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### The role of facial expression in resisting enjoyable advertisements

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# Thesis Abstract

## **Abstract in English**

### The role of facial expression in resisting enjoyable advertisements

This thesis on consumer resistance to enjoyable advertisements is positioned in the areas of persuasive communication and social psychology. From the literature on consumer behavior, much is known about how consumers can resist advertising by adopting resistance strategies, such as counter-arguing and selective exposure (e.g., Fransen et al., 2015; Knowles & Linn, 2004). However, the role of emotion regulation and bodily expression in resisting persuasion is so far understudied. This is a surprising observation, if one considers that at least 40% of advertisements use positive emotions (i.e., happiness) to persuade consumers to like the ad, brand and product (Weinberger et al., 1995).

In the present thesis, we argue that consumers can resist persuasion by controlling their facial expressions of emotion when exposed to an advertisement. Following the embodiment literature and the facial feedback hypothesis (Buck, 1980), we propose that controlling the expression of emotions elicited by an ad (for example refusing to smile) might be a fruitful way to resist the ad's persuasive potential. We focus on resistance toward persuasion as mediated by facial expression demonstrated in emotion regulation (Gross, 1998) and facial mimicry (Bush et al., 1989) in response to amusing ads. We propose that embodied emotion regulation in the service of resistance can be extended from the individual to social situations in which consumers watch ads in the company of others.

In Chapter 1, we present the tenets of our model of Embodied Resistance to Persuasion where we build on Scherer's componential process model of emotions (2004, 2009) and focus specifically on facial expression. We argue that facial expression of emotion is a privileged point of application for embodied resistance because of its inherent links with emotion regulation (Izard, 1990) and appetitive attitudes (Eagly & Chaiken, 2007; Frijda, 2007) as explained by the facial feedback hypothesis (Buck, 1980).

In Chapter 2, we first present a validation study of our main research instrument FaceReader (Noldus, 2014). Since we study embodied resistance to persuasion through facial expression, we first need to establish the validity of the automated facial coding tool we use in the subsequent chapters. We showed that, on average, FaceReader recognized 88% of the target basic emotion expressions (Ekman, 1972; Ekman & Cordano, 2011) and reached a 0.69 FACS

index of agreement (Ekman et al., 2002). This warranted the use of this software in the experiments in Chapters 3-5.

In Chapter 3, we establish the core premise of our embodied resistance to persuasion model in our first facial coding experiment. In this study, emotional action readiness -- i.e., approach and be-with tendencies (Frijda, 2007) -- were operationalized as ad (Phillips, 2000) and brand liking (Chattopadhyay & Basu, 1990). Participants were video-recorded while watching three popular video commercials designed to elicit high, medium, and low levels of amusement. Facial expressions during exposure to the advertisements were coded using FaceReader. Ad and brand liking were measured afterwards. In the high and medium amusement conditions, but not in the low amusement one, positive correlations were found between facial expression of happiness scores and ad and brand liking. We propose to have found initial support for the hypothesis that facial expression predicts positive consumer attitudes in response to enjoyable advertisements.

In Chapter 4, across seven facial coding experiments, we thoroughly test consumer resistance to persuasion through embodied emotion regulation. We showed that response- and antecedent- focused emotion regulation (Gross, 1998) decreases or increases both negative and positive responses to a variety of advertisements. In five experiments with amusing advertisements, we demonstrated a causal mediation path (Preacher & Hayes, 2008) from emotion regulation to facial expression and further down to attitude change. This path was not fully replicated for disgusting ads.

In Chapter 5, we investigate the situation where a consumer watches an ad together with a co-viewer. While people often watch advertisements in company, our previous experiments had individual consumers watching an ad in isolation. Across three experiments, we build on our prior results and demonstrate that shared emotion regulation, manipulated through facial mimicry (Bush et al., 1989), modified consumers' happiness during exposure to an amusing ad and subsequently their attitudes.

Finally, Chapter 6 recapitulates major findings and discusses implications and considerations for future research. Showing the viability of Embodied Resistance to Persuasion is relevant in view of the fact that ads trying to persuade us by addressing our positive emotions are ubiquitous (e.g., Weinberger et al., 1995). Embodied resistance helps consumers to cope with these induced positive emotions in order to resist advertisements. In this thesis, we provide

innovative evidence that one way to resist the persuasive effects of an ad is to regulate the emotions experienced and expressed when exposed to that ad. Overall, we suggest that embodied emotion regulation might be a novel and effective strategy to resist persuasion.

Companies exploit powerful emotional techniques, such as the elicitation of enjoyment, when creating their advertising campaigns. This thesis therefore aims to empower consumers with some additional “tools” resistance to persuasion that counteract deliberate persuasive attempts used in such marketing communication strategies.

## Abstract in het Nederlands

De rol van gezichtsuitdrukking bij het weerstaan van vermakelijke reclames

Dit proefschrift over weerstand van consumenten tegen vermakelijk reclames<sup>1</sup> is gepositioneerd in het gebied van persuasieve communicatie en sociale psychologie. Uit de literatuur over consumentengedrag is veel bekend over manieren waarop consumenten weerstand kunnen bieden tegen overtuigingsstrategieën. *Counter-arguing* en *selective exposure* zijn bekende voorbeelden (Fransen et al., 2015; Knowles & Linn, 2004). In een meer gerichte vorm van weerstand kan door een consument mogelijk gebruik worden gemaakt van regulatie van de eigen emotie die wordt opgewekt door de advertentie. Ook het beheersen van de fysieke expressie van emotie kan een ingang zijn voor het weerstaan van persuasieve boodschappen. Deze mogelijkheden zijn tot nu toe onvoldoende onderzocht. Dit is een opvallende lacune gezien het feit dat ten minste veertig procent van alle reclamespots positieve emoties (bijv. blijheid) gebruiken om consumenten over te halen om reclame, merk of product te waarderen (Weinberger et al., 1995).

In dit proefschrift beargumenteren wij dat consumenten die naar een reclamespot kijken weerstand kunnen bieden door hun fysieke expressies te beheersen. Op basis van de literatuur over *belichaming* van emoties<sup>2</sup> en de *facial feedback hypothese* (Buck, 1980) stellen wij dat beheersing van de expressie van emoties die door een reclame worden veroorzaakt (zoals het tegengaan van lachen) een manier kan zijn om reclames te weerstaan. Centraal in het onderzoek staat weerstand tegen overreding door vermakelijke reclame gemedieerd door 1) gezichtsexpressie als onderdeel van emotieregulatie (Gross, 1998) en 2) nabootsing van gezichtsexpressie (*mimicry* volgens Bush et al., 1989). Het model van belichaamde emotieregulatie in dienst van weerstand tegen overreding heeft in de eerste plaats betrekking op individuele kijkers die alleen naar reclame kijken. Wij stellen echter dat het model uitgebreid kan worden naar sociale situaties waarin consumenten samen met anderen naar reclames kijken.

In Hoofdstuk 1 worden de uitgangspunten gepresenteerd van het model van Belichaamde Weerstand tegen Overreding (BWO). Het model rust op Scherers (2004, 2009) component-processen benadering van de emoties, en in het bijzonder de rol van een van de componenten, namelijk gezichtsexpressie van emotie. Wij betogen dat de gezichtsexpressie van emotie een

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<sup>1</sup> Vermakelijke reclame is de Nederlandse vertaling van het Engelse *entertaining* (of *amusing*) advertisements

<sup>2</sup> Belichaming is de vertaling van *embodiment*

geprivilegieerd aangrijpingspunt vormt voor belichaamde weerstand. Het argument daarvoor is dat intrinsieke koppelingen bestaan tussen zowel gezichtsexpressie en emotieregulatie (Izard, 1990) als tussen gezichtsexpressie en *appetitive attitudes* (Eagly & Chaiken, 2007; Frijda, 2007). Beide koppelingen berusten op een *feedback*-mechanisme (Buck, 1990).

In Hoofdstuk 2 wordt het onderzoek voorbereid dat hypothesen ontleend aan het BWO-model toetst. Wij rapporteren de validatie van het belangrijkste meetinstrument, een automatisch systeem voor de herkenning van gezichtsuitdrukkingen, FaceReader (Noldus, 2014). Wij laten zien dat het instrument gemiddeld 88% van de uitdrukkingen van de zgn. basis-emoties (Ekman, 1972; Ekman & Cordano, 2011) herkent. Door het systeem geleverde classificaties van expressies bereikten een overeenstemming van 0.69 met zgn. FACS scoringen (Ekman et al., 2002). De uitkomsten wettigen het gebruik van deze software in de experimenten gerapporteerd in Hoofdstukken 3-5.

In Hoofdstuk 3 wordt het kernuitgangspunt van ons BWO-model onderzocht in een eerste gezichtsexpressie-experiment. In deze studie werd emotionele actiebereidheid - d.w.z. toenadering en de neiging om dicht bij een object te zijn (Frijda, 2007) geoperationaliseerd als voorkeur voor een advertentie (Phillips, 2000), en merkvoorkeur (Chattopadhyay & Basu, 1990). Deelnemers werden op video opgenomen tijdens het kijken naar populaire video-reclames ontworpen om respectievelijk lage, middelmatige en hoge niveaus van vermaak op te wekken. Gezichtsuitdrukkingen vertoond tijdens de blootstelling aan de advertenties werden gecodeerd met behulp van FaceReader. Advertentie en merkvoorkeur werden erna gemeten. In de hoge en middelmatige vermaak condities, maar niet in de lage, werden positieve correlaties gevonden tussen de gezichtsexpressie van blijheid en advertentie en merkvoorkeur. Geconcludeerd wordt dat met deze resultaten initiële steun is gevonden voor de hypothese dat gezichtsexpressies in reactie op plezierige advertenties voorspellende waarde hebben voor een positieve houding van de consument.

Hoofdstuk 4 doet verslag van zeven gezichtsexpressie- experimenten die grondig de weerstand testen van de consument tegen overtuiging door belichaamde emotieregulatie. We toonden aan dat respons- en antecedent- gerichte emotieregulatie (Gross, 1998) zowel positieve als negatieve reacties op verschillende reclames verhogen dan wel verlagen. In vijf experimenten met gemakkelijke reclames toonden we een causaal mediatiepad aan (Preacher & Hayes, 2008) van emotieregulatie naar uitdrukking en vervolgens naar attitudes. Dit wil zeggen dat het effect

van emotieregulatie op attitudes via gezichtsuitdrukkingen wordt gerealiseerd. Dit mediatiepatroon werd evenwel niet volledig gerepliceerd indien in plaats van vermakelijke afstotelijke reclames werden gepresenteerd.

In Hoofdstuk 5 onderzoeken we de situatie waarin een consument een advertentie kijkt samen met een medekijker. De vorige experimenten richtten zich op individuele consumenten die in isolement naar een advertentie kijken, terwijl mensen in werkelijkheid reclames vaak zien in gezelschap. Over drie achtereenvolgende experimenten heen zien we een versterking van de eerder gevonden resultaten. We tonen aan dat tijdens blootstelling aan vermakelijke reclames gedeelde emotieregulatie, gemanipuleerd door nabootsing van gezichtsuitdrukkingen (Bush et al., 1989) de mate van blijheid van consumenten verandert en vervolgens ook hun positieve attitude.

Hoofdstuk 6 ten slotte recapituleert de belangrijkste bevindingen en bespreekt implicaties ervan alsmede overwegingen in verband met toekomstig onderzoek.

Het demonstreren van de mogelijkheden die een strategie als Belichaamde Weerstand tegen Overtuiging (BWO) de consument biedt is relevant in het licht van het feit dat reclames ons proberen te overtuigen door in te spelen op onze positieve emoties. Zulke reclames zijn alomtegenwoordig (bijv. Weinberger et al., 1995). BWO helpt consumenten om te gaan met deze geïnduceerde positieve emoties teneinde reclames te weerstaan. In dit proefschrift bieden we innovatief bewijs dat een manier om bij blootstelling aan een advertentie persuasieve effecten daarvan te weerstaan eruit bestaat dat ervaren en uitgedrukte emoties worden gereguleerd. Meer in het algemeen stellen we voor dat belichaamde emotieregulatie een nieuwe en effectieve strategie ter voorkoming van overtuiging zou kunnen zijn.

Het is bekend dat bedrijven krachtige emotionele technieken, zoals het opwekken van plezier, benutten bij het maken van hun reclamecampagnes. Dit proefschrift wil daarom de consument helpen uitrusten met extra "gereedschap" om opzettelijke pogingen tot overtuiging in dergelijke marketing-communicatiestrategieën tegen te gaan.



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# **Author Contributions**

### **Authors' initials**

Peter Lewinski – PL, Marieke Fransen – MF, Ed Tan – ET, MdU – Marten den Uyl, TdU – Tim den Uyl, CB – Crystal Butler, WW – Wouter Weeda, KC – Karolina Czarna, MS – Mariska Snijdewind, NC – Nina Chrobot, DF – Diana Foltean.

### **Chapter 1**

PL, MF, ET developed the outline, revised several dozen drafts of the manuscript, prepared figures. PL performed the literature search, wrote all concept versions, presented preliminary results at research meetings and Etmaal 2015. MF, ET, MdU provided supervision. MdU took care of funding.

### **Chapter 2**

PL performed the literature search, wrote all concept versions and the final manuscript, developed research plan and the design, identified and accessed the datasets, computed basic emotions evaluation metrics, prepared all the tables and figures, presented preliminary results at Etmaal 2014, chose the target outlet, formatted the paper, submitted the paper, wrote letter to the editor, prepared resubmission and review notes. PL, TdU revised several early draft of the paper, drafted and revised correction note. TdU computed FACS evaluation metrics, PL, CB used FACS to code material. CB proofread the final manuscript. MdU took care of funding.

### **Chapter 3**

PL, MF, ET developed the design, revised several drafts of the manuscript, revised the resubmission and review notes, provided input on data analysis, interpretation and conclusions. PL wrote all concept versions and the final manuscript, performed the literature search, presented preliminary results at research meetings, conferences - NPE 2013, ISRE 2013, NMWF 2014, conducted the experiment, analyzed the data, prepared all tables and figures, chose the target outlet, formatted the paper, submitted the paper, wrote letter to the editor, prepared resubmission and review notes. MF, ET, MdU provided supervision. MdU took care of funding.

### **Chapter 4**

PL, MF, ET, WW developed research plan, PL, MF, ET developed the design, revised several dozen early drafts of the manuscript, revised multiple resubmission and review notes, provided input on data analysis, interpretation and conclusions, chose the target outlets, dealt with rejections. PL wrote all concept versions and the final manuscript, performed the literature search, conducted the experiments, analyzed the data for all experiments, presented preliminary

results at research meetings, conferences - EFPSA 2013, EASP 2014, ICORIA 2014, Etmaal 2015, drafted the manuscript, analyzed the data, prepared all the tables and figures, formatted and reformatted the paper, submitted the paper multiple times, wrote multiple letters to the editor, prepared multiple resubmissions and review notes. KC assisted in analyzing the data for two experiments, preparing some of the figures and proofreading the paper. MS and WW assisted in analyzing the data for another two experiments. MS proofread the paper and formatted references. Senior colleagues – AF, BM, SD, and SB provided an informal revision. MF, MdU and ET provided supervision. MdU took care of funding.

### **Chapter 5**

PL, MF, ET developed research plan, PL, MF, ET developed the design, revised several dozen early drafts of the manuscript, revised multiple resubmission and review notes, provided input on data analysis, interpretation and conclusions, chose the target outlets, dealt with rejections. PL wrote all concept versions and the final manuscript, performed the literature search, conducted the experiments, analyzed the data for all experiments, presented preliminary results at research meetings, conferences - EASP 2014, ICORIA 2014, analyzed the data, prepared all the tables and figures, formatted and reformatted the paper, submitted the paper multiple times, wrote multiple letters to the editor, prepared multiple resubmissions and review notes. CB and PL developed the avatar stimuli. KC helped in analyzing the data for one experiment, proofreading the paper and formatting references. NC and DF helped in collecting and analyzing the data for eyetracking experiment. CB, KC, NC, proofread the paper. Senior colleagues – AF, LC, SD, and LC provided an informal revision. MF, ET, MdU provided supervision. MdU took care of funding.

### **Chapter 6**

PL, MF, ET developed the outline, revised several dozen drafts of the manuscript, prepared figures. PL wrote all concept versions and the final manuscript, performed the literature search, drafted the manuscript, presented preliminary results at research meetings and a conference - Etmaal 2015. MF, ET, MdU provided supervision. MdU took care of funding.

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As a closing paragraph, I would like to mention that I find it very difficult to write this acknowledgment section. I would like to write a few more pages, mentioning all the important people but I feel I would fail in doing so and surely I would forget about someone and that I would not like to happen. This is why, I kept it so short, but please do know that you all are in my heart forever.

## Biography Note

I was born on 06 February 1990 in Warsaw, Poland. In 2009, I graduated from Paisley Public Charter High School, Oregon US. In 2012, I graduated with M.Sc. degree in Economic Psychology from University of Warsaw. In 2011-2012, I was a research assistant to prof. José Miguel Fernández Dols at Universidad Autónoma de Madrid. In 2011-2012, I did an Erasmus exchange year at Universidad Complutense de Madrid, where I met my future wife. In 2011-2013, I served as an Executive Board Member of European Federation of Psychology Students' Association. In 2012, I started a law degree programme at European School of Law and Administration. In 2012-2015, I have been working on this thesis, as a Marie Curie Research Fellow within EU-funded CONCORT network, with ASCoR and VicarVision as host institutions. In 2014, I was a Visiting Scholar at Faculty of Psychology and Educational Sciences, KU Leuven with prof. Batja Mesquita. In 2015, I was a Visiting Lecturer at University of Warsaw. Since 2013, I have been a member of AIRE lab at Faculty of Psychology, UvA. Before all that, I was a semi-professional judoka and I competed in over 200 tournaments until 2011 attaining a black belt (1st Dan).

## Publications

Olszanowski, M., Pochwatko, G., Kuklinski, K., Scibor-Rylski, M., **Lewinski, P.**, & Ohme, R.K. (2015). Warsaw Set of Emotional Facial Expression Pictures: A validation study of facial display photographs. *Frontiers in Psychology*, 5(1516). doi: 10.3389/fpsyg.2014.01516.

**Lewinski, P.**, Fransen, M. L., & Tan, E.S. (2014). Predicting advertising effectiveness by facial expressions in response to amusing persuasive stimuli. *Journal of Neuroscience, Psychology, and Economics*, 7(1), 1-14. doi: 10.1037/npe0000012

**Lewinski, P.**, den Uyl, T. M., & Butler, C. (2014). Automated facial coding: Validation of basic emotions and FACS AUs recognition in FaceReader. *Journal of Neuroscience, Psychology, and Economics*, 7(4), 227-236. doi: 10.1037/npe0000028



This dissertation on consumer resistance to enjoyable advertisements is positioned in the areas of persuasive communication and social psychology. In this thesis, we argue that consumers can resist persuasion by controlling their facial expressions of emotion when exposed to an advertisement. Following the embodiment literature and the facial feedback hypothesis, we propose and prove that controlling the expression of emotions elicited by an ad (for example refusing to smile) might be a fruitful way to resist the ad's persuasive potential.

