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The effect of ego-threatening stress on food intake and the role of extraversion

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Abstract

The relationship between stress and eating behaviour has been investigated frequently. High levels of stress were found to be associated with increased food intake, which can lead to overweight. An important mechanism is the proposal that overeating results from an attempt to escape attention away from an ego-threatening stimulus that causes aversive self-awareness. However, ego-threatening stress is not the only trigger of overeating. The current study assessed the role of extraversion in the link between ego-threatening stress and overeating. The main hypothesis was that extraversion moderates the relationship between ego-threatening stress and eating behaviour. In a laboratory experiment, 72 participants were randomly divided in an ego-threatening stress group and a control group. The experiment questioned extraversion by using the NEO Five-Factor Inventory. The subjects were asked to fill in the anagram and were given M&M's to consume. No difference in food consumption were found between the ego-threatening stress group and the control group.

Furthermore, extraversion did not moderate the relationship between ego-threatening stress and eating behaviour. Future research is needed to get a better understanding of the influence of personality, on ego-threatening stress and overeating.

Stress is an aversive state in which the well-being of the organism is in danger or threaten to outstrip and resources to cope (Lazarus & Folkman, 1984). There are many kinds of stressors like psychological stressors, emotional stressors, social stressors, physical stressors, chemical stressors, and physiologic stressors. All these stressors can induce a stress response (Sherwood, 2001). Stressors are in two forms: short term and on daily basis. The short term is called acute stress and the one occur on daily basis is called chronic stress. The most importance reactions to kinds of stressors are the "active fight-or-flight" pattern and the "passive" pattern (Cohen, 2000). Acute or chronic stress can cause responses that can lead to physiologic changes that include slowed gastric emptying, increase in heart rate, elevation of blood pressure, mobilization of energy stores, and decrease in blood flow to non-essential organs (Bhatia & Tandon, 2005). The responses to stress include behaviors such as smoking, alcohol consumption , and eating. Stress also causes hormones that can specifically affect appetite (Torres, Diet, &Nowson, 2007). Several studies indicate that acute stress may influence food intake. Acute stress alters eating frequency, food preference, and the amount of energy intake (Oliver, Wardler & Gibson, 2000; Zellner, Loaiza, Gonzalez et al., 2006).

Ego-threatening stress is fear of failure and endangered self-worth (McGrath 1982). One way to cope with stressful situations is to change the eating behavior (Newman, O'Connor, & Conner 2007). Many different mechanisms have been to explain stress-induced overeating . A theoretical framework that explains eating behaviour of people during stress is the Escape theory **(**Heatherton & Baumeister, 1991**).** Escape theory suggests that people eat to cope with their stress and that eating distract their attention away from stimuli threatening self-esteem by focusing on stimuli. In this view, people sometimes find it difficult and aversive to be aware of themselves, so these people seek to escape (Wicklund, 1975). It is difficult to simply turn off one's awareness of themselves. A strategy is to narrow the focus of attention to the present and immediate stimulus environment like food (Baumeister, 1989). Therefore, disinhibited eating occurs in response to ego threat as attempt to escape aversive self-perceptions accompanied by emotional distress (Heatherton & Baumeister, 1991).

Overweight is a rapidly growing public health problem. Indeed, the severity of the 'obesity epidemic' is underscored by its recognition by the Word Health Organization as one of the top 10 global health problems (Kelner & Helmuth, 2003). Awareness of obesity in the Netherlands has increased, especially after the results of the Fourth National Growth Study in 1997 showed a substantial increase in the prevalence of overweight and obesity since 1980 (van den Hurk, van Dommelen, van Buuren, Verkerk, & HiraSing , 2007). The most recent

data of the Centraal Bureau voor de Statistiek (2016) showed an overweight prevalence of 43% in the Dutch population. As overweight and obesity increase the risk of illnesses, such as heart and vascular diseases, diabetes, and psychosocial problems (Goodman & Whitaker, 2002; Roberts, Strawbridge, Deleger, & Kaplan, 2002). Identifying important determinants of overweight and obesity could increase our understanding of how to prevent negative health issues related to unhealthy high body weight.

The relationship between stress and eating behaviour has been previously investigated. In a study of Wardle, Steptoe, Oliver, and Lipsey, (2000), it was found that high levels of stress were associated with increased food intake, which in turn can lead to overweight (Wardle, Steptoe, Oliver, & Lipsey, 2000). Another study found that a large number of women believed that stress was the trigger of their increased food intake (Bennett, Greene, & Schwartz-Barcott, 2013). Studies also showed that greater stress levels were associated with greater amount of food consumption (Preedy, Watson and Martin, 2011; Torres & Nowson, 2007; Wallis & Hetheringen, 2004). Stress alters food preference, eating frequency, and amount of energy intake. Furthermore, food preference is altered by stress toward intake of sweet foods (Oliver et al., 2000; Zellner et al., 2006). In sum, stress-induced eating may be an important source of overeating, which contributes to overweight.

However, ego-threatening stress is not the only trigger of overeating. Furthermore, personality is an important factor that determines how we cope in stressful situations (Hoekstra, Fruyt, & Ormel, 2007). Personality traits are related with various health outcomes (Raynor & Levine,2009). Several research results showed that some personality traits do influence eating behaviour during stress (Kleifield, Sunday, Hurt, & Halmi, 1994;Greeno & Wing, 1994). Results of recent studies showed that personality factors also influence people's food choices (Tiainen et al., 2013). A prior study has found that low levels of extraversion related to overeating (Kleifield et al., 1993). Furthermore, personality trait extraversion were found to be correlated with overeating styles (Heaven, Mulligan, Merrilees, Woods, & Fairooz, 2001), such as eating in response to a negative mood and stress or in response to environmental food cues (Van Strien, Frijters, Bergers, & Defares, 1986).

Studies of clinical populations with eating disorder have found that low levels of extraversion related to disordered eating (De Silva & Eysenck, 1987; Feldman & Eysenck, 1986; Kleifield et al., 1993). Costa and McCrae(1985) showed that low extraversion is characterized by introspection, reservation and a passive and avoidant style of coping (such as suppression and blame). High level of extraversion is characterized by active and direct coping such as seeking information or support and attempt to change the stressful situation.

Extraversion has been associated with active, problem-focused coping (Penley & Tomaka, 2002). Extraverts have characteristics that contributing benefits for coping with stress. Characteristics such as being sociable, talkative, assertive, experience positive affect, energetic, and warm (Watson & Clark, 1997).

There is too little research about the moderation effect of extraversion in relationship between ego-threatening stress and eating behaviour. It is important to study how extraversion can influence the relationship between ego-threatening stress and eating behaviour. A person's personality may be a risk factor for an unbalanced diet, and this may result in the developing chronic diseases. Personality may make an important contribution to the prediction of general functioning and prognosis (Steiger & Bruce, 2004).

The present experiment assessed the role of extraversion in the relationship between stress (assessed as ego-threatening stress) and eating behaviour. Based on the association of greater stress levels with greater amount of food consumption found in previous studies (Kleifield et al., 1993), it was expected that experiencing a high level of stress would be resulting into more high caloric sweet food consumption compared to experiencing a low level of stress.

Additionally, it was expected that extraversion would moderate the link between ego-threatening stress and overeating. Specifically, it was expected low extraversion and ego-threatening stress correlate positively to greater food consumption.

Method

Participants

Participants randomly selected from the Utrecht University students in the hallways of the campus were invited to take part in the study "Relatie tussen cognitieve vaardigheden en persoonlijkheid". Social sciences students from Utrecht University received course credit for participation. All other participants were not compensated for participation.

The power analysis showed that 67 participants were needed. To calculate power analysis G*Power software used, given alpha .025, power 80%, (one sided). 11 participants were extra added because we estimated a 15% fallout rate. The total of subjects were 78 undergraduate student volunteers, with a dropout of 6.

A total of 13 men and 59 completed the study. Their age was 17 to 31 years, with a mean age of 21.27 (*SD*= 2.92).

Materials

Extraversion

The 60-item NEO Five-Factor Inventory (NEO-FFI; Hoekstra, Fruyt, & Ormel, 2007) was used to assess the level of extraversion. The test was used to measure the personality dimensions extraversion (Hoekstra et al., 2007). Mean scores for the personality trait extraversion were computed based on 12 questions. The NEO- FFI inventories are composed of descriptive statements (e.g., "I like to have a lot of people around me," "I really enjoy talking to people"). The items were answered on a 5-point Likert scale from 1 = strongly disagree to 5 = strongly agree. Items were recoded if appropriated and averaged with higher scores indicating high extraversion. Research has supported the reliability and psychometric validity of the NEO-FFI(Hoekstra et al., 2007). The resulting variable of mean extraversion score was normally distributed, with a non-significant Kolmogorov-Smirnov test (statistic = 0.08, p = .200). The mean extraversion score was 3.38, with a standard deviation of 0.58. Based on the 25th and 75th percentile scores, three groups were created: low extraversion (scores below or equal to 2.92), average extraversion (scores between 2.92 and 3.83) and high extraversion (scores higher or equal to 3.83). This resulted in a low extraversion group (N = 20, M = 2.64, SD = 0.26), an average extraversion group (N = 32, M = 3.41, SD = 0.21) and a high extraversion group (N = 20, M = 4.07, SD = 0.22).

Ego-threatening stress

In line with the work of Both MacLeod, Rutherford, Campbell, Ebsworthy, and Holker (2002) and Zellner et al. (2006) we used anagrams to measure ego-threatening stress. For the experimental group (ego-threatening stress group) was an unsolvable anagram used, and for the control group a solvable anagram. The anagrams contained an instruction and 10 words. An example of an unsolvable anagram word was "bellen," (call). The anagrams are enclosed in the appendix.

Eating behavior

Subjects were presented with bowls containing plain M&M chocolate candies (about 100g). This food was selected to provide subjects with a sweet unhealthy food. This is a popular snack food suggesting that most people find them to be hedonically positive (Zellner et al., 2006). After the experiment was finished we have checked how many M&M's there was left. The average consumption was 26.35 grams (*SD*=3.20).

Procedure

The study was approved by the Faculty's Ethics Committee at the Faculty of Social Sciences of Utrecht University. The study was conducted in a controlled laboratory environment, with the subjects being individually tested in a quiet room. The experimental and control group were randomly assigned to the groups. After entering the room, participants were told that we test the cognitive skills and the relationship between personality and certain cognitive skills were tested. In total 78 envelops were filled before the experiment with a informed consent, evaluation form, debriefing and a secrecy clause and a solvable or unsolvable anagram. These envelops were hustled and randomly numbered. The participants were invited to the laboratory room where the experiment took place. Each participant received an envelope and their own participant number. Afterwards they filled out four demographic questions and personality questionnaire (NEO Five-Factor Inventory) on the computer. Demographic questions about gender, age, school year, and enrollment in the faculty of Social Sciences are made. After the questionnaire the subject received the anagram. 100 grams M&M's were poured out the packing into a cup with the announcement that the subject could consume the M&M's as a "thank you" for their participation. They were told that the anagram would be rated afterwards. Each subject was given 10 minutes to complete the anagram. After the anagram they filled in a form with 11- point rating scale of 0 (low stress) to 10 (high stress), to signal how much stress they experienced during the experiment. During this time the researcher graded the anagram test in other room. Then the researcher came back with a

debriefing and every participant were informed about the purpose of the experiment. Finally the subjects needed to sign a secrecy clause to disclose any information concerning the experiment to others student

Statistical analysis

The statistical analyses were performed with IBM SPSS Statistics Version 20. We checked the assumptions to see if the residues were normally divided. There was also a test for outliers using the Cook Distance's and the Standardized Residual. (Fields, 2013). A manipulation check was performed to test whether the experimental condition did indeed cause participants to experience more stress than in the control condition. The difference in participants' stress level between the two groups was tested using an independent-samples *t*-test. Under the condition of successful manipulation, main effects of stress and extraversion, as well as the interaction stress x extraversion on the dependent variable (eating behaviour) were tested in a 2 (i.e. control group, 'stress' group) x 3 (i.e. low, average, and high extraversion group) *ANOVA*.

Results

Assumptions

For the ANOVA, the assumption of equal error variances is only just met (Levene's test is not significant, F (5, 66) = 2.312, p = .054). The assumption for normally distributed residuals was therefore not met. It is important to check outliers. There were no Cook's distance scores found that were greater than three times the mean Cook's distance score (M = 0.149). Therefore, we can conclude there were no significant outliers in the data.

Manipulation check

The independent-samples *t*-test showed that the assumption of equal variances was met (Levene's test is not significant with p = .247). The mean score for stress level was significantly higher in the 'ego- threatening stress' group (M = 5.33, SD = 2.53) than in the control group (M = 1.92, SD = 2.22), t (70) = -6.089, p <.001.

In contrast with the hypothesis, the results showed no main effect of ego-threatening stress on eating behaviour. Participants in the ego-threatening condition did not significantly

eat more than the participants in the control condition (Table 1), F (1, 66) = 3.068, p = .084. Furthermore, no main effect of extraversion on food consumption was found. Participants low in extraversion did not eat more than participant high in extraversion. Analysis showed that the main effect of extraversion on eating behaviour showed a non-significant effect, F (2, 66) = 1.930, p = .153. The ANOVA showed no significant differences in overeating between the low extraversion group (M = 18.35, SD = 25.39), the average extraversion group (M = 33.00, SD = 27.99) and the high extraversion group (M = 23.70, SD = 28.49).

In table 1 the results show that students with high levels of extraversion during stress ate more than students with a low level of extraversion. Analysis showed no significant interaction between the variables of experimental condition and extraversion level, F (2, 66) = 1.330, p = .272. This does not confirm the hypothesis. The hypothesis that extraversion moderates the relationship between ego-threatening stress and eating behaviour was rejected.

Tabel 1

Eating behaviour

Extraversion	*Ego-threatening*		*Control*	
	M	*SD*	*M*	*SD*
Low	27.30	8.57	9.40	8.57
Average	31.75	8.07	34.25	6.77
High	33.20	8.57	14.20	8.57

Discussion

The goal of this study was to explore the changes in eating behavior associated with ego-threatening stress. We tested the role of extraversion in the relationship between ego-threatening stress and eating behavior.

In contrast with the hypothesis, it was found that students in the ego-threatening condition did not significantly eat more than the participants in the control condition. We did not found that students with low levels of extraversion show overeating. This finding contrasts the proposition of lower extraversion related to overeating (Rhodes, Courneya & Jones, 2003; Elfhag& Morey, 2008). Penley and Tomaka (2002) showed that high levels of

extraversion is characterized by active and direct coping such as seeking information or support and attempt to change the stressful situation. Therefore we assumed that they would influence the relationship between ego-threatening stress and eating behavior. Our results did not confirm that extraversion moderates the relationship between ego-threatening stress and eating behavior.

Stress is difficult to operationalize, because what overload one person may be pleasantly stimulating for another. Evidence has demonstrated that different types of stressors exert different cognitive and physical effects (Gerin et al, 1992).

Two studies (Wallis & Hetherington, 2004; Heatherton, Herman & Polivv, 1992) showed that during stress participants eat more. These studies investigated different sources of stress as 'fear of electroshock' and 'stroop test'. It is showed that different types of stress exert different effects on dependent measures that might be related to eating. Therefore different types of stressors may cause diffent eating behavior.

Maybe an important feature of stress induced overeating is the ways in which different stressors disrupt regular schedules. Maybe stressors that disrupt time schedules are less likely to increase consumption than stressors that cause feeling of discomfort or anxiety. Also the timing of the effect of stress on eating can be differ for the two types of stressors.

Also intensity of stress may moderate the effects of stress on eating behavior. It would be useful to know or individuals overeat after the acute phase of the stress and also useful to know or their later consumption is greater than that which would be predicted from the previous decrease in their intake. Life-threatening stressors may be qualitatively different from stressors that are not life threatening. The effect of stress can be moderated by the stress's intensity (Greeno & Wing, 1994). Method employed to generate ego-threatening stress like failure at an easy task like anagram are difficult to replicate and are prone to uncontrollable biases. It's important to have a reliable laboratory method of inducing stress that poses a treat to self-esteem and emotional stability (Lattimore, 2001). High stress and aversive self-awareness may be necessary to induce stress related eating (Wallis & Hetherington, 2004).

Zellner et al (2006) investigated the eating behavior of different food items during an ego-threatening stress situation and a control situation. They could not confirm if the ego-threatening stress or the control group at more of certain food. Thus it is important to examining food consumption with different sources of stress and habitual eating style was needed. The present findings may be speculated to extend interpersonal, self-threatening and social stressors, which are perceived as a rather distinct source of stress (Wallis &

Hetherington, 2009).

Penley and Tomaka (2002) showed that high levels of extraversion is characterized by active and direct coping such as seeking information or support and attempt to change the stressful situation. Therefore we assumed that they would influence the relationship between ego-threatening stress and eating behavior. The difference with this study and previous study is that those results were attained only using questionnaires. The results can be differ because of the testing method. It is also possible that high levels of extraversion influence the stress level of the subject. Personality could be than a confounding factor. Confounding factor is a factor that influence the depended (eating behaviour) and independent factor (ego-threatening stress) (Aldwin, 2007).

The results must be considered in light of study limitations. The above results may not be an accurate representation of the true nature of the relationships present between extraversion, ego-threatening stress and their effect on food intake because the weaknesses. Stress has been studied in the laboratory setting. Laboratory studies of stress mostly expose subject to a short-term experience. The advantage of this kind of stressors is that each subject can be exposed to the same experience. But they are clearly weaker and shorter than naturalistic stressor (Greeno & Wing, 1994). Additional limitation of the experimental study includes a relatively small sample size. A large random sample from the general population gives more accurate results. The method by which participant scores were obtained may also account for some unreliability. The questionnaires that were used to measure personality traits extraversion and stress were self-reported questionnaires. For the ego-threatening stress we use an 11 points stress level scale. When introducing a manipulation in a model there always need to be a before and after measurement to see the effectiveness (Wallis & Hetherington, 2008). This was not done in this study. Confounding variables may have also been of detriment to the study. The time of day may have affected participant responses. For example if participants tested just after lunch they maybe have lack of hunger than they eat less than if they were hungry. If participants had been tested before lunch, when they had not ate and were hungry, they may eat more. Therefore, it's better to test participants at set times when hunger has less influence on preference. A further limitation is that subjects had a limited amount of time to consume the foods. Other limitation is the possibility that, for reasons of social desirability, people may have disavowed emotional eating.

In conclusion, this study did not find evidence about the role of extraversion between the relationship of ego-threatening stress and eating behaviour. To get a better understanding of the influence of personality more research is needed. Ego-threatening stress does not

change eating behaviour. However, it is possible to draw some conslusions from other literature. Much work to be done on whether different types of stressors produce different effects on eating and or the intensity and duration of stress affect overeating. The level of stress that has been tested is narrow, consisting largely of short, low-intensity laboratory stressor. Intense life threatening stress may cause a change in eating.

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Appendix Experiment

Instructies experiment

Doel experiment: Onderzoeken of persoonlijkheid het eetgedrag van personen in een ego-bedreigende situatie beïnvloed.

Hoeveel deelnemers: 70 deelnemers

Datum:16 november 2015 tot en met 7 december 2015

- 35 enveloppen met een normaal anagram situatie, een informed consent, toestemmingsformulier, debriefing en geheimhoudingscontract in zit.
- 35 enveloppen met een ego threatening anagram situatie, een informed consent, toestemmingsformulier, debriefing en geheimhoudingscontract in zit.

Instructie 1: experiment deel 1: vragenlijst invullen

- Onderzoeker heet proefpersoon welkom en geeft aan dat het onderzoek gaat om de verbanden tussen de persoonlijkheid trek ´scepticisme´ en cognities. '*Er wordt eerst begonnen met een persoonlijkheidstest via de computer, vervolgens gaan we over naar een cognitieve opdracht*.'
- De onderzoeker kiest willekeurig een van de enveloppen. Het informed consent en het toestemmingsformulier worden getekend. Alle papieren worden voorzien van het respondentennummer.
- Aan de proefpersoon wordt gevraagd plaats te nemen achter de computer.
- De proefpersoon wordt gevraagd een seintje te geven aan de onderzoeker wanneer hij klaar is met de persoonlijkheidstest die wordt afgenomen via de computer.
- De juiste webpagina wordt voorheen geladen op de computer.

Instructie 2: experiment deel 2: anagram

- Er zijn twee anagrams gemaakt voor dit onderzoek. Een oplosbare (situatie 1) of een niet-oplosbare (situatie 2). De uit de envelop behaalde anagram wordt aan de proefpersoon voorgelegd.
- De proefpersoon wordt nogmaals bedankt voor zijn deelname. Helaas kunnen we hem /haar geen geld aanbieden, maar alleen ppu. Als bedankje hebben we nog wel M&M's voor elke deelnemer. Voor de ogen van de proefpersoon wordt er een zakje M&M'S tevoorschijn gehaald. Het zakje is vooraf gewogen d.m.v. een keuken weegschaal en bevat 100 gram M&M's. De M&M's worden in een bakje gedaan en op het bureau van de proefpersoon geplaatst. (We zetten per dag 10 plastic zakjes M&M's van 100 gram klaar die we direct in een lege M&M zakje kunnen plaatsten. In het lab en voor de ogen van de proefpersoon worden de M&M's in een bakje gegoten.)
- De proefpersoon mag tijdens het maken van anagram de M&M's eten.
- De proefpersoon krijgt nu een oplosbare (situatie 1) of een niet-oplosbare (situatie 2) anagram voor zich. Er wordt gecommuniceerd dat dit een vrij makkelijke opgave is en dat er na afloop een scoring zal plaatsvinden met zijn normgroep.
- De onderzoeker geeft aan dat ze even iets moet navragen en de proefpersoon 10 minuten heeft om de anagram te maken.
- De onderzoeker stelt het alarm in (van een telefoon) en vraagt de proefpersoon om na die 10 minuten echt te stoppen met het onderzoek.
- De onderzoek zorgt ervoor dat ze binnen 10 minuten terug is om de afloop van de test te ervaren.

Instructie 3: experiment deel 3: stressschaal

- Na 10 minuten komt de onderzoeker terug. Wanneer het alarm afgaat wordt de proefpersoon verzocht om te stoppen met de anagram.
- Er wordt gevraagd om een algemeen evaluatieformulier in te vullen.
- Om te maskeren dat we eetgedrag en stress meten, worden er ook algemene vragen gesteld over hoe de test ging

Instructie 4: Debriefing

- Omdat er plaatsvindt van misleiding is het belangrijk dat de proefpersoon wordt ingelicht over het onderzoek.
- De instructies van de debriefing worden doorgenomen.

- Aan de proefpersoon wordt expliciet gevraagd om de kern van het onderzoek niet aan andere studenten te communiceren.
- Er wordt een geheimhoudingsverklaring ondertekend.

Respondentnummer:

Universiteit Utrecht

Toestemmingsformulier

Experiment: Relatie tussen cognitieve vaardigheden en persoonlijkheid

Onderzoeksleid(st)ers: Sibel Arpat en Pelin Altun

Bij deelname aan bovenstaand onderzoek is het van belang dat je kennis neemt van de volgende punten en daarmee instemt:

- Ik ben goed geïnformeerd over het doel en werkwijze van het onderzoek.
- Mijn deelname aan het onderzoek is geheel vrijwillig. Ik kan mij ten allen tijde terugtrekken uit het onderzoek zonder dat dit op enige wijze nadelige gevolgen voor mij heeft.
- De onderzoeksgegevens worden anoniem geanalyseerd. Bij publicatie van de resultaten wordt er zorgvuldig op gelet dat de gegevens niet individueel herkenbaar zijn.
- Ik zal nauwkeurig en serieus meedoen aan alle onderdelen van dit onderzoek
- Mijn persoonsgegevens zullen op geen enkele wijze worden gekoppeld aan de onderzoeksgegevens.

Indien je vragen hebt met betrekking tot het onderzoek kan je contact opnemen met de onderzoeksleidsters.

Ik heb de bovenstaande punten nauwkeurig gelezen en ga hiermee akkoord.

Handtekening Datum Plaats

…… ……

……..

Als onderzoeksleidster van dit onderzoek verklaar ik dat de bovengenoemde deelnemer goed is geïnformeerd over het onderzoek en dat ik borg sta voor de privacy van zijn/haar gegevens

Naam	Handtekening	Datum	Plaats
……	……..	…….	…….

Respondentnummer:

Evaluatieformulier

Bedankt voor het deelnemen aan het onderzoek. Wij willen graag weten hoe je dit onderzoek hebt ervaren. Kun je de onderstaande vragen beantwoorden door middel van ze een cijfer te geven?

1. Vond je de persoonlijkheidstest gemakkelijk in te vullen?
   - Ja
   - Nee

2. Vond je de anagramtest gemakkelijk in te vullen?
   - Ja
   - Nee
3. Geef aan hoe gestrest je bent door de persoonlijkheidstest?
   (0=geen stress 10=veel stress)

0 1 2 3 4 5 6 7 8 9 10

4. Geef aan hoe gestrest je bent door de anagram opdracht?
   (0=geen stress 10=veel stress)

0 1 2 3 4 5 6 7 8 9 10

Debriefing

We zouden met je graag evalueren hoe je dit onderzoek in zijn geheel hebt ervaren.

Had je al een idee over het doel van het onderzoek voordat je aan het onderzoek begon?

Zo ja,

wat……...

Heb je al eerdere ervaringen met soortgelijk
onderzoek?.....
Ben je nog geïnteresseerd in het doel van het onderzoek?

- Nee (volgende alinea)
- Ja, het doel was te achterhalen hoe jij je zou gedragen tijdens het maken van een cognitieve taak en in hoeverre dit je eetgedrag beïnvloed en of je persoonlijkheid invloed uitoefent op deze relatie.

Wil je op de hoogte gehouden worden van het onderzoek door middel van een mail?

- Nee
- Ja, geef je emailadres door, …….

We zouden het fijn vinden indien je de expliciete details van dit onderzoek met niemand anders van de universiteit bespreekt. Zodat zij zonder eventuele sturing kunnen deelnemen aan het experiment. Daarom willen wij je vragen om het volgende geheimhoudingscontract te ondertekenen.

Bedankt voor je deelname. Voor je deelnamen aan het onderzoek ontvang je een proefpersoon uur. Mag ik je studentennummer zodat ik je proefpersoonsuren kan doorgeven?

Geheimhoudingscontract

De masterstudenten Sibel Arpat en Pelin Altun hebben onder leiding van Dr. Lot Sternheim een onderzoek opgezet naar de relatie tussen stress en eetgedrag.

Ondergetekende heeft deelgenomen PERSCOG onderzoek. Met ondergetekende is overeengekomen dat ter bescherming van het doel van het onderzoek hij/zij geen informatie zal uit wisselen met derden met betrekking tot het onderzoek.

Ondergetekende verklaard bovengenoemde afspraken in acht te nemen tot afloop van het onderzoek op 7 december.

Naam:
Studentennummer:
Geboortedatum:

Respondentnummer:

Datum:

Plaats:

Handtekening Participant:

Handtekening Proefleiders:

……

……

Anagram

Beste participant,

Een anagram van een woord is een ander woord dat je kunt maken door de volgorde van de letters te veranderen. Zo kun je van "TAK" bijvoorbeeld "KAT" maken.

Vorm met ieder woord hieronder een andere woord.

N E P	……..
L O O P	……..
P O T	……..
U N I T	……..
E T E N	……..
D O N O R	……..
T E E R	……..
T I P	……..
K I J K E N	……..
K A M E R	……..

Respondentnummer:

Beste participant,

Een anagram van een woord is een ander woord dat je kunt maken door de volgorde van de letters te veranderen. Zo kun je van "TAK" bijvoorbeeld "KAT" maken.

Vorm met ieder woord hieronder een andere woord.

A A R D E	……..
K O K E N	……..
H U I S	……..
B A L P E N	……..
B E L L E N	……..
K L I K	……..
Z O U T	……..
S C H U U R	……..
B A K K E N	……..
P A A R D	……

Respondentnummer:

Beste participant,

Een anagram van een woord is een ander woord dat je kunt maken door de volgorde van de letters te veranderen. Zo kun je van "TAK" bijvoorbeeld "KAT" maken.
Vorm met ieder woord hieronder een andere woord.

N E P	……..
L O O P	……..

P O T ……..

U N I T ……..

E T E N ……..

D O N O R ……..

T E E R ……..

T I P ……..

K I J K E N ……..

K A M E R ……..

Respondentnummer:

Beste participant,

Een anagram van een woord is een ander woord dat je kunt maken door de volgorde van de letters te veranderen. Zo kun je van "TAK" bijvoorbeeld "KAT" maken.
Vorm met ieder woord hieronder een andere woord.

A A R D E ……..

K O K E N ……..

H U I S ……..

B A L P E N ……..

B E L L E N ……..

K L I K ……..

Z O U T ……..

S C H U U R ……..

B A K K E N ……..

P A A R D ……..