Does a Positive Suggestion Work Better in Encouraging Positive Eating Behavior?

Thamonwan Chukhanhom, Khon Kaen University, Thailand

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Abstract
Due to the increasing problem of diabetes caused by unhealthy food consumption behavior, countless behavioral science has paid attention to encouraging people to eat healthier foods. Previous studies suggested that framing messages with low and high-construal influences people's food choices, and a sense of power is also found to motivate individuals to change their behavior. Thus, the current study aimed to investigate the effects of healthy messages framed with low and high construal levels combined with a sense of power on people's healthy food choices. In doing so, four-hundred participants were randomly assigned to one of five conditions in the laboratory experiment: i. low-construal level message, ii. the high-construal level message, iii. a low-construal level message with a high sense of power, iv. a high-construal message with a high sense of power, and v. control group (no message frame). Each message was presented in the "thank you" card, given to participants in each condition after completing the activity that did not relate to food. Afterward, participants were asked to choose either healthy brownies or regular ones as a reward for participating in the experiment. The result showed that a low-construal healthy message influenced participants to choose healthy brownies ($p<0.05$). Unexpectedly, messages with a high construal level and a high sense of power were not shown the effects.

Keywords: Construal Level Theory, Message Framing, Sense of Power, Healthy Eating Behavior, and Laboratory Experiment

1. Introduction

In Southeast Asia, Thailand currently has the second highest level of obesity, behind Malaysia in the first place (Taylor, 2021). Research has shown that the number of diabetic patients in Thailand has grown over the years (Hunsa, 2021) and that deaths from this disease account for nearly 70% of all deaths (Hunsa, 2021). Additionally, high sugar consumption is associated with diabetes risks (Hunsa, 2021) and can result in a number of non-communicable diseases (NCDs), for example, liver cancer, diabetes, and obesity. The Thai Health Promotion Foundation declared that the average Thai person consumes about 6 teaspoons of sugar per day, and this puts them at a five times greater risk of developing a fatal disease than COVID-19. According to ThaiHealth Watch, Thai people eat food that tastes extremely sweet, which not only causes these diseases but also affects blood vessels, the heart, and kidneys (Thai PBS World, 2021).

According to such statistics, throughout the past decades, there have been countless behavioral science initiatives aimed at encouraging people to reduce their risk of developing these diseases by eating healthy food. For example, Segovia et al. (2020) conducted a laboratory experiment focusing on the association between food decision-making and episodic future thinking (EFT). EFT defined as efficacy to project self into the future, has proved that it productive for pre experiencing in future aftereffect of going actions. Besides, substantial studies in domain of food choice rely on the proximity effect; the phenomenon that human are more likely to make a decision on most proximally option that present to them. Gestel et al. (2020) examined the affect of proximity nudge on food choice in a realistic circumstances with multiple choices in the present surroundings of the target choice and was found that people tend to choose the proximity one.

Furthermore, psychological distance is another factor that influences human behavior. Psychological distance refers to a demarcation between instances, for example persons, events, or times (Baltatescu, 2014). Trope et al. (2005) has clarified the relationship between psychological distance and mental construal. They found that distant objects are construed at a further level. High level construal reminds people of more distant objects. For example, a forest might be seen from a distance, however, as it is viewed from a closer point, the individual trees become more visible. The reverse is also true; to see the forest instead of the trees, it must be viewed from further away. This indicates that more psychological distance, the interpretation becomes further abstract. Also, the more level of abstraction, the furthur psychological distance is envisaged.

Soderberg (2015) issued two meta-analyses of 106 papers consisting of a total 267 research experiments on the effects of psychological distance on abstraction and its consequences. The results showed a dependable and middle size affect of psychological distance on both levels (low and high) of abstraction in psychical representation and the consequences. To illustrate, in one study, individuals were asked to think of himself/herself perform the activities neither tomorrow nor next year. Participants showed a higher relative bias on high level versus low level explanation when they were thinking of doing activities in the distant future. Accordingly, as temporal distance increases, people construe events more abstractly.

Most studies on psychological distance have been grounded in construal level theory (CLT); a social psychology theory that interprets the relationship between psychological distance and the scope of what a person is contemplating (object or event for example) as abstract or concrete. Where psychological factors have been applied together with message framing,

CLT has garnered excessive attentiveness from the psychology and marketing fields (Soderberg et al., 2015). Most analyses from published research state that low construal levels can motivate a participant's decision when they have to deal with proximal decisions. This is also the case when they face the how message that are concrete or psychologically proximate. On the other hand, high construal levels will directly motivate participants' decisions when they have to deal with distant decisions, and are faced with why messages that are abstract or psychologically distant.

The current study aimed to investigate how to persuade people to consume less sugar by framing messages based on CLT. Specifically, the present study expected that low construal messages would directly lead subjects to choose a healthy option. This is in accordance with Trope et al. (2010), whose major findings were that for psychological proximity people think at a concrete and detailed level (low CLT or 'how'), and when psychologically distant in more broad and abstract terms (high CLT or 'why'). In addition, the current study examined the effects of sense of power on the relationship between psychological distance and behavior. Smith & Trope (2006) insisted that consumers with high power tend to associate in high-level construal and more abstract cogitation. Concurringly, previous findings introduce that long term goals is liable to be more outstanding when consumer has higher level of power. To illustrate, Magee et al. (2010) stated that people with higher positional power interpret incidences more abstractly than those who has less positional power. A higher sense of power stimulates consumers to engage in high-level versus low-level construal. It can also stimulate consumers to put more emphasis on long-term consequences of a decision. Previous research has suggested that consumers with high power have a tendency to seek a target that they regard as salient (Wang et al., 2020).

Thus, to satisfy the research objectives, a lab experiment was conducted to test four treatments: messages with low construal level (how an individual should eat), high construal level (why or reason to eat), low construal level (how) together with sense of power (high power), and high construal level together with sense of power (high power), and 1 control group (no message). Based on previous research, the researcher expected that a message with low (how) together with sense of power would have a higher impact on consumers to choose a healthy option than other treatments.

To develop sustainable healthy eating behavior amongst customers, messages should be framed with an appropriate construal level together with a high sense of power. The current study is expected to benefit agencies, entrepreneurs and people who need to stimulate their loved ones or customers to change their behavior to healthy eating for their good health and to reduce unnecessary costs.

2. Methodology

Experimental Design and Sample

To test the research question of whether the positive suggestion works better in encouraging positive eating behavior. A between-subject design with four experiment conditions and a control group was employed in a laboratory experiment, which was conducted at Khon Kaen University, from August to October 2022, the sample was a graduate student at Khon Kaen University who was not *allergic to milk, butter, peanuts, or sugar and was also able to read and write Thai.* A total of four hundred participants were recruited through an online invitation poster. The online poster also informed that participants must complete two sets of

questionnaires: *i. personal eating behavior and ii. carefully reading and rating the given messages*. If so, they will receive one piece of brownie and fifty baht as compensation at the end of the activity. A student who is interested in joining the experiment can be registered through the online form. Our team will opt for the qualified student and randomly define them into one of five conditions (forty rounds: ten people each). The confirmation message will be directly sent to them and provided with the date and round of an experiment.

Procedure:

Experiment stage

Registered who truly meet all the trial qualifications will receive the confirmation date and round of the experiment and were randomly assigned to one of five conditions.

Four were treatment groups:

- ***treatment group I.*** received a LOW-construal healthy message. (HOW to choose the healthy option)
- ***treatment group II.*** received a HIGH-construal healthy message. (WHY choose the healthy option).
- ***treatment group III.*** received a LOW-construal healthy message. (HOW to choose the healthy option) together with a *high sense of power*.
- ***treatment group IV.*** received a HIGH-construal healthy message. (WHY choose the healthy option) together with a *high sense of power*.

Whilst one was the control group

- ***control group*** received *no persuading message.*

The experiment will be conducted with a total of forty rounds, with ten participants each, meaning out of 400, eighty participants will be in each trial group.

On that day, the researcher showed them to the room in which participants sat at individual tables and announce the two activities: firstly, complete the eating behavior questionnaire, at this stage, the researcher emphasized to the participants that the collected data will only be published as per-capita averages, not personal. So that the participants can fill out the information accurately and truthfully. Subjects were asked to provide information regarding their demographics and eating behavior by completing a questionnaire. Demographic questions included: gender, age in years, height, weight, and salary. Behavioral questions included: Currently, do you have a grievous health issue? Do you usually eat healthy foods? Are you currently on a diet?

Moreover, participants need to fill out how hungry do they felt right now with the ranking 1 (not at all) to 5 (extremely hungry) to assess their current hunger. This was to prevent participants' hunger levels from affecting the discrepancies in the experimental results. The reason being that if the participants had high hunger levels, it could bias brownie selection.

The Dutch Eating Behavior Questionnaire by van Strien et al. (1986) was used to check whether participants could be classified as emotional eaters, restrained eaters, or external eaters. The question was translated into Thai by the double translation method. Such a questionnaire contains 33 questions. A total of 10 questions are used to assess whether

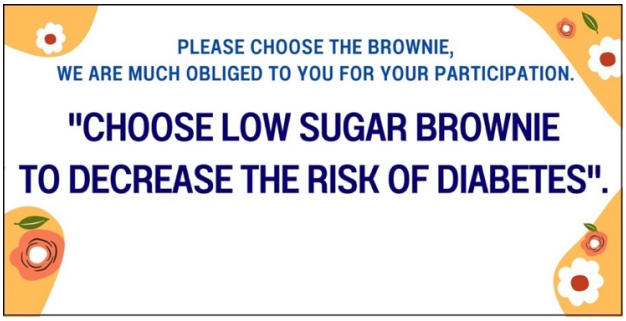
participants are restrained eaters. Another 10 questions assess whether participants are emotional eaters whilst the rest 13 questions were external eaters. Response ranges are used to classify participants according to their emotional or restrained eating habits (Hussain et al., 2020).

After the participants completed the personal and background information, the researcher introduced the following activities of that day, and an information sheet was provided.

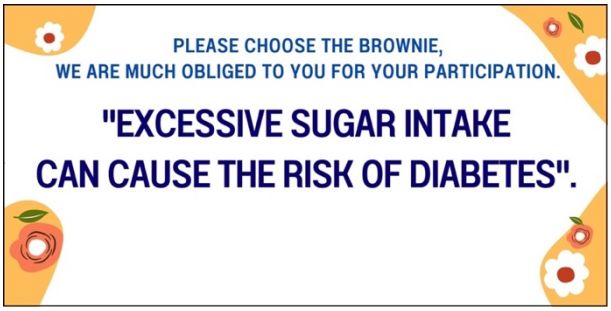
The second important stage comes, participants were distracted from the actual experimental purpose by the score rating activity. A narration by the researcher about the corruption in 'attendance check', which arises from the sympathy of the teacher was occur. Such activity helps gain participants' intention to concentrate on solving the corruption problem and mind carefully reading the entire message. After the narration stage, participants immediately read the second set of questionnaires carefully: the seven corruptions in attendance check's messages and were asked to rate on a scale of one (not at all) to seven (definitely agree). On the same questionnaire, which, of course, contained a message touting healthy brownies at the end. Participants will continue to focus on question number eight which was no longer the rating score, yet our *target question*.

The target question provided two substances: firstly, start with the 'THANK YOU' message which led them to choose brownies as compensation, followed by the different four persuading healthy brownie messages which were shown as follows:

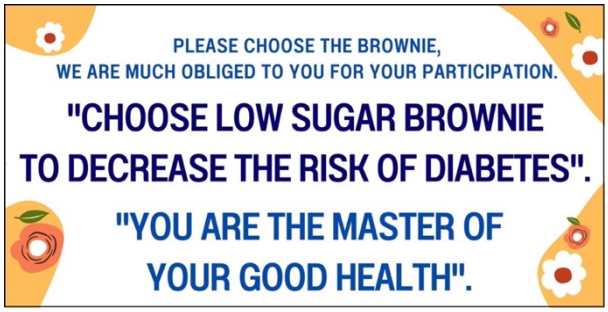
Treatment group I : LOW construal level message (HOW)



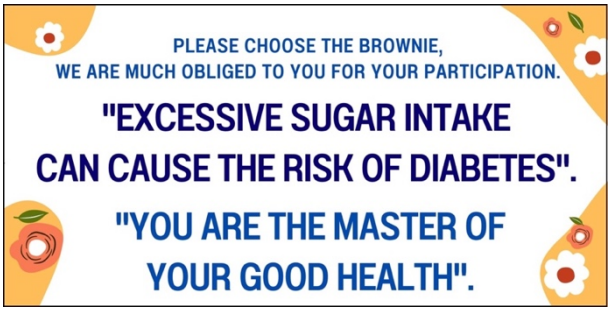
Treatment group II : HIGH construal level message (WHY)



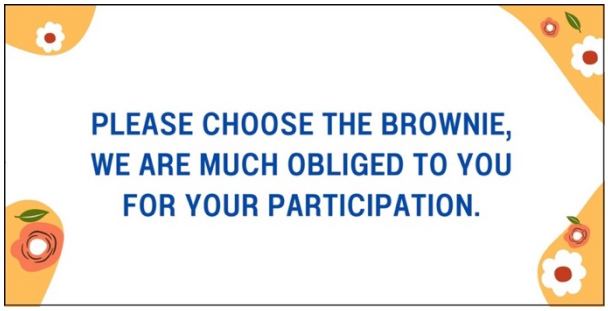
Treatment group III: LOW construal level message (HOW)
+ (HIGH) sense of power.



Treatment group IV : HIGH construal level message (WHY)
+ (HIGH) sense of power.



Whilst, in ***the control group***, participants will receive a 'THANK YOU' message *only*.



Afterward, participants had to mark their choice either receive a '*healthy brownie'* or an '*unhealthy brownie'* on the last question provided in the sheet. The trials' entire activities take approximately thirty minutes. In the final stage, the researcher checked for the completeness of all responses and speech the participants a sincere thank you. Then, they were invited to the space in front of the room and picked one piece of a '*healthy brownie'* or an '*unhealthy brownie' that they consider at the end of the questionnaire* and the amount of fifty baht.

Manipulation Check

We verify if the subjects truly read all messages including manipulated ones by providing them with the square box: placed below the target picture. The box mentions them to carefully read all the messages, especially on the last page. If participants truly read all the

messages, they were asked to mark the correct (ü) symbol in the box. In the case that participants do not mark the correct symbol in the square box, the responses will be sorted out.

Statistical method

A binary outcome is a common term implying it only has two possible outcomes (yes or no) for a definite situation. Binary outcomes are implemented in several fields. For example, in computer science, a 'bit' is a binary outcome with a value of either zero or one, and a series of bits are combined to create data. Also, many statistical and math applications use binary outcomes (Motley Fool Staff, 2016).

In the current study, a model of binary outcomes was introduced as follows:

$$HT_i = \beta_0 + \beta_1 LCi + \beta_2 HC_i + \beta_3 LCP_i + \beta_4 HCP_i + \beta_5 BMI_i + \beta_6 PI_i + \beta_7 EB_i + ER_i$$

where participants choosing the healthy brownie is the dependent variable. The variables LC_i, HC_i LCP_i and HCP_i are treatment dummies while the control is excluded. - BMI_i is a measurement of body fat based on height and weight. PI_i is the participant's general information (e.g., gender, age, and faculty). HNG_i is the level of participants' hungriness. EB_i is the eating behavior and ER_i is a logistic distribution error. The standard errors are a group at an individual level.

- HT_i is the dependent variable coded as 1 if participants chose the healthy brownie and 0 if participants did not. Where its unit is individual. The researcher expected that each participant in the four treatment conditions would have a higher probability of choosing the healthy brownie after they read the construal level message compared to the control group.

- LC_i HC_i LCP_i and HCP_i refer to the treatment:
LC_i refers to treatment i: the low construal level message.
HC_i refers to treatment ii: the high construal level message.
LCP_i refers to treatment iii: the low construal level message together with high sense of power.
HCP_i refers to treatment iv: the high construal level message together with high sense of power.
The four treatments were coded as 1 if participants chose the healthy brownie and 0 if participants did not. The researcher expected treatment group iii to have the highest number of participants to choose the healthy brownie.

- BMI_i is Body Mass Index: the standard formula of BMI is "kg/m^2". BMI is also used to classify subjects as either normal weight with BMI less or equal to 24.9, overweight with 25-29.9, or obese with more or equal to 30. According to Segovia (2020) following the National Institute of Health guidelines to categorize subjects by BMI. The researcher expected that participants in the overweight and obese groups would be more likely to choose the healthy brownie in the case of the treatment groups i, ii, iii, and iv.

- PI_i is the personal information (e.g., age, gender, and diet). This was used to confirm there was no bias in the experiment.

- EB_i refers to eating behavior. According to The Dutch Eating Behavior Questionnaire by van Strien et al. (1986), the range is from 1 (never) to 5 (very often). Responses with higher scores refer to an increase in emotional or restrained eating (Hussain et al., 2020). The researcher expected that the participants with restrained behavior would choose the healthy brownie more than people classified as emotional eaters.

- ER_i is the logistic distributed error term.

- The range of 1 to 5 (not at all to very often) will be present as mean, standard deviations (sd), standard error (se), minimum, and maximum values.

3. Results

Descriptive

The experiment was conducted and went successfully as planned. By the consists of five experimental groups: I. low CLT (HOW), II. high CLT (WHY), III. low CLT (HOW) with High sense of power, IV. high CLT (WHY) with High sense of power and V. the control group. All Four-hundred participants were randomly assigned to one of five groups and were organized into 40 rounds of an experiment. Each round contains 10 participants. Whereas its consequence reveals as a statistic in Table I. and Table II.

Table 1 Descriptive statistic: Demographic and Eating Behavior

							Dutch Eating Behaviour Questionnaire		
			Age	Salary	BMI	Hungriness	Restrain	Emotional	External
CONDITION	CONTROL	Min	18.00	1,000.00	14.20	1.00	1.00	1.00	2.10
		Max	24.00	20,000.00	36.89	5.00	4.60	4.54	4.80
		Means	20.40	8,481.25	21.25	2.4	2.60	2.39	3.76
		Standard deviation	1.70	3,640.01	4.26	1.24	0.90	0.75	0.54
	TREATMENT I.	Min	18.00	1,000.00	16.53	1.00	1.00	1.00	2.30
		Max	26.00	100,000.00	35.75	5.00	4.50	5.00	4.80
		Means	19.55	7,918.75	21.88	2.39	2.77	2.12	3.51
		Standard deviation	2.18	3,797.50	3.76	1.37	0 .86	0.78	0.58
	TREATMENT II.	Min	18.00	2,500.00	15.94	1.00	1.00	1.00	2.40
		Max	22.00	60,000.00	40.29	5.00	4.60	4.23	4.80
		Means	18.50	9,143.75	21.94	2.79	2.85	2.27	3.63
		Standard deviation	0.98	7,721.31	4.97	1.52	0.89	0.86	0.51
	TREATMENT III.	Min	18.00	3,000.00	16.23	1.00	1.30	1.00	2.10
		Max	26.00	60,000.00	34.96	5.00	4.80	4.54	4.60
		Means	21.23	12,531.25	21.52	2.98	2.79	2.11	3.50
		Standard deviation	2.59	9,420.669	3.78	1.15	0.81	0.83	0.59
	TREATMENT IV.	Min	18.00	2,800.00	13.89	1.00	1.00	1.00	1.90
		Max	26.00	16,000.00	32.41	5.00	4.70	4.46	4.70
		Means	19.53	7,372.5	21.28	2.53	2.62	2.36	3.55
		Standard deviation	2.04	3,328.967	3.93	1.32	0.95	0.86	0.68

Table 1 reveals the minimum, maximum, means, and standard deviation from the five conditions.

Table 2 Descriptive statistic: The randomization checks for demographic and Eating Behavior.

	CONDITION				
	CONTROL (N=80)	**TREATMENT I. (N=80)**	**TREATMENT II. (N=80)**	**TREATMENT III. (N=80)**	**TREATMENT IV. (N=80)**
Characteristic					
Gender (%(n))					
Male	16.25 (13)	22.5 (18)	28.75 (23)	35 (28)	35 (28)
Female	83.75 (67)	77.5 (62)	71.25 (57)	65 (52)	65 (52)
Gender	$0.838^{B*/C**}$	$0.775^{F*/G*}$	0.713	0.650	0.065^{D***}
Female=1	(0.042)	(0.047)	(0.051)	(0.054)	(0.054)
Age	$20.40^{A***/B***}$	$19.55^{E***/F***}$	$18.50^{H***/I***}$	$21.23^{C**/J***}$	19.53^{D***}
	(0.190)	(0.244)	(0.110)	(0.290)	(0.228)
Salary	$8481.250^{C***/D**}$	7918.750^{F***}	$9144.750^{H**/I*}$	12531.250^{J***}	7372.500
	(406.965)	(424.574)	(863.269)	(1053.263)	(372.190)
BMI	21.25	21.88	21.94	21.51	21.28
	(0.477)	(0.420)	(0.556)	(0.423)	(0.439)
Healthy	0.125^{D*}	0.188	0.200^{H*}	0.100^{I*}	0.225
	(0.037)	(0.044)	(0.045)	(0.034)	(0.470)
Loose weight	0.263^{A*}	0.386	0.325	0.388^{C*}	0.313
	(0.050)	(0.059)	(0.053)	(0.055)	(0.052)
Hungriness	$2.400^{B*/C**}$	$2.388^{E*/F*}$	2.788	2.975^{J**}	2.525
	(0.138)	(0.154)	(0.170)	(0.128)	(0.148)
Dutch Eating Behavior Questionnaire					
Restrain eating	2.599	2.766^{B*}	2.848	2.788	2.621
	(0.101)	(0.961)	(0.099)	(0.090)	(0.106)
Emotional eating	$2.388^{C**/A**}$	2.118^{G*}	2.265	2.109^{J*}	2.363
	(0.084)	(0.087)	(0.096)	(0.093)	(0.096)
External eating	3.759^{A***}	3.514	3.633	3.503^{C***}	3.548^{D***}
	(0.061)	(0.065)	(0.057)	(0.066)	(0.076)

Note: Standard errors are in parentheses. ***, **, and * are significant level at 15 and 10%, respectively. The comparison among the two experimental conditions is "A" for Control and Treatment I, "B" for Control and Treatment II, "C" for Control and Treatment III, "D" for Control and Treatment IV, "E" for Treatment I and Treatment II, "F" for Treatment I and Treatment III, "G" for Treatment I and Treatment IV, "H" for Treatment II and Treatment III, "I" for Treatment II and Treatment IV, "J" for Treatment III and Treatment IV.

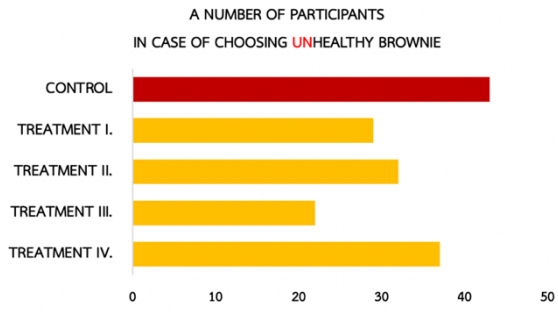
Table 2 reveals four-hundred participants' demographics divided by the experimental groups. Such samples are 72.5 percent female, with a statistically significant difference in control and treatment III ($p<0.01$), treatment IV ($p<0.05$), and treatment II ($p<0.1$). Moreover, treatment I have a statistically significant difference from treatment III and Treatment IV ($p<0.1$). The average age of participants is 20 years. In the case of treatment I and treatment IV found no statistically significant difference (P-value>0.1), yet the other pair are, and as $p<0.01$, the reason is that participants are a student and have near age. The body mass index is not significantly different, with an average of 21.57. For the salary, (M_{salary}=9,090) statistically significant difference in treatment III with the control, treatment I, treatment IV as $p<0.01$. And as the $p<0.05$, in control and treatment IV, treatment II and treatment III found a statistically significant difference. Whilst treatment I and treatment V also found significant differences as $p<0.1$. Eating healthy, in control and treatment IV, treatment II and treatment III, treatment II and treatment IV found a statistically significant difference as $p<0.1$. Furthermore, in loose weight, found a barely significant difference in control and treatment III as $p<0.1$. The hungriness with a significant difference in control and treatment III, treatment III and IV as $p<0.05$. Also found a barely significant difference between treatment II and control, II, III as $p<0.1$. In the Dutch Eating Behavior Questionnaires', we found a barely significant difference $p<0.01$ in restrain: as in control and treatment II, in emotional eating: as in treatment I and IV, treatment III and IV. Whilst barring pair in case of emotional

eating that found a statistically significant difference in <0.05: control and treatment I, III. The external eating found a statistically significant difference in the paring of control and treatment I,III,IV (p-value<0.01). Nevertheless, the form probit regression model (*See III.Data in-depth*) was formed to reduce the biases caused by the differences in variables.

Proceed to such study, the certain aim was to gather data about a number of brownie selections: between less sweet and normal brownies. The brownie selection proportions will be discussed in the next section.

Data analysis

Satisfactorily, experimental findings point us out at a highly different number between healthy brownie selection in the case of 'do message framing' and 'no message framing'. To prove that the effectiveness of adding healthy (Low CLT and High CLT) messages is more efficient than no messages, results are presented in figures 1 and 2.



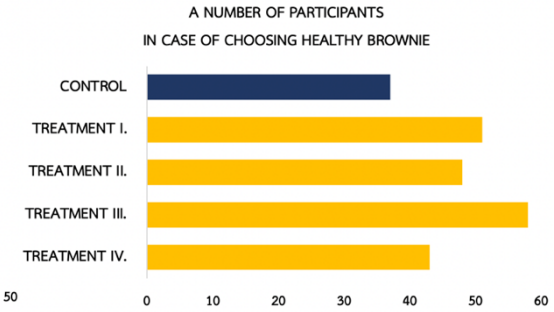


Figure 1 A number of unhealthy brownies. **Figure 2** A number of healthy brownies.

In the left case, Figure 1.: control condition (red bar), the number of unhealthy brownie choices was more than half (43 from the total of 80) or was calculated as 53.8%. Whilst 'do healthy message framing' were no more than half: in treatment I: Low CLT (HOW), unhealthy brownie choices tend to decrease and were calculated as 36.25%, treatment II: High CLT (WHY) was 40%, treatment III: Low CLT (HOW) combined with High sense of power was 27.5% and treatment IV: High CLT (WHY) combined with High sense of power was at 46.25%.

Accordingly, loading the message framing can lower the rate of choosing unhealthy brownies.

On the right hand (figure 2), in the case of the control condition (navy bar), the number of healthy brownie choices was no more than half or was calculated as (37) 46.%. Whilst 'do healthy message framing' were more than half: in treatment I: Low CLT (HOW) the number of healthy brownie choices was at (51) 63.75% (+ 17.45% compared to control condition), treatment II: High CLT (WHY) (48) 60% (+13.7% comparing to control condition), treatment III: Low CLT (HOW) combined with High sense of power (58) 72.5% (+26.2% compared to control condition) and treatment IV: High CLT (WHY) combined with High sense of power was (43) 53.75% (+7.45% comparing to control condition).

To recapitulate the number of healthy brownie choices' results, either framing with a Low or High construal level message can highly increase the rate of choosing healthy brownies. In

other words, framing with ‘HOW’ and ‘WHY’ messages can decrease the rate of choosing unhealthy brownies.

Data In-depth

However, human behavior is one of a kind. Such could lead them to select the target brownie themselves. For this reason, framing message has no repercussions to them. Aiming to avoid error, individual data on a number of brownie selections ought to consider in depth. In doing so, the researcher formulates the two-probit regression:

I. Probit regression on brownie selection and the IV treatment.

$$HTbrownie_i = \beta_0 + \beta_1 LC_i + \beta_2 HC_i + \beta_3 LCP_i + \beta_4 HCP_i + ER_i$$

Such an equation is a probit regression where the control condition performs as a reference group. Further variables were excluded. Exclusively I,II,II, and IV treatment were considered: LC refers to I. Low CLT (HOW), HC is II. High CLT (WHY), LCP is III. Low CLT with a High sense of power and HCP IV. is High CLT with a High sense of power.

Proceed to equation II.

II. Probit regression on brownie selection with all factors.

$$HTbrownie_i = \beta_0 + \beta_1 LC_i + \beta_2 HC_i + \beta_3 LCP_i + \beta_4 HCP_i + \beta_5 BMI_i + \beta_6 PI_i + \beta_7 EB_i + ER_i$$

The equation II has an identical reference group as I. To point out the dissimilar up, all variable was included: where BMI is the body mass index, PI is the personal information, EB is (DUTCH) eating behavior and ER is a logistic distributed error term.

The regressions’ result reveals in Table III. The comparison between equation I and II was intriguingly different as follow.

Table 3 The influence of reference-dependent on healthy brownie selection and its marginal effect.

	HTbrownie$_i$					HTbrownie$_i$		
	I	marginal effect	II	marginal effect		**I**	II	marginal effect
Treatment I.	**0.450****	**0.173****	0.446**	0.172**	Age	**-**	0.023	0.009
	(0.201)	**(0.078)**	(0.212)	(0.082)			(0.035)	(0.062)
Treatment II.	**0.347***	**0.135***	0.319	0.123	Salary	**-**	0.000*	0.000*
	(0.199)	**(0.077)**	(0.219)	(0.084)			(0.000)	(0.000)
Treatment III.	**0.692*****	**0.268*****	0.606***	0.233***	BMI	**-**	0.035**	0.014**
	(0.205)	**(0.079)**	(0.224)	(0.086)			(0.178)	(0.007)
Treatment IV.	**0.188**	**0.073**	0.244	0.094	Disease	**-**	-0.001	-0.001
	(0.198)	**(0.077)**	(0.214)	(0.082)			(0.066)	(0.025)
Restrain eating	-		0.392***	0.151	Loose weight	**-**	-0.124	-0.048
			(0.092)	(0.035)			(0.171)	(0.066)
Emotional eating	-		0.097	0.038	Healthy	**-**	-0.062	-0.024
			(0.088)	(0.034)			(0.185)	(0.071)
External eating	-		-0.178	-0.069	Hungriness	**-**	-0.052	-0.020
			(0.130)	(0.050)			(0.053)	(0.020)
Gender (female=1)	-		0.070	0.027				
			(0.160)	(0.062)				
					N	**400**	400	
					Log likelihood	**-263.745**	-241.553	
					Pseudo R^2	**0.025**	0.107	

Note: Standard errors are in parentheses. ***, **, and * are significant level at 1,5 and 10%, respectively.

According to Table 3, the bold highlighted was referred to as Equation I. (treatment only) whilst the rest was equation II. (All factors). Firstly, considering closely the bold space, the interpretation of healthy brownie selection is significantly greater in treatment I. Low CLT (HOW) (63.75%; $p<0.05$) yet slightly significant in treatment II. High CLT (WHY) (60%; $p<0.1$). In addition, the uppermost significance goes to treatment III. Low CLT with a High sense of power as it is significant as (72.5%; $p<0.01$). Unexpectedly, there is no significance in treatment IV. High CLT with a High sense of power (53.75%; $p>0.1$).

Emphasizing in equation II(all factor), such make certain that the selection of healthy brownie was truly affected by the message framing. The rest area, in the case of the treatment I. (HOW) and III. (HOW with a High sense of power) were still significantly considerable at an entirely high level ($p<0.05$ and $p<0.01$, respectively) causing the hypothesis I. and III. to be supported.

Nevertheless, there is no longer significance in treatment II. (WHY) (60% ;$p>0.1$) causing not to support Hypothesis II (WHY). As a consequence of an increase in the relevant variable: demographic. Data shows that the decision on selecting a healthy brownie depends on 'restrained eating' with significantly greater ($p<0.01$), lower in 'BMI' and 'salary' ($p<0.05$, $p<0.1$) respectively.

Henceforth, the steady significant treatment (I. HOW and III. HOW with a High sense of power) will be considered in-depth. Due to this, we form pairwise comparisons across

treatment I. and treatment III. to verify whether, LOW CLT power itself, or the addition of 'High sense of power' that influence greatly the number of healthy brownie selections. In doing so, the researcher tested if the effect of treatment I. was equal to the effect of treatment III. by using the statistical test and found that there is no significant (Chi^2=0.49, F-test=1, p>0.1) between treatment I and treatment III. This statistic affirmation that these two groups have no difference.

Accordingly, adding 'YOU'RE POWERFUL' did not lead higher rate of choosing healthy brownies yet the power of 'HOW MESSAGE'. Therefore, Hypothesis IV was not supported (p>0.1).

4. Conclusion, discussion, and implication

Conclusion and discussion

Diabetes prevention is better safe than sorry. At a young age, people do not feel close to home with such a disease. For this reason, in addition to educating them: try message framing, and as a matter of fact, convincing someone is extremely difficult. Hence, this study aimed to consider the effectiveness of 'low-construal healthy messages' and 'high-construal healthy messages' in increasing the number of healthy food choices. Moreover, previous studies also found interesting results in human behavior changing by the 'sense of power'. For this reason, the low and high construal healthy message and a high sense of power were combined to change human behavior into long-term healthy.

In doing so, we experimented with four-hundred participants which were randomly assigned into five groups (*I. Low CLT, II. High CLT, III. Low CLT+High sense of power, IV. High CLT+High sense of power, and V. the control*).

Psychological Distance

The consequences of such experiments spotlight the psychological distance theory. In recap, two parts of psychological distance are *proximity* and *distance*.

- Psychological proximity: *HOW*

When humans quickly make decisions, for instance, in line for ordering food. At the moment, system 1 (an emotional decision) in their brain automatically works and goes very well flow seeking tasty and delicious food, with no concern for long-term health goals or reason to eat. Similarly, such participants who decide on unhealthy brownies sometimes are taken in an emotional decision. Thus, the hero goes to the 'choose the low sugar brownie to decrease the risk of diabetes' or 'HOW' message, which plays a salient role in the case of psychological proximity. Even 3-4 seconds, after reading this, people can perfectly understand and be able to conclude what I would like to communicate and be able to decide which one they should make a decision on. So on, as reported in the current result, I discovered that only low-construal healthy messages (HOW) increase the number of healthy food choices (72.5%; p<0.01) compared with no message (46%: p>0.1). This is in accordance with the study by Grazzini et al. (2018). Grazzini found a rising of about 22% (p<0.01) authentic in recycling behavior in the case of the hotel guest' getting the message 'HOW' together with 'losses' compared with no message.

- Psychological distance: *WHY*
As I mentioned that system 1 quickly occurs. Exactly, conflictingly to system 2, such uses reason to make decisions, considering things deeply. Causing this part of the brain to *always* work slower than another. 3-4 Minutes may not be sufficient for humans to evaluate. For that reason, I do not discover a statistically significant in increasing the number of healthy food choices ($p>0.1$) in the case of giving the participant an 'Excessive sugar intake can cause the risk of diabetes' or 'WHY' message. According to the psychological distance, people think about now rather than the future, for this reason, imagine about diabetes may sound inordinately distant to such participants.

Sense of power

The study by Wang et al. (2020) stated a high sense of power could increase healthy food purchases. Also, previously studied found that the sense of power could change human behavior. This is in accordance with my long-term goal of changing behavior into healthy eating. Due to this, annexing a high sense of power together with message framing may show a positive effect on the result. Yet, Surprisingly, in the current study, I do not discover a statistically significant in the high sense of power that enhances the effect of construal healthy eating choices ($p>0.1$). The reason behind this may as be reported by Wang et al. (2020) that a high sense of power has a greater beneficial impact effect on low socioeconomic Potentially, the target of the current study is the student from an urban area. Studying in an urban area may not be a key, students feel powerful themselves.

In conclusion, leading them with 'YOU'RE POWERFUL' to help them a healthy eating decision may affect nothing if they already feel the power.

Reasonably, a high sense of power did not lead higher rate of choosing healthy brownies. Try providing one with a short sentence of 'HOW MESSAGE', which was powerful enough. Instead of letting them imagine what the giver wants to communicate. Let system 1 have a chance! Lead the persuaded to know exactly 'how they should do.'

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