Frame was not statistically significant either ($F(1, 125) = 3.15, p = .079$). Further analyses are done on Issue Involvement (due to significant result) and on Frame (due to theoretic interest).

What is the influence of Mood?

A two-way analysis of variance with Mood and Issue Involvement as factors showed no main effect of Mood on 'Recollect the main message' ($F(1, 125) = 1.04, p = .310$). The interaction effect between Mood and Issue Involvement was not statistically significant either ($F(1, 125) < 1$).

A two-way analysis of variance with Mood and Frame as factors showed no main effect of Frame on 'Recollect the main message' ($F(1, 125) < 1$). Mood was also found to have no main effect ($F(1, 125) = 1.15, p = .287$). The interaction effect between Mood and Frame was however statistically significant ($F(1, 125) = 5.80, p < .05$). When exposed to a loss frame, subjects with a positive mood had a better recollection ($M = 2.53, SD = 0.56$) than subjects in a negative mood ($M = 2.07, SD = 0.81$). When exposed to a gain frame, mood was not of influence.

What is the influence of Need for Cognition?

A two-way analysis of variance with Need for Cognition and Issue Involvement as factors showed no main effect of Need for Cognition on 'Recollect the main message' ($F(1, 125) < 1$). The interaction effect between Need for Cognition and Issue Involvement was not statistically significant either ($F(1, 125) < 1$).

A two-way analysis of variance with Need for Cognition and Frame as factors showed no main effect of Frame on 'Recollect the main message' ($F(1, 125) < 1$). Need for Cognition was also found to have no main effect ($F(1, 125) < 1$). The interaction effect between Need for Cognition and Frame was not statistically significant either ($F(1, 125) = 3.09, p = .081$).

What is the influence of a Sedentary job?

A two-way analysis of variance with Sedentary job and Issue Involvement as factors showed no main effect of Sedentary job on 'Recollect the main message' ($F(1, 125) = 1.94, p = .166$). The interaction effect between Sedentary job and Issue Involvement was not statistically significant either ($F(1, 125) = 2.00, p = .160$).

A two-way analysis of variance with Sedentary job and Frame as factors showed no main effect of Frame on 'Recollect the main message' ($F(1, 125) < 1$). Sedentary Job was found not to have a main effect ($F(1, 125) < 1$). The interaction effect between Sedentary job and Frame was not statistically significant either ($F(1, 125) < 1$).

Processing Manner Method 2 | Recall

The second Processing Manner method, Recall, was a measurement of the total number of correctly answered questions about facts that were mentioned in the stimulus. Four questions were posed in the experiment. A new variable was made that counted the number of correctly answered questions per subject. This was simply being referred to as 'Recall' in the analyses below. An overview of means and standard deviation of the recall method can be found in table 7.

Table 7: Overview of mean and standard deviation of recall.

| | <u>Low involvement</u> | | <u>High involvement</u> | |
|--------|------------------------|-------------|-------------------------|-------------|
| | Gain frame | Loss frame | Gain frame | Loss frame |
| Recall | 2.26 (1.00) | 1.73 (1.04) | 2.38 (1.16) | 1.90 (1.19) |

A two-way analysis of variance with Issue Involvement and Frame as factors showed a main effect of Frame on 'Recall' ($F(1, 125) = 6.79, p < .05$). Subjects in a gain frame condition

recalled more correct answers ($M = 2.37$, $SD = 1.08$) than subjects in a loss frame condition ($M = 1.81$, $SD = 1.11$). Issue Involvement was found not to have a main effect ($F(1, 125) < 1$). The interaction effect between Involvement and Frame was not statistically significant either ($F(1, 125) < 1$). Since a main effect of Frame appeared and it was theoretically interesting, the effect of Mood, Need for Cognition and Sedentary job has been researched as well.

What is the influence of Mood?

A two-way analysis of variance with Mood and Frame as factors showed no main effect of Mood on 'Recall' ($F(1, 125) < 1$). The interaction effect between Mood and Frame was not statistically significant either ($F(1, 125) = 2.16$, $p = .144$).

What is the influence of Need for Cognition?

A two-way analysis of variance with Need for Cognition and Frame as factors showed no main effect of Need for Cognition on 'Recall' ($F(1, 125) = 1.62$, $p = .205$). The interaction effect between Need for Cognition and Frame was not statistically significant either ($F(1, 125) < 1$).

What is the influence of a Sedentary job?

A two-way analysis of variance with Sedentary job and Frame as factors showed no main effect of Frame on 'Recall' ($F(1, 125) = 2.33$, $p = .130$). Sedentary Job was also found to have no main effect ($F(1, 125) = 1.34$, $p = .250$). The interaction effect between Sedentary job and Frame was however statistically significant ($F(1, 125) = 4.28$, $p < .05$). The difference was only found for subjects with a sedentary job ($F(1, 90) = 12.28$, $p < .05$). Via a split file option, based upon Sedentary job the same analysis was done and findings indicated that the effect of framing on 'Recall' was dependent on having a sedentary job or not. Subjects exposed to a gain frame and whom had sedentary jobs ($M = 2.51$, $SD = 0.95$) scored better 'Recall' than the ones with a loss frame and a sedentary job ($M = 1.76$, $SD = 1.11$). No difference was found for subjects without a sedentary job ($F(1, 35) < 1$).

2. What is the relation between Processing Manner and the persuasiveness of gain and loss framed messages?

To be able to make statements about the relation between processing manner and Message Persuasiveness regression analyses were executed. Once with all variables included and once when the results were grouped in gain and loss framed conditions. By grouping the results, it was possible to detect under what condition of framing a certain Processing Manner leads to a better persuasiveness.

‘Total number of critical thoughts’ category serves as a measurement for Processing Manner. On top of that ‘Recall’ was included as well as these two measurements were confirmed by Maheswaran and Meyers-Levy (1990) as indicators for systematic processing. Since Message Persuasiveness was measured in terms of Intention and Attitude, the results of the regression analyses were divided into two parts.

Part 1 | Intention

‘Total number of critical thoughts’ and ‘Recall’

Both gain and loss frame conditions

A Multiple regression analysis showed that the variables entered, ‘Total number of critical thoughts’ and ‘Recall’, explained 4.6 % of the variance in Intention ($F(2, 126) = 4.06, p < .05$). ‘Total number of critical thoughts’ was a marginally significant predictor of Intention ($\beta = -.17, p = .051$), ‘Recall’ was not ($\beta = -.16, p = .062$). Subjects, who showed signs of systematic processing, had a lower intention. The corresponding numbers are presented in table 8.

Table 8: Regression analysis of the variables ‘Total number of thoughts’ and ‘Recall’ that predict Intention.

| Variable | B | SE B | β |
|-----------------------------------|-------|------|---------|
| Total number of critical thoughts | -.07 | .04 | -.17 |
| Recall | -.09 | .05 | -.16 |
| R^2 | .046 | | |
| F | 4.06* | | |

* $p < .05$

Loss frame condition

A Multiple regression analysis showed that the variables entered, 'Total number of critical thoughts' and 'Recall', explained 8.3 % of the variance in Intention ($F(2, 61) = 3.87, p < .05$). 'Recall' was a significant predictor of Intention ($\beta = -.25, p < .05$). 'Total number of critical thoughts' was not ($\beta = -.21, p = .097$). When exposed to a loss frame, subjects who showed signs of systematic processing had a lower intention. The corresponding numbers are presented in table 9.

Table 9: Regression analysis of the variables 'Total number of thoughts' and 'Recall' that predict Intention, grouped by loss frame.

| Variable | B | SE B | β |
|-----------------------------------|-------|------|---------|
| Total number of critical thoughts | -.08 | .05 | -.21 |
| Recall | -.14 | .07 | -.25* |
| R^2 | .083 | | |
| F | 3.87* | | |

* $p < .05$

Gain frame condition

A Multiple regression analysis showed that the variables entered, 'Total number of critical thoughts' and 'Recall', explained 0.7 % of the variance in Intention ($F(2, 62) = 1.22, p = .301$).

Part 2 | Attitude

'Total number of critical thoughts' and 'Recall'

Both gain and loss frame condition

A Multiple regression analysis showed that the variables entered, 'Total number of critical thoughts' and 'Recall', explained 3.7 % of the variance in Attitude ($F(2, 126) = 3.44, p < .05$). 'Total number of critical thoughts' was a significant predictor of Attitude ($\beta = .20, p < .05$), 'Recall' was not ($\beta = -.12, p = .166$). Subjects who showed signs of systematic processing, had a more positive attitude. The corresponding numbers are presented in table 10.

Table 10: Regression analysis of the variables 'Total number of thoughts' and 'Recall' that predict Attitude.

| Variable | B | SE B | β |
|-----------------------------------|-------|------|---------|
| Total number of critical thoughts | .12 | .05 | .20* |
| Recall | -.09 | .07 | -.12 |
| R^2 | .037 | | |
| F | 3.44* | | |

* $p < .05$

Loss frame condition

A Multiple regression analysis showed that the variables entered, 'Total number of critical thoughts' and 'Recall', explained 0.6 % of the variance in Attitude ($F(2, 61) < 1$).

Gain frame condition

A Multiple regression analysis showed that the variables entered, 'Total number of critical thoughts' and 'Recall', explained 15.2 % of the variance in Attitude ($F(2, 62) = 6.72, p < .05$). 'Total number of critical thoughts' was a significant predictor of Attitude ($\beta = .39, p < .05$). 'Recall' was as well ($\beta = -.24, p < .05$). When exposed to a gain frame subjects who showed signs of systematic processing, had a more positive attitude. The corresponding numbers are presented in table 11.

Table 11: Regression analysis of the variables 'Total number of thoughts' and 'Recall' that predict Attitude, grouped by gain frame.

| Variable | B | SE B | β |
|-----------------------------------|-------|------|---------|
| Total number of critical thoughts | .33 | .10 | .39* |
| Recall | -.20 | .10 | -.24* |
| R^2 | .152 | | |
| F | 6.72* | | |

* $p < .05$

3. How do Issue Involvement and Frame affect Message Persuasiveness?

To detect the effects of Issue Involvement and Frame on Message Persuasiveness, two-way analyses of variance were executed on Intention and Attitude. An overview of means and standard deviations can be found in table 12. Regarding further analyses, Processing Manner was added besides the variables Mood, Need for Cognition and Sedentary job. That is because it was theoretically interesting to detect what possible influence Processing Manner had on Intention and Attitude.

The second method, 'Recall', formed the basis of this particular Processing Manner measurement. This was the only variable with a valid median split possibility. Based upon the median split a new variable was made that grouped subjects either into a systematic processing or heuristic processing group. The tests were not conclusive, since Processing Manner was not manipulated in the experiment. The results merely gave indications of the possible influence of Processing Manner on Intention and Attitude.

Table 12: Overview of means and standard deviations of intention and attitude.

| | <u>Low involvement</u> | | <u>High involvement</u> | |
|-----------|------------------------|-------------|-------------------------|-------------|
| | Gain frame | Loss frame | Gain frame | Loss frame |
| Intention | 4.81 (0.35) | 4.42 (0.71) | 4.71 (0.66) | 4.64 (0.52) |
| Attitude | 2.14 (1.00) | 2.10 (0.81) | 2.04 (0.85) | 2.23 (0.70) |

Part 1 | Intention

A two-way analysis of variance with Issue Involvement and Frame as factors showed a main effect of Frame on Intention ($F(1, 125) = 5.03, p < .05$). Subjects exposed to a gain frame, had a higher intention ($M = 4.76, SD = 0.53$) than subjects exposed to a loss frame ($M = 4.53, SD = 0.63$). Issue Involvement was found not to have a main effect on Intention ($F(1, 125) < 1$). The interaction effect between Issue Involvement and Frame was not statistically significant either ($F(1, 125) = 2.24, p = .137$).

What is the influence of Processing Manner?

A two-way analysis of variance with Processing Manner and Frame as factors showed a main effect of Processing Manner on Intention ($F(1, 125) = 4.35, p < .05$). Subjects grouped in the

heuristic processing group had a higher intention ($M = 4.77$, $SD = 0.49$) than subjects in the systematic processing group ($M = 4.59$, $SD = 0.63$). The interaction effect between Processing Manner and Frame was not statistically significant though ($F(1, 125) < 1$).

What is the influence of Mood?

A two-way analysis of variance with Mood and Frame as factors showed no main effect of Mood on Intention ($F(1, 125) < 1$). The interaction effect between Mood and Frame was not statistically significant either ($F(1, 125) < 1$).

What is the influence of Need for Cognition?

A two-way analysis of variance with Need for Cognition and Frame as factors showed no main effect of Frame on Intention ($F(1, 125) = 3.20$, $p = .076$). Need for Cognition did not have a main effect on Intention either ($F(1, 125) < 1$). The interaction effect between Need for Cognition and Frame was also not statistically significant ($F(1, 125) = 1.10$, $p = .296$).

What is the influence of a Sedentary job?

A two-way analysis of variance with Sedentary job and Frame as factors showed no main effect of Sedentary Job on Intention ($F(1, 125) < 1$). The interaction effect between Sedentary job and Frame was not statistically significant either ($F(1, 125) = 1.68$, $p = .197$).

Part 2 | Attitude

A two-way analysis of variance with Issue Involvement and Frame as factors showed no main effect of Frame on Attitude ($F(1, 125) < 1$). Issue Involvement was also found to have no main effect on Attitude ($F(1, 125) < 1$). The interaction effect between Issue Involvement and Frame was not statistically significant either ($F(1, 125) < 1$).

What is the influence of Processing Manner?

A two-way analysis of variance with Processing Manner and Frame as factors showed no main effect of Processing Manner on Attitude ($F(1, 125) < 1$). The interaction effect between Processing Manner and Frame was not statistically significant either ($F(1, 125) < 1$).

What is the influence of Mood?

A two-way analysis of variance with Mood and Frame as factors showed no main effect of Mood on Attitude ($F(1, 125) = 2.76$, $p = .099$). The interaction effect between Mood and Frame was not statistically significant either ($F(1, 125) < 1$).

What is the influence of Need for Cognition?

A two-way analysis of variance with Need for Cognition and Frame as factors showed no main effect of Need for Cognition on Attitude ($F(1, 125) < 1$). The interaction effect between Need for Cognition and Frame was not statistically significant either ($F(1, 125) = 1.84, p = .177$).

What is the influence of a sedentary job?

A two-way analysis of variance with Sedentary job and Frame as factors showed no main effect of Sedentary Job on Attitude ($F(1, 125) < 1$). The interaction effect between Sedentary job and Frame was not statistically significant either ($F(1, 125) = 1.80, p = .182$).

Summary of results per research question

In table 13 all relevant results are presented per research questions to give an overview. The conclusion and discussion section indicate whether these findings were expected, and if not, what explanations exist to verify the difference.

Table 13: A summary table of conclusions obtained from this study presented per research question.

| Research question | Conclusion |
|--|---|
| 1. How do issue involvement and frame affect processing manner? | Low involvement → systematic processing Loss frame → systematic processing (only if mood is positive and diminished by need for cognition and sedentary job) Gain frame → systematic processing (only if presence of sedentary job) |
| 2. What is the relation between processing manner and the persuasiveness of gain and loss framed messages? | If exposed to loss frame; systematic processing → lower intention If exposed to a gain frame; systematic processing → more positive attitude |
| 3. What is the effect of issue involvement and frame on intention and attitude? | Gain frame → high intention Heuristic processing → high intention No effects on attitude. |

Conclusion

The aim of this research was to explore under what conditions of issue involvement and processing manner are people more persuaded by gain or loss framed messages. Two types of message frame were applied being gain and loss frames. Whether these were persuasive was measured in terms of intention and attitude. However, the persuasiveness has been suggested to depend on several factors such as the level of involvement towards the issue presented, the manner of processing the information presented, the current mood one is in and one's level of need for cognition. All of these items were therefore included in this research. An experiment was done among 129 subjects. The level of issue involvement and the frame were manipulated. All of the other items were measured after subjects were exposed to the stimulus.

This study obtained results that both gain and loss frames evoke systematic processing. It depends on underlying variables such as mood, need for cognition and sedentary job what processing manner is dominant. Furthermore low involvement leads to systematic processing. Next, systematic processing is positively related to more persuasive results in terms of attitude, when a gain frame is used. This is an indirect effect of issue involvement on message persuasiveness, measured via the relation between processing manner and message persuasiveness. The direct effect shows that subjects were stronger persuaded in terms of intention, when gain frames are used and when they process information heuristically regardless of the level of involvement.

Discussion

This study has shown some expected and unexpected results all of which are discussed below.

How do issue involvement and frame affect processing manner?

Regarding the effect of involvement and frame on processing manner, this research has indicated that loss frames lead to more critical thoughts regarding the message. That suggests systematic processing (Chaiken, 1980). This result is in line with Kuvaas and Selart (2004) who claim that loss frames stimulate systematic processing. The obtained result that a gain frame also indicated systematic processing is however contradictory. This effect was diminished by the interaction effect of sedentary job and frame. Subjects in a gain frame condition who also had a sedentary job had a better recall. This is an indication for systematic processing. A possible explanation is that subjects with a sedentary job, had a higher personal relevance towards the topic. As a result subjects paid more attention to the text.

The effect of gain frames on systematic processing might also be explained by the difference in perspective regarding the affect-cognition model as used by Kuvaas and Selart (2004). Their claim is that a negative affect, a loss frame, informs about problematic conditions and to solve these problems subjects process information carefully. Positive affect does not induce problems to be solved. In this study both gain and loss frame conditions had a problem that had to be solved. The difference was whether subjects were manipulated to see the problem as personally relevant to them or not. Subjects in the high involvement condition did see the problem as personally relevant. This might explain the gain frame advantage to stimulate systematic processing since that was moderated by the high involvement condition.

In spite of the moderating effect of the high involvement condition, no direct effect of high involvement was seen. On the contrary, low involvement was associated with more critical thoughts and a correct recall of the main message. This indicates systematic processing. Once again, this result is not in line with previous research by Chaiken (1980). A possible explanation is that subjects with a low involvement condition did not care about the message enough to give it any attention at all. If they had seen the text in a real life situation, they probably would have avoided it or stopped reading it. However, in this case stop reading was not an option since subjects volunteered to participate in the experiment. To participate

they had to read the entire text. As a result they might have been more sceptical towards the message.

The presence of a sceptical view might be related to the attention towards the message. Attention should be given to the arguments posed in the text and attention is suggested to be of influence in this experiment. A low involvement manipulation did not encourage subjects to pay attention, but it did trigger a more critical perspective. This also stimulated a better recall of the main message. Attention to the message is known to be an important prerequisite to draw conclusions about the processing manner (Rothman & Updegraff, 2011). This was however not manipulated or measured in this experiment.

Another interesting findings was that the main effect of issue involvement disappeared when need for cognition and sedentary job were included in the analyses. Loss involvement no longer led to systematic processing. Although no interaction effects were found. On top of that, a main effect of frame did appear in the extended analyses. Loss frames led to systematic processing. Thus, the underlying variables of processing manner are of influence. To what extent cannot be clearly obtained from this research.

What is the relation between processing manner and gain- or loss frame advantage in terms of Message Persuasiveness?

The relation between processing manner and intention and attitude showed merely indications as results. Since processing manner was not manipulated, no causal relationship can be drawn. This study shows that when exposed to a loss frame, subjects who showed signs of systematic processing had a lower intention. On the other hand, when exposed to a gain frame subjects who showed signs of systematic processing, had a more positive attitude.

This is not in line with the results of Maheswaran and Myers-Levy (1990) and Meyers-Levy and Maheswaran (2004). They expect that systematic processing is positively related to loss frames being more persuasive and that heuristic processing would lead to gain frames being more persuasive.

Nonetheless several possible explanations exist that might explain these conflicting findings. Firstly, attitude is merely one out of three predictors of intention according to the theory of planned behaviour (Fishbein & Yzer, 2003). A positive attitude could lead to a positive intention that could lead to actual behaviour. Since systematic processing led to a

lower intention when subjects were exposed to a loss frame in this study, the other two predictors of intention, normative norm and self-efficacy, might play a role in this matter as well. Confirmation of the influence of self-efficacy is already established by Van 't Riet, Ruiter, Verrij and De Vries (2010), who showed that a loss frame advantage exists when people have a high self-efficacy, whereas people with a low self-efficacy avoided the message.

Another possible explanation is that assuming systematic processing induces subjects to be critical towards the message which means that they are not easy to be convinced, causing the lower level of intention. It does not explain why a critical view leads to a higher attitude. The only difference present is the frame to which subjects were exposed. Thus it seems that frame is a stronger predictor of the persuasiveness of the message when subjects are systematically processing the message.

How do issue involvement and frame affect message persuasiveness?

The results of the direct effects of issue involvement and frame on intention and attitude were quite unexpected. Issue involvement did not affect the level of intention or attitude at all. That is surprising since Maheswaran and Meyers-Levy (1990) and Martin and Marshall (1997) based upon the negativity bias, strongly suspected a loss frame advantage when issue involvement was high. A gain frame advantage was expected when issue involvement was low. This might be explained by the fact that the manipulation of issue involvement was not completely successful.

On the other hand framing did affect message persuasiveness. A gain frame advantage was seen when looking at the level of intention. Although this main effect disappeared when need for cognition was taken into consideration too. Likewise heuristic processing also led to a higher intention. A gain frame advantage as well as heuristic processing advantage is not surprising. Meyers-Levy and Maheswaran pose in 2004 that gain frames are more persuasive in general since people generally have a dominant preference to rely on heuristic information.

Neither frame or issue involvement were found to affect attitude. It could be that attitude was not an appropriate measurement for message persuasiveness. As explained earlier, other factors such as self-efficacy and normative norm influence intention as well.

Intention is a strong indicator for planned behaviour (Fishbein & Yzer, 2003). It is possible that attitude does not influence intention in this particular setting.

How do the individual characteristics of mood, need for cognition and personal relevance (having a sedentary job) affect the above?

Another unexpected result was the limited ability of mood and need for cognition to explain the results. Although these variables were not manipulated, but merely measured after subjects were exposed to the stimulus, they hardly explained any of the effects. Nonetheless, their presence is and should be acknowledged. After all they diminished some main effects or set conditions under which main effects occurred. That is, loss frames only led to systematic processing when being in a positive mood and that when in a positive mood, gain frames were more persuasive. The latter is supported by Wegener, Petty and Klein (1994) and by Yan, Dillard and Shen (2010). Need for cognition diminished the main effect of issue involvement on processing manner and of frame on intention. No indications were present as to the single contribution of need for cognition on processing manner and intention. This is contrasting to the expectation that a high need for cognition would evoke systematic processing (Petty & Cacioppo, 1986). Perhaps need for cognition was not measured as successfully as hoped.

Limitations

Although the current study provides a refreshing follow-up of the over 20 years old message framing research, some limitations were unavoidable. To start with the manipulations of processing manner, mood and need for cognition. These variables are central factors in previous research and combining them in one research was therefore a logical choice. However when one is not manipulating but merely measuring, it remains difficult to draw strong conclusions. No causal relationships can be drawn regarding processing manner, mood and need for cognition.

Manipulation limitations

Furthermore issue involvement could be manipulated stronger. Although personal relevance is a solid manipulator for involvement, the country one lives in did not lead to such a big difference in involvement level. In fact the difference was not significant at all. Luckily a

tendency towards a higher involvement when being exposed to a high involvement condition was seen.

Likewise is the execution of the frame manipulation. The current loss frame was formulated in a rather difficult way according to feedback of the subjects. As a result subjects could have interpreted the stimulus wrongly, which impacts the findings of this research. The weak clarity might have been due to the fact that the frame statements were negated ('if we move more and sit down less, we increase the chance of a more satisfying life'). It would have been better to have one statement and a clearer conclusion (e.g., 'if we sit down less, we are happier about life').

Measurement limitations

Alongside the manipulations, the measurement of processing manner was rather limited in order to actually measure what was intended to be measured. Two methods were used since measuring processing manner is generally quite unexplored being thought listing and recall. Combining two methods including some adjustment especially made for this study, which is an innovative measurement. However this resulted in some contrasting results, which made it difficult to claim a subject, was either systematically or heuristically processing information. Furthermore, the thought listing method was divided into several categories that made interpretation of the results a bit more confusing.

Although the attempt to measure processing manner was based upon other research, the execution was not as convincing as expected. The recall method by Kuvaas and Kaufmann seemed like the most concrete measurement. This was based on number of correctly recalled answered and not on the subjectivity of researchers' coding choices as is the case with thought listing. Whereas recall was concrete to measure, it did not give evident indications for systematic or heuristic processing since subjects in all conditions scored quite similar. Greater differences in scores among the different groups, would have been a stronger indication for processing manners. On the other hand thought listing was thought to give a better indication of processing manner. In particular the category critical thoughts strongly systematic processing as critical thoughts is the clearest systematic cue within this research.

Future research

Several suggestions can be made regarding how someone might (better) investigate the current topic. To start, the current topic is that complex and would require much more time if one aims at researching the entire picture. For a master thesis, this was unfortunately not feasible. On the other hand, the topic definitely provides interesting starting points for future, more elaborated, research.

Suggestions to improve the manipulation of variables

The current study only manipulated involvement and frame. Issue involvement might even be stronger manipulated by personalising the advocated message. Another option is letting subjects choose items they like to buy or are interested in before they participate in the experiment, and the advertisement will consequently be adjusted to their item of interest. Although this method will be more time consuming, the results will be more realistic as it better represents the natural involvement towards the issue presented.

However when this study would be replicated on a larger scale it is highly recommended to manipulate all variables included. That means mood, need for cognition and processing manner. **Mood** has been manipulated more often in previous research and has valid methods to do so. For instance by presenting happy or sad songs/movies/stories to subjects before presenting the stimulus. However, from an ethical point of view it is recommended to be careful with inducing a negative mood.

Generally seen **ethical considerations** are of influence in this type of research. Subjects are manipulated to ensure that possible effects occurred due to the manipulated factors. Future research should always be careful to what extent manipulations will be added. Also, subjects should be made aware of any possible 'sensitive manipulations such as mood. If subjects are informed about the goal of the study and the rationale behind the manipulation, they might be more willing to participate in research. That should limit the ethical challenges.

Also **need for cognition** could be concretely manipulated for instance by posing that subjects have to pretend they are keen on establishing the right attitude regarding the presented issue or not. However need for cognition is a personal trait. A person will likely automatically tend to show symptoms of high need for cognition. It is therefore not evident that a manipulation of need for cognition will be 'pure'.

Where concrete suggestions for manipulation mood and need for cognition can be made, it remains a difficult task to properly manipulate **processing manner**. It is recommended to focus more on manipulating heuristic processing. Currently the stimulus contained only limited heuristic cues. One could add more cues such as weak arguments, play with differences in colours, add positive music or make use of the influence principles by Cialdini (2007). Moreover, the systematic manipulation could be stronger by including stronger arguments. With the current technological innovations, being more creative in the design of the manipulation seems feasible.

Suggestions to improve the measurement of variables

Measurement of processing manner

A better, more solid measurement of processing manner would be of high importance as well. This study suggests merely indications of the influence or role of Processing Manner. It would be better to obtain causal results. It would be wise to study the measurement of processing manner on itself rather than include it in a broader study. If one does want to include it, it would benefit the validity to determine first what possible methods one could use to actually measure systematic and heuristic processing. Currently it is rather unknown what the possible categories of generated thoughts imply. Does total number of thoughts truly indicate systematic processing for instance?

Critical thoughts are a possible indicator for systematic processing, but whether one agrees with the main message is neither a systematic nor heuristic cue. Instead it says more about the persuasiveness of a frame. Perhaps it serves as an indication for persuasiveness instead. This is on the other hand never validated.

It is also unclear what meaning is to be extracted from the category of being reflective towards one's own behaviour. It might serve as an indication towards persuasiveness of the message as well. It could also be an indication for intention or even self-efficacy. Thus, a future study should take into consideration the validation of the possible thoughts categories and their meaning in terms of indicators for processing manners or persuasiveness.

Measurement of persuasiveness

Moreover the measurement of message persuasiveness could be measured in alternative manners. One suggestion is to measure actual behaviour rather than intentions. This

suggestion is based upon the possible presence of the *intention-behaviour-gap* (Maio et al., 2007). This states that although high intentions might be present, actual behaviour could still stay out. Intentions are therefore not necessarily a proper measurement of the effectiveness of a message if one aims at changing behaviour.

Furthermore it would be best to measure both intention and behaviour at multiple times to detect any long-term effects. The aspects of short-term versus long-term effects might be explored. Such an approach was applied by Moyer-Guse, Chung and Jain (2011). In their study subjects' intention was measured right after the experiment and after two weeks they measured actual behaviour. That showed a difference in actual behaviour, which was not seen in intention, which might be explained by the *sleeper effect*. A sleeper-effect implies that an effect is stronger after a while. Thus, future research should measure both intention and behaviour, at multiple times. However contradictory to Moyer-Guse et al, both should be measured right after the experiment and both after two weeks. This will also detect whether a possible *sleeper-effect* might be present or not.

Another suggestion to measure frame persuasiveness, is to let subject choose their preferred framed message. This was unfortunately not feasible to execute in the current study. In the proposed measurement subjects would choose which frame they consider more convincing regarding whether they would change their behaviour or not. Subjects would be manipulated into different processing manners and/or motivational variables that influence processing manners. After they had seen information about the research topic, they may choose a frame that would best convince them to change their behaviour. If one measures afterwards reasons for choosing the frame and even measures actual behaviour, a new persuasive framing technique is explored.

Suggestions for general research

Attention towards the message is important for any processing manners to occur. Future research could include attention to the message as well. Furthermore only attitude and intention were included in this study, as being part of determinants of the theory of planned behaviour model. It would be interesting to include the entire model in framing research. Future research could detect which variable of the theory of planned behaviour has the strongest impact on framing outcomes. Moreover, argument quality is a solid indicator for processing manner. This could be incorporated in future research as well.

Practical implications

Message designers are able to influence their target group on a daily basis. Although product advertisers are quickly seen as classic examples of great influencers, a commercially driven rationale is not even necessarily present. Health communicators' aim is to convince their audience to change their behaviour in order to become healthy or to prevent diseases. Moreover the government aims to promote social problems. Thus, many communication professionals apply persuasive communication and therefore the results obtained in this study impact different fields of communication professionals.

To test whether their proposed message is effective or not, message designers could do a/b testing. This usability test enables them to expose two types of advertisement to different users at the same time, in order to measure which advertisement is most effective. If message designers would be better informed about the underlying factors that enable their message to be more persuasive, the usability tests would even show greater results.

Many advertisements are also personally customised which could result in higher issue involvement, for instance. If the advertising world would know better what type of frame has more favourable results when issue involvement is high, they could adjust their advertisements accordingly. This research could not give a definitive answer to that unfortunately, which is why exploring the effect of issue involvement on framing advantages remains a topic of interest. It would be beneficial to both message designers and communication researchers to work together. Communication research could make use of the practical examples of message designers and message designers could base their choices on research instead of gut feeling. Message designers in several fields could then increase the effectiveness of their persuasive communication.

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Appendices

Appendix 1 | Manipulation of stimulus in Dutch

Ingekorte versie, van origineel artikel bron:

<http://www.kijkmagazine.nl/mens/nederlander-zit-het-meest-van-alle-europeanen/>

In geel gemarkeerd waar mogelijke manipulaties aan te brengen zijn.

Van alle Europeanen zitten de **Nederlanders** dagelijks het **langst**. En dat is **niet** iets om trots op te zijn. Je hoort het steeds vaker: zitten is slecht voor je. Maar gegevens die deze uitspraak ondersteunen, zijn moeilijk te vinden. Daarom hebben wetenschappers een nieuw grootschalige onderzoek uitgevoerd, waarbij ze keken naar de zittijd van de inwoners van 28 Europese landen. En wat blijkt? Van alle landen heeft **Nederland** het **hoogste** percentage 'langzitters'.

Langzitters

De resultaten van de zittijd werden in tweeën gesplitst: of je zit minder dan 7,5 uur per dag of je zit 7,5 uur of langer per dag. Met 32,1 procent langzitters spande **Nederland** de kroon, terwijl **Spanje** met 8,9 procent de minste langzitters kent. Onze buurlanden scoren overigens een stuk **beter** dan wij: 'slechts' 18 procent van de Belgen en Duitsers zit dagelijks 7,5 uur of langer.

Ontevreden zitters

Een ander opvallend resultaat was dat mensen die **minder** tevreden zijn over hun leven **meer** zaten. Wat kunnen we er mee nu we dit weten?. Zogenoemde **zit-sta-werktafels bieden een uitkomst** voor echte zitberoepen. Maar waar het eigenlijk op neerkomt, is dat we massaal van **onze luie kont moeten afkomen en meer bewegen**.

Versie 1: **hoge betrokkenheid** (is NL)– **positief frame** (de positieve gevolgen van het wel overnemen van het gewenste gedrag worden benadrukt).

- - - Van alle Europeanen zitten de **Nederlanders** dagelijks het langst. En dat is niet iets om trots op te zijn.

Je hoort het steeds vaker: zitten is slecht voor je. **Als men meer beweegt en minder zit, is dat beter voor de gezondheid.** Maar gegevens die deze uitspraak ondersteunen, zijn moeilijk te vinden. Daarom hebben wetenschappers een nieuw grootschalige onderzoek uitgevoerd, waarbij ze keken naar de zittijd van de inwoners van 28 Europese landen. En wat blijkt? Van alle landen heeft **Nederland** het hoogste percentage 'langzitters'.

Langzitters

De resultaten van de zittijd werden in tweeën gesplitst: of je zit minder dan 7,5 uur per dag of je zit 7,5 uur per dag of langer. Met 32,1 procent langzitters spande **Nederland** de kroon, terwijl Spanje met 8,9 procent de minste langzitters kent. Gemiddeld genomen zat 18% van de Europese inwoners dagelijks 7,5 uur of langer.

Ontevreden zitters

Een ander opvallend resultaat was dat mensen die minder uren per dag zaten, meer tevreden zijn over hun leven. Wat kunnen we doen nu we dit weten? Zogenaemde zit-sta-werktafels bieden een uitkomst voor echte zitberoepen. Maar waar het eigenlijk op neerkomt, is dat **wij massaal van onze luie kont moeten afkomen en meer moeten bewegen. Als we meer bewegen en minder zitten, verhogen we de kans dat we meer tevreden over ons leven zijn.**

Versie 2: **hoge betrokkenheid** (is NL)– **negatief frame** (de negatieve gevolgen van het niet overnemen van het gewenste gedrag worden benadrukt).

- - - Lees onderstaande tekst alsjeblieft:

Van alle Europeanen zitten de **Nederlanders dagelijks het langst. En dat is niet iets om trots op te zijn.**

Je hoort het steeds vaker: zitten is slecht voor je. **Als men niet meer beweegt en minder zit, is dat slecht voor de gezondheid.** Maar gegevens die deze uitspraak ondersteunen, zijn moeilijk te vinden. Daarom hebben wetenschappers een nieuw grootschalige onderzoek uitgevoerd, waarbij ze keken naar de zittijd van de inwoners van 28 Europese landen. En wat blijkt? Van alle landen heeft **Nederland** het hoogste percentage 'langzitters'.

Langzitters

De resultaten van de zittijd werden in tweeën gesplitst: of je zit minder dan 7,5 uur per dag of je zit 7,5 uur of langer per dag. Met 32,1 procent langzitters spande **Nederland** de kroon, terwijl Spanje met 8,9 procent de minste langzitters kent. Gemiddeld genomen zit 18% van de Europese inwoners dagelijks 7,5 uur of langer.

Ontevreden zitters

Een ander opvallend resultaat was dat mensen **die meer uren per dag zaten, minder tevreden zijn over hun leven.** Wat kunnen we doen nu we dit weten? Zogenaemde zit-sta-werktafels bieden een uitkomst voor echte zitberoepen. Maar waar het eigenlijk op neerkomt, is dat **wij massaal van onze luie kont moeten afkomen en**

meer moeten bewegen. Als we niet meer bewegen en minder zitten, verhogen we de kans dat we minder tevreden over ons leven zijn.

Versie 3: **lage betrokkenheid** (is Hongarije)– **positief frame** (de positieve gevolgen van het wel overnemen van het gewenste gedrag worden benadrukt).

- - - Lees onderstaande tekst alsjeblieft:

Van alle Europeanen zitten de Hongaren dagelijks het langst. En dat is niet iets om trots op te zijn.

Je hoort het steeds vaker: zitten is slecht voor je. **Als men meer beweegt en minder zit, is dat beter voor de gezondheid.** Maar gegevens die deze uitspraak ondersteunen, zijn moeilijk te vinden. Daarom hebben wetenschappers een nieuw grootschalige onderzoek uitgevoerd, waarbij ze keken naar de zittijd van de inwoners van 28 Europese landen. En wat blijkt? Van alle landen heeft **Hongarije** het hoogste percentage 'langzitters'.

Langzitters

De resultaten van de zittijd werden in tweeën gesplitst: of je zit minder dan 7,5 uur per dag of je zit 7,5 uur per dag of langer. Met 32,1 procent langzitters spande **Hongarije** de kroon, terwijl Spanje met 8,9 procent de minste langzitters kent. Gemiddeld genomen zat 18% van de Europese inwoners dagelijks 7,5 uur of langer.

Ontevreden zitters

Een ander opvallend resultaat was dat mensen die minder uren per dag zaten, meer tevreden zijn over hun leven. Wat kunnen we doen nu we dit weten? Zogenaemde

zit-sta-werktafels bieden een uitkomst voor echte zitberoepen. Maar waar het eigenlijk op neerkomt, is dat wij massaal van onze luie kont moeten afkomen en meer moeten bewegen. Als we meer bewegen en minder zitten, verhogen we de kans dat we meer tevreden over ons leven zijn.

Versie 4: lage betrokkenheid (is Hongarije)– negatief frame (de negatieve gevolgen van het niet overnemen van het gewenste gedrag worden benadrukt

- - - Lees onderstaande tekst alsjeblieft:

Van alle Europeanen zitten de Hongaren dagelijks het langst. En dat is niet iets om trots op te zijn.

Je hoort het steeds vaker: zitten is slecht voor je. Als men niet meer beweegt en minder zit, is dat slecht voor de gezondheid. Maar gegevens die deze uitspraak ondersteunen, zijn moeilijk te vinden. Daarom hebben wetenschappers een nieuw grootschalige onderzoek uitgevoerd, waarbij ze keken naar de zittijd van de inwoners van 28 Europese landen. En wat blijkt? Van alle landen heeft Hongarije het hoogste percentage 'langzitters'.

Langzitters

De resultaten van de zittijd werden in tweeën gesplitst: of je zit minder dan 7,5 uur per dag of je zit 7,5 uur of langer per dag. Met 32,1 procent langzitters spande Hongarije de kroon, terwijl Spanje met 8,9 procent de minste langzitters kent. Gemiddeld genomen zat 18% van de Europese inwoners dagelijks 7,5 uur of langer.

Ontevreden zitters

Een ander opvallend resultaat was dat mensen die meer uren per dag zaten, minder tevreden zijn over hun leven. Wat kunnen we doen nu we dit weten? Zogenoemde zit-sta-werktafels bieden een uitkomst voor echte zitberoepen. Maar waar het eigenlijk op neerkomt, is dat wij massaal van onze luie kont moeten afkomen en meer moeten bewegen. Als we niet meer bewegen en minder zitten, verhogen we de kans dat we minder tevreden over ons leven zijn.

Q1 Beste deelnemer aan dit onderzoek, Erg fijn dat je de tijd wilt nemen om de vragenlijst voor mijn scriptie in te vullen. Bedankt! Wat kun je verwachten: Het duurt ongeveer 5-10 minuten. Je krijgt eerst een tekst te lezen en vervolgens komt er een vragenlijst tevoorschijn. Geen enkel antwoord is fout, dus probeer niet te lang over het antwoord na te denken. Boven aan zie je hoe ver je bent. Je kunt halverwege stoppen en op een later moment verder gaan, maar voor de uitkomst van mijn onderzoek is het beter om dit niet te doen. Doel van onderzoek: Door dit onderzoek probeer ik erachter te komen hoe mensen bepaalde informatie interpreteren. Ik kijk hiervoor specifiek naar een aantal factoren die daarop van invloed zijn. Overige zaken: - De antwoorden worden anoniem behandeld en uitsluitend voor dit onderzoek gebruikt.- Je mag zo lang over het invullen van de vragenlijst doen als je wilt. - De gegevens uit de tekst zijn aangepast ten behoeve van dit onderzoek en wijken daardoor af van de werkelijkheid.- Er staat geen beloning tegenover het invullen van de vragenlijst, wel heel veel dank! Als je op >> klikt, ga je ermee akkoord dat de door jou ingevulde antwoorden worden gebruikt voor dit onderzoek. Met vriendelijke groet, Diana van Bommel
Studente Master Communicatie & Beïnvloeding Radboud Universiteit Nijmegen

Q9 Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Hongaren dagelijks het langst. En dat is niet iets om trots op te zijn. Je hoort het steeds vaker: zitten is slecht voor je. Maar gegevens die deze uitspraak ondersteunen, zijn moeilijk te vinden. Daarom hebben wetenschappers een nieuw grootschalige onderzoek uitgevoerd, waarbij ze keken naar de zittijd van de inwoners van 28 Europese landen. En wat blijkt? Van alle landen heeft Hongarije het hoogste percentage 'langzitters'. Langzitters De resultaten van de zittijd werden in tweeën gesplitst: of je zit minder dan 7,5 uur per dag of je zit 7,5 uur per dag of langer. Met 32,1 procent langzitters spande Hongarije de kroon, terwijl Spanje met 8,9 procent de minste langzitters kent. Gemiddeld genomen zit 18 procent van de Europese inwoners dagelijks 7,5 uur of langer. Ontevreden zitters Een ander opvallend resultaat was dat mensen die minder tevreden zijn over hun leven meer uren per dag zaten. Wat kunnen we doen nu we dit weten? Zogenoemde zit-sta-werktafels bieden een uitkomst voor echte zitberoepen. Maar waar het eigenlijk op neerkomt, is dat wij massaal van onze luie kont moeten afkomen en meer moeten bewegen. Als we dat doen, is de kans groot dat we meer tevreden over ons leven zijn.

Q10 Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Hongaren dagelijks het langst. En dat is niet iets om trots op te zijn. Je hoort het steeds vaker: zitten is slecht voor je. Maar gegevens die deze uitspraak ondersteunen, zijn moeilijk te vinden. Daarom hebben wetenschappers een nieuw grootschalige onderzoek uitgevoerd, waarbij ze keken naar de zittijd van de inwoners van 28 Europese landen. En wat blijkt? Van alle landen heeft Hongarije het hoogste percentage 'langzitters'. Langzitters De resultaten van de zittijd werden in tweeën gesplitst: of je zit minder dan 7,5 uur per dag of je zit 7,5 uur of langer per dag. Met 32,1 procent langzitters spande Hongarije de kroon, terwijl Spanje met 8,9 procent de minste langzitters kent. Gemiddeld genomen zit 18 procent van de Europese inwoners dagelijks 7,5 uur of langer. Ontevreden zitters Een ander opvallend resultaat was dat mensen die minder tevreden zijn over hun leven meer uren per dag zaten. Wat kunnen we doen nu we dit weten? Zogenoemde zit-sta-werktafels bieden een uitkomst voor echte zitberoepen. Maar waar het eigenlijk op neerkomt, is dat wij massaal van onze luie kont moeten

afkomen en meer moeten bewegen. Als we dat niet doen, is de kans groot dat we minder tevreden over ons leven zijn.

Q8 Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Nederlanders dagelijks het langst. En dat is niet iets om trots op te zijn. Je hoort het steeds vaker: zitten is slecht voor je. Maar gegevens die deze uitspraak ondersteunen, zijn moeilijk te vinden. Daarom hebben wetenschappers een nieuw grootschalige onderzoek uitgevoerd, waarbij ze keken naar de zittijd van de inwoners van 28 Europese landen. En wat blijkt? Van alle landen heeft Nederland het hoogste percentage 'langzitters'. Langzitters De resultaten van de zittijd werden in tweeën gesplitst: of je zit minder dan 7,5 uur per dag of je zit 7,5 uur of langer per dag. Met 32,1 procent langzitters spande Nederland de kroon, terwijl Spanje met 8,9 procent de minste langzitters kent. Gemiddeld genomen zit 18 procent van de Europese inwoners dagelijks 7,5 uur of langer. Ontevreden zitters Een ander opvallend resultaat was dat mensen die minder tevreden zijn over hun leven meer uren per dag zaten. Wat kunnen we doen nu we dit weten? Zogenaemde zit-sta-werktafels bieden een uitkomst voor echte zitberoepen. Maar waar het eigenlijk op neerkomt, is dat wij massaal van onze luie kont moeten afkomen en meer moeten bewegen. Als we dat niet doen, is de kans groot dat we minder tevreden over ons leven zijn.

Q7 Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Nederlanders dagelijks het langst. En dat is niet iets om trots op te zijn. Je hoort het steeds vaker: zitten is slecht voor je. Maar gegevens die deze uitspraak ondersteunen, zijn moeilijk te vinden. Daarom hebben wetenschappers een nieuw grootschalige onderzoek uitgevoerd, waarbij ze keken naar de zittijd van de inwoners van 28 Europese landen. En wat blijkt? Van alle landen heeft Nederland het hoogste percentage 'langzitters'. Langzitters De resultaten van de zittijd werden in tweeën gesplitst: of je zit minder dan 7,5 uur per dag of je zit 7,5 uur per dag of langer. Met 32,1 procent langzitters spande Nederland de kroon, terwijl Spanje met 8,9 procent de minste langzitters kent. Gemiddeld genomen zit 18 procent van de Europese inwoners dagelijks 7,5 uur of langer. Ontevreden zitters Een ander opvallend resultaat was dat mensen die minder tevreden zijn over hun leven meer uren per dag zaten. Wat kunnen we doen nu we dit weten? Zogenaemde zit-sta-werktafels bieden een uitkomst voor echte zitberoepen. Maar waar het eigenlijk op neerkomt, is dat wij massaal van onze luie kont moeten afkomen en meer moeten bewegen. Als we dat doen, is de kans groot dat we meer tevreden over ons leven zijn.

Q13 De volgende vragen gaan over de gegevens uit de tekst die je zojuist gelezen hebt. Het is niet erg als je een verkeerd antwoord geeft, dat is namelijk niet de essentie van wat ik wil meten met deze vragen. Schrijf alle, aan de tekst gerelateerde, gedachtes op die je had terwijl je de tekst las.

Q14 Schrijf hieronder alles op wat je onthouden hebt van het slotstandpunt van de tekst:

Q15 Hoeveel Europese landen waren er betrokken bij het onderzoek in de tekst?

- ☐ 18 (1)
- ☐ 24 (2)
- ☐ 28 (3)
- ☐ Ik weet het niet meer. (4)

Q16 Wat was de verdeling van zit-uren die gebruikt werd in het onderzoek in de tekst?

- ☐ Minder dan 7,5 uur - exact 7,5 uur - langer dan 7,5 uur (1)
- ☐ Minder dan 7,5 uur - langer dan 7,5 uur per week (2)
- ☐ Minder dan 7,5 uur - meer dan 7,5 uur per dag (3)
- ☐ Ik weet het niet meer. (4)

Q17 Welk land scoorde het laagste percentage zit-uren?

- ☐ Nederland (1)
- ☐ Spanje (2)
- ☐ Hongarije (3)
- ☐ Ik weet het niet meer. (4)

Q18 Was het gemiddelde percentage zit-uren van alle Europese inwoners?

- ☐ 18 (1)
- ☐ 16 (2)
- ☐ 22 (3)
- ☐ Ik weet het niet meer. (4)

Q11 De volgende vragen gaan over jouw mening over het slotstandpunt uit de voorgaande tekst: Geef aan wat op jou van toepassing is: Voor mij is 'meer bewegen en minder zitten':

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Onbelangrijk:Belangrijk (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Saai:Interessant (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Irrelevant:Relevant (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Niet spannend:Spannend (4) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Betekenisloos:Betekenisvol (5) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Onaantrekkelijk:Aantrekkelijk (6) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Niet de moeite waard:De moeite waard (7) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Betreft mij niet:Betreft mij (8) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Answer If Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Nederlanders dagelijks he... Is Displayed Or Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Hongaren dagelijks het langst.... Is Displayed And Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Nederlanders dagelijks het l... Is Not Displayed And Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Hongaren dagelijks het langst.... Is Not Displayed

Q12 Wat vind je van het standpunt 'Als ik meer beweeg en minder zit, dan is de kans groot dat ik meer tevreden over het leven ben'.

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Negatief:Positief (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Biedt de mogelijkheid om belangrijke voordelen te behalen:Biedt de mogelijkheid om belangrijke voordelen te verliezen (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Answer If Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Nederlanders dagelijks het l... Is Displayed Or Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Hongaren dagelijks het langst.... Is Displayed And Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Nederlanders dagelijks he... Is Not Displayed And Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Hongaren dagelijks het langst.... Is Not Displayed

Q33 Wat vind je van het standpunt 'Als ik niet meer beweeg en minder zit, dan is de kans groot dat ik minder tevreden over het leven ben'.

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Negatief:Positief (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Biedt de mogelijkheid om belangrijke voordelen te behalen:Biedt de mogelijkheid om belangrijke voordelen te verliezen (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q21 De volgende vragen gaan over jouw intenties en houding ten opzichte van het slotstandpunt. Het is niet nodig om een sociaal wenselijk antwoord te geven, met een eerlijk antwoord ben ik het meest geholpen. Ik ben van plan om het komende jaar meer te bewegen en minder te zitten.

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Zeker niet:Zeker wel (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q22 Ik zal het komende jaar meer bewegen en minder zitten.

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|-------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Onwaarschijnlijk:Waarschijnlijk (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q23 Ik ben bereid om het komende jaar meer te bewegen en minder te zitten.

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|--------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Niet waar:Waar (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q24 Ik ga het komende jaar meer bewegen en minder zitten.

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|---------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Zeer me eens:Zeer me oneens (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q25 Als ik meer beweeg en minder zit, dan is dat:

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|-------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Goed:Slecht (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Onplezierig:Plezierig (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Schadelijk:Voordelig (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Interessant:Oninteressant (4) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Verstandig:Onverstandig (5) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q26 De volgende vragen hebben betrekking op een aantal persoonskenmerken van je. Ik ben een:

- ☐ Man (1)
- ☐ Vrouw (2)

Q27 Mijn leeftijd is:

Q28 Mijn hoogst afgeronde opleiding is:

- ☐ MBO (1)
- ☐ HBO (2)
- ☐ WO (3)
- ☐ Anders (4)

Q29 Ik heb een zitberoep.

- ☐ Ja (1)
- ☐ Nee (2)

Q30 Op mijn werk gebruiken we zit-sta-werktafels.

- ☐ Ja (1)
- ☐ Nee (2)
- ☐ Niet van toepassing, want ik werk niet. (3)

Q31 Geef alsjeblieft aan in hoeverre je het eens bent met de volgende stellingen:

| | Volledig mee eens (1) | Mee eens (2) | Enigszins mee eens (3) | Neutraal (4) | Enigszins mee oneens (5) | Mee oneens (6) | Volledig mee oneens (7) |
|---|-----------------------------|-----------------------|------------------------------|-----------------------|--------------------------------|-----------------------|-------------------------------|
| Na het lezen van de tekst voelde ik me vrolijk (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Momenteel ben ik in een goede bui (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Op de een of andere manier, voel ik me niet erg comfortabel nu. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Op dit moment voel ik me licht geïrriteerd. (4) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q33 Je bent bijna aan het einde van de vragenlijst. Dit is de laatste vraag. Geef alsjeblieft aan in hoeverre je het eens bent met de volgende stellingen:

| | Volledig mee eens (1) | Mee eens (2) | Enigszins mee eens (3) | Neutraal (4) | Enigszins mee oneens (5) | Mee oneens (6) | Volledig mee oneens (7) |
|--|-----------------------------|-----------------------|------------------------------|-----------------------|-----------------------------------|-----------------------|----------------------------------|
| Ik vind het leuk om aan een taak te werken waardoor ik tot nieuwe oplossingen voor problemen kom. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik vind het leuker als een taak intellectueler, moeilijker en belangrijker is dan wanneer een taak niet veel denkkracht nodig heeft. (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Nieuwe dingen leren vind ik niet erg leuk. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik discussieer graag over zaken die me niet per se persoonlijk aanspreken (4) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik vind het geen fijn idee om afhankelijk te zijn van mijn denkkracht om zo de top te bereiken (5) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Abstract denken spreekt me niet aan (6) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik denk slechts net zoveel na als nodig is. (7) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik vind taken leuk die weinig denkkracht kosten, zodra ik ze onder de knie heb (8) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| | | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Ik vind het leuker om over kleine dagelijkse taken na te denken dan over grote projecten. (9) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik doe liever iets dat minder denkkracht vergt dan iets dat mijn denkvaardigheden zeker zal testen. (10) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik krijg geen voldaan gevoel van lang en intensief overleggen. (11) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik vind het niet leuk om de verantwoording te hebben over een situatie die veel denkkracht vereist. (12) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik voel eerder opluchting dan voldoening nadat ik een taak heb afgerond die veel mentale inspanning kostte (13) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Nadenken is niet mijn idee van vermaak. (14) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik probeer situaties te vermijden wanneer de kans aanwezig is dat ik diep moet nadenken over iets. (15) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik vind het leuk als mijn leven gevuld is met puzzels die ik moet oplossen. (16) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik vind complexe taken leuker dan makkelijke taken. (17) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| | | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Ik vind het prima om te weten dat iets werkt, maar ik hoef niet te weten hoe of waarom het werkt. (18) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|

Q32 Dit is het einde van de vragenlijst. Ontzettend bedankt voor het invullen!!

The list of questions was drawn up in Qualtrics, an online survey tool. All nine subjects were recruited via personal invitations with a brief introduction. This introduction emphasized the importance of paying attention to the fact whether they understood the questions, the time it took to answer all questions and other remarks they had. The randomizer worked well since the four different versions were equally divided among the subjects and most questions remained intact. However, some adjustments had to be made to the questions as well as the stimuli in order for the manipulation to be successful and to fully understand each question. That led to the following changes:

- Two extra framing manipulations were added at the beginning of the stimuli and at the end of the stimuli in order to make the framing effect stronger.
- The thought listing question included the following 'all to the text related thoughts' but that part was left out, since all thoughts would be relevant to know.
- The scales that included 'agree-disagree' were not convenient since it makes more sense to have disagree on the left and agree on the right hence 'disagree-agree'.
- An extra manipulation check was added regarding framing: The text highlighted mainly; advantages-disadvantages-I do not recall'.
- The manipulation check of framing included two questions which both had positive-negative answer categories. One question had the negative category on the left and the other one had the negative category on the right. An adjustment was made to have both negative answer categories on the same side.
- An error was present in one of the items to measure Mood. This was solved in the qualtrics data entry.
- Some suggestions were made for the introduction sentences above the questions. This was a matter of formulation which the researchers agreed upon.
- Instead of referring to the 'end statement' an adjustment was made to refer to the issue instead.
- The order of questions was changed. Demographics are now at the end.
- The length of the experiment was too long and subjects indicated being fatigue at the end of the experiment. Therefore, the Need for Cognition scale was reduced

from 18 items to 5 items. These items were chosen since they were the most concrete and easy to understand.

Appendix 4 | List of questions that were included in this experiment

Q1 Beste deelnemer aan dit onderzoek, Erg fijn dat je de tijd wilt nemen om de vragenlijst voor mijn scriptie in te vullen. Bedankt! Wat kun je verwachten: Het duurt ongeveer 5-10 minuten. Je krijgt eerst een tekst te lezen en vervolgens komt er een vragenlijst tevoorschijn. Geen enkel antwoord is fout, dus probeer niet te lang over het antwoord na te denken. Boven in het scherm, zie je een balk die aangeeft hoe ver je bent. Je kunt halverwege stoppen en op een later moment verder gaan, maar voor de uitkomst van mijn onderzoek is het beter om dit niet te doen. Doel van dit onderzoek: Door dit onderzoek probeer ik erachter te komen hoe mensen bepaalde informatie interpreteren. Ik kijk hiervoor specifiek naar een aantal factoren die daarop van invloed kunnen zijn. De samenhang tussen de vragen wordt met opzet niet aangegeven, om een zo objectief mogelijk resultaat te krijgen. Overige zaken: - De antwoorden worden anoniem behandeld en uitsluitend voor dit onderzoek gebruikt. - Je mag zo lang over het invullen van de vragenlijst doen als je wilt. - De gegevens uit de tekst zijn aangepast ten behoeve van dit onderzoek en wijken daardoor af van de werkelijkheid. - Er staat geen beloning tegenover het invullen van de vragenlijst, wel heel veel dank! Als je op >> klikt, ga je ermee akkoord dat de door jou ingevulde antwoorden worden gebruikt voor dit onderzoek. Met vriendelijke groet, Diana van Bommel
Studente Master Communicatie & Beïnvloeding
Radboud Universiteit Nijmegen

Q9 Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Hongaren dagelijks het langst. En dat is niet iets om trots op te zijn. Je hoort het steeds vaker: zitten is slecht voor je. Als men meer beweegt en minder zit, is dat beter voor de gezondheid. Maar gegevens die deze uitspraak ondersteunen, zijn moeilijk te vinden. Daarom hebben wetenschappers een nieuw grootschalig onderzoek uitgevoerd, waarbij ze keken naar de zittijd van de inwoners van 28 Europese landen. En wat blijkt? Van alle landen heeft Hongarije het hoogste percentage 'langzitters'. Langzitters De resultaten van de zittijd werden in tweeën gesplitst: of je zit minder dan 7,5 uur per dag of je zit 7,5 uur per dag of langer. Met 32,1 procent langzitters spande Hongarije de kroon, terwijl Spanje met 8,9 procent de minste langzitters kent. Gemiddeld genomen zit 18 procent van de Europese inwoners dagelijks 7,5 uur of langer. Ontevreden zitters Een ander opvallend resultaat was dat mensen die minder uren per dag zaten, meer tevreden zijn over hun leven. Wat kunnen we doen nu we dit weten? Zogenaemde zit-sta-werktafels bieden een uitkomst voor echte zitberoepen. Maar waar het eigenlijk op neerkomt, is dat wij massaal van onze luie kont moeten afkomen en meer moeten bewegen. Als we meer bewegen en minder zitten, verhogen we de kans dat we meer tevreden over ons leven zijn.

Q10 Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Hongaren dagelijks het langst. En dat is niet iets om trots op te zijn. Je hoort het steeds vaker: zitten is slecht voor je. Als men niet meer beweegt en minder zit, is dat slecht voor de gezondheid. Maar gegevens die deze uitspraak ondersteunen, zijn moeilijk te vinden. Daarom hebben wetenschappers een nieuw grootschalig onderzoek uitgevoerd, waarbij ze keken naar de zittijd van de inwoners van 28 Europese landen. En wat blijkt? Van alle landen heeft Hongarije het hoogste percentage 'langzitters'. Langzitters De resultaten van de zittijd werden in tweeën gesplitst: of je zit minder dan 7,5 uur per dag of je zit 7,5 uur of langer per dag. Met 32,1 procent langzitters spande Hongarije de kroon, terwijl Spanje met 8,9 procent de minste langzitters kent. Gemiddeld genomen zit 18 procent van de Europese inwoners dagelijks 7,5 uur of langer. Ontevreden zitters Een ander opvallend resultaat

was dat mensen die meer uren per dag zaten, minder tevreden zijn over hun leven. Wat kunnen we doen nu we dit weten? Zogenoemde zit-sta-werktafels bieden een uitkomst voor echte zitberoepen. Maar waar het eigenlijk op neerkomt, is dat wij massaal van onze luie kont moeten afkomen en meer moeten bewegen. Als we niet meer bewegen en minder zitten, verhogen we de kans dat we minder tevreden over ons leven zijn.

Q8 Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Nederlanders dagelijks het langst. En dat is niet iets om trots op te zijn. Je hoort het steeds vaker: zitten is slecht voor je. Als men niet meer beweegt en minder zit, is dat slecht voor de gezondheid. Maar gegevens die deze uitspraak ondersteunen, zijn moeilijk te vinden. Daarom hebben wetenschappers een nieuw grootschalig onderzoek uitgevoerd, waarbij ze keken naar de zittijd van de inwoners van 28 Europese landen. En wat blijkt? Van alle landen heeft Nederland het hoogste percentage 'langzitters'. Langzitters De resultaten van de zittijd werden in tweeën gesplitst: of je zit minder dan 7,5 uur per dag of je zit 7,5 uur of langer per dag. Met 32,1 procent langzitters spande Nederland de kroon, terwijl Spanje met 8,9 procent de minste langzitters kent. Gemiddeld genomen zit 18 procent van de Europese inwoners dagelijks 7,5 uur of langer. Ontevreden zitters Een ander opvallend resultaat was dat mensen die meer uren per dag zaten, minder tevreden zijn over hun leven. Wat kunnen we doen nu we dit weten? Zogenoemde zit-sta-werktafels bieden een uitkomst voor echte zitberoepen. Maar waar het eigenlijk op neerkomt, is dat wij massaal van onze luie kont moeten afkomen en meer moeten bewegen. Als we niet meer bewegen en minder zitten, verhogen we de kans dat we minder tevreden over ons leven zijn.

Q7 Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Nederlanders dagelijks het langst. En dat is niet iets om trots op te zijn. Je hoort het steeds vaker: zitten is slecht voor je. Als men meer beweegt en minder zit, is dat beter voor de gezondheid. Maar gegevens die deze uitspraak ondersteunen, zijn moeilijk te vinden. Daarom hebben wetenschappers een nieuw grootschalig onderzoek uitgevoerd, waarbij ze keken naar de zittijd van de inwoners van 28 Europese landen. En wat blijkt? Van alle landen heeft Nederland het hoogste percentage 'langzitters'. Langzitters De resultaten van de zittijd werden in tweeën gesplitst: of je zit minder dan 7,5 uur per dag of je zit 7,5 uur per dag of langer. Met 32,1 procent langzitters spande Nederland de kroon, terwijl Spanje met 8,9 procent de minste langzitters kent. Gemiddeld genomen zit 18 procent van de Europese inwoners dagelijks 7,5 uur of langer. Ontevreden zitters Een ander opvallend resultaat was dat mensen die minder uren per dag zaten, meer tevreden zijn over hun leven. Wat kunnen we doen nu we dit weten? Zogenoemde zit-sta-werktafels bieden een uitkomst voor echte zitberoepen. Maar waar het eigenlijk op neerkomt, is dat wij massaal van onze luie kont moeten afkomen en meer moeten bewegen. Als we meer bewegen en minder zitten, verhogen we de kans dat we meer tevreden over ons leven zijn.

Q35 Timing

- First Click (1)
- Last Click (2)
- Page Submit (3)
- Click Count (4)

Q13 De volgende vragen gaan over de gegevens uit de tekst die je zojuist gelezen hebt. Het is niet erg als je het antwoord niet (meer) weet. Schrijf alle gedachtes op die je had terwijl je de tekst zojuist las.

Q14 Schrijf hieronder alles op wat je onthouden hebt van de hoofdboodschap van de tekst. Oftewel: welke boodschap wilde de tekst overbrengen?

Q15 Hoeveel Europese landen waren er betrokken bij het onderzoek?

- ☐ 18 (1)
- ☐ 24 (2)
- ☐ 28 (3)
- ☐ Ik weet het niet meer. (4)

Q16 Wat was de verdeling van zit-uren die gebruikt werd in het onderzoek?

- ☐ Minder dan 7,5 uur - exact 7,5 uur - langer dan 7,5 uur (1)
- ☐ Minder dan 7,5 uur - langer dan 7,5 uur per week (2)
- ☐ Minder dan 7,5 uur - meer dan 7,5 uur per dag (3)
- ☐ Ik weet het niet meer. (4)

Q17 Wat was het hoogste percentage zit-uren van het onderzoek?

- ☐ 31,2 % (1)
- ☐ 32,1 % (2)
- ☐ 33,2 % (3)
- ☐ Ik weet het niet meer. (4)

Q18 Was het gemiddelde percentage zit-uren van alle Europese inwoners?

- ☐ 18 (1)
- ☐ 16 (2)
- ☐ 22 (3)
- ☐ Ik weet het niet meer. (4)

Q11 De volgende vragen, geven uitersten aan. Vink het bolletje aan, dat jouw mening het beste weergeeft. Voor mij is 'meer bewegen en minder zitten':

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Onbelangrijk:Belangrijk (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Saai:Interessant (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Irrelevant:Relevant (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Niet spannend:Spannend (4) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Betekenisloos:Betekenisvol (5) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Onaantrekkelijk:Aantrekkelijk (6) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Niet de moeite waard:De moeite waard (7) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Betreft mij niet:Betreft mij (8) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q34 De tekst benadrukte vooral:

- ☐ De nadelen (1)
- ☐ De voordelen (2)
- ☐ Ik weet het niet meer. (3)

Answer If Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Nederlanders dagelijks he... Is Displayed Or Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Hongaren dagelijks het langst.... Is Displayed And Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Nederlanders dagelijks het l... Is Not Displayed And Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Hongaren dagelijks het langst.... Is Not Displayed

Q12 Wat vind je van het standpunt uit de tekst: Als we meer bewegen en minder zitten, verhogen we de kans dat we meer tevreden over ons leven zijn.

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Negatief:Positief (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Biedt de mogelijkheid om belangrijke voordelen te verliezen:Biedt de mogelijkheid om belangrijke voordelen te behalen (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Answer If Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Nederlanders dagelijks het l... Is Displayed Or Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Hongaren dagelijks het langst.... Is Displayed And Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Nederlanders dagelijks he... Is Not Displayed And Lees onderstaande tekst alsjeblieft: Van alle Europeanen zitten de Hongaren dagelijks het langst.... Is Not Displayed

Q33 Wat vind je van het standpunt uit de tekst: Als we niet meer bewegen en minder zitten, verhogen we de kans dat we minder tevreden over ons leven zijn.

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Negatief:Positief (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Biedt de mogelijkheid om belangrijke voordelen te verliezen:Biedt de mogelijkheid om belangrijke voordelen te behalen (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q25 De volgende vragen gaan over jouw intenties en houding ten opzichte van de boodschap van de tekst. Probeer de vragen zo eerlijk mogelijk en naar je persoonlijke situatie in te vullen. Als ik meer beweeg en minder zit, dan is dat:

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|-------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Goed:Slecht (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Onplezierig:Plezierig (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Schadelijk:Voordelig (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Interessant:Oninteressant (4) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Verstandig:Onverstandig (5) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q21 Ik ben van plan om het komende jaar meer te bewegen en minder te zitten.

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Zeker niet:Zeker wel (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q22 Ik zal het komende jaar meer bewegen en minder zitten.

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Onwaarschijnlijk:Waarschijnlijk (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q23 Ik ben bereid om het komende jaar meer te bewegen en minder te zitten.

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Niet waar:Waar (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q24 Ik ga het komende jaar meer bewegen en minder zitten.

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) | 6 (6) | 7 (7) |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Zeër mee oneens:Zeër mee eens (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q31 De volgende vragen hebben niet langer betrekking op de tekst, maar op een aantal persoonskenmerken van je. Er is hier geen goed of fout antwoord (1/3). Geef alsjeblieft aan in hoeverre je het eens bent met de volgende stellingen:

| | Volledig mee oneens (1) | Mee oneens (2) | Enigszins mee oneens (3) | Neutraal (4) | Enigszins mee eens (5) | Mee eens (6) | Volledig mee eens (7) |
|---|-------------------------------|-----------------------|--------------------------------|-----------------------|------------------------------|-----------------------|-----------------------------|
| Na het lezen van de tekst voelde ik me vrolijk. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Momenteel ben ik in een goede bui. (5) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Op de een of andere manier, voel ik me niet erg comfortabel nu. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Op dit moment voel ik me licht geïrriteerd. (4) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q33 De volgende vragen hebben betrekking op een aantal persoonskenmerken van je. Er is hier geen goed of fout antwoord (2/3). Geef alsjeblieft aan in hoeverre je het eens bent met de volgende stellingen:

| | Volledig mee oneens (1) | Mee oneens (2) | Enigszins mee oneens (3) | Neutraal (4) | Enigszins mee eens (5) | Mee eens (6) | Volledig mee eens (7) |
|--|-------------------------------|-----------------------|--------------------------------|-----------------------|------------------------------|-----------------------|-----------------------------|
| Nieuwe dingen leren vind ik niet erg leuk. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Nadenken is niet mijn idee van vermaak. (14) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik vind het leuk als mijn leven gevuld is met puzzels die ik moet oplossen. (16) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik vind complexe taken leuker dan makkelijke taken. (17) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik vind het prima om te weten dat iets werkt, maar ik hoef niet te weten hoe of waarom het werkt. (18) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q26 Je bent bijna aan het einde van de vragenlijst. De volgende vragen hebben betrekking op een aantal persoonskenmerken van je (3/3). Ik ben een:

- ☐ Man (1)
- ☐ Vrouw (2)

Q27 Mijn leeftijd is:

Q28 Mijn hoogst afgeronde opleiding is:

- ☐ MBO (1)
- ☐ HBO (2)
- ☐ WO (3)
- ☐ Anders (4)

Q29 Ik heb een zitberoep.

- ☐ Ja (1)
- ☐ Nee (2)

Q30 Op mijn werk gebruiken we zit-sta-werktafels.

- ☐ Ja (1)
- ☐ Nee (2)
- ☐ Niet van toepassing, want ik werk niet. (3)

Q32 Dit is het einde van de vragenlijst. Ontzettend bedankt voor het invullen!! Klik op >> om je antwoorden te registeren.

Version 1

The Dutch sit down the most compared to other Europeans. And this is not something to be proud of.

It is a frequently mentioned statement; sitting down is bad for you. If we move more and sit down less, that is healthy. But factual information to support this statement is hard to find. Therefore scientist have conducted largescale research in which they looked at the 'sitting-time' of habitants of 28 European countries. What was the result? The Dutch have the highest percentage of 'long-sitters' of all 28 countries.

'long-sitters'

The results of the 'sedentary-time' were cut down in two; either one sits down less than 7.5 hours per day or one sits down 7.5 hours or longer per day. The Dutch ruled the list with 32.1% 'long-sitters' while Spain had the least 'long-sitters' with 8.9%. On average, 18 % of all European habitants sit down more than 7.5 hours per day.

Unsatisfied sitters

Another remarkable result was that the more and longer people sat down, the less satisfied they were with their life. What can we about this matter now we know about it? The so-called stand-sit-worktables offer a solution for true 'sedentary-jobs'. What it basically says is that we should get our lazy ass of the chair and move more. For instance by using 'stand-sit-worktables. If we would do this, the chance is high we would become more satisfied about our life.

Version 2:

The Dutch sit down the most compared to other Europeans. And this is not something to be proud of.

It is a frequently mentioned statement; sitting down is bad for you. If we do not move more and sit down less, that is unhealthy. But factual information to support this statement is hard to find. Therefore scientist have conducted largescale research in which they looked at the 'sitting-time' of habitants of 28 European countries. What was the result? The Dutch have the highest percentage of 'long-sitters' of all 28 countries.

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Version 3:

The Hungarians sit down the most compared to other Europeans. And this is not something to be proud of.

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The results of the 'sedentary-time' were cut down in two; either one sits down less than 7.5 hours per day or one sits down 7.5 hours or longer per day. The Hungarians ruled the list with 32.1% 'long-sitters' while Spain had the least 'long-sitters' with 8.9%. On average, 18 % of all European habitants sit down more than 7.5 hours per day.

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Version 4:

The Hungarians sit down the most compared to other Europeans. And this is not something to be proud of.

It is a frequently mentioned statement; sitting down is bad for you. If we do not move more and sit down less, that is unhealthy. But factual information to support this statement is hard to find. Therefore scientist have conducted largescale research in which they looked at the 'sitting-time' of habitants of 28 European countries. What was the result? The Hungarians have the highest percentage of 'long-sitters' of all 28 countries.

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The results of the 'sedentary-time' were cut down in two; either one sits down less than 7.5 hours per day or one sits down 7.5 hours or longer per day. The Hungarians ruled the list with 32.1% 'long-sitters' while Spain had the least 'long-sitters' with 8.9%. On average, 18 % of all European habitants sit down more than 7.5 hours per day.

Unsatisfied sitters

Another remarkable result was that the more and longer people sat down, the less satisfied they were with their life. What can we about this matter now we know about it? The so-called stand-sit-worktables offer a solution for true 'sedentary-jobs'. What it basically says is that we should get our lazy ass off the chair and move more. If we do not move more and get our lazy ass off the chair for instance by using 'stand-sit-worktables, the chance is high we would become more unsatisfied about our life.

- Please write down all the thoughts that occurred while you have read the previous text.
 - Please write down everything you remembered about the statement that was posed at the end of the text.
 - How many European countries were investigated in the research?
 - 28
 - 24
 - 18
 - I do not recall.
 - What was the division of sitting down hours?
 - Lower than 7.5 hours, exactly 7.5 hours and more than 7.5 hours
 - Lower than 7.5 hours or more than 7.5 hours per week
 - Lower than 7.5 hours or more than 7.5 hours per day
 - I do not recall.
 - What is the highest percentage of sitting down hours in the research?
 - 31.2%
 - 32.1%
 - 33.2%
 - I do not recall.
 - What was the average percentage of sitting down hours from all European inhabitants?
 - 18%
 - 16%
 - 22%
 - I do not recall.
- To me 'moving more and sitting down less is:

| | | |
|---------------|---------------|-------------|
| ○ Unimportant | 0 0 0 0 0 0 0 | important |
| ○ Boring | 0 0 0 0 0 0 0 | interesting |
| ○ Irrelevant | 0 0 0 0 0 0 0 | relevant |
| ○ Unexciting | 0 0 0 0 0 0 0 | exciting |

- Means nothing 0 0 0 0 0 0 0 means a lot to me
- Unappealing 0 0 0 0 0 0 0 appealing
- Worthless 0 0 0 0 0 0 0 valuable
- Uninvolving 0 0 0 0 0 0 0 involving

- The text highlighted mainly:

- Disadvantages
- Advantages
- I do not recall

- This question implied that subjects read either 'If we move more and sit down less, we increase the chance of a more satisfying life' or 'If we do not move more and sit down less, we increase the chance of a less satisfying life'

| | | |
|----------------------------|---------------|---------------------------------------|
| Positive | 0 0 0 0 0 0 0 | negative |
| Offers possibility to gain | 0 0 0 0 0 0 0 | offers possibility to loose important |
| Important benefits | | benefits |

- If I move more and sit down less, that is:

- Good 0 0 0 0 0 0 0 bad
- Pleasant 0 0 0 0 0 0 0 unpleasant
- Harmful 0 0 0 0 0 0 0 gainful
- Interesting 0 0 0 0 0 0 0 uninteresting
- Sensible 0 0 0 0 0 0 0 insensible

- I plan to move more and sit down less in the next year.

| | | |
|------------|---------------|-----------|
| Surely yes | 0 0 0 0 0 0 0 | surely no |
|------------|---------------|-----------|

- I will move more and sit down less in the next year.

| | | |
|----------|---------------|--------|
| Unlikely | 0 0 0 0 0 0 0 | likely |
|----------|---------------|--------|

- I am willing to move more and sit down less in the next year.

| | | |
|----------|---------------|------|
| Not true | 0 0 0 0 0 0 0 | true |
|----------|---------------|------|

- I am going to move more and sit down less in the next upcoming month

Strongly disagree 0 0 0 0 0 0 strongly agree

After having read the text, please indicate to what extent you agree with the following statements:

- “Currently I am in a good mood”
 - strongly disagree 0 0 0 0 0 0 strongly agree
- “After seeing this ‘stimulus’ I feel cheerful”
 - strongly disagree 0 0 0 0 0 0 strongly agree
- “For some reason I am not very comfortable right now”
 - strongly agree 0 0 0 0 0 0 strongly agree
- “At this moment I feel edgy or irritable”
 - strongly disagree 0 0 0 0 0 0 strongly agree

- Learning new ways to think doesn’t excite me very much. (a)
 - strongly disagree 0 0 0 0 0 0 strongly agree
- Thinking is not my idea of fun. (a)
 - strongly disagree 0 0 0 0 0 0 strongly agree
- I prefer life to be filled with puzzles that I must solve.
 - strongly disagree 0 0 0 0 0 0 strongly agree
- I would prefer complex to simple problems.
 - strongly disagree 0 0 0 0 0 0 strongly agree
- It’s enough for me that something gets the job done; I don’t care how or why it works. (a)
 - strongly disagree 0 0 0 0 0 0 strongly agree

What gender are you:

- Male
- Female

How old are you?

What is your highest education?

- Secondary school
- MBO

- HBO
- WO

I have a sitting-down job

- Yes
- No

At my work, we use sitting-stand-worktables

- Yes
- No
- Not applicable, since I do not work