

**Universidade de Brasília  
Instituto de Psicologia  
Departamento de Psicologia Social e do Trabalho  
Programa de Pós-Graduação em Psicologia Social, do Trabalho e das Organizações**

**Dissertação de Mestrado**

**PERSUASION, SELF-CONFIDENCE AND RESISTANCE: A DUAL-PROCESSING  
PERSPECTIVE ON CONSUMER FRAUD**

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**Brasília, outubro de 2014**

**Persuasion, self-confidence and resistance: A dual-processing perspective on consumer fraud**

**Persuasão, autoconfiança e resistência: Uma perspectiva de processamento dual em fraudes contra o consumidor**

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Dissertação de Mestrado apresentada ao Programa de Pós-Graduação em Psicologia Social, do Trabalho e das Organizações, do Instituto de Psicologia da Universidade de Brasília, como parte dos requisitos para obtenção do título de Mestre em Psicologia Social, do Trabalho e das Organizações.

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## DEDICATÓRIA

Dedico esta dissertação aos milhões de colegas de vida que tenho neste mundo. Movidos a café seus dias são longos e seus salários são baixos, tudo em nome da ciência. Seus esforços serão recompensados, desde que  $p < 0,05$ .

*When Kepler found his long-cherished belief did not agree with the most precise observation, he accepted the uncomfortable fact. He preferred the hard truth to his dearest illusions; that is the heart of science.*

Carl Sagan

*Por que a psicanálise está em declínio? É difícil dizer. É como procurar dados mais atualizados de porquê as pessoas deixaram de atribuir os trovões a Zeus e procuraram explicações científicas. É coisa antiga, já passou.*

Saulo Maciel Oliveira

## AGRADECIMENTOS

Meu caminho até a produção desta dissertação foi influenciado por inúmeras pessoas com quem convivi e a quem agradeço. À minha mãe, Maria Madalena, por me obrigar a ter um ensino formal e por estimular minha curiosidade com revistas sobre dinossauros e ciência voltada pra crianças. Ao meu orientador e grande amigo, Fabio Iglesias, por toda a paciência e empenho em expandir meus conhecimentos de psicologia social, comportamento do consumidor, métodos de pesquisa e estatística, nos diferentes projetos que topou conduzir comigo. À profa. Laércia, que me apresentou ao mundo da pesquisa experimental e me deu as bases para o que hoje faço. Ao prof. Ronaldo, por todas as lições aprendidas sobre pesquisa desde 2009. Aos professores, Carla Antloga e Cláudio Hutz, pelas valiosas contribuições dadas durante o Seminário de Dissertações e Teses do PSTO, 2013. Aos professores Carla Antloga, Hartmut Gunther e Timothy Mulholland, pelo auxílio no recrutamento de participantes, e ao professor Gerson Américo Janczura, por valiosos comentários sobre o manuscrito 2. Agradeço também aos membros da banca, Profa. Dra. Amalia Raquel Pérez-Nebra, Prof. Dr. Ronaldo Pilati e Profa. Dra. Goiara Mendonça de Castilho, por aceitarem participar de minha defesa e por todas as questões desafiadoras feitas sobre meu trabalho.

Sou muito grato também a todos meus amigos de laboratório e redondezas: Adriano Sampaio, Aline Fernandes, Ana Luiza Marinho, André Rabelo, Bárbara Monteiro, Bruna Resende, Camila Gastal, Daniel Barbieri, Elena Pinheiro, Érika Ramos, Gabriela Campelo, Gabriela Ribeiro, Izabella Melo, João Modesto, Leonardo Martins, Ligia Abreu, Lorena Andreoli, Luisa Teixeira, Marcello Santos, Marco Akira, Marcos Pimenta, Maurício Sarmet, Nathalia Polla, Patrícia Ribeiro, Raissa Damasceno, Raquel Sousa, Renan Benigno, Renan Lyra, Saulo Maciel, Stela de Lemos, Victor Keller e Vithor Rosa; vocês sempre estiveram lá para dar boas ideias, discutir algum tema ou mesmo jogar conversa fora.

Apesar de pequeno e frequentemente cheio, o LAPSOCIAL é um ambiente fecundo para a produção de boa ciência. Não tenho dúvida de que se tivesse passado os dois últimos anos em uma sala vazia, este trabalho seria inferior, portanto agradeço em especial às pessoas que com quem lá trabalhei. À Érika Ramos, Ligia Abreu, Raissa Damasceno, Renan Benigno e Vithor Rosa, pelo esforço de revisarem este manuscrito, mesmo não tendo tempo de sobra. Aos meus assistentes de pesquisa, Izabella Melo, Renan Lyra, Bruna Resende e Ana Luisa Nardi, por toparem trabalhar comigo nestes dois últimos anos. Este trabalho não existiria sem vocês. Tem um lugar especial pra vocês no meu coração. :)

Agradeço também aos grandes amigos que tenho dentro e fora da UnB: Aos meus irmãos da República do Potro Amarelo: Allan Mendes, Henrique Terceiro, Gabriel, Alziro e Nathália Guedes, por ter um lar para voltar. À Mari, por ser minha irmãzinha de consideração, desde sempre. Aos meus irmãos, Betinha, Dori e Dudu, pela amizade incondicional. Aos meus colegas de pós, Marina, Daniel Barbosa, Thainá, Eduardo, Maurício, Polyanna, Veruska e Luana, por compartilhar as alegrias e as dificuldades que enfrentamos. Aos Power Rangers: Lindo, Thor e Saulindo, por encherem minha caixa de mensagens com besteira. Ao Akira e ao Agriaum, só pra agradecer mesmo, vocês são brothers. E ao Hidetaka Miyazaki, por criar a serie de jogos Dark Souls.

Por fim, à Aline Fernandes, por existir, por fazer parte da minha vida, por ser a pessoa linda que é e por me fazer querer ser uma pessoa melhor. Te amo.

## CONTENTS

Dedicatória.....	03
Agradecimentos.....	04
Index of Tables.....	09
Index of Figures.....	10
Abstract.....	11
Resumo.....	12
General Introduction.....	13
Manuscript 1 - Self-confidence, time perspective and negative life events: Exploring predictors of fraud victimization.....	15
Abstract.....	16
Resumo.....	17
Method.....	24
Participants.....	24
Instruments.....	25
Procedures.....	27
Results.....	27
Discussion.....	29
References.....	32
Foreword to Manuscript 2.....	36
Manuscript 2 - Yes Man! Persuasion at different levels of elaboration.....	37
Abstract.....	38
Resumo.....	39
Experiment 1.....	45
Method.....	46

Participants.....	46
Instruments and Procedures.....	46
Results.....	49
Discussion.....	50
Experiment 2.....	52
Method.....	52
Participants.....	52
Instruments and Procedures.....	52
Results.....	54
Discussion.....	55
General Discussion.....	56
References.....	58
Final remarks on the thesis.....	63
References.....	64
Appendix A: Survey instrument used in Manuscript 1.....	65
Appendix B: Texts Used in Both Weak and Strong Favorable Arguments Conditions in Manuscript 2.....	73
Appendix C: Texts Used in Both Weak and Strong Against Arguments Conditions in Manuscript 2.....	74
Appendix D: Template for the instrument used in Manuscript 2.....	75
Appendix E: Factor Loadings for Exploratory Factor Analysis with Varimax Rotation of Consumer Self-Confidence in manuscript 1.....	78
Appendix F: Factor Loadings for Exploratory Factor Analysis with Direct Oblimin Rotation of Temporal Orientation Scale in main study of manuscript 1.....	79

Appendix G: Summary of Principal Axis Factoring for the Semantic Differential Scale in Experiment 1.....	80
Appendix H: Factor Loadings for Exploratory Factor Analysis for the Need for Cognition Scale in Experiment 1.....	81
Appendix I: Summary of Principal Axis Factoring for the Semantic Differential Scale in Experiment 2.....	82
Appendix J: Factor Loadings for Exploratory Factor Analysis for the Need for Cognition Scale in Experiment 2.....	83



**INDEX OF TABLES**

Table 1 (Manuscript 1): Linear model of predictors of fraud victimization.....	36
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**INDEX OF FIGURES**

Figure 1 (Manuscript 2): Mean difference values representing attitude change compared by quality of arguments and valence of the message.....	55
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## ABSTRACT

Fraud is a common practice around the world that usually involves an agent, using shady means to cheat and to get benefits at the cost of others. Largely underreported because of social embarrassment, fraud prevention is difficult and evolves quickly. However, the social influence processes behind this phenomenon change little. People are frequently victims of consumer fraud and scams, but in most cases the victim could have detected the fraud if only checked for inconsistencies in the scammer's message. What makes some people detect and avoid a scam while others fall prey to it? Two different models of persuasion from social psychology can be used to understand this phenomenon: the persuasion knowledge model and the elaboration likelihood model. The persuasion knowledge model proposes that persuasion is a dyadic relation between the agent and the target of persuasion. In this relation the target relies on three types of knowledge to resist persuasion attempts: topic knowledge, agent knowledge and persuasion knowledge. The elaboration likelihood model proposes that attitude change occurs through two routes, with different levels of elaboration. The central route of persuasion involves high elaboration and more effortful control, while the peripheral route involves low elaboration and less effortful control. They provide the basis for this dissertation, presented in the form of two manuscripts. The objective of the first manuscript was to test the value of four groups of predictor variables to fraud victimization: time perspective, consumer self-confidence, negative life events and indebtedness. A sample of Brazilians answered an online survey about fraud victimization. Results suggested a link between self-confidence in personal outcomes marketplace interactions and fraud victimization. In the second manuscript, two experiments tested the effects of ego depletion, issue involvement, need for cognition, and valence of arguments on attitude change. In Experiment 1, it was expected that under a high ego depletion condition, attitudes would be similar in both strong and weak arguments conditions, while under a low ego depletion condition, attitudes would be significantly higher in the strong argument condition. In Experiment 2, it was expected that participants' attitudes would follow the direction of the valence of the persuasive message. Results supported the hypotheses of Experiment 2 but not of Experiment 1. Uses and limitations of the persuasion knowledge model and the elaboration likelihood model are discussed. Future research may benefit from using different manipulations based on the elaboration likelihood and from testing the persuasiveness of fraudulent messages. Findings may be relevant for better understanding self-protection skills in fraud attempts.

**Keywords:** fraud; persuasion; consumer behavior; persuasion knowledge model; elaboration likelihood model.

## RESUMO

A fraude é uma prática comum em todo o mundo, sempre envolvendo um agente que usa meios escusos para enganar e obter benefícios à custa de outros. Em grande parte subnotificado devido ao constrangimento social, fraudes são difíceis de prevenir porque mudam rapidamente. No entanto, os processos de influência social por trás deste fenômeno mudam pouco. Pessoas são vítimas de golpes e fraudes contra o consumidor diariamente, no entanto, na maioria dos casos, a vítima poderia ter detectado a fraude se tivesse dado atenção para as inconsistências na mensagem do golpista. O que é que torna algumas pessoas capazes de detectar e evitar um golpe enquanto outros caem no mesmo? Dois modelos distintos de persuasão na psicologia social podem ser usados para entender esse fenômeno: o modelo de conhecimento da persuasão e o modelo de probabilidade da elaboração. O modelo de conhecimento da persuasão propõe que a persuasão é uma relação diádica entre um agente e um alvo da persuasão. Nessa relação o alvo depende de três tipos de conhecimento para resistir às tentativas de persuasão: o conhecimento do assunto, o conhecimento do agente e o conhecimento de persuasão. O modelo de probabilidade da elaboração propõe que a mudança de atitude ocorre através de duas rotas, com diferentes níveis de elaboração. A rota central de persuasão envolve alta elaboração e maior controle consciente, enquanto a rota periférica envolve baixa elaboração e menor controle consciente. Ambos fomentam esta dissertação, apresentada em dois manuscritos. O objetivo do primeiro manuscrito foi testar o valor preditivo de quatro grupos de variáveis em relação à vitimização a fraudes: perspectiva temporal, auto-confiança do consumidor, eventos de vida negativos e endividamento. Uma amostra de brasileiros respondeu a um questionário online sobre vitimização a fraude. Os resultados sugerem uma relação de vitimização a fraudes com a auto-confiança em consequências pessoais da tomada de decisão do consumidor e auto-confiança em interações no mercado. No segundo manuscrito, dois experimentos testaram os efeitos do esgotamento do ego, do envolvimento com a questão, da necessidade de cognição e da valência de argumentos sobre a mudança de atitude. O Experimento 1 testou a hipótese de que, sob um alto esgotamento do ego, atitudes seriam semelhantes em ambas as condições de argumentos fortes e fracos, enquanto sob um alto esgotamento do ego, atitudes seriam significativamente maiores na condição de argumentos fortes. No Experimento 2, esperava-se que as atitudes dos participantes iriam seguir a direção da valência da mensagem persuasiva apresentada. Os resultados apoiaram a hipótese de Experimento 2, mas não do Experimento 1. Usos e limitações do modelo de conhecimento da persuasão e do modelo de probabilidade da elaboração são discutidos. Pesquisas futuras poderão se beneficiar do uso de diferentes manipulações da probabilidade de elaboração e de testar o poder de persuasão das mensagens fraudulentas. Resultados podem ser relevantes para uma melhor compreensão de competências de auto-proteção que são úteis para os consumidores protegerem-se de fraudes.

**Palavras-chave:** fraude; persuasão; comportamento do consumidor; modelo de conhecimento da persuasão; modelo de probabilidade da elaboração.

## **PERSUASION, SELF-CONFIDENCE AND RESISTANCE: A DUAL-PROCESSING PERSPECTIVE ON CONSUMER FRAUD**

“Please I need your help. I need to transfer of \$ 100,000, 000 USD to an account out of my country. As a reward, you will be given 20% of the total amount, no risk involved”.

For an unsuspecting individual, that subject could mean great news! Easy money: that is the shape of the classical Nigeria prince scam, to which many have fallen. Typically, you will receive an email (or letter) from a supposed refugee prince who wants to take his money out of his war torn country. He will ask to use your bank account and offer a share of the fortune as reward. However, he will ask you for a “transaction fee” or something similar before sending the money. Should not be a problem, right? Sure you will cover that expense with your new fortune. Well... the catch is that after sending the fee to his account you will not ever hear again from the (now rich) prince. Here we investigate frauds against the consumer like the one just described, by taking a sociopsychological perspective. This dissertation is organized in two independent manuscripts, following the American Psychological Association guidelines for submission to scientific journals.

The term fraud has its origin in the Latin *fraus*, suggesting the ideas of deceit and loss/injury. Whatever the type, the fraud process inevitably involves an agent (usually referred to as a con artist or con man) that uses deception and forgery of documents to cheat, and take assets from a victim. Some authors point out five important variables found in any case of fraud (Allen, 2004): the con artist, the target of the fraud, the use of deception, the intention to deceive, and a valuable good. Two different models of persuasion from social psychology can be used to understand this phenomenon: the persuasion knowledge model (Friestad & Wright, 1994) and the elaboration likelihood model (Petty & Cacioppo, 1986). These models were explored separately in two distinct manuscripts.

Manuscript 1 describes a survey, aimed to testing four predictor variables relations (temporal orientation, consumer self-confidence and negative life events and indebtedness) to fraud victimization. Manuscript 2 describes two experiments, aimed to test the elaboration likelihood model, so that future research in fraud may use it as an explanation model. All the instruments used during research are available as appendices to this dissertation. The tables describing summaries of exploratory factor analysis of the variables are also available as appendices.

It should finally be pointed out that these papers are a first attempt to initiate a research program of consumer behavior in fraud situations, which is sparse in the social psychological literature (Langenderfer & Shimp, 2001; Pratkanis & Shadel, 2005; Shadel, 2007) and even more rare in the Brazilian context. Results from this type of research may have many potential applications to benefit consumers and provide them with psychological tools for self-protection (Boush, Friestad, & Wright, 2009; Mick, Pettigrew, Pechmann, & Ozanne, 2012).

**Self-confidence, time perspective and negative life events: Exploring predictors of fraud  
victimization**

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### Abstract

Fraud is a common practice around the world that involves an agent, using shady means to cheat and to get benefits at the cost of others. Largely underreported because of social embarrassment, fraud is difficult to prevent because it changes quickly. However, the social influence processes behind this phenomenon changes little. The persuasion knowledge model explains how an individual can cope with deceptive persuasion. The objective of this Study was to investigate the relation of fraud victimization to four groups of predictor variables: time perspective, consumer self-confidence, negative life events and indebtedness. A sample of 129 Brazilian individuals answered an online survey about fraud victimization. Results suggested a relation of fraud victimization with self-confidence in personal outcomes from consumer decision making and self-confidence in interactions in the marketplace. Uses and limitations of the persuasion knowledge model for investigating and preventing frauds are discussed.

*Keywords:* persuasion; consumer fraud; consumer behavior; consumer self-confidence.



## Resumo

A fraude é uma prática comum em todo o mundo, sempre envolvendo um agente que usa meios escusos para enganar e obter benefícios à custa de outros. Em grande parte subnotificado devido ao constrangimento social, fraudes são difíceis de prevenir porque mudam rapidamente. No entanto, os processos de influência social por trás deste fenômeno mudam pouco. O modelo de conhecimento persuasão explica como uma pessoa pode lidar com uma persuasão enganosa. O objetivo deste estudo foi investigar a relação de vitimização a fraude com quatro grupos de variáveis preditoras: perspectiva do tempo, auto-confiança do consumidor, eventos de vida negativos e endividamento. Uma amostra de 129 indivíduos brasileiros respondeu a um questionário online sobre vitimização a fraude. Os resultados sugerem uma relação de vitimização a fraudes com a auto-confiança em consequências pessoais da tomada de decisão do consumidor e auto-confiança em interações no mercado. Usos e limitações do modelo de conhecimento da persuasão para investigar e prevenir fraudes são discutidos.

*Palavras-chave:* persuasão; fraude; comportamento do consumidor; autoconfiança do consumidor.

## **Self-confidence, time perspective and negative life events: Exploring predictors of fraud victimization**

From the moment someone was able to earn resources by deceiving others, it is likely that the phenomenon of fraud presented itself in human society. Evidence of fraud can be traced at least back to the fifth century B.C., as is the case of fake animal mummies in ancient Egypt (Parodi, 2008). Nowadays, a common practice around the world, it is estimated that 26% of the adult population in the United States of America, and 10% of British people have been victims of fraud (Pratkanis & Shadel, 2005). Recent data on fraud victimization shows that 54% of a random sample of Brazilians was victim of some type of fraud, in the period from February 2013 to January 2014 (Serviço de Proteção ao Crédito – SPC [Credit Protection Service], 2014). As a matter of fact, the real number of victims of fraud may be even higher, since fraud victimization is a phenomenon largely underreported because of social embarrassment involved in feeling duped (Vohs, Baumeister, & Chin, 2007). The SPC data also showed that about 62% of fraud victims affirm that they have never been victims. Despite all of its unequivocal negative effects on economy, health and social relations, fraud is still a relatively widespread and largely tolerated behavior in many cultures (Bierstaker, 2009). For example, each year, estimates indicate that 11% to 16% of the Gross Domestic Product growth in the United States is consumed by fraud (Allen, 2004).

Although fraud is typically a subject of study in law, information, management and other related sciences, its psychosocial nature is clear, it involves social interactions and processes of deceptive persuasion. Furthermore, most of the literature on fraud victimization is theoretical or descriptive. Therefore, one aim of this paper is the advancement of the understanding of relationships between fraud victimization and some predictor variables. Fraud is a process that necessarily involves an agent, using shady means to cheat and to get benefits at the cost of others, who may be an individual, an organization, or even large groups

of people, like an entire nation (Parodi, 2008). Thus, one operational definition of fraud is the acquisition of goods that belongs to an individual, a group of individuals or an organization, through the use of deception. Moreover, frauds can be classified into three major groups according to its victims. Fraud affecting individuals are those in which an individual is cheated and loses his or hers personal property. On the other hand, fraud affecting groups are those in which the deception may be directed to one or more individuals, but damages a large number of people. Fraud affecting organizations are those in which the deception is directed to individuals, but causes an injury to an entire organization. While frauds may affect groups and organizations, the scope of the present paper is on fraud that harms individuals.

Frauds against individuals can be classified as confidence games, investment fraud and consumer fraud (Allen, 2004; Parodi, 2008; Pratkanis & Shadel, 2005). In confidence games con artists seek to get the victim to trust them, so they can use this trust to take hold of the victim's goods. This type of fraud usually involves an agent telling that the victim won a prize, or can receive a large sum of money, but to get the money one must first pay some fee in advance. The agent then disappears with the fee, only returning later to do the same thing again. Trust of the victim is usually gained by typical social influence processes such as: impersonation of an authority figure, posing as a friend or using a false association to a trusted organization (Cialdini & Griskevicius, 2010). Investment frauds are those in which the agent presents an investment opportunity to the victim, but the value of the investment is misrepresented, or does not exist at all. The con artist usually disappears with the victim's capital giving something of little value in return. Finally, consumer fraud involves agents that create fake businesses or pose as a legal business to deceive consumers, selling goods that are counterfeit or just of poor quality. In many cases the fraud agent may target not the capital itself, but some personal data or documents, which can be used to defraud others later on (e.g. using the documents to prove the legitimacy of an organization). While fraud prevention is

made more difficult as the different forms of scams evolve, the social influence processes behind these episodes have changed little (Shadel, 2007).

### **Social Processes Involved in Deceptive Persuasion**

Years of research have been devoted to understanding the underlying social influence processes involved in deception (Boush et al., 2009; Ekman, 1992; Friestad & Wright, 1994; Pratkanis, 2007). This body of knowledge indicates that the processes used to persuade and deceive others rely heavily on vulnerabilities in the automatic processing of the human brain. This stems from the findings that most of the cognitive processing of humans is done unconsciously (Evans & Stanovich, 2013; Fiske & Taylor, 2013). Numerous persuasion strategies can be used to exploit the vulnerabilities, and boost the persuasive power of a message (Cialdini & Griskevicius, 2010; Pratkanis, 2007). The ability to be able to detect these strategies becomes paramount for consumer decision-making.

An important perspective for understanding the process of persuasion, and resistance to it, is the persuasion knowledge model (PKM) (Friestad & Wright, 1994). Its core idea is that persuasion is a dyadic process between the target and the agent of persuasion in which there are three types of knowledge relevant to the target of persuasion: knowledge about the topic, knowledge of how persuasion occurs and knowledge about the agent (Campbell & Kirmani, 2008). Topic knowledge refers to what one knows about the object of the persuasion attempt, like a product or service (e.g. the characteristics of a car model). Knowledge about the agent is what the target of persuasion knows about the specific agent that is trying to persuade him (e.g. “Is this salesperson trustworthy?” “Has this trader fooled me before?”). Finally, persuasion knowledge refers to what one knows about how the process of persuasion occurs, such as the tactics that may be used for deception, the goals of marketers in general, and how to resist to persuasion attempts. With these three types of knowledge a consumer may infer the motivations of a salesperson detect persuasion tactics,

evaluate how these tactics are being used to deceive, and use all this information to counter-argue, self-protect from being duped and better achieve one's own goals (Kirmani & Campbell, 2009). One feature that distinguishes the persuasion knowledge model from other models of persuasion is its focus on the target of persuasion and thus its relevance for understanding the process of resistance to persuasion (Boush, Friestad, & Wright, 2009). While topic knowledge and agent knowledge are specific to each situation, persuasion knowledge is a dispositional characteristic and may be measured as an individual differences variable (Bearden, Hardesty, & Rose, 2001).

It is important to point out that overconfidence on one's own knowledge about how the persuasion occurs may be detrimental. Evidence suggests that individuals who believe they cannot be deceived by persuasion are frequently more vulnerable to it (Boush et al., 2009). This finding is closely related to the third person effect, which is characterized by the tendency of individuals to believe that others are more vulnerable to mass media and are under greater influence of the negative effects of persuasive messages than themselves (Davison, 1983; Perloff, 2010). Consumers also appear to be more susceptible to fraud attempts in three situations: when dispositional or situational limitations prevent them from judging messages as false; when true arguments with distorted implications are used; and when they have access to correct information but cannot use it to detect a deception (Xie & Boush, 2011). Taking this into account, this paper aims to explore the relations of vulnerability to fraud to some predictor variables that previous research may suggest relations to fraud victimization (Shadel, 2007): the predisposition, or not, of an individual to plan for future goals (time perspective), self-confidence on one's capacity to make consumer decisions and protect oneself in the marketplace (consumer self-confidence), events that affect a person's everyday life negatively (negative life events), and amount of money owed (indebtedness).

### **Time perspective**

Time perspective is a process, by which an individual ascribes temporal categories to personal and social experiences (Zimbardo & Boyd, 2008). Temporal categories are individual-differences variables that are relatively stable. This process helps to maintain meaning, order and coherence to experiences, being important to the selection and pursuit of social goals (Zimbardo & Boyd, 1999). Future oriented individuals have higher levels of self-efficacy, being better at planning and achieving long term goals (Epel, Bandura, & Zimbardo, 1999). Also according to Epel et al. (1999), individuals who are present oriented are more prone to believe that the future is set, being more focused on enjoying the present, less inclined to delay a reward for a better outcome in the future and more inclined to find short-term solutions to problems.

Previous research also suggests a link between time orientation and indebtedness, so that individuals with higher present perspective may have less self-control and more unplanned consuming, which in turn are related to indebtedness (Pimenta & Iglesias, 2014). Less self-control may also be related to less ability to counter argue, and consequently to resist to persuasion attempts (Burkley, 2008). Lastly, previous research indicates that con artists take advantage of the low self-control of victims facing a very desirable reward (Langenderfer & Shimp, 2001; Pratkanis & Shadel, 2005). It is reasonable, then, to expect that fraud victimization may be predicted by the time perspective of an individual. So it is hypothesized that participants with higher present time perspective will be victims of fraud more frequently when compared to future-oriented participants.

### **Consumer Self-Confidence**

While engaging in consumer behavior, an individual may believe in his own ability to generate pleasant consumer experiences as being high or low. Consumer self-confidence can be defined as how much a person trusts his capabilities to make consumer related decisions

and to protect himself or herself from deception and unfair treatment in the marketplace (Bearden, Hardesty, & Rose, 2001). This psychological construct is proposed to have two components: decision making self-confidence (one's perceived ability to make consumer decisions) and protection (one's perceived ability to protect oneself from deception, misleading and unfair treatment in the marketplace). Both are further divided into subcomponents. The component of decision making self-confidence has four subcomponents: information acquisition, consideration-set formation, personal outcomes and social outcomes, while the protection component has two subcomponents: persuasion knowledge and marketplace interfaces. These subcomponents, proposed by Bearden et al. (2001) are described in terms of individual's confidence in consumer related decisions.

Information acquisition is an individual's confidence in his or her own power to acquire marketplace information needed for decision making (Bearden et al., 2001). Consideration-set formation reflects a person's confidence in the ability to identify and select acceptable choice alternatives, like brands and shopping places. Personal outcomes is one's confidence that a decision will generate personal feeling of satisfaction. Social outcomes is an individual's confidence that a decision will generate positive reactions from others. Persuasion knowledge represents one's confidence in his or her knowledge regarding persuasion tactics used by marketers to convince consumers. Finally, marketplace interfaces reflects an individual's confidence in the ability to defend his rights and express one's opinion to others, when interacting in the marketplace. The Consumer Self-Confidence Scale may be very useful in fraud research, as a predictor of fraud vulnerability (Shadel, 2007) and for measuring confidence in persuasion knowledge, one variable in the persuasion knowledge model (Kirmani & Campbell, 2009). The persuasion knowledge dimension is of particular interest as it may be a predictor of vulnerability to fraud, because individuals with high persuasion knowledge confidence may be more vulnerable to deceptive persuasion (Perloff,

2010) and overconfidence is a common bias on consumer decision making (Alba and Hutchinson 2000). So it is hypothesized that participants with more confidence in their persuasion knowledge will be victims of fraud more frequently.

### **Negative Life Events**

Previous research on fraud victimization suggests that victims of fraud have a higher incidence of negative life events, are less financially literate, and many are indebted even before being victims of fraud (AARP, 2003; Pratkanis & Shadel, 2005; Shadel, 2007). Negative changes in life, frequency of daily hassles, along with low self-efficacy, are predictors of depression and negative well-being, especially among older persons (Holahan & Holahan, 1987). Depression may in turn affect one's ability to protect oneself from deception. This mechanism may shed some light on why many surveys indicate that the elderly are more frequently fraud victims (Shadel, 2007; SPC, 2014). So, according to previous studies it is hypothesized that participants with more negative life events are victims of fraud more frequently. So, it is hypothesized that in accord to previous research, participants with more negative life events will have been victims of fraud more frequently. Also related to the hypothesis of time perspective, it is expected that participants with high levels of indebtedness will have been victims of fraud more frequently, as both indebtedness and fraud victimization are related to low self-control.

The objective of this Study was to investigate, in a Brazilian sample, the relation of fraud victimization to four groups of predictor variables: time perspective, consumer self-confidence and negative life events and indebtedness.

## **Method**

### **Participants**

A nonrandom sample of 129 individuals, 73.6% women, with mean age of 33.5 years old (SD = 14.9) took part in the study. Most of them were from the Midwest region of Brazil



(80.9%). The educational level of the participants was distributed as: 5.5% completed second grade or less, 40.0% had some college education, 16.4% completed college, 20.9% completed a postgraduate specialization, and 17.2% went to some graduate school or more. Participants were recruited online through social media contacts or discussion groups and were invited to answer a survey about consumer decision making.

## **Instruments**

### **Consumer Self-Confidence Scale**

The original version of the Consumer Self-Confidence Scale (Bearden et al., 2001) is comprised of 31 sentences that describe characteristics related to self-confidence during decision making in consumer situations. Each of the 31 items refers to one of the six dimensions of consumer self-confidence: information acquisition (5 items), consideration-set formation (5 items), personal outcomes (5 items), social outcomes (5 items), persuasion knowledge (6 items), and marketplace interfaces (5 items). Participants answer each item according to a five-point scale (from 1 - Not characteristic at all, to 5 - Extremely characteristic). The Consumer Self-Confidence Scale was translated and adapted from English to Portuguese by the research team. This version was then back-translated to English by a bilingual colleague, following Vijver and Leung (2011) criteria for cross-cultural adaptation of instruments. The back-translated scale was compared to the original scale, and five items were dropped because they were too similar to other items or did not translate to the cultural context of Brazil. No substantial differences were found among the other items, suggesting that the translation kept the original meaning. In a pilot study, the scale showed promising psychometric properties (52.19% of variance explained, Cronbach's  $\alpha > .65$ ), and all of its 26 items were retained to this study.

### **Temporal Orientation Scale**

Time perspective was measured using the Temporal Orientation Scale (Pimenta & Iglesias, 2014), which is a Brazilian scale, based on the Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999). The scale is composed of 16 items, organized in two dimensions, Present Orientation (8 items) and Future Orientation (8 items). Participants answered each item according to a five-point scale (from 1 - Completely Disagree, to 5 - Completely Agree).

### **Negative Life Events**

A list of negative life events was created based on the combination of two measures of stressful events from Holahan and Holahan (1987): the negative life change events measure; and the daily hassles measure. A different combination of these measures was also used in previous research on fraud victimization (Shadel, 2007). The list used in this study describes 16 events that may have different levels of negative impact on the life of an individual (e.g. income decreases, death of a spouse). Participants answered whether each occurred in the last three years and rated the hassle it caused according to a five-point scale (from 1 - No distress at all, to 5 - Extreme distress).

### **Indebtedness Survey**

Two questions about one's level of indebtedness were asked, both taken from a previous study on the use of credit (Pimenta & Iglesias, 2014). The first question inquires the monthly amount of debt one has to pay, discounting credit card and provisions at home: "Not taking into account the credit card, add your installment credit, car finance, carnet store, personal loans, payroll loans and others, how much will you pay for this month?" The second question asks the frequency of full payments of one's credit card bill on the last three months: "In the last 3 months, how many times did you pay the full bill of your credit card?"

### **Fraud Victimization Survey**

Fraud victimization was investigated in two different ways, using a general question and with a list of sentences. First, a question that encouraged alternative explanations to the event (besides fraud) was asked, translated from previous research (Shadel, 2007): "Have you ever made a financial investment where you lost some or all of the money you invested? If yes, select the statement that best describes why this happened." Participants answered one of five alternatives: a) This never occurred to me; b) I did not know how to invest and made a bad call; c) The market took a downward turn; d) I was misled or defrauded by the broker or company I invested in; e) Another reason. Only alternative "d" is considered fraud victimization. A list of 14 sentences describing different types of fraud was created based on recent empirical evidence of the most frequent kinds of fraud (SPC, 2014) and on fraud typology (Allen, 2004; Parodi, 2008). Each sentence asked whether the participant was victim of a particular type of fraud in the last two years, and was answered with a yes or no (e.g. "Have you ever accepted a prize offer or a free sample that ended up not being free?", "Did a seller ever lie to you about the price of a product and then charged a higher price than the previously advertised?").

### **Procedures**

Participants were invited to take part in this survey by email, mailing lists and social media sites. The instrument was presented in the following sequence: 1 - Self-Confidence Scale, 2 - Temporal Orientation Scale, 3 - Negative life events and indebtedness survey, 4 - Fraud victimization survey, 5 - Demographic survey.

### **Results**

A principal axis factor analysis was conducted on the 26 items of the Consumer Self-Confidence Scale with orthogonal rotation (Varimax) ( $KMO = .76$ ). A three factor solution was selected because they better represented the original study structure (Bearden, Hardesty,

& Rose, 2001), explained a good percentage of variance and showed good reliabilities. No item was excluded. The items that cluster in the same factor suggest that Factor 1 represents persuasion knowledge ( $\alpha = .77$ ); Factor 2 represents information acquisition, social outcomes and consideration-set formation ( $\alpha = .83$ ); Factor 3 represents marketplace interaction and personal outcomes ( $\alpha = .82$ ). Three variables were created by taking the means of the items of each of the three factors. A principal axis factor analysis was also conducted on the 16 items of the Temporal Orientation Scale using an oblique rotation ( $KMO = .84$ ). Similar to the original, a two factor solution was used but four items were excluded because they had factor loadings smaller than .3. Factor 1 represents future orientation ( $\alpha = .82$ ) and Factor 2 represents present orientation ( $\alpha = .78$ ). Two variables were also created by taking the means of the items of each factor. Both of the summaries of factor analysis are available as Appendices E and F.

The dependent variable of fraud victimization was created by taking the sum of the affirmative responses to the 14 sentences describing types of fraud. Higher fraud victimization was only significantly predicted by the variable personal outcomes and marketplace interaction  $b = .84$  [.37, 1.34],  $p = .002$  (Table 1). There was no significant relationship between fraud victimization and persuasion knowledge, or information acquisition, social outcomes and consideration-set formation. Fraud victimization was also not predicted by negative life events and time perspective. Also, fraud victimization was not predicted at a significant level by monthly amount of debt  $F(7, 106) = 1.13$ ,  $p = .35$ ,  $\omega^2 = .008$  or by credit card payments  $F(4, 111) = 1.73$ ,  $p = .15$ ,  $\omega^2 = .03$ . No relationships with gender, age, educational level or income were found.

Table 1:

*Linear model of predictors of fraud victimization, with 95% bias corrected and accelerated confidence intervals reported in parentheses. Confidence intervals and standard errors based on 1000 bootstrap samples.*

	<i>b</i>	<i>SE B</i>	$\beta$	<i>p</i>
Constant	.885 (-.304, 1.968)	.661		<i>p</i> = .183
Marketplace Interaction and Personal Outcomes	.841 (.373, 1.337)	.260	.295	<i>p</i> = .002

### Discussion

This study had the objective of exploring the relation of fraud victimization to four groups of predictor variables. The hypothesis that participants with more confidence in their persuasion knowledge would be victims of fraud more frequently was not confirmed. Higher fraud victimization was only predicted by the personal outcomes and marketplace interaction factor. Individuals with less self-confidence on personal outcomes and marketplace interaction abilities were victims of fraud more often than not. This result does not support the rationale that overconfidence may leave an individual vulnerable to fraud (Perloff, 2010). However, as this study was correlational, it may well be possible that the relationship between these variables is inverted: individuals who were victims of fraud had their consumer self-confidence damaged by this fact.

No relationship was found between future temporal orientation, present temporal orientation, negative life events, indebtedness, and fraud victimization. These results may be explained by the fact that overall the participants had few hassles caused by negative life events, were lightly indebted and, most importantly, were victims of a few cases of fraud ( $Md = 2$ ). This low frequency of cases reported may be a consequence of high social desirability, as underreport of fraud victimization has been observed frequently in fraud research (AARP, 2003; Shadel, 2007; SPC, 2014). These results may also be a consequence of the

characteristics of the sample, which may be non-representative of the characteristics of victims of fraud. Previous research in fraud indicates that people with some demographic characteristics are more likely to be fraud victims (Shadel, 2007), depending on the type of fraud. Future research should try to remediate this issue by using stratified sampling to achieve a more diverse sample. A paper-and-pencil strategy, for example, may be necessary to better reach individuals who cannot be reached by an online survey.

Finally, the persuasion knowledge model may have limitations to analyze fraud against individuals that are inherent to it. Frequently, the knowledge of the agent that a target of fraud has may be close to nothing, as the criminal may impersonate others, be complete stranger or even remain completely anonymous. Knowledge about the topic may be useful for detecting counterfeit goods and shady transactions; however that requires previous knowledge of the products or financial transactions that are supposedly being presented. Also, even people who are financially literate and have knowledge about investments are frequent victims of frauds (Shadel, 2007; Pratkanis & Shadel, 2005), which indicates that knowledge about the topic alone may not be enough to protect consumers from fraud. There exists a good body of literature about the persuasion tactics that con artists use (Allen, 2004; Boush et al., 2009; Langenderfer & Shimp, 2001; Parodi, 2008; Pratkanis & Shadel, 2005) and it may serve for consumer to protect themselves from fraud. However, a main issue in the PKM is the fact that it relies on the assumption that people will have the resources and self-control needed to use the available knowledge to critically analyze a fraud. Moreover, evidence shows that the process of inferring motivations behind a persuasive message requires higher order (Type 2) thinking (Evans & Stanovich, 2013). Thus, consumers who lack cognitive resources will be less likely to be able to use persuasion knowledge to detect and resist to persuasion attempts (Campbell & Kirmani, 2000). While the PKM remains a

useful model for analyzing many marketplace interactions, answering to these limitations may be necessary for its further use on fraud research.

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## FOREWORD TO MANUSCRIPT 2

The previous manuscript aimed to investigate the relationship of fraud victimization to four predictors: the predisposition, or not, of an individual to plan for future goals (time perspective), self-confidence on one's capacity to make consumer decisions and protect oneself in the marketplace (consumer self-confidence), events that affect a person's everyday life negatively (negative life events), and amount of money owed (indebtedness).

Along with the previous study, two experiments were conducted to investigate the effects of ego depletion, issue involvement, need for cognition, and valence of arguments on a persuasion attempt, in a Brazilian sample, operationalizing the elaboration likelihood model as an explaining model for attitude change. It should be highlighted that the original aim of the study reported in the second manuscript was to test the elaboration likelihood model using fraud scenarios; however, some limitations impeded the original aim. First, simulating a fraud situation with realism involves some ethical issues that were not resolved by the time of the experiments. Also, the literature lack any operationalizations of the ELM in the cultural context of Brazil. The two experiments described in the following paper aim to gather this evidence.

**Yes Man! Persuasion at different levels of elaboration**

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### Abstract

People are victims of consumer fraud and scams on a daily basis. However, in most cases the victim could have detected the fraud if only checked for inconsistencies in the scammer's message. What makes some people detect and avoid a scam while others fall prey to it? This paper investigates in 2 experiments the effects of ego depletion, issue involvement, need for cognition, and valence of arguments on attitude change. Experiment 1 tested the hypothesis that under high ego depletion, attitudes would be similar in both strong and weak arguments conditions, while under low ego depletion, attitudes would be significantly higher in the strong argument condition. In Experiment 2 it was expected that participants' attitudes would follow the direction of the valence of the persuasive message. Results supported the hypotheses of Experiment 2 but not of Experiment 1. Future research may benefit from using different manipulations of the elaboration likelihood and from testing the persuasiveness of fraudulent messages. Findings of research using the ELM may be useful to better understand which self-protection skills are useful for consumers to protect themselves from fraud.

*Keywords:* persuasion; consumer behavior; elaboration likelihood model; ego depletion.

## Resumo

Pessoas são vítimas de golpes e fraudes contra o consumidor diariamente. No entanto, na maioria dos casos, a vítima poderia ter detectado a fraude se tivesse dado atenção para as inconsistências na mensagem do golpista. O que é que torna algumas pessoas capazes de detectar e evitar um golpe enquanto outros caem no mesmo? Este artigo investiga em dois experimentos, os efeitos do esgotamento do ego, do envolvimento com a questão, da necessidade de cognição e da valência de argumentos sobre a mudança de atitude. O Experimento 1 testou a hipótese de que, sob um alto esgotamento do ego, atitudes seriam semelhantes em ambas as condições de argumentos fortes e fracos, enquanto sob um baixo esgotamento do ego, atitudes seriam significativamente maiores na condição de argumentos fortes. No Experimento 2, esperava-se que as atitudes dos participantes iriam seguir a direção da valência da mensagem persuasiva apresentada. Os resultados apoiaram a hipótese de Experimento 2, mas não do Experimento 1. Pesquisas futuras poderão se beneficiar do uso de diferentes manipulações da probabilidade de elaboração e de testar o poder de persuasão das mensagens fraudulentas. As conclusões da pesquisa usando o ELM podem ser úteis para compreender melhor quais as competências de auto-proteção que são úteis para os consumidores protegerem-se de fraudes.

*Palavras-chave:* persuasão; comportamento do consumidor; modelo de probabilidade de elaboração; esgotamento do ego.

### **Yes Man! Persuasion at different levels of elaboration**

While trying to sell a product, a salesperson may use a wide array of tactics to better persuade consumers. Often, the consumer regrets his purchase later on, feels deceived and asks why he or she bought it in the first place, and in many cases such was the intention of the salesperson. This phenomenon, deceptive persuasion, occurs when a persuasion agent fools the target by fabricating, manipulating or hiding information about a product or service, only to better convince him to purchase it (Boush, Friestad, & Wright, 2009). Consumer fraud is a kind of deceptive persuasion, in which the product may not exist, and the objective is not selling, but appropriating the target's money or some personal information (Allen, 2004; Parodi, 2008). In most cases of consumer fraud, the information provided by a con artist contains a lot of inconsistencies (e.g., inexistent companies, prizes that are too good to be true, false policies and laws). These could have been easily noticed by the victim, if only one had scrutinized and fact-checked the content of a message. However, many fail to notice these scam cues and fall victim to the con artist. What causes people to evaluate a persuasive message in different ways?

Many recent models in social psychology work with the idea that there are two types of thinking: one is quick and more unconscious and the other is slow and more conscious (Evans & Stanovich, 2013). In a general sense, these so called dual-process models describe that part of the cognitive processing occurs outside of one's awareness, by dividing human cognitive processing into two sets of systems, usually named Type 1 and Type 2 (Fiske & Taylor, 2013). Psychologists use these models to understand how and why people overestimate the level of control over their own thoughts and behaviors. Type 1 processes work quickly and automatically, with little to no effort from the individual. It is older in the evolutionary history of humans and associated with tasks such as pattern recognition, emotion elicitation and other automatic processes (Evans & Frankish, 2009). On the other



hand, Type 2 processes are slow and deliberate, demanding more cognitive effort from the individual, and are considered to have emerged more recently in human evolution. These processes are related to establishment of long-term goals, analytic processing, and suppression of Type 1 processes (Kahneman, 2011).

Different cognitive costs are associated to each type of processing. Conscious control of processes demands much more from the individual, especially when Type 2 processing must override a Type 1 process (Evans & Stanovich, 2013). Evidence also suggests that the cognitive resources to do conscious processing are limited, and when drained, an individual has more hardship to use Type 2 processing and relies more on automatic processing (Hagger, Wood, Stiff, & Chatzisarantis, 2010). This may lead to a higher frequency of errors and irrational decisions because more often than not, beliefs, attitudes and decisions are actually processed automatically and only later processed consciously, creating an illusion of control (Stanovich, 2012, 2013).

The research on automatic processing, in social psychology, is especially prolific in the areas of attitudes, impression formation, stereotypes, priming, pursuit of goals, social influence, and judgment and decision making (Dijksterhuis, 2010). Heuristics can be defined as shortcuts used to simplify and facilitate judgment in situations with little time to make a decision (Fiske & Taylor, 2013; also Gilovich, Griffin, Kahneman, 2002). These strategies rely on ignoring a piece of information to make faster, more economic and accurate decisions, as compared to more complex decision making processes (Gigerenzer & Gaissmaier, 2011). It is important here to highlight that, at first, the use of heuristics is not necessarily beneficial or detrimental, rational or irrational; their accuracy will depend on the structure of the environment. Gigerenzer and Gaissmaier (2011) also point to evidence that individuals and organizations often use heuristics in a well adaptive way, because in environments with high uncertainty, ignoring part of the information often leads to better

decisions. However, in many cases, this effort saving may result in less accuracy in decision making (Stanovich, 2005), for example: a bad-intended individual, armed with only layman knowledge of these characteristics of human thinking, can exploit vulnerabilities in Type 1 and 2 processing to persuade and deceive a victim (Boush, Friestad, & Wright, 2009; Pratkanis & Farquhar, 1992). A revision (Pratkanis & Shadel, 2005) of the tactics used by con artists indicates that they frequently try to take advantage of people's quick decision making and lack of self-control (Langenderfer & Shimp, 2001).

Persuasion can be defined as a deliberate attempt to change the attitudes of another person (Petty & Cacioppo, 1986). The elaboration likelihood model (ELM) describes persuasion as an interaction between the agent and the target of persuasion, in which different individuals have different levels of elaboration of the message that is presented, and may be persuaded through one of two routes. When the target analyses thoroughly each argument presented in the persuasion message, with high effort and elaboration, it is said that he or she used the central route. On the other hand, when the target experiences a change of attitude without analyzing each argument presented, with low effort and low elaboration, one used the peripheral route. Because of these two different ways of elaboration, the quality of the arguments of a persuasive message may influence less one's attitudes if that person is processing through a peripheral route (Petty & Briñol, 2010). Accordingly, if one's elaboration is high (central route of persuasion), the quality of the arguments will be evaluated more thoroughly. The ELM is clearly a dual-process model created specifically to understand persuasion processes. While the central route may be considered a Type 2 processing, the peripheral route can be considered a Type 1 processing. The route used is determined by many factors that include one's motivation to elaborate the message and one's ability to evaluate the arguments presented (Petty & Briñol, 2012).

## **Factors Influencing Elaboration Likelihood**

Various factors are determinants of an individual's motivation and ability to process a persuasive message (Petty, Cacioppo, Strathman, & Priester, 2005). Among the factors that affect one's motivation is the personal relevance of the subject of the message and his need for cognition (Petty & Briñol, 2012). When exposed to a message of high personal relevance, people tend to be more motivated to elaborate a message. Petty and Briñol (2012) also review some factors that influence one's ability is the presence of distracting variables, one's cognitive resources, and knowledge about the subject. In the presence of distracting elements during a persuasion attempt, a person may find it harder to elaborate the message and there will be a higher likelihood of using a heuristic to evaluate it (Petty & Briñol, 2010). An individual may lack cognitive resources because of restrictions on his working memory span (Schmeichel & Hofmann, 2012). This lack of cognitive resources may hampers one's ability to think about the message and make it more likely that one will be influenced by peripheral cues of the message (Burkley, 2008; Wheeler, Briñol, & Hermann, 2007).

### **Issue Involvement**

Issue involvement can be manipulated by changing the temporal proximity of the consequences of the message. The temporal proximity refers to how far in the future are the consequences of a persuasive message and it may influence the likelihood that an individual will elaborate it effortfully (Petty & Briñol, 2012). Also, the construal level theory (CLT), describes the relationship between different levels of construal to different psychological distances (Trope & Liberman, 2012). Thus, when facing an event that is distant in the future a person will have a more abstract level of thinking and be less motivated to elaborate it. On the other hand, an event that is bound to happen soon generates a more concrete level of construal in a person and more motivation to process a related persuasive message. It is reasonable to expect that, when presenting a non-trivial issue, manipulating the temporal

proximity (close - distant) will affect levels of construal and how much someone will think about the message presented. When faced with consequences that are far in the future, the quality of the arguments will have less effect on the participants (Petty & Cacioppo, 1984). As a side note, it is possible that individuals with a future temporal orientation may be less sensible to this variable (Pimenta & Iglesias, 2014); however, studying the moderating role of temporal orientation goes beyond the scope of this paper.

### **Ego Depletion**

According to the strength model of self-control (Baumeister, Bratslavsky, Muraven, & Tice, 1998), conscious and deliberative processes rely on a limited resource (as Type 2 processes) that, when exhausted, has a negative impact on one's executive function. This condition of diminished strength to exert self-control is called ego depletion (Hagger, Wood, Stiff, & Chatzisarantis, 2010). Therefore, an individual with less self-control will have a harder time, for example, while resisting to act on an emotion. Evidence suggests that self-control has an important role in resistance to persuasion (Burkley, 2008); and that successful resistance to persuasion diminishes the capacity of self-control. Particularly important is the finding that impairment of self-control weakens one's ability to generate counterarguments, by leading to less resistance to persuasion (Burkley, 2008; Wheeler, Briñol & Hermann, 2007). It follows that a person under ego depletion will be less likely to elaborate a persuasive message. The person will rely more on peripheral cues to evaluate the message, and thus may be more easily convinced by the presentation of weak arguments.

### **Need for Cognition**

Need for cognition (NfC) is a cognitive style associated to enjoying and engaging in effortful thinking more frequently (Cacioppo, Petty, & Kao, 1984). It is a relatively stable individual differences variable that predicts relations with many psychological variables, such as: negative relations with external locus of control and neuroticism; positive relations with

problem solving and objectivism (Cacioppo, Petty, Feinstein, & Jarvis, 1996). Scoring higher on the Need for Cognition Scale is associated to engaging more frequently on deep thought and enjoying reasoning and problem solving. Other studies also indicate that this cognitive style predicts analytic reasoning tendencies (Kokis, Macpherson, Toplak, West, & Stanovich, 2002) and critical thinking skills (West, Toplak, & Stanovich, 2008), even after controlling for general intelligence. In persuasion processes, Need for Cognition has a moderating role, affecting the motivation of an individual to elaborate the message presented (Haugtvedt & Petty, 1992). Thus, it is expected that those who score higher in the Need for Cognition Scale will be more motivated to think about a persuasive message and to evaluate its consistency, and thus, be more sensible to the quality of the arguments presented.

### **Objective**

Two experiments were aimed to investigate, in a Brazilian sample, the effects of ego depletion, issue involvement, need for cognition, and valence of arguments on a persuasion attempt, using the ELM as an explaining model for attitude change.

### **Experiment 1**

Experiment 1 was aimed to test the ability to resist to persuasion under ego depletion. The objective was to investigate main effects and interactions between three independent variables, ego depletion, temporal proximity and quality of the message. It was expected that participants under high ego depletion would be less likely to elaborate the persuasive message, and therefore would be more persuaded by weak arguments, relationships expressed in three hypotheses:

Hypothesis 1 - A Strong Arguments condition will generate more positive attitudes about the proposal than a Weak Arguments condition.

Hypothesis 2 - There will be an interaction effect between temporal proximity and quality of the arguments. Participants presented to a consequence far in the future will be less

motivated to elaborate the arguments presented on a message. Consequently they will have more positive attitudes about the proposal in the weak arguments condition.

Hypothesis 3 - There will be an interaction effect between ego depletion and quality of the arguments. Participants in the weak arguments condition will have more positive attitudes about the proposal in the high ego depletion condition when compared to the low ego depletion condition.

## **Method**

### **Participants**

The participants were 128 volunteers, 59.1% women, with a mean age of 20.1 years old ( $SD = 2.2$ ) recruited in the campus of a major public university. The sample is comprised of university students (90.6%), distributed in 35 different majors. Sample size was set based on an ability to detect an effect size of medium magnitude with a statistical power of .80 using G\*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007). The experiment used a 2 x 2 x 2 independent factorial design. The variables were manipulated between subjects, and involved the quality of the arguments presented (strong condition x weak condition), ego depletion (high condition x low condition) and temporal proximity (close condition x far condition).

### **Instruments and Procedures**

#### ***Independent Variables***

##### *Quality of Arguments Manipulation*

Two small texts arguing in favor of establishing a mandatory test at the end of all undergraduate courses were created by the research team. Participants were told that the text they would read was a summary written by an unidentified professor of the university. Each condition presented four different arguments in favor of the proposal; the selection of these arguments was based on previous research (Petty, Harkins, & Williams, 1980). The weak argument condition text contained poor arguments that relied on personal opinion. The strong

argument condition text contained better constructed arguments that relied on data. A pilot study was conducted to test this manipulation. The tests indicated that there were no statistically significant differences in the texts on difficulty,  $F(1, 41) = .71, p = .40, \eta^2 = .007$ ; and complexity,  $F(1, 41) = .62, p = .44, \eta^2 = .009$ . The texts arguing in favor of the proposal are available as Appendix B.

#### *Temporal Proximity Manipulation*

Temporal proximity (close x far) was manipulated by informing the time when the test was to be implemented. In the close condition, participants were informed that the test would start to be mandatory in the next year. In the far condition, participants were informed that the test would be mandatory in six years.

#### *Ego Depletion Task*

The ego depletion task was inspired by the task used in Wheeler, Briñol and Hermann (2007), and created by Baumeister, Bratslavsky, Muraven and Tice (1998). In the first part, participants received one page with randomly generated letters and numbers, and were instructed to search and cross all the letters “e” that they could find in the page in less than 5 minutes. The second part included the manipulation of ego depletion (high x low). In the low ego depletion condition, participants were simply instructed to repeat the first part of the task. In the high ego depletion condition, participants received another copy of the same page and were instructed to repeat the task, with two new rules, though. First, they should not cross the “e” when it appeared after a vowel and, second, they should not cross the “e” when it was separated from another vowel by a consonant.

#### *Dependent Variables*

Attitudes towards the proposal were measured in two ways, a semantic differential scale and two questions measuring attitude change.

### *Semantic Differential Scale*

A seven-point semantic differential scale was created with eight pairs of adjectives used to evaluate the proposal (harmful/beneficial, good/bad, positive/negative, necessary/unnecessary, terrible/great, useful/useless, unpleasant/pleasant, and favorable/unfavorable). Participants responded each of the eight pairs of adjectives indicating how close their attitudes were to one of the extremes of the scale.

### *Attitude Change*

Two questions were used to measure if there was any attitude change in participants. The first question was asked after explaining the proposal but before the persuasive text and read “Before reading the text, please, mark on the following scale, what is your attitude about the establishment of this mandatory test at the end of the undergraduate courses.” The second question was asked after the persuasive text and read: “Please, mark in the following scale, what is your attitude about the proposal you just read?” Both questions were answered in a 5-point scale (from 1 - Totally against, to 5 - Totally in favor?).

### *Need for Cognition Scale*

The Need for Cognition scale (Cacioppo, Petty, & Kao, 1984) is comprised of 18 items that describes preferences related to the tendency to engage or not in deep thinking (e.g. “I would prefer complex to simple problems”). Participants should answer each item according to a five-point scale (from 1 - Not characteristic at all, to 5 - Extremely characteristic”). In this study, a Brazilian version of the Need for Cognition Scale, adapted in a previous study (Barbieri, Caldas, Ribeiro, Sarnet, & Pilati, working paper), was used.

### *Procedure*

After recruitment, participants were randomly allocated to one of the two conditions of the ego depletion task. The task was presented as a “measure of attention”, and participants were asked to answer it. After that, they received one of the four different



versions of the instrument, randomly allocated to the combination of the two independent variables (quality of arguments and temporal proximity). They were instructed to read the message and to answer all the measures in the instrument. Upon completion they were debriefed about the real purpose of the experiment.

## Results

To check if the Differential Semantic Scale was a reliable measure of attitudes, a principal axis factor analysis was conducted on the 8 items ( $KMO = .89$ ). Only one factor had an eigenvalue above Kaiser's criterion of 1 and explained 54.40% of the variance. A one factor solution was retained with no item excluded ( $\alpha = .90$ ). A principal axis factor analysis was also conducted on the 18 items of the Need for Cognition Scale ( $KMO = .76$ ). One factor had an eigenvalue above Kaiser's criterion of 1 and explained 19.13% of the variance. A one factor solution was used but six items were excluded because they had factor loadings smaller than .3 ( $\alpha = .80$ ). Both summaries of factor analysis are available as Appendices G and H.

In order to measure attitudes towards the proposal additional variable was created by taking the average of the items of the semantic differential scale – hereafter referred to as the semantic differential variable. In this measure, higher values indicated more positive attitudes. A three-way independent ANOVA was used to test the effect of the three IVs on the semantic differential variable. A significant effect of the quality of the argument on the attitudes toward the message was found,  $F(1, 116) = 8.54, p = .004, \eta_p^2 = .07$ , indicating that the strong argument generated more favorable attitudes than the weak ones. There were no statistically significant effects of temporal proximity,  $F(1, 116) = 1.12, p = .29, \eta_p^2 = .01$ , or ego depletion,  $F(1, 116) = 2.15, p = .15, \eta_p^2 = .02$ , on attitudes towards the proposal. There were no significant interactions between any of the independent variables; argument quality x cognitive load,  $F(1, 116) = .62, p = .43, \eta_p^2 = .005$ ; argument quality x temporal proximity,  $F(1, 116) = 1.43, p = .24, \eta_p^2 = .012$ ; temporal proximity x cognitive load,  $F(1, 116) = .034, p$

= .85,  $\eta_p^2 < .001$ ; and argument quality x cognitive load x temporal proximity,  $F(1, 116) = 1.87, p = .17, \eta_p^2 = .02$ . The covariate, Need for Cognition, was significantly related to the participant's attitude,  $F(1, 115) = 5.15, p = .025, \eta_p^2 = .04$ . The results did not differ after controlling for the Need for Cognition. The attitude change measure indicated that, overall, participants were more favorable to the proposal after reading the text ( $M = 3.71, SE = .097$ ) as compared to before reading it ( $M = 3.53, SE = .093$ ),  $t(127) = -2.2, p = .03, d = 1.94$ . There were no statistically significant effects of the IVs in the attitude change measure.

## Discussion

As expected, quality of the arguments was a predictor of attitudes, with strong arguments generating more positive attitudes than weak arguments. Need for cognition was also found to be a significant predictor of attitudes. However, after controlling for it, there was no significant change on the model used to explain the results. So it appears that, contrary to the expected on the literature (Haugtvedt & Petty, 1992), need for cognition did not have a moderating role on persuasion, high-NfC individuals being affected in the same way that low-NfC individuals. This could be a consequence of the dimensional structure of the NfC measure, that is different from the original study. On the other hand, this pattern may also suggest that despite differences in need for cognition, individuals were in general not motivated to elaborate the message presented.

The effects described on hypotheses 2 and 3 were also not found to be significant, and some possible explanations for that will now be explored. First, the hypothesis 2 described an interaction effect between temporal proximity and quality of the arguments on the attitudes towards the proposal. This indicates that, contrary to expectations based on the literature (Petty & Cacioppo, 1984), the temporal proximity of the consequences did not affect how participants elaborated the message in a detectable way. It is possible that the manipulation did not affect the personal involvement of participants, which means they were less motivated

to elaborate the message. Second, the hypothesis 3 described an interaction effect between ego depletion and quality of the arguments on the attitudes towards the proposal. Such a result also goes against the literature (Burkley, 2008), suggesting that the level of ego depletion did not affect the final generated attitude. This can also be explained by participants' lack of motivation to elaborate the message, as that would lead to less use of conscious processes and make self-control resources less important (Petty & Briñol, 2012). These limitations were not detected in time because of a lack of pretest of the variables ego depletion and temporal proximity.

Other possible explanation to this result is that there could have been limitations associated to the ego depletion task itself, although it was directly adapted from the original (Baumeister, Bratlavsky, Muraven, & Tice, 1998). While this was not measured, resources for self-control may have not been affected by the task in a detectable way, thus a manipulation check should test this explanation in the future. However, a recent meta-analysis (Carter & McCullough, 2014) suggests that the ego depletion effect literature may suffer from publication bias. After applying methods correcting for small-study effects, Carter and McCullough found that the effect of ego depletion was not statistically different from zero. So, a better choice may be to drop the ego depletion task in favor of another manipulation that affects the working memory, for example a cognitive load task (Petty & Briñol, 2012; Schmeichel & Hofmann, 2012).

One final possible explanation relies on the observation that overall, participants tended to have favorable attitudes to the proposal ( $M = 3.53$ ,  $SD = 1.06$ ), even before reading the persuasive message, with only 21.1% of the participants being partially or completely against the proposal. It is possible that participants have tended to simply agree with the proposal presented without thinking much about it, because it is simply the lowest cost option. Experiment 2 was devised to test this explanation.

## **Experiment 2**

Experiment 2 was aimed to conduct a conceptual replication of Experiment 1, testing for a new effect, the valence of the proposal. The objective was to investigate main effects and interactions between two independent variables: quality of the arguments and valence of the message. It was expected that participants' attitudes would tend to follow the direction of the persuasive message despite the quality of its arguments, according to two hypotheses.

Hypothesis 1 - There will be an effect of the valence of the message on attitudes about the message, wherein the valence of the attitudes will follow the valence of the message.

Hypothesis 2 - There will be an interaction effect between valence of the message and quality of the arguments. The strong arguments condition will generate more positive attitudes in the favorable valence condition, and will generate more negative attitudes in the against valence condition, when compared to the weak arguments condition.

### **Method**

#### **Participants**

The participants were 67 volunteers, 60.6% women, with a mean age of 19.8 years old ( $SD = 3.48$ ) recruited in the campus of a major public university. The experiment used a 2 x 2 independent factorial design. The variables were manipulated between subjects, and involved the quality of the arguments presented (strong x weak condition) and valence of the message (in favor condition x against condition).

#### **Instruments and Procedures**

##### ***Independent Variables***

##### ***Quality of Arguments and Valence of the Message Manipulations***

Valence of the message was manipulated by changing the arguments to be in favor or against the proposal. Thus, two new short texts were elaborated for this manipulation; both following the same structure of the texts used in Experiment 1. However, instead of arguing

in favor of the proposal, these two texts argue against it. Accordingly, each text contained four arguments against the proposal. The weak condition text contained weak arguments and the strong condition text contained better arguments. Both texts in favor of the proposal (weak and strong) used in Experiment 1, were also used in this Study for the in favor condition. As in Experiment 1, participants were told that the text they would read was a summary written by an unidentified professor of the university. The texts arguing in favor (strong or weak) and against (strong or weak) the proposal are available as Appendix B and Appendix C.

### *Dependent Variables*

Attitudes towards the proposal were measured in two ways, a semantic differential scale and two questions measuring attitude change.

#### *Semantic Differential Scale*

The same eight-item semantic differential scale used in Experiment 1 was presented to participants in the Experiment 2.

#### *Attitude Change*

Attitude change was measured with the same two questions used in Experiment 1.

#### *Need for Cognition Scale*

The Brazilian version of the 18 item version of the Need for Cognition Scale (Barbieri et al, working paper) was also used in this Study.

### *Procedure*

Participants were recruited in class, and the experiment was conducted collectively. They were told that they would have to read and evaluate a short text. Participants received one of the four different versions of the instrument, randomly allocated to the two independent variables, quality of arguments and valence of the message. They were

instructed to read the message and answer the entire instrument. Finally, a debriefing was conducted upon completion of the experiment.

## Results

A principal axis factor analysis was conducted on the 8 items of the Differential Semantic Scale ( $KMO = .899$ ). A one factor solution was retained with no item excluded ( $\alpha = .92$ ). A principal axis factor analysis was also conducted on the 18 items of the Need for Cognition Scale ( $KMO = .70$ ). A one factor solution was used but three items were excluded because they had factor loadings smaller than .3 ( $\alpha = .82$ ). Both summaries of factor analysis are available as Appendices I and J.

An effect of the valence of the message was found in the first question of attitude change,  $F(1, 66) = 4.86, p = .031, \eta^2 = .07$ , suggesting that participants' attitudes followed the direction of the valence of the message, with mean higher on the in favor condition than in the against condition. A measure of attitude change was created by taking the difference between the two initial questions, and a two-way independent ANOVA was used to test the effect of the two IVs on the attitude change variable. There was a significant interaction between the two independent variables on attitude change,  $F(1, 66) = 4.96, p = .03, \eta_p^2 = .073$ , suggesting that on the strong argument condition, attitudes changed according to the message (see Figure 1). However, there were no significant main effects of quality of the arguments,  $F(1, 66) = .02, p = .88, \eta_p^2 < .001$ , and valence of the message,  $F(1, 66) = .53, p = .47, \eta_p^2 = .008$ , on the variable of attitude change. Need for cognition was not significantly related to the valence of the message.

A two-way independent ANOVA was used to test the effect of the two IVs on the semantic differential variable. There was a significant effect of the valence of the message on the attitudes toward the message,  $F(1, 66) = 7.21, p = .009, \eta_p^2 = .10$ , indicating that the in favor condition generated more favorable attitudes than the against condition. There was a

marginally significant effect of the quality of the arguments,  $F(1, 66) = 3.39, p = .07, \eta_p^2 = .05$ , on attitudes towards the proposal. There was no significant interaction between the two independent variables,  $F(1, 66) = 1.73, p = .19, \eta_p^2 = .03$ . When inserting need for cognition in the model, it was not significantly related to participants' attitude.

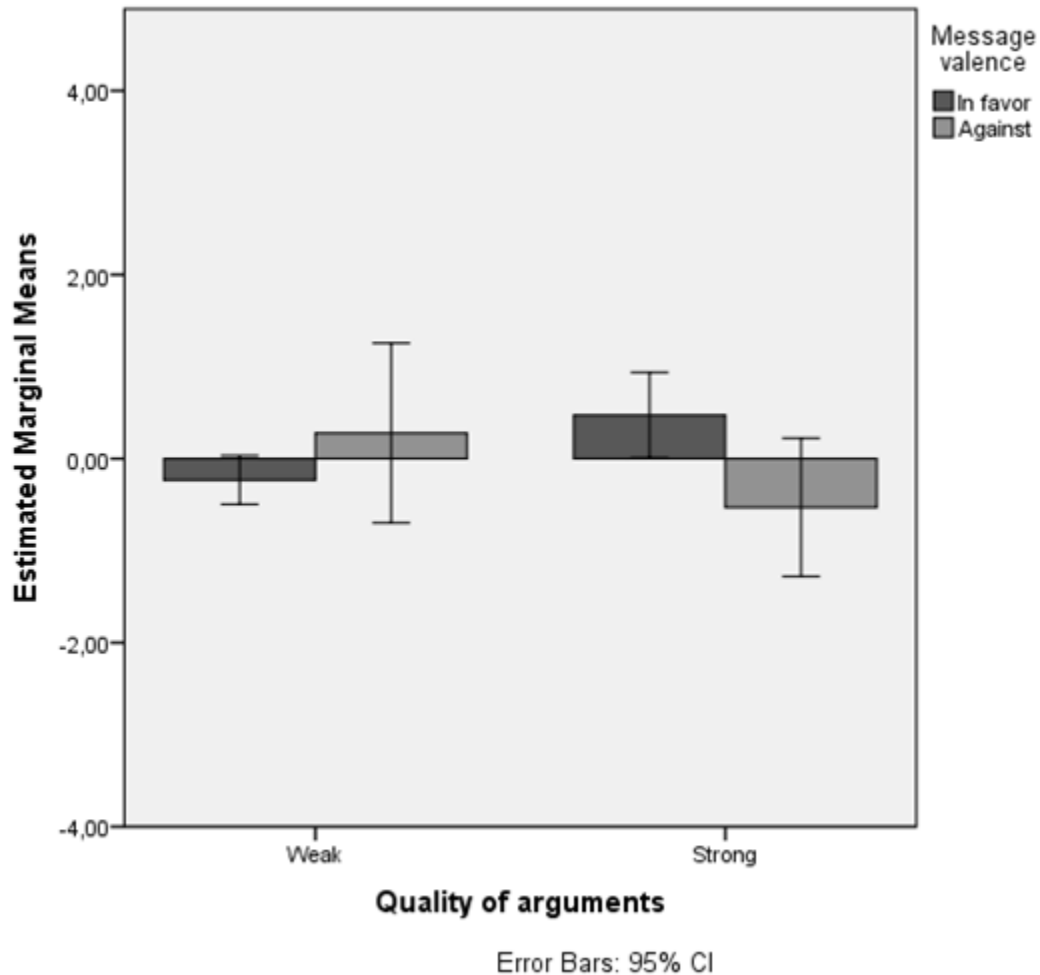


Figure 1. Mean difference values representing attitude change compared by quality of arguments and valence of the message.

## Discussion

Hypothesis 1 was confirmed, as an effect of the valence of the message on attitudes about the proposal was found. Participants tended to agree with what was argued in the persuasive message before even reading it. This trend was also observed in the attitudes after reading the arguments. Furthermore, the interaction between valence of the message and

quality of arguments on the attitude change measure supports Hypothesis 2, that stronger arguments would generate even stronger attitudes in the direction of the message valence. In other words, participants exposed to the favorable arguments had a stronger positive attitude change in the strong arguments condition, while participants exposed to unfavorable arguments had a stronger negative attitude change in the strong arguments condition. These results give support to the idea that participants may have had low motivation to elaborate the message and may have tended to agree with what was proposed, without thinking much about it. While this effect may have occurred because it is the lowest cost option, it may have been exacerbated because of the description of the author of the text as a professor and ex-doyen of the university. The power of authorities has been observed many times in the literature (e.g. see Bickman, 1974; Milgram, 1974; for an extensive review, Cialdini & Goldstein, 2004). The professor, a figure of authority, may have acted as a peripheral cue, guiding a peripheral attitude change (Petty & Briñol, 2012). With little motivation to elaborate the message, the status of the professor may have had more weight on the evaluation, acting as a heuristic (Gilovich, Griffin, & Kahneman, 2002).

Need for cognition was not found to be a significant predictor of attitudes, and after controlling for it, there was no significant change on the linear model used to explain the results. As in the results found in Experiment 1, this may be a consequence of the differences from the original dimensional structure of the NfC. However, this result may also be explained by the possibility that on a low personal relevance situation, need for cognition alone is not sufficient to motivate participants to elaborate the message presented.

### **General Discussion**

Two main directions that should follow these experiments will now be described. First, an effective manipulation of personal relevance needs to be devised. This means finding a way to make participants feel a strong personal impact of the consequences of the



proposal. Other possibility would be to change the proposal itself to something that would elicit more motivation. Finally, a future study should also test the interaction of a cognitive load task to the independent variables of Experiment 2.

The second direction of studies would be to devise experiments that can better emulate fraud settings. This could be done by asking participants to evaluate messages that imitate the ones used by con artists, testing whether participants that elaborate the message detect its fraudulent nature. Other possibility would be to conduct field experiments that simulate fraud situations. Here, the possible effect of authority as a heuristic is of special relevance, as literature indicates that con criminals frequently pose as authorities when committing their crimes (Boush, Friestad, & Wright, 2009; Pratkanis & Shadel, 2005). Findings of research using the ELM may be useful to better understand which self-protection skills are useful for consumers to protect themselves from fraud. This could lead to the development of a set of “fraud protection heuristics” that when trained served to avoid situations that are likely to be scams. These heuristics could be very useful for consumers to protect themselves from fraud (Gigerenzer & Todd, 1999; Mick, Pettigrew, Pechmann, & Ozanne, 2012). Finally, future findings may be useful to detect tactics that hamstrings a consumer’s Type 2 processing, and push for legislation that takes these vulnerabilities into account.

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## FINAL REMARKS

The general goal of this dissertation was to explore the use of two different models of persuasion to understand the phenomenon of fraud: the persuasion knowledge model (Friestad & Wright, 1994) and the elaboration likelihood model (Petty & Cacioppo, 1986). To our knowledge, this was the first attempt to initiate a research program of consumer behavior in fraud situations from a sociopsychological perspective in Brazil. Future research may benefit from replicating the field studies of fraud, conducted by Pratkanis and Shadel (2007). Such studies may advance knowledge by identifying, in a natural context, the variables related to high and low levels of elaboration.

Results from this type of research may have many potential applications to benefit consumers and provide them with psychological tools for self-protection (Boush, Friestad, & Wright, 2009; Mick, Pettigrew, Pechmann, & Ozanne, 2012). Large amounts of money are invested in the development of fraud prevention technologies, but at the same time the social bases of fraud are not sufficiently tackled. In a context with emerging technologies, many elements related to fraud remain the same. Social psychology can help developing low-cost solutions to fraud protection. Here were presented some foundations for a social psychology of fraud.

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## Appendix A: Survey instrument used in Manuscript 1

26/9/2014

Print version

[Print version](#)

### Questionnaire

#### 1 Intro

Olá!

Obrigado por aceitar o convite a participar desta pesquisa desenvolvida pelo Laboratório de Psicologia Social da Universidade de Brasília. Estamos estudando como as pessoas pensam sobre suas decisões de consumo no dia-a-dia. O tempo de participação é de aproximadamente 14 minutos.

Sua participação consiste em responder às questões apresentadas neste questionário eletrônico, tendo em vista os seguintes pontos:

- Sua participação é voluntária, portanto, você poderá abandonar a tarefa a qualquer momento, clicando no botão SAIR, disponível em todas as páginas da pesquisa. Tal desistência não implicará em qualquer ônus para você.
- Sua participação é anônima e todos os dados coletados serão tratados de forma agrupada, impedindo a identificação de respostas individuais. Garantimos que todas as informações coletadas são sigilosas e ficarão sob a guarda dos pesquisadores responsáveis, sendo utilizadas unicamente para a produção de relatórios científicos.
- Não há riscos de cunho físico, psicológico ou moral envolvidos na realização da tarefa.

**Caso aceite participar da pesquisa, marque a declaração abaixo e depois clique no botão "Continuar".**

- Estou de acordo com essas informações e aceito participar da pesquisa.

#### 2 Self-confidence

**A seguir encontram-se algumas afirmações relacionadas a situações de consumo do dia-a-dia. Por favor, indique na escala apresentada o quanto cada item lhe é característico.**

	Nada característico	Pouco característico	Medianamente característico	Muito característico	Totalmente característico
Muitas vezes as coisas que eu compro não são satisfatórias	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu sei onde encontrar a informação que eu preciso antes de fazer uma compra	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu não consigo dizer não para um vendedor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu fico muito acanhado quando problemas aparecem enquanto faço compras	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
É fácil me concentrar em algumas boas marcas quando tenho que tomar uma decisão	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu confio na minha habilidade de fazer pesquisas quando a compra é importante	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu tenho a habilidade de dar bons presentes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu frequentemente me pergunto se eu fiz a escolha de compra correta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu frequentemente sofro pensando sobre o que comprar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu sei quais perguntas certas fazer quando estou comprando	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu não tenho problemas para entender as táticas de barganha usadas por vendedores	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu consigo reconhecer quais marcas alcançam as minhas expectativas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu tenho habilidade de reconhecer uma marca que merece confiança	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu tenho as habilidades necessárias para obter as informações que preciso antes de	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26/9/2014

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fazer uma compra importante

Eu tenho receio de reclamar enquanto faço compras	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu frequentemente tenho dúvidas sobre as decisões de compra que tomo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu sei em quais lojas devo comprar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu consigo separar o que é falso e o que é verdadeiro nas propagandas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu pareço nunca comprar a coisa certa para mim	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu consigo perceber os truques que vendedores usam para fazer os consumidores comprarem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu sei quando um vendedor está me pressionando para comprar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu impressiono as pessoas com as boas compras que faço	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu sei quando tem algo de suspeito com uma oferta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu recebo elogios dos outros sobre as minhas decisões de compras	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu sei quando uma oferta "é boa demais para ser verdade"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu fico sem jeito de pedir para falar com o gerente	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### 3 ZTPI

Por favor, leia as afirmações abaixo e indique o quanto concorda com cada uma delas, usando a escala apresentada:

	Discordo totalmente	Discordo	Nem discordo, nem concordo	Concordo	Concordo totalmente
Compro coisas motivado pelas promoções do momento.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Se fosse possível, eu viveria cada dia como se fosse o último sem pensar no amanhã.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Não conto com a sorte, poupo todo mês para ter um futuro melhor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frequentemente sigo mais meus desejos do que minha razão.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resisto às tentações de consumo quando lembro de outras prioridades financeiras.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tenho projetos e planos de futuro bem definidos.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Acredito que é o destino que determina a maior parte da minha vida.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fico chateado quando chego atrasado para um compromisso.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Não importa o que eu tente fazer, pois o que tiver que acontecer vai acontecer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Não faz sentido me preocupar com o futuro já que não há nada que se possa fazer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Termino minhas obrigações no tempo certo, avançando constantemente.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encaro cada dia como vier, ao invés de tentar planejá-lo.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Minha noção sobre o que vou fazer no próximo semestre é bem clara.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Na minha vida particular tenho planos para vários anos à frente.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gastar com o que me dá prazer é melhor do que poupar para os riscos do amanhã.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ao tomar uma decisão analiso todos os custos e os benefícios envolvidos.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26/9/2014

Print version

#### 4 Eventos de vida negativos

Na questão a seguir, há uma lista de eventos que podem ter acontecido com você nos últimos três anos. Para cada evento, por favor, informe quanta dificuldade esse evento lhe causou.

Se o evento não se aplicar marque a opção "Não se aplica/Não me ocorreu".

	Não se aplica/Não me ocorreu	Nenhuma dificuldade	Pouca dificuldade	Média dificuldade	Muita dificuldade	Extrema dificuldade
Redução de renda familiar.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Perda de emprego.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preocupação com dívidas a pagar.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preocupação em ter dinheiro guardado para emergências.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preocupação com falta de dinheiro pra pagar as contas do dia a dia.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mudança de residência recente.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aposentadoria recente.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preocupação com solidão.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Problemas na justiça.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Morte de cônjuge ou parceiro.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Morte de um amigo ou parente próximo.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sofreu de lesão ou doença graves.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Teve lesão ou doença graves na família.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Divórcio ou separação na família.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dificuldades de relacionamento com o cônjuge ou parceiro.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Problemas envolvendo filhos ou netos.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Sem pensar no cartão de crédito e na prestação da casa própria, some suas parcelas de crediário, financiamento de carro, carnê de loja, empréstimos pessoais, crédito consignado e outros. Para este mês, quanto terá que pagar?

- Até R\$ 50.
- De R\$ 51 a R\$ 100.
- De R\$ 101 a R\$ 300.
- De R\$ 301 a R\$ 700.
- De R\$ 701 a R\$ 1500.
- De R\$ 1501 a R\$ 3500.
- Acima de R\$ 3501.
- Não sei.
- Não tenho prestações.

#### Nos últimos 3 meses, pagou a fatura integral do cartão de crédito por quantas vezes?

- Nos últimos 3 meses, eu paguei as 3 faturas integralmente.
- Nos últimos 3 meses, eu paguei apenas 2 faturas integralmente.
- Nos últimos 3 meses, eu paguei apenas 1 fatura integralmente.
- Nos últimos 3 meses, eu não paguei qualquer fatura integralmente.
- Não faço compras com cartão de crédito.

#### 5 Fraude.geral.a

Pensando em suas experiências de consumo nos últimos anos, por favor, responda:

Alguma vez você fez um investimento financeiro em que perdeu parte ou todo o dinheiro investido? Se sim, selecione a opção que melhor descreve o porque disto ter acontecido.

26/9/2014

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- Isto nunca me ocorreu.
- Eu não sabia como investir e fiz um investimento ruim.
- O mercado mudou de forma inesperada.
- Eu fui enganado ou fraudado pela pessoa ou empresa em que investi.
- Outro motivo.

**Caso tenha marcado "outro motivo", por favor especifique:**

**Você fez alguma reclamação após isso ter acontecido?**

- Sim
- Não

**Se sim, com quem você reclamou?**

**Qual foi a resposta que você teve após a reclamação?**

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## 6 Fraudes.b

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Pensando em suas experiências de consumo nos últimos anos, por favor, avalie os seguintes cenários:

**Nos últimos dois anos, alguma vez você aceitou uma oferta de prêmio ou amostra grátis que acabou não sendo gratuita?**

- Sim
- Não

**Nos últimos dois anos, alguma vez você pagou por algum conserto de carro que, mais tarde você descobriu que não foi realizado ou que era completamente desnecessário?**

- Sim
- Não

**Nos últimos dois anos, alguma vez você foi enganado para fornecer o número de sua conta bancária ou de seu cartão de crédito pra que compras fossem feitas sem seu conhecimento?**

- Sim
- Não

**Nos últimos dois anos, alguma vez um vendedor mentiu para você sobre o preço de um produto ou serviço e depois cobrou um preço mais caro do que o anterior?**

- Sim
- Não

**Nos últimos dois anos, alguma vez um investidor ou corretor de ações te deu informações falsas ou te enganou para ficar com o seu dinheiro?**

- Sim
- Não

**Nos últimos dois anos, alguma vez você comprou um produto ou serviço pela internet e nunca o recebeu?**

- Sim
- Não

**Nos últimos dois anos alguma vez você tentou fazer uso da garantia de um produto ou serviço e não conseguiu?**

26/9/2014

Print version

 Sim Não

**Nos últimos dois anos, alguma vez você descobriu que tinha comprado combustível adulterado em um posto de gasolina?**

 Sim Não

**Nos últimos dois anos, alguma vez você contratou o serviço de uma empresa de telefonia fixa/celular e recebeu um serviço diferente do contratado?**

 Sim Não

**Nos últimos dois anos, alguma vez você teve o cartão de crédito clonado?**

 Sim Não

**Nos últimos dois anos, alguma vez fez um empréstimo em que as condições foram diferentes das contratadas?**

 Sim Não

**Nos últimos dois anos, alguma vez você comprou um pacote de viagens e recebeu um serviço diferente do contratado?**

 Sim Não

**Nos últimos dois anos, alguma vez você contratou o serviço de empresa de TV por assinatura e recebeu um serviço diferente do contratado?**

 Sim Não

**Nos últimos dois anos, alguma vez você contratou um plano de saúde e recebeu um serviço diferente do contratado?**

 Sim Não

**Caso você queira fazer algum comentário sobre estes cenários, por favor, use este espaço:**

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## 7 Dados sociodemográficos

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Para finalizar, por favor, forneça os seguintes dados.

**Qual o seu sexo?**

 Feminino Masculino

**Qual o seu ano de nascimento?**

  
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26/9/2014

Print version

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**Qual seu nível de escolaridade?**

- Ensino fundamental (1º grau) incompleto
- Ensino fundamental (1º grau) completo

26/9/2014

Print version

- Ensino médio (2º grau) incompleto
- Ensino médio (2º grau) completo
- Ensino superior incompleto
- Ensino superior completo
- Especialização
- Mestrado
- Doutorado

**Qual o estado em que você mora?**

Não moro no Brasil atualmente

Acre

Alagoas

Amapá

Amazonas

Bahia

Ceará

Distrito Federal

Espírito Santo

Goiás

Maranhão

Mato Grosso

Mato Grosso do Sul

Minas Gerais

Pará

Paraíba

Paraná

Pernambuco

Piauí

Rio de Janeiro

Rio Grande do Norte

Rio Grande do Sul

Rondônia

Roraima

Santa Catarina

São Paulo

Sergipe

Tocantins

**Qual a cidade em que você mora?****Qual a sua ocupação atual?****Renda familiar (incluindo os rendimentos extras):**

- Até R\$ 724 (até 1 salário mínimo)
- De R\$ 725 a R\$ 1.448 (entre 1 e 2 salários mínimos)
- De R\$ 1.449 a R\$ 2.172 (entre 2 e 3 salários mínimos)
- De R\$ 2.173 a R\$ 3.620 (entre 3 e 5 salários mínimos)
- De R\$ 3.621 a R\$ 5.792 (entre 5 e 8 salários mínimos)
- De R\$ 5.793 a R\$ 9.412 (entre 8 e 13 salários mínimos)
- De R\$ 9.413 a R\$ 15.204 (entre 13 e 21 salários mínimos)
- De R\$ 15.205 a R\$ 24.616 (entre 21 e 34 salários mínimos)
- Acima de R\$ 24.617 (acima de 34 salários)
- Não sei

**8 Final page**

26/9/2014

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Muito obrigado por sua participação! :)

Pedimos, por gentileza, que você também encaminhe o convite para as pessoas que você conhece. Isso nos ajudará a ter uma amostra maior e mais representativa.

Caso você tenha qualquer dúvida, por favor entre em contato conosco na Universidade de Brasília pelo email: **psicologia social.unb@gmail.com** ou pelo telefone **(61) 3107-6873**.

**Pesquisadores:  
Lucas Caldas  
Prof. Dr. Fabio Iglesias**

**Laboratório de Psicologia Social**

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## **Appendix B: Texts Used in Both Weak and Strong Favorable Arguments Conditions in Manuscript 2.**

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### ***Weak + favorable argument condition text:***

Uma mudança importante para o futuro da Universidade de Brasília é o estabelecimento de uma prova obrigatória para todos os alunos de graduação que sejam prováveis formandos. Esta prova será aplicada ao final do último semestre da graduação, testando o conhecimento acerca de todo o conteúdo que ele deve dominar ao final de seu curso. A universidade deverá estabelecer uma nota de corte mínima que o aluno deve atingir para obter seu diploma. As principais justificativas para implementação destas provas são as seguintes: Primeiro, esta prova aumentaria a motivação dos alunos para estudar, mesmo ao final de seu curso, pois nenhum deles irá querer ter sua formatura adiada por causa de uma prova. Em segundo lugar, estas provas podem permitir aos alunos compararem suas notas às de alunos de outras universidades que usam o mesmo sistema. Em terceiro lugar, a vida profissional não é fácil. O nível de dificuldade destas provas serve para preparar os alunos para os desafios que terão que encarar no futuro. Por fim, acredito que os alunos vindos de universidades que aplicam este tipo de avaliação terão mais facilidade para obter emprego.

### ***Strong + favorable argument condition text:***

Uma mudança importante para o futuro da Universidade de Brasília é o estabelecimento de uma prova obrigatória para todos os alunos de graduação que sejam prováveis formandos. Esta prova será aplicada ao final do último semestre da graduação, testando o conhecimento acerca de todo o conteúdo que ele deve dominar ao final de seu curso. A universidade deverá estabelecer uma nota de corte mínima que o aluno deve atingir para obter seu diploma. As principais justificativas para implementação destas provas são as seguintes: Em 2012, um estudo realizado por Evans, Scott e Weiner indicou que universidades de renome mundial observaram um aumento no rendimento dos alunos nos semestres seguintes à implementação deste sistema de avaliação. Em segundo lugar, este mesmo estudo indicou que, nestas universidades, a qualidade do ensino de graduação melhorou, pois os professores precisaram acompanhar mais de perto a rotina de estudos dos estudantes. Em terceiro lugar, muitos programas de pós-graduação na América do Norte e Europa têm dado preferência a alunos formados em universidades que adotam este tipo de sistema de avaliação. Por fim, uma pesquisa indicou que os salários iniciais dos alunos oriundos destas universidades são, em média, 30% mais altos (Dietrich & Samadi, 2011). Esta diferença permanece mesmo se forem levados em conta outros fatores, como a reputação da universidade e o nível socioeconômico dos alunos.

### **Referências**

- Dietrich, C. H., & Samadi, V. R. (2011). Graduated students employment challenges: A prospective study. *Bulletin of Work and Higher Education*, 25, 120-129.
- Evans, M. J., Scott, H., & Weiner, S. (2012). Comprehensive exams as requirement for graduation: An evaluation of the last decade. *Journal of Educational Psychology*, 120(3), 549-563.
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## Appendix C: Texts Used in Both Weak and Strong Against Arguments Conditions in Manuscript 2

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### *Weak + Against argument condition text:*

Uma mudança que compromete o futuro da Universidade de Brasília é o estabelecimento de uma prova obrigatória para todos os alunos de graduação que sejam prováveis formandos. Caso seja implementada, esta prova será aplicada ao final do último semestre da graduação, testando o conhecimento acerca de todo o conteúdo que ele deve dominar ao final de seu curso. A própria universidade deverá estabelecer uma nota de corte mínima que o aluno deve atingir para ter direito ao seu diploma. As principais justificativas contra a implementação destas provas são:

Primeiro, esta prova diminuiria a motivação dos alunos para estudar, e muitos poderiam desistir e abandonar seus cursos. Em segundo lugar, as notas destas provas podem ser usadas de forma incorreta para julgar a qualidade de uma universidade. Em terceiro lugar, a vida profissional tem outras demandas. O nível de dificuldade destas provas não ajuda em nada para preparar os alunos para os desafios que terão que encarar no futuro. Por fim, acredito que os alunos vindos de universidades que aplicam este tipo de avaliação terão a mesma dificuldade para obter emprego.

### *Strong + Against argument condition text:*

Uma mudança que compromete o futuro da Universidade de Brasília é o estabelecimento de uma prova obrigatória para todos os alunos de graduação que sejam prováveis formandos. Caso seja implementada, esta prova será aplicada ao final do último semestre da graduação, testando o conhecimento acerca de todo o conteúdo que ele deve dominar ao final de seu curso. A própria universidade deverá estabelecer uma nota de corte mínima que o aluno deve atingir para ter direito ao seu diploma. As principais justificativas contra a implementação destas provas são:

Em 2012, um estudo realizado por Evans, Scott e Weiner indicou que universidades de renome mundial observaram uma queda no rendimento geral dos alunos, nos semestres seguintes à implementação deste sistema de avaliação. Em segundo lugar, este mesmo estudo indicou que, nestas universidades, a qualidade do ensino de graduação piorou, pois os professores precisaram mudar o conteúdo das aulas para diminuir o número de reprovações nas avaliações de fim de curso. Em terceiro lugar, muitos programas de pós-graduação na América do Norte e Europa são contrários e não dão preferência a universidades que adotam este tipo de avaliação. Por fim, uma pesquisa indicou que os salários iniciais dos alunos oriundos de universidades que usam esse sistema são, em média, iguais aos doutras universidades (Dietrich & Samadi, 2011). Outros fatores são muito mais determinantes de diferenças no salário, como a reputação da universidade e o status socioeconômico dos alunos.

### Referências

- Dietrich, C. H., & Samadi, V. R. (2011). Graduated students employment challenges: A prospective study. *Bulletin of Work and Higher Education*, 25, 120-129.
- Evans, M. J., Scott, H., & Weiner, S. (2012). Comprehensive exams as requirement for graduation: An evaluation of the last decade. *Journal of Educational Psychology*, 120(3), 549-563.
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## Appendix D: Template for the instrument used in Manuscript 2

### Pesquisa sobre avaliação acadêmica

Caro(a) Participante:

Este questionário tem como objetivo avaliar como ocorre a formação de impressões e atitudes sobre a opinião de outras pessoas. No texto a seguir, um professor, que já foi decano da universidade, defende a implementação de uma prova obrigatória no final do curso para testar os conhecimentos dos alunos de graduação. Se esta medida for aprovada, esta prova passaria a ser obrigatória para todos os alunos que se formarem **após o ano de 2014 (2020)**.

O material que você lerá é um resumo do relatório escrito pelo professor, em que ele enumera as principais razões para realização da prova. Sua tarefa será fazer uma leitura crítica deste resumo e em seguida responder a algumas perguntas. Garantimos que os dados coletados serão tratados de forma anônima e sigilosa. Se tiver alguma dúvida ou comentário, entre em contato por meio do email: [lucas.soares.caldas@gmail.com](mailto:lucas.soares.caldas@gmail.com)

Antes de ler o resumo, por favor, indique na escala a seguir, qual é o seu posicionamento inicial em relação à implementação desta prova obrigatória ao final dos cursos de graduação?

Sou totalmente contra	Sou parcialmente contra	Sou indiferente	Sou parcialmente favorável	Sou totalmente favorável
( )	( )	( )	( )	( )

Desde já, muito obrigado por sua participação.

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**Proposta:**


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1. Por favor, indique na escala a seguir, qual é o seu posicionamento em relação a proposta que acabou de ler

Sou totalmente contra	Sou parcialmente contra	Sou indiferente	Sou parcialmente favorável	Sou totalmente favorável
( )	( )	( )	( )	( )

2. Por favor, indique nos itens a seguir o que você acha da texto que acabou de ler. Os itens devem ser respondidos de acordo com a escala apresentada de -3 a +3.

**Eu acho que a proposta defendida no texto que acabei de ler é...**

Prejudicial	-3	-2	-1	0	+1	+2	+3	Benéfica
Boa	-3	-2	-1	0	+1	+2	+3	Ruim
Positiva	-3	-2	-1	0	+1	+2	+3	Negativa
Necessária	-3	-2	-1	0	+1	+2	+3	Desnecessária
Péssima	-3	-2	-1	0	+1	+2	+3	Ótima
Útil	-3	-2	-1	0	+1	+2	+3	Inútil
Desagradável	-3	-2	-1	0	+1	+2	+3	Agradável
Favorável	-3	-2	-1	0	+1	+2	+3	Desfavorável

4. A seguir, utilize a escala abaixo e atribua, para cada afirmação apresentada, o quanto você acha que ela é característica de você, de acordo com a escala apresentada abaixo.

1	2	3	4	5
Nada característico	Pouco característico	Indiferente	Característico	Totalmente característico

Eu prefiro problemas complexos a problemas simples	1	2	3	4	5
Eu gosto de ter a responsabilidade de lidar com uma situação que requer pensar muito	1	2	3	4	5
Pensar não é minha idéia de diversão	1	2	3	4	5
Eu preferiria fazer algo que requer pouco raciocínio do que algo que com certeza desafiará minha capacidade de pensar	1	2	3	4	5
Eu tento antecipar e evitar situações em que haverá uma chance de eu ter que pensar profundamente sobre algo	1	2	3	4	5
Eu tenho satisfação em ponderar intensamente e por longas horas	1	2	3	4	5
Eu só penso tanto quanto for necessário	1	2	3	4	5
Eu prefiro pensar em projetos curtos e diários do que em projetos de longo-prazo	1	2	3	4	5
Eu gosto de tarefas que requerem que eu pense pouco após tê-las aprendido	1	2	3	4	5
A idéia de depender do raciocínio para chegar ao topo me atrai	1	2	3	4	5

Eu realmente aprecio uma tarefa que envolve criar novas soluções para problemas	1	2	3	4	5
Aprender novas formas de pensar não me empolga muito	1	2	3	4	5
Eu prefiro que minha vida seja repleta de enigmas que eu deva resolver	1	2	3	4	5
A noção de pensar de forma abstrata me atrai	1	2	3	4	5
Eu preferiria uma tarefa que é intelectual, difícil e importante do que uma que é um pouco importante, mas que não requer muito raciocínio.	1	2	3	4	5
Eu sinto alívio ao invés de satisfação depois de completar uma tarefa que requer muito esforço mental	1	2	3	4	5
É suficiente para mim que algo funcione, não importando como ou por que.	1	2	3	4	5
Eu geralmente acabo deliberando sobre questões mesmo quando estas não me afetam pessoalmente	1	2	3	4	5

**5. Idade:** \_\_\_\_ anos

**5. Sexo:** ( ) Masculino ( ) Feminino

**6. Escolaridade** ( ) 1º grau incompleto ( ) 1º grau completo ( ) 2º grau incompleto  
( ) 2º grau completo ( ) Superior incompleto ( ) Superior completo ( ) Pós-graduação

Caso tenha marcado Superior completo ou incompleto: Curso: \_\_\_\_\_

Caso seja aluno de graduação, qual o seu semestre? \_\_\_\_\_

**7. Você trabalha:** ( ) Não ( ) Sim - Caso trabalhe, quantas horas semanais: \_\_\_\_\_  
Identificação do participante: \_\_\_\_\_

**Muito obrigado pela colaboração!**

**Appendix E: Factor Loadings for Exploratory Factor Analysis with Varimax Rotation  
of Consumer Self-Confidence in manuscript 1.**

Item	Rotated factor loadings			$h^2$
	1	2	3	
I can see through sales gimmicks used to get consumers to buy	.75			.60
I know when a marketer is pressuring me to buy	.73			.60
I can tell when an offer has strings attached	.54	.35		.66
I know when an offer is 'too good to be true'	.51	.49		.63
I have no trouble understanding the bargaining tactics used by salespersons	.47		-.31	.41
I can separate fact from fantasy in advertising	.34			.28
I am confident in my ability to recognize a brand worth considering		.70		.50
I have the skills required to obtain needed information before making important purchases		.69		.61
I can tell which brands meet my expectations		.68		.49
I am confident in my ability to research important purchases		.60		.47
I get compliments from others on my purchase decisions		.54		.34
I know which stores to shop		.51		.28
I know where to find the information I need prior to making a purchase		.49		.31
I know the right questions to ask when shopping		.43		.59
I impress people with the purchases I make		.42		.20
I can focus easily on a few good brands when making a decision		.36		.14
I have the ability to give good presents		.33		.11
I often wonder if I've made the right purchase selection			.68	.48
I have a hard time saying no to a salesperson			.63	.43
I am hesitant to complain when shopping	-.38		.56	.48
I often have doubts about the purchase decisions I make			.53	.34
I never seem to buy the right thing for me			.53	.33
I am afraid to "ask to speak to the manager"	-.40		.51	.42
Too often the things I buy are not satisfying			.49	.25
I frequently agonize over what to buy			.48	.24
I am too timid when problems arise while shopping			.44	.28
Eigenvalues	2.88	3.79	3.24	
% of variance	11.0%	14.6%	12.4%	
Cronbach's $\alpha$	.77	.83	.82	

## Appendix F: Factor Loadings for Exploratory Factor Analysis with Direct Oblimin

### Rotation of Temporal Orientation Scale in main study of manuscript 1.

Item	Rotated factor loadings		$h^2$
	1	2	
In my private life I have plans for several years ahead.	.90		.66
My notion about what I'm doing next semester is clear.	.78		.54
Have well-defined projects and future plans.	.75		.56
I see each day as it comes, instead of trying to plan it. *	-.66		.40
When deciding I analyze all the costs and benefits involved.	.43		.33
It makes no sense to worry about the future because there is nothing you can do. *	-.40		.25
I resist the temptations of consumption when I remember other financial priorities.	.32		.30
It doesn't matter what I try, what has to happen will happen.			
I finish my obligations on time, advancing steadily.			
I believe that the fate determines most of my life.			
I buy things motivated by promotions of the moment.		.83	.59
I follow my desires more often than my reason.		.81	.59
Spending on whatever gives me pleasure is better than saving for the risks of tomorrow.		.66	.51
I do not count on luck; I spare every month to have a better future. *		-.43	.41
If it were possible, I would live each day as if it were the last without thinking about tomorrow.		.35	.30
I get upset when I'm late for an appointment.			
Eigenvalues	4.6	1.3	
% of variance	28.5%	7.9%	
<i>Cronbach's alpha</i>	.82	.78	

\* Reverse scoring was used on this item.

**Appendix G: Summary of Principal Axis Factoring for the Semantic Differential Scale  
in Experiment 1.**

Item	Loadings	$h^2$
Positive/Negative*	.82	.67
Good/Bad*	.82	.67
Terrible/Great	.78	.61
Favorable/Unfavorable*	.77	.60
Useful/Useless*	.74	.54
Harmful/Beneficial	.72	.52
Necessary/Unnecessary*	.68	.46
Unpleasant/Pleasant	.54	.29
Eigenvalue	4.35	
% of variance	54.4	
<i>Cronbach's <math>\alpha</math></i>	.90	

\* Reverse scoring was used on this item.



**Appendix H: Factor Loadings for Exploratory Factor Analysis for the Need for  
Cognition Scale in Experiment 1.**

Item	Loadings	$h^2$
I like to have the responsibility of handling a situation that requires a lot of thinking.	.71	.50
I prefer my life to be filled with puzzles that I must solve.	.70	.49
I would prefer complex to simple problems.	.60	.36
I really enjoy a task that involves coming up with new solutions to problems.	.54	.29
Learning new ways to think doesn't excite me very much.*	.52	.27
I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.*	.50	.25
The idea of relying on thought to make my way to the top appeals to me.	.47	.23
Thinking is not my idea of fun.*	.46	.21
The notion of thinking abstractly is appealing to me.	.44	.19
I find satisfaction in deliberating hard and for long hours.	.44	.19
I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.	.36	.13
I like tasks that require little thought once I've learned them.*	.35	.13
I try to anticipate and avoid situations where there is likely a chance I will have to think in depth about something.*		
I usually end up deliberating about issues even when they do not affect me personally.		
I only think as hard as I have to.*		
I prefer to think about small, daily projects to long-term ones.*		
I feel relief rather than satisfaction after completing a task that required a lot of mental effort.*		
It's enough for me that something gets the job done; I don't care how or why it works.*		
Eigenvalue	3.44	
% of variance	19.13	
<i>Cronbach's <math>\alpha</math></i>	.80	

\* Reverse scoring was used on this item.

**Appendix I: Summary of Principal Axis Factoring for the Semantic Differential Scale in  
Experiment 2.**

Item	Loadings	$h^2$
Terrible/Great	.92	.85
Positive/Negative*	.88	.78
Good/Bad*	.87	.76
Harmful/Beneficial	.86	.74
Favorable/Unfavorable*	.79	.62
Useful/Useless*	.76	.58
Necessary/Unnecessary*	.74	.54
Unpleasant/Pleasant	.37	.14
Eigenvalue	4.99	
% of variance	62.48	
<i>Cronbach's <math>\alpha</math></i>	.92	

\* Reverse scoring was used on this item.

**Appendix J: Factor Loadings for Exploratory Factor Analysis for the Need for  
Cognition Scale in Experiment 2.**

Item	Loadings	$h^2$
I like to have the responsibility of handling a situation that requires a lot of thinking.	.67	.44
I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.	.62	.39
I really enjoy a task that involves coming up with new solutions to problems.	.58	.34
I like tasks that require little thought once I've learned them.*	.55	.30
I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.*	.53	.28
The idea of relying on thought to make my way to the top appeals to me.	.52	.27
I would prefer complex to simple problems.	.52	.27
I prefer my life to be filled with puzzles that I must solve.	.52	.26
I find satisfaction in deliberating hard and for long hours.	.45	.21
Learning new ways to think doesn't excite me very much.*	.42	.17
The notion of thinking abstractly is appealing to me.	.42	.17
I usually end up deliberating about issues even when they do not affect me personally.	.42	.17
I only think as hard as I have to.*	.41	.17
It's enough for me that something gets the job done; I don't care how or why it works.*	.39	.15
Thinking is not my idea of fun.*	.33	.11
I feel relief rather than satisfaction after completing a task that required a lot of mental effort.*		
I prefer to think about small, daily projects to long-term ones.*		
I try to anticipate and avoid situations where there is likely a chance I will have to think in depth about something.*		
Eigenvalue	3.86	
% of variance	21.4	
<i>Cronbach's <math>\alpha</math></i>	.82	

\* Reverse scoring was used on this item.