"Irrational choices" that shape history

A Behavioural Economic Approach for the Brexit-Trump Syndrome

Master Thesis

Facultat d'Economia i Empresa

Màster Oficial d'Internacionalització

Author: Sanda Cracan

Tutor: Prof. Dr. Patricia García-Durán Huet

Academic Year: 2021-2022

Abstract:

Behavioural economics has emerged as a new field in economics allowing to rethink rational expectations. This research's hypothesis, however, is that advancements in understanding human behaviour come also with its dangers. To test the hypothesis, the cases of 2016 Brexit Referendum and 2016 US Presidential Election are analysed. The results show proof of the existence of behavioural economics tools that were intentionally targeted to undermine rational decision-making . By so doing, this thesis raises awareness of the need to regulate such practices, as well as helps open the debate on the ethics to be followed by such regulation.

Key Words: Behavioural economics, nudges, prospect theory, Trump campaign, Brexit campaign, voting behaviour, 2016 US Presidential, 2016 UK Referendum;

RESUMEN:

La economía del comportamiento ha surgido como un nuevo campo en la teoría económica que permite repensar las expectativas racionales. La hipótesis de esta investigación, sin embargo, es que lo avances en la comprsion del comportamiento humano también conllevan sus peligros. Para porbar la hipótesis, se analizan los casos del referéndum del Brexit de 2016 y las elecciones presidenciales de EE. UU. De 2016. Los resultados muestran pruebas de la existencia de herramientas de economía del comportamiento que fueron intencionalmente dirigidas a socavar la toma de decisiones racionales. Al hacerlo, esta tesis crea conciencia sobre la necesidad de regular tales praticas, asi como ayuda a abrir el debate sobre la ética que debe seguir dicha regulación.

Table of Contents

Figures and Tables

Introduction

Since the beginning of time, the human species have been distinct from others with the complexity of their behaviour and thinking ability. According to Professor Yuval Noah Harari, humans have been subject to constant development, shaping the course of evolution and history through three important revolutions: the Cognitive Revolution (approx. 70,000 years ago), the Agricultural Revolution (approx.12,000 years ago) and the Scientific Revolution (approx.500 years ago) (Harari, 2015). In particular, *homo sapiens* have contributed with a series of innovations and facilitation of human life, bringing us to the incomparable ability to rule and control world events.

Economic thought has had a considerable impact in social life, allowing the transformation of the economy into large markets. Greatest economists such as Adam Smith or John Maynard Keynes have taught and shaped the course of the world, proposing policies to improve the welfare of humankind**.** By questioning the completeness of standard economic theories and depicting its empirical anomalies, all of them enriched the social sciences and came up with more accurate predictions and models.

Originally introduced by Adam Smith in his essay "An Inquiry into the Nature and Causes of the Wealth of Nations" (1799), "Rational Choice Theory" was to become the central tenet of 'neoclassical economics', term introduced in 1900 (Aspromourgos, 1986). Rational choice theorists often presume that the individual decision-making unit in question is "rational", "typical" and "representative" (Green, 2002). But are people and their choices completely and ultimately rational?

Economic Nobel Laureate, Richard Thaler stated that **"**the problem is with the model being used by economists, a model that replaces homo sapiens with a fictional creature called homo economicus" (Thaler R. , 2016). The relatively new economic movement of behavioural economics applies models of systematic imperfections in human rationality to the study and engineering of organizations, markets and policies. These imperfections include limits on rationality, willpower, and self-interest (Mullainathan, 2000).

Behavioural economics is not intended to substitute traditional economics but rather to bring economic theory closer to human nature by admitting imperfections. There is a line of experimental evidence that occurred over the years that prove human tendencies for error. Practitioners of behavioural economics link the cause of suboptimal decision-making processes to the contextual and psychological constraints of humans. While there are suggestions that people would make economically rational decisions only under the condition of complete information, the founders of the behavioural economic field, Daniel Kahneman and Amos Tversky (Tversky & Kahneman , 1979) do not agree. They argue that despite the access to information, people still choose against economic interests.

Faced with the imperfectability of decision making, theorists have sought ways to achieve, if not optimal outcomes, at least acceptable ones (Buchanan L. , 2006). Incorporating psychology and related disciplines, we can develop a deeper understanding of what at first sight appears irrational (Wilkinson, 2018). Therefore, behavioral economics studies have found a broad application in the government, business, and financial markets, providing new methodology and a more humanitarian vision for predicting the events. By doing so, however, they have also provided politicians with a better knowledge of human behavior and thus on how to counteract human rationality.

The aim of this research is to underline the dangers of this particular scientific progress. The hypothesis is that better knowledge of human behaviour may lead to abuses. Quoting the French philosopher, Albert Camus "life is a sum of choices", it can be deducted, that history is the sum of choices by mankind. The decision-making processes shape the evolutionary direction, the adopted policies and regimes and the future of nations. This is especially the case when democratic regimes emerge all over the world; the power of choice becomes indisputable. People exercise their democratic rights through a series of actions, one of which being, of course, voting. Hence, understanding the way the human mind works may facilitate irrational decision-making processes because politicians may use this knowledge to manipulate voters.

To test the hypothesis, this research proposes the study of both the campaigns for the Brexit Referendum and the 2016 US presidential election. Most textbooks on behavioural economics refer to the results of both as examples of people's irrationality. The authors claim that the election outcome leading to Britain´s exit from European Union and Trump´s stepping in the presidential cabinet of USA caught most economic experts by surprise - two history-

changing phenomena that did not necessary serve voters´ best interests yet happened. The hypothesis of this research would not be rejected if voter´s behaviour was the result of external triggers that were calibrated to maximise emotional rather than rational decision-making using learnings from behavioural economics. To establish whether this was the case, this work analyses the pro-Brexit and Trump campaign through the prism of behavioural economics tools. The hypothesis will be rejected if none of the behavioural economics tools identified in chapter one was in use during US and UK 2016 election campaign; in that case, Trump election and/or Brexit could not be perceived as the result of coercion tactics, any other allegation remaining a subject of speculation.

This research is structured in four chapters and a conclusion. The first chapter is centred on the theoretical concepts of the behavioural economics field. Chapter two then focus on the applicability of such concepts and tools in the real-life world events. The third chapter justifies the methodology used for this thesis and explains the choice of both case studies regarding the Leave EU Brexit campaign and Trump´s 2016 presidential campaign. The fourth chapter presents the results determining whether emotional triggers were used for influencing the rational decision–making process of the voters. Lastly, the thesis presents a conclusion that attests to this study´s contribution and also the suggestion of further extension of the investigation.

Chapter 1: What is behavioural economics?

This chapter reviews the literature on behavioural economics. It establishes a knowledgeable base and understanding for the purpose of this research. After presenting the definition and evolution of behavioural economics, the chapter focuses on explaining its main approaches and corrective practices.

1.1   Definition and evolution of behavioural economics

Imagine passing by your favourite bakery feeling the smell of fresh baked pastries, would you resist the temptation of buying anything? Most people do not. Temptations are defined as highly personal and depend on people´s state of arousal over time (Thaler & Sunstein, 2021), but they are also a general proof for lack of self-control in human nature which contradicts one of the main principles of mainstream economic models.

Daily, we make hundreds, even thousands of choices, both of little and big importance, including of financial and economic nature. Choosing choice A over choice B comes with a cost of opportunity, the value of the alternative. Economists try to conduct experiments and gain data to create the most accurate predictions on the behaviour, but they exclude the "misbehaviour" of humans. That is the reason why behavioural economics emerged, to take into account human irrationality and project it into more accurate predictions and decision-making analysis.

Substantially, behavioural economics is defined as the symbiosis of economics, psychology, and sociology (Kapeliushnikov, 2015). Another way of defining it is by saying that it involves a different type of interdisciplinary collaboration, psychology acts as the "mother country", whereas economic theory is the territory being "colonized" (Glaeser, 2003). The purpose is to humanise the economic occurrences and to analyse them by using psychological developed methods. Like any other social science, its aim is to help us better understand the world we live in and how to intervene to make it a better place. It has been gathering attention and applicability in both the public and private sectors.

Behaviour economics is quite close to another research sub-field: experimental economics. Both may be used in a complementary way: for example, when evaluating the decision-making processes through laboratory research results, that is, an experimental method (Kapeliushnikov, 2015). However, there is a difference: while behavioural approach consists in a more individual and cognitive analysis, the experimental one is aimed at the results of interpersonal interaction.

Behavioural economics is often described as a relatively new school of thought and its methods are still regarded with high level of scepticism, especially by economists. Its origin, however, can be traced back to David Hume and Adam Smith (Nagatsu, 2015). Hume´s theory of mind and Smith´s theory of moral sentiments underlines the assumptions of modern behaviouralism and anticipate the main subjects of the field such as cognitive, will-power and ethics.

The course of history sharply separated economics and psychology, leading to economic innovations of consumer choice behaviour grounded on assumptions of rationality which are now declared anomalies or controversial. The preference and utility theories are based on individual preferences, offering an insight into decision-making processes, yet they do not consider that humans may not act rationally. Recalling the economics textbooks, "utility theory postulates that consumers make decisions based in the degree of utility or satisfaction they obtain from a given item, meaning that the higher the utility level – the higher the item will be prioritised in the consumer´s budget" (Academy, 2012).

Herbert Simon was one of the early critics of rational choice in economics (Nagatsu, 2015). He argued against what he termed as "bounded rationality" in economic theory by asserting that the cognitive bias of human decision-makers is not always sufficient to find optimal solutions to complex real-life problems leading to suboptimal outcomes (Mallard, 2018). Probably due to the fact that these first arguments of behavior economics (the "old") were positioned against the mainstream economics, dismissing the methodology used by the traditional economics, the approach did not achieve the proclamation as an official area of study or got the deserved attention.

The behavioural turnover is considered to have been triggered later on, by two papers published by Daniel Kahneman and Amos Tversky in the 1980s (Kapeliushnikov, 2015).

Considered the founders of behavioural economics, their contribution is having an impact, engaging young adepts of thought. The studies of heuristics and bias, the experiments that demonstrate framing effects and the prospect theory for alternative processes of decision-making are just some of theoretical central pylons on which the behavioural works are based.

Another notorious contribution to the field has been made by Richard Thaler, a known colleague of Kahneman and, unlike the former, an economist. In his book "Misbehaving: The Making of Behavioral Economics", published in 2015, he describes in-depth the phases and the struggle of gaining the attention upon the field and organising fruitful debates and meetings between psychologists and economists at the different universities he had worked for. Yet, the idea of behavioural economics as a mainstream approach is penetrating the minds of economists, policymakers, businessmen and any individual interested. The field has gained prestige and produced innovations that lead to prestigious prize awards. Herbert A. Simon (1916 - 2001) won the Nobel Memorial Prize in Economic Science in 1978 for the interdisciplinary nature of the research, by applying psychological insights into economic theorization; Daniel Kahneman (1934 - present) was awarded the Nobel Memorial Prize in Economic Science in 2002; and Richard H. Thaler (1945 - present) was also awarded with the Nobel Memorial Prize in Economic Science in 2017 for the contributions made to behavior economics.

Behaviour economics is no longer a fringe operation, and writing an economics paper in which people behave like Humans is no longer considered misbehaving (Thaler R. , 2016) The history and evolution of behavioural theory does not stop here: while it is now living a phase of prosperity and acknowledgements, many of the lines of human behaviour remain yet to be discovered and considering the diversity of the subject, they might be infinite.

1.2 Basic theories and decision-making analysis

"Perhaps, the most difficult thing that a human is being called upon to face is concentrated thinking" (Gernsberg, 1925). It has been proven that the human mind operates using two systems. System 1 is for automatic and effortless operations; it sums the congenital skills we own and share with other mammals. We are born prepared to perceive the world around us. System 1 allows to associate ideas and abilities such as reading and understanding social situations (Kahneman, 2013). It is the fast system, making 98% of our thinking,

automatically generating answers for 2+2, the distance between objects, what is written on the boards and many more.

System 2, however, is much more demanding taking our mind into a process of concentration and rigorous thinking. It is a conscious process of slow, analytical mode that takes an in-depth view on the situation circumstances. The highly diverse operations of System 2 have one common feature: they require attention and are disrupted when attention is drawn away (Kahneman, 2013). The engagement of system 2 could be found when exercising an important exam, filling out formal forms and driving in heavy traffic etc.

The interaction of the two systems shapes the functionality of one another, while System 2 activates the behavioural pattern of System 1 by automating tasks and infiltrating certain actions in the memory, System 1 is constantly generating suggestions to System 2, impressions, intuitions, intentions and feelings (Kahneman, 2013). If things follow their usual order, System 2 has little or no implication at all. When System 1 is faced with a more complex situation, however, the capacity of problem solving of System 2 is immediately recalled. By alternating both systems, brain activity effort is minimised, while its performance is optimised.

Perceiving the ability of thinking in such a manner (mostly running on System 1) formulates a clearer pattern of how people make decisions and behave in daily life. The main theories of behaviour economics are grounded on this assumption.

1.2.1 The Heuristics and Bias Theory

Following the Cambridge dictionary, heuristic is a method of learning or solving problems that allow people to discover things themselves and learn from their own experiences. Yet, applying heuristics leads to various cognitive biases within System 1 which commit to certain inaccurate judgement, predictions and poor decision making (Tversky & Kahneman , 1974). There are several types of heuristics, each one leads to a certain bias and manifests itself differently under various circumstances. The more common are anchoring, availability and representativeness.

The anchoring bias, explained through the psychological priming effect,[1] is a cognitive bias that describes the common human tendency to rely too heavily on the first piece of information ("the anchor") gathered during a decision-making process (Staff, 2019). The anchor is perceived as a reference point for approximation of a value or comparison, but most of time it results in being inaccurate. The anchoring effect has a large application during sales´ season and in negotiation techniques. Although, we have the urge to deny that we apply such rule, multiple psychological experiments and daily life observation prove that we are subject to this cognitive bias. A good defence against anchoring bias is "thinking the opposite", because it negates the bias recruitment (Kahneman, Thinking, Fast and Slow, 2013).

The availability heuristics are defined as the process of judging frequency by the ease with which instances come to mind (Kahneman, 2013). The more available an information is, the more important it seems to us, that's why when making statistical assumptions or calculating risks we can be easily mislead by our personal vivid memories, the subjects covered by media or recent conversations with friends. Objectively, there is no connection between the memories we own and the likeness of something to occur in future. Nevertheless, availability heuristics can skew our perception of risks in two ways: "we overestimate the likelihood of unlikely events and underestimate the likelihood of likely events" (Parrish, fs.blog, 2016).

The representativeness heuristics is another trick of mind when making estimations on probability. We tend to assess an existing mental prototype on the likelihood of a certain event, which tends not to be accurate every time. In other words, we tend to judge a book by its cover. It is a common cause of racism because Black men tend to be overrepresented in coverage on crime and poverty. This increases the chance of infiltrating the Black person in the criminal prototyping in our minds (Bordalo, 2016). This is a very prevalent one and can lead to many other biases, one of which is the so-called conjunction fallacy. The latter happens when people judge a conjunction of two events to be more probable than one of the events (Kahneman, 2013). Yet, there is no possible way for two events to be more statistically probable than just one of them. The conjunction fallacy is happening because of the mental shortcut from our perceived plausibility of a scenario to its probability (Parrish, 2020). According to various

---

[1] The priming effect refers to the incidental influence of environmental context on cognition and behavior. The priming methodology is used as methodology to understand how activated knowledge and evaluations influence perception (Logan, 1980).

studies[2] it is a common bias in decision-making processes of the representatives in the juridical system.

The list of heuristics does not end here, there are plenty more types and derivatives of our mental shortcuts. All of them making part of our daily life and decision-making processes, summing up the actions we take and the consequences they outsource. Many of these decisions are made subconsciously, by intuition, using one or more heuristics without even realising it.

1.2.2 The Prospect Theory

The process of decision-making weights more thought and importance under risk circumstances. A good choice doesn't always imply an outcome alone, it should consider the gains and loses it carries. When facing the circumstances, the choice comes with meticulously calculated prospects and options. It is possible to calculate the risk through the known probabilities it generates, the classic example of betting with flipping a coin with heads up which has the chances and logical probability to happen half of the times. When relating to situations of predicable risks, it is facilitated to be insured against them, however, when the risk factor is positioned under uncertainty the tension in the decision-making process increases.

The *homo economicus* has its own way of handling such circumstances, every decision under risk coming with a precise determination and functions. There are many theories developed to help this cause. The analysis of decision-making under risk has been dominated by the Expected Utility Theory (EUT) for over two centuries, yet several flaws and neglected conditions have been revealed. The Prospect Theory introduced by Daniel Kahneman and Amos Tversky is an alternative model of expected utility theory. It complemented the EUT and adapted it to human behaviourism.

The EUT, originally introduced by Daniel Bernoulli around two centuries ago has been largely used in social sciences. It is the foundation of the rational model and was not intended as a psychological approach, rather a logic of choice based on elementary rules of rationality (Kahneman, 2013). The EUT determines a way of calculating and ranking the options according to the choice and risks individuals might take through evaluation of their worth.

---

[2] Fox Craig and Birke Richard "Forecasting Trial Outcomes: Lawyers Assign Higher Probability to Possibilities That Are Described in Greater Detail", Law and Human Behavior Vol. 26, 2002

According to D. Kahneman and A. Tversky, however, the EUT excludes two important factors: the degree of risk adverseness in individuals, and reference points in one´s wealth/happiness.

The accurate assumption that people dislike risk and risky situation results that in a gambling situation the decision maker if given the choice, between gambling and a certain win with less of a value, the decision maker would select the certainty. In fact, people are eager to pay for premium products just to avoid risks, which explains the success of insurances especially among people with a lower income that are more risk-averse than the ones with higher wealth. However, EUT does not take into account the situation when people are risk-seeking because of having nothing to lose as the result of only bad outcomes.

Another significant omission, "also identified as the central flaw", of the classical EUT model are the so-called 'reference points'. Consider the scenario of individuals X and Y having a wealth of 5 million today, although yesterday X owned 1 million in wealth and Y – 9 million, would they be equally happy? (Tversky & Kahneman , 1979). The theory assumes that both individuals have the same value of utility, meaning they are equally happy, except they are not. Resulting that when measuring the utility, one must take into account the history of one´s wealth and not only the present amount. Neuroscience studies proved that gain and losses appear to activate or deactivate different areas in brain (Wilkinson, 2018). The study and observation of human cognitive bias, specifically the loss-aversion, allows to conclude that the pain of losing is psychologically twice as powerful as the pleasure of gaining (Lab, 2020).
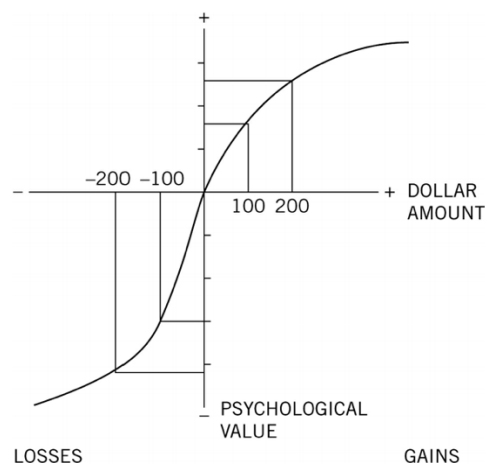
Figure 1: Source: Daniel Kahneman (2014). "Thinking, Fast and Slow". Prospect Theory function

Figure 1, also called "the flag" of Prospect Theory is a graphic representation of the central idea of this hypothesis. According to the graph, the asymmetrical s-shape line proves that loss of the same amount is perceived more painful than the gain of the same amount. The slope changing at the reference point (0 – the origin) at which the losses and gains are evaluated.
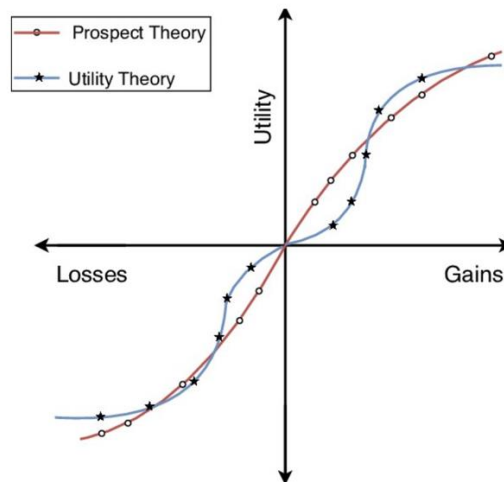
Figure 2: Source: Vinay Chamola (2020). "Secure Lending: Blockachain and Prospect Theory Based Decentralized Credit Scoring Model." Comparison of Expected Utility Theory and Prospect Theory

As Figure 2 shows, the Prospect Theory is an improved EUT that addresses the neglected and unrealistic part of the latter. By adding the history of wealth or reference point, the utility gains a psychological perception based on the loss-aversion bias highlighting the focal rule that losses are perceived differently than gains. Using Prospect Theory gives a more accurate prediction of the outcome of decision-making under risks and uncertainty, and it is now widely used by investors, lawyers, politics etc.

1.2.3 The Nudge Theory

The power of free will can both make us happier and harm us. But what if the power of free will is not lead by total freedom of choice but rather purposely shaped by external factors? Lately, the study and observations on behavioral patterns has generated a willingness to shape individual behavior. Nudges are one of the tools used by so-called choice-architects that use the known biases and heuristics in order to frame a better environment and push individuals in the right direction. Nudges are the small details that add up to individuals´ life, such as reminders, checklists, investment goods and feedbacks (Thaler R. H., 2021). The central role of nudge theory is to construct a sustainable and understandable design of choice which influences and "pushes" the individual onto the favourable position. It should be applied in a

subtle and tactical way without disrupting or threatening the subject of choice. The nudge theory quickly infiltrated in different areas of the public and private sector, such as medical system, governmental public policies regarding taxes and pension fund

Within nudge theory, there are clearly established nuances based on observations of decision-making processes, so-called 'defaults' are one of them. Defaults are ubiquitous and powerful. They are also unavoidable in the sense that for any node of a choice architecture system, there must be an associated rule that determines what happens to the decision-maker if she does nothing (Thaler & Sunstein, 2021). Defaults choices are in fact very popular among consumers for several reasons: timesaving, the uncertainty of change, habit or familiarity and additional associated costs of the change. The importance and difference made by default decision as choice-architecture tools is reflected in investment and retirement plans (particularly the USA 401K plan), insurance plans and organ donation.

A welcomed initiative into the public administration and private sector is the introduction of so-called 'smart disclosure'. It is another forming feature of the nudge theory which provides consumers with greater access to the information needed to make informed choices (Sunstein C. , 2012). Smart disclosure was initially introduced in order to address the mentioned concept of bounded rationality and to facilitate people´s informative limitations. Example of situation where it is insisted on using the smart disclosure practice are the mortgages and credit card situations, in this case the smart disclosure of nudge theory is orientated towards the limitation on the will of humans. Both credit cards and house loans have the tendency to allow individual to have the goods before actually paying for it, which, statistically, faced with the self-control limitation can destroy the welfare ecosystem of the household.

Regardless of how much society would favor the freedom of choice, the oxymoron of libertarian paternalism has persisted at the base of policy-making in the majority of developed countries. A policy counts as "paternalistic" if it is selected with the goal of influencing the choices of affected parties in a way that will make those parties better off (Sunstein & Thaler, 2003). However, the normative approach of the libertarian paternalism authorizes private and public institution to orientate people in the direction of promoting their own welfare.

1.3 Conclusion

The emerging field of behavioural economics has rapidly gained the attention and recognition of notorious academic figures. By highlighting the cases of economic anomalies and experimenting new perspective of economic social science, a closer perception of human behaviour is possible. This generates a better understanding of individuals' tendencies when making decisions and brings a more accurate prediction on the community´s tendencies. The most relevant approaches to behavioral economics are the prospect theory, the nudge theory, bias and heuristics such as loss – aversion bias and framing effect. Besides being observed through experimental practices in automatic human behaviour and improving the outcome of human actions, these psychological manoeuvres are being engaged in different real-life practices that lead to the improvement of society´s well-being.

Chapter 2: From Good Causes to Malicious Ends

This chapter addresses the innovative tendency of applying behavioural insights in the development of economic and social public policies. With the advance in the research of behavioural economics field, the knowledge is continuously applied within the governmental decision for generating efficient solutions to complex civil problems. "They are influencing people in multiple ways in order to reduce poverty, to increase employment, to clean the air, to improve health and to increase safety" (Sunstein C. , 2016).

Nevertheless, it is important to reckon the extent and ethics of using the influence through behavioral practices. The first part of the chapter presents how behavioral economics can help implement policies by public authorities, the matter of discussion is in the positive or negative value these changes bring. The second, however, focuses on the dark side of the use of these theories There are ethical questions related with the use of behavioral economics knowledge.

2.1 Improving policy design through Behavioral Economics

Behavioural studies reshaped the starting point of classical economics and its axioms, pulling out testable hypotheses that have become a debatable subject on the scientific description of human economic preferences. Nevertheless, policymakers have already taken into consideration predominant lessons on human irrationality, thus readdressing the effectiveness of public policy making. The basic insights from combined psychology and economics have had a major impact in areas such as health service, education, productivity, agriculture, finance, and the delivery of public services (Kanbur & Pirttilä, 2014).

In fact, behavioural economics utility has gained recognition from a considerable number of representativeness of governments and organisations. The initiative to engage behavioural economic insights at the official public level through their representatives was launched by the Obama cabinet in 2019, by naming them responsible of the Office of Information and Regulations in the US. In 2010, the UK Cabinet established the first Behavioural Insight Units (BIT). Germany, Australia, Canada, Netherlands followed the same practice. Nowadays dozens of countries have integrated behavioural units into their operational

activities. Moreover, they are also found in European Union´s organisms, World Bank, OECD and UN agencies.

There is a systematic approach to the policy design. As shown in Figure 3, behavioural economics method is focalised on identifying the behavioural pattern and bias within the problem it copes with, the central parts of the scheme are the diagnosis – the actionable parts in human behaviour or where to interfere, and the design – tools of a choice architect or how to interfere.

Figure 3: *Source: Mullainathan S. & Datta S. (2014). "Behavioral Design: A new approach to developmental policy"* The Stages of Behavioral Design Process

The following example is on the behavioral policy of Singapore's government to manage traffic congestion. As a matter of evolution and development, the urban areas have been extensively extending and intensifying. With a highly urbanized environment traffic arises and more specifically, traffic congestions. In 1975, the Area Licensing Scheme was introduced in the city center of Singapore (Low, 2012). The requirement of the scheme was the purchase of a paper license for entering a restricted zone in the peak hours. While this scheme failed, it led to better systems. In 2008, the Electronic Road Pricing (ERP) System finally got to the attention of drivers. This system takes into account that if the individual separates the payment from consumption in his mental accounting finance, he/she has the tendency to consume more or excessively (Thaler & Sunstein, 2021). By making the charges of the ERP more notorious, people´s attention narrowed on the household spending parallel, making public transportation money savings more salient. That influenced the citizens to opt for the optimal alternative.

Behavioural economics is helping to produce new ideas on how to cope with climate change such as green taxes, cap-and-trade and getting higher prices on fuels (Thaler & Sunstein, 2021). There are purely behavioural- designed initiatives such as the introduction of "Greenhouse gas inventory" (GGI) requested by the Paris Agreement, requiring disclosure by all significant emitters. It is a low-cost nudge using the Smart Disclosure technique. If people

are subject to cause-effect along the way of daily decision they make, why, for the scope of making the environment cleaner, isn´t the green option the easy option? (Thaler & Sunstein, 2021). The defaults have massive effects, pushing people to accept the automatic enrolment and stick to the status quo bias. The proof of its functionality is reflected in the experiment conducted on the German households (Kaiser & Bernauer, 2020). According to the results of the analysis, by using defaults for the psychological drives of inertia and endorsement, 69% of German households had never switched from their basic provider (Kaiser & Bernauer, 2020). Accordingly, better architecture of choice can also play an important role.

The healthcare system was also challenged by the implication of nudges. The most studied subject on the healthcare societal aspect is the organ donation. As discussed by C. Sunstein and R. Thaler (2021), the implementation of a default option is working within different sectors of life, the first proved example is the pension found and the acceding of 401K Plan in US. By applying default option to the organ donation registration, a prompted choice design is formed and therefore people are more likely to consent on the nudge of becoming registered donors. As US have followed the lead of the nudge specialist, the results have recorded significant increase in saving life of patients that were in need of transplants.

In conclusion, behavioural economics practices are proved to be highly efficient in influencing human behaviour to better causes and outcomes of their own choices. As part of the libertarian paternalism, the steering of citizens in a certain direction by applying default options and other types of nudging such as prompted choices, tackling self-control or other stimulus showed more saved lives due to high organ donations, less traffic and even a step-forward combating climate change. Therefore, influencing individuals in the right direction itself cannot be characterised as unethical, however these methods could be employed towards less noble, and more self-interest aims.

2.2 "The dark side" of behavioural economics: Ethical issues

Ever since the acknowledgement of the nudge theory as an efficient method of influencing people's behaviour in the designing of public policy, the nudges have been largely discussed. In terms of "how far to nudge" and how ethical this influence gets, "it would be a mistake to underestimate the effects of influence and the extent to which it can be used for good or evil" (Sunstein C. , 2016). Creating a dilemma on the use of nudges between coercion

and influence. Respectively, the nudge practice has received persistent criticism and has been characterised as manipulative. Daniel Husman and Bryan Welch highlight the idea of autonomy in terms of targeted nudges, "their freedom in the terms of what alternatives can be chosen, is virtually unaffected, but when this pushing does not take the form of rational persuasion, their autonomy – the extent to which they have control over their own evaluation and deliberation is diminished. Their actions reflect the tactics of choice architect rather than exclusively their own evaluation of alternatives."

The study and understanding of psychology, behaviour and people´s decisional preferences have a neutral value, but as Cass Robert Sunstein underlines such knowledge is desirable and is intensively put in practice with doubtful ethical constraints (2016). In 1988, two behavioral economists, G. Quattrone and A. Tversky, reflected in their paper "Contrasting Rational and Phycological Analyses of Political Choice", that if you perceive that you or your country has been losing lately, then you are likely to be risk seeking, if you do not have that perception then you are likely to be risk-averse (Quattrone & Tversky, 1988).

Mario Rizzo (Abdukadirov, 2016) outlines four necessary conditions for crafting effective nudges, one of which consist of knowing who it is addressed to and how the individuals´ behavior deviates. In his book "What´s your bias", Lee Do-Wit demonstrates a range of corelations between the voting behavior preferences and psychological profile. Therefore, linking the cognitive experiments results to real life events, Lee Do-Wit suggests that "by knowing your electorate better, a greater influence is achieved with lowering the overall costs" (De-Wit, 2017). Stuart Mills has dedicated his time in studying the personalised nudging practice in accordance with the decade´s big data availability, "choice architects can personalize both the choices being nudged towards (choice personalization) and the method of nudging itself (delivery personalization) … In other words, Big Data may tell us who to talk to, but behavioral economics may tell us what to say" (Mills, 2020).

Martin Barker argues that "just as behavioural science can be used to increase voter turnout; it can also be used to suppress the voters of specific individuals" (2018). The author develops the idea of the "dark art of persuasion" He highlights that by targeting "people that are unclear, uncertain, angry or feel that their world is in a bad state" it is easier to persuade them with emotional and instinctual sensory. In his research, he puts a great emphasis on the how the behavioural economics knowledge has been applied in practice (Barker, 2018).

Andrew Liptak confirms the assertion, by explaining and exemplifying the persuadable voters and their sensibility to certain social media nudges (2018). As inspected throughout the investigation, human behaviour can be predicted, controlled, and channeled towards performing certain actions instead of others.

2.3 Conclusion

Behavioural economics´ tactics and theories carry a neutral value that can be attributed to both good and ethically - doubtful causes. By better understanding people decisions, behavioural economics may help better design public policies. Nevertheless, they also imply a libertarian paternalism that may become a dark art of persuasion. The knowledge on how humans behave may help political parties to maximize irrational behaviour. In this paper, we propose to study the case of the US elections in 2016 as well as the Brexit Referendum to understand how nudges and other tools of behavioural economics may be used in nuruturing such purpose.

Chapter 3: Methodology

This chapter is aimed to present the methodological approach of the following thesis. It defines the structure of this research for the purpose of testing the central proposition regarding the implication of emotional triggers for pursuing voter choice in a certain direction by a third party. It is dived into four parts, including the conclusions. The first section justifies the hypothesis based on the theoretical framework introduced in the previous chapters. The second justifies the chosen case studies to test the hypothesis. The third section shows the tools and data collection procedure for the analysis. Concluding with the final, fourth part.

3.1 Justifying the hypothesis

Chapter one and two serve as a theoretical ground to justify the hypothesis that better knowledge of human behaviour may lead to abuses and therefore, that the development of behavioural economics is not without its dangers. The first chapter shows that the evolution of the emerging field of behavioural economics implies a better understanding of the human decision-making processes and individuals' tendency towards irrationality. The advancements of the research and investigative areas towards understanding the human nature has made it easier to document deviation from the neoclassical economic models and therefore made humans more predictable and persuadable.

Chapter two then underlines how a better perception of the drivers of behaviours has the potential to transform public policy market and to ensure more effective interventions (John, 2018). The behavioural economics tools put at government's disposal are low-cost small changes with corrective approaches. However, identifying the persuasiveness of this practices, the issue of ethics has been raised regarding the autonomy of self´s choice. As being stated, behavioural economics can exert a certain level of influence on one´s decision.

.

This research proposes to test the hypothesis through an in-depth analysis of the Leave Brexit campaign and Trump electoral campaign with a particular focus on the conducted actions on social media platforms. The hypothesis will be rejected if behavioural economic tools were not used.

3.2 Justifying the case studies

The case studies proposed have two characteristics that make them ideal to test the hypothesis. The first characteristic is that in both cases forecasting experts and economists failed into providing accurate predictions on both voting turnouts. The second is that behavioural economics literature consider that both cases prove that voters can make irrational decisions. If behavioural economic tools were used in both cases, it would be difficult to defend that such tools are not dangerous.

The literature on the British referendum on whether to leave the European Union is large and several theories have been put forward as to why the referendum took place and why the leave option wan. What is of interest here is that there is consensus in that the outcome was not a foregone conclusion. While the United Kingdom has always been the "awkward" member in the European integration process,   the group of grumbling voices that claimed a better fate of the UK outside of the European Union were counteracted by statements of the major economic hit suffered by the country in case of the scenario of leaving. The rationality of voting leave is not straightforward (see for example: Buchan (2019). . and Fisher and Renwich (2018))

Firstly, the EU-UK trade relationship has been a tight one, in 2016 12.6% of UK GDP was linked to EU exports, 60% of the British exports were covered by the EU membership therefore it was stated that UK is more dependent on the EU than vice versa (Movement, 2017). Moreover, tackling the issue of immigration that was one of the main concerns of British nationalists, studies prove that European immigrants contributed 64% more in taxes than they received in benefits (Dustmann & Tommaso, 2014). Hence, Brexit might be called an English movement (O´Toole, 2016), but it was also not a very rational vote for most voters. . In fact, the literature on the Brexit referendum reveals that the regions that voted strongly for Leave tended also to be those with the greatest levels of dependency on EU markets for their local economic development (Galbraith, 2017). Research literature also underlines particular groups

of voters that have sustained the EU Leave option although it was not part of their economic interests and benefits. Daniel May and Sara Arancibia (2021) revise the case of British farmers that voted for the Leave option when they were depended on permanent and seasonal EU labour force., This is in line with the argument put forward by David Sears and Carolyn Funk (1990) that in terms of political preferences, the individual has a limited economic self – interest and then when making the electoral choice, the effect of suggested ideology is stronger.

On the other shores of the Atlantic Ocean, in the same year, the 58th quadrennial American presidential election was held. This election has been described as contentious, unpredicted and full of surprises, redefining the meaning of an election like no other (Johnson & Brown, 2018). On the part of Democrats, we have seen the unprecedented candidature of a woman, Hilary Clinton to win the presidential nomination, and on the part of Republicans, there is Donald J. Trump, a businessman with no prior experience in governance.

Hilary Clinton´s candidacy for the U.S President on the behalf of Democratic Party is described as a continuation of Obama´s policies (Gunawan, 2017) with several improvements. During her campaign, she made eminent promises and outlined heavy-proposal mechanism of a possible implementation. She committed to offer free-tuition to college students, a comprehensive immigration reform, better health-care system, tax-cut and a more equal America to the citizens (Carroll, 2016). Contrary, Trump´s campaign was led by less technical and complex statements, but certainly louder and more emotional. "Is Trump intent on extinguishing social progress in favour of a conservative populist mix of isolation, protectionism, and white male domination? (Rosefielde, 2017)". Trump´s strategy of drawing attention to scandalous statements about women, veterans, Latin Americans and Muslims, he replaces the issues of debate with easier ones, activating stereotypical reactions on immigrants, minorities, jobs, power and control of the media and politicians (Kanev, 2017).

Considering the allegation made by both Trump and Clinton´s party, it is important to understand the socioeconomic context of the country in the time of the election. According to Alan Abramowitz´s "time for change" political forecasting model (Abramowitz, 2016), there was a distinguished approval of B. Obama and American economic situation. With a fall of the unemployment rate by 4.9% and a constant GDP growth of 2.3% (Remnick, 2016), additionally to a closing culture war with a high accent on equality despite the race or gender. Trump was not expected to win but he did by winning 30 states and turning the Florida, Ohio,

Iowa, Michigan, Pennsylvania and Wisconsin into Republican supporters, although they had had a stronghold history of Democratic affiliation since 1990s..

Both David Halpern (2019) and Chrisophe Heintz (2016) highlight the risk-seeking attitude in the behaviour of American citizens prior to the election day. Their studies explain the urge to abandon the status quo and to take a leap into a "risk" alternative due to concerns about immigration taking jobs, cuts from public services and decline of traditional industries. As represented in the graph below, Clinton´s candidature has a far better expected performance, yet due to Trump´s uncertainty and people´s attitude to risk, he ends up being more desirable to the public.
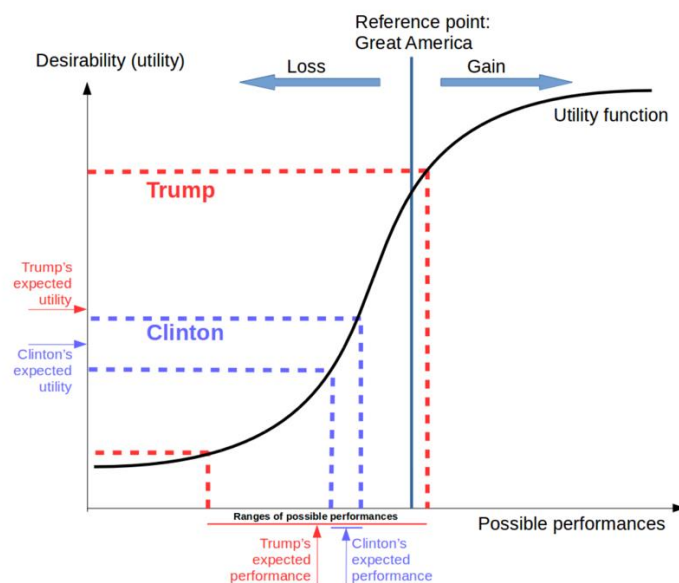
Figure 4: Source: Christophe Heintz, ICCI: international cognition and culture institute, 2016; Expected utility of president´s potential performance in a loss frame, according to prospect theory

In conclusion, the UK and US 2016 elections correspond to the conditions of the case studies that attest this thesis hypothesis. As outlined above, both American and British 2016 elections were cases of economic irrationality and were affected by sensitive subjects, therefore, causing an uncertain and uncommon outcome. Besides the surprising results, they have both used the implication of Cambridge Analytica and therefore the conduction and strategy of the campaign are still to be investigated for the purpose of this research and identification of behavioural economics procedures.

3.3 Justifying the analysis

To test whether better knowledge of human behaviour may lead to abusive practices, this research proposes to conduct an analysis of the pro-Brexit and Trump campaigns. The hypothesis would not be rejected if voter´s behaviour was the result of external factors calibrated to maximise emotional rather than rational decision-making process. The analysis therefore should help determine whether both the Leave and Trump's campaigns used manipulative behavioural tools for undermining each individual´s free will. To do so, the analysis should look first at the voter's profiles and then at the campaign strategies.

Applying behavioural tools usually demands knowing the voters' personality profile (De-Wit, 2017); for constructing a successful, in this case, manipulative campaign, the campaigners have to know their audience. Therefore, to determine whether there was a link between their emotional triggers and their socioeconomic status, geographical and gender characteristics, this research identifies targeted British and American voters. It does so through statistical demographics put at the disposal by The Electoral Commission of both American and British state. Aside from the demographical indicators, this research uses the results of academically conducted surveys and polls,[4] for a better characterization of the situation and the bounded rationality of the voters when making the choice. Table 2 below represents the main demographical indicators defining the voter´s profile. The chosen demographical indicators of the voter´s profile highlight the pattern and typology of Brexit and Trump supporters allowing to then study whether they were targeted by behavioural economics tools.

---

[4]"Analysing the Trump and Brexit Voters" Maria Jose Palma Lamperia dos Santos, 2018, Euromed (Santos, 2018)
"Brexit behaviorally: lessons learned from the 2016 referendum" Tessa Buchanan, 2019 (Buchanan T. , 2019)

Voter´s Profile Indicators
Region
Age Range
Nationality/Ethnicity
Social Class/Income gap
Education
Personal beliefs/ Values

Table 1: own elaboration; Voter´s profile indicators

To determine whether voters´ behaviour was the result of external emotional triggers also identified as behavioural economics tools, this research looks for the tools described in chapter one. Table 1 below highlights behavioural economics tools such as loss-aversion bias, framing effect, system 1 thinking, availability bias and nudges. To establish whether any of these tools were present in both case studies, we use specific indicators. The indicators are accordingly to each of the tools' definitions and impact on choice. Respectively, it has been stated through the studied theory that System 1 is more susceptible to emotional information when dealing with a decision-making process, the framing effect relies on the way the information is offered and therefore perceived, and the availability bias is strongly linked to human's tendency to rely on the readily available data.

	Bias and heuristics:	Indicators:
Behavioural economic evidence	Loss – aversion bias	Proved risk-seeking attitude
	Framing effect	Created common issue/evil – relies on the way of offering a certain information
	System 1 – automatic thinking	Sensitive and emotionally triggering messages
	Availability bias	Excessive presence on media coverage, TV and social media platform
	Nudges	Cambridge Analytica involvement

Table 2: Source: own elaboration; Behavioral economic tools and indicators

The indicators are measured through different data sources. This study engages into a wide collection of visual social media materials collected from the Trump and Leave campaign postings on social media. The frequency and tendency of the posts are analysed in accordance with the targeted profiles. The qualitative data was extracted using electronic academic search platforms such as cercabib.ub.edu, ssrn.com and the American Economic

Association website (aeaweb.org), along with the social media evidence shared on social media platforms such as Facebook and Twitter. The materials of the research have been selected through the filter of keywords such as *"Brexit"*; *"Trump"*; *"2016 election"*; *"behavioural economics"; "the nudge theory"* and *"the prospect theory"*. The reason of choosing the mentioned tools and selection criteria has a direct link with the subject of this research. By collecting electoral campaign data, it is possible to conduct a qualitative analysis through the behavioural economic lenses (mentioned in chapter 1) upon the strategy of the campaigns, the used slogans and the tackled emotional aspects of the targeted voters.

Additionally, to the qualitative data for the support of this thesis´s hypothesis, the official testimonials and written evidence provided by Dr. Emma Briant[5] against the case of Cambridge Analytica in the Court of United Kingdom are used and analysed through the above mentioned behavioural economic tools. Aside, more interviews and testimonies from former Cambridge Analytica employees are collected for the purpose of understanding the used tools and certify their category and functionality.

The statistics and citations enlisted in the analysis of both included case studies of this thesis were collected and designated in accordance with their relevance to the subject. Another motif of selection is due to their frequent use by other notorious academic researchers of the field. Accordingly, they are considered well-grounded for the analysis of the case studies. The hypothesis will be rejected if none of the behavioural economics tools identified in chapter one was in use during US and UK 2016 election campaign; in that case, Trump election and/or Brexit could not be perceived as the result of coercion tactics, any other allegation remaining a subject of speculation.

---

[5] http://emma-briant.co.uk/reports/

3.4 Conclusions

The hypothesis that better knowledge of human behaviour may lead to abuses is anchored in the assumption that the development of social science advancement can address doubtful ethical practices, for example, the maximisation of emotional rather than rational decision-making, therefore the choice can be manipulated. The British and American 2016 elections have been chosen as case studies for testing the hypothesis due to their concordance with the criteria. Firstly, it had to include an election with a non-beneficial economic outcome, secondly, it had to imply multiple sensitive and emotional speculations of national value. The chosen methods of analysis through both quantitative and qualitative data are to determine whether behavioural economic tools have been used to manipulate the voters' choices. The hypothesis will be rejected if in the result of analysing the UK and USA 2016 campaign there will be no proof of manipulative and speculative behavioural economic tools and the citizens' vote was made fully acknowledgeable.

Chapter 4: The Case Studies

This chapter presents the results of the analysis of both case studies.the The first section covers the Leave campaign strategy and the second, Trump's campaign . Each section is subdivided into two, the first part focuses on the voters' profile and the second, on the results regarding the behavioural economic tools indicators. The last section concludes .

4.1 Brexit Referendum – Leave Campaign

The results of the Leave campaign indicate that voters have been submitted to behavioural economics tools practices, each nudging them into the desired outcome of a leave vote. Firstly, the examination of the Brexit supporters is resumed into the fact of their dissatisfaction with the status quo due to living in poorer areas, feeling that they have missed the opportunity of developing, having a lower-than-average income and a medium level of education. Secondly, the Eurosceptics party is proved to have constructed special mechanisms in order to acute the risk-seeking attitude of marginalised British citizens through augmenting fears of more immigrants, loss of control due European Union and increasing costs.

4.1.1 Brexit Voters' profile

From a total of 72.2% of voter turnout of 46.6 million during the EU referendum, 16,141,241 had manifested their desire to maintain the status quo and remain part of the European Union, while the majority of 17,410,742 opted for a riskier choice (UK, 2019). The consequences of the choice have been felt in all side: legal, economic, social and political aspects of the country. There was a considerable rise and strengthening of the anti-immigration parties, a turbulence of the currency market and a turndown of the economic growth due to uncertainty and instability. Yet who voted for such chaos and deliberately damaged their own economic interest?

There are a range of electoral demographics that are to be enlisted as an indicator of voters' profiles. The important variables such as gender, age, nationality, geographic location, education level and class status are among the most influenceable in the following analysis. It throws a light to a deeper understanding of social, economic and ideology division within the nation.

The geographics of the vote has initiated a debate on the voters' profile in reference to the region they belong to. According to the map below illustrating the statistics of the electoral commission, it is deducted that communities that felt economically disadvantaged and not integrated into the global post-industrialisation process were more likely to go for a riskier version, therefore breaking the status quo with a leave. In accordance with the Prospect Theory, it can be certain that when the individual is not completely satisfied with the life level and feels "left behind", he most probably advances with the riskier choice. Moreover, the analysis of the Brexit referendum reveals that the regions that voted strongly for Leave tended also to be those with the greatest levels of dependency on European Union markets for their local economic development (Galbraith, 2017).
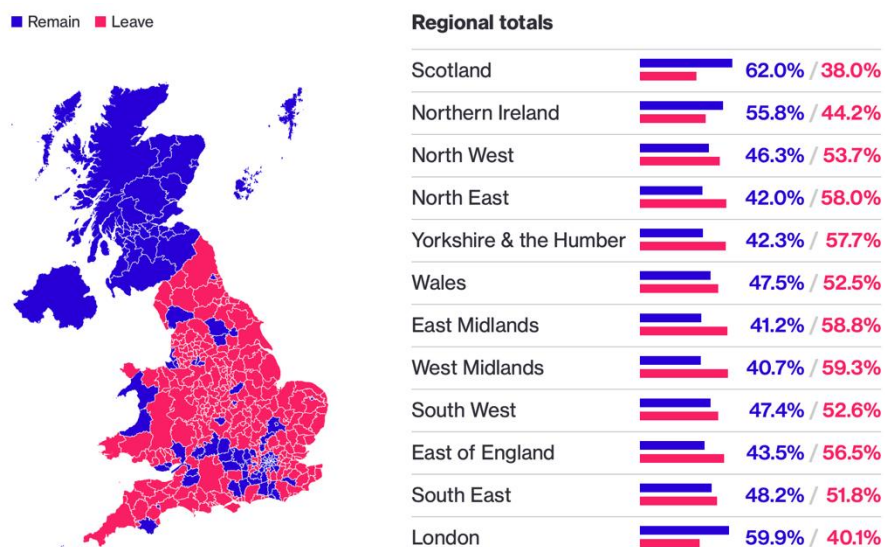
Figure 5: Source: Bloomberg.com; EU Referendum results by region

Therefore, to continue the analysis of the Leave targeted profile, more data will be provided for supporting the allegation of a more "persuadable" category according to the education and class status level. Considering the characteristics of the Leave support areas (exposed in Fig.6), they can be traced to aggregated age levels and lower educational backgrounds. According to Figure 7 below, it is obvious that lower-income households with elder family members, mostly white and with no academic qualifications are the main particularities of the Leave supporters.
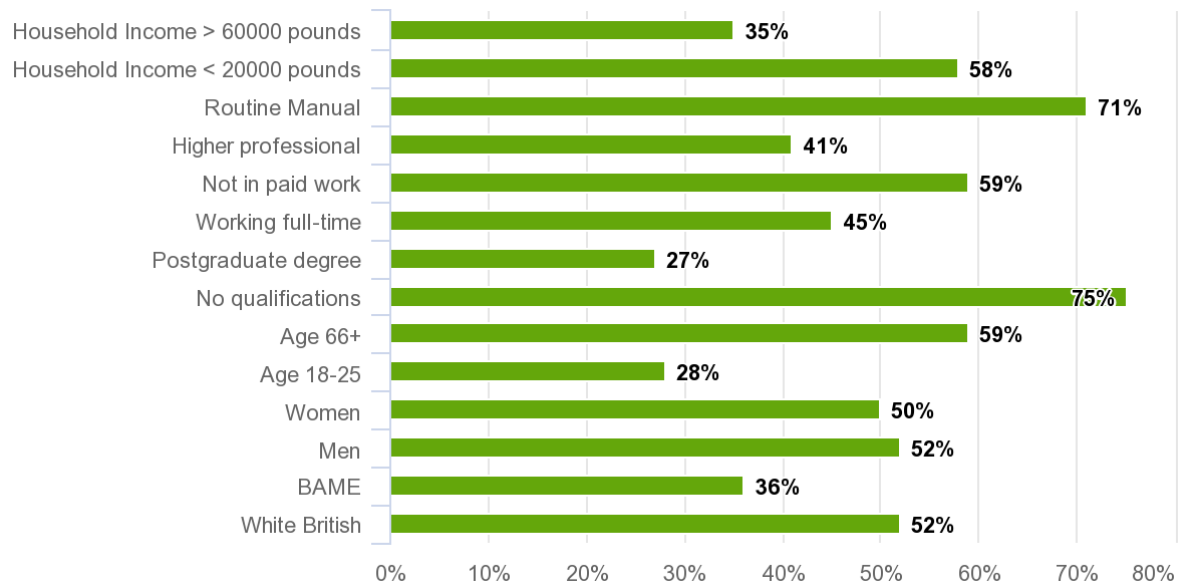
Figure 6:British Election Study EU Referendum subtracted from jrf.org.uk; Support leave among different demographic sub-groups

It is important to highlight the role of education when analysing the other particularities, as it is a central factor during the decision–making process. According to research conducted by Armen Hakhverdian on Euroscepticism, it has been found that education is one of the main aspects in understanding the public antipathy towards European Union (Hakhverdian, 2013). The educational factor is highly dependent to the idea of cognitive resources and competitiveness in a globalised society.

Still, as Matthew Goodwin and Oliver Heath argue, correlating the educational factor to the geographical location of the individual and involving the creation of a significant "interaction effect." Thus, even if people possess educational qualifications and skills, if they are stuck in the left behind areas that experience decline and lack opportunities to use these skills and progress, it can fuel feelings of exclusion and marginalisation (Goodwin & Heath, 2016). The statement can be supported by the survey conducted by Tessa Buchan (2019) who´s results are inserted below, proving that most of the individuals in the same household or friend group shared the same political view upon the referendum.

| 11% | 29% | 14% | 27% | | 14% |

■ All of them (11%) ■ Most of them (29%) ■ About half (14%) ■ A few (27%) ■ None (5%) ■ Don't know (14%)
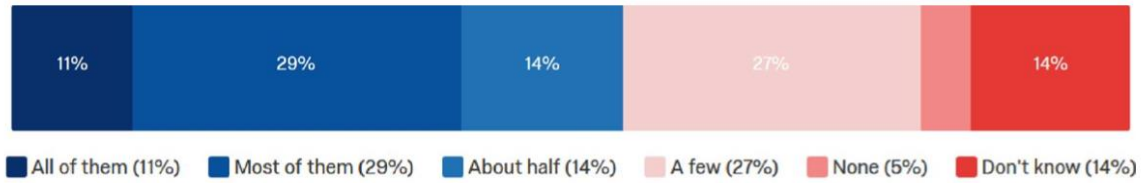
Figure 7: Source: Tessa Buchanan, 2019; Respond result for "as far as you know, how many of your close family members voted the same as you?"

| 27% | 18% | 25% | | 24% |

■ All of them (3%) ■ Most of them (27%) ■ About half (18%) ■ A few (25%) ■ None (4%) ■ Don't know (24%)
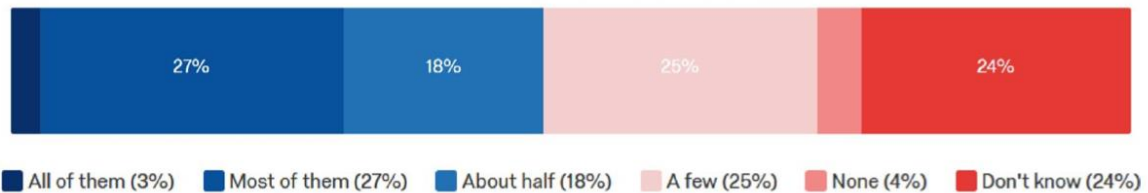
Figure 8: Source: Tessa Buchanan, 2019; Respond result for "as far as you know, how many of your friends voted the same as you in the EU referendum?"

For a better insight on Brexit supporters, in alignment with their characterisation are their values and beliefs. The understanding of British views and preferences serves as a key point in constructing a campaign when pushing on the emotional attitudes. According to Eric Kaufmann (2016), there is an abrupt distinction between people who own socially liberal views and those who have socially conservative views. In Figure 10, there are presented several sensitive social themes, according to it, the Leave supporters are most likely to support death penalty and harsher sentences, while being more against gender and homosexual equality. This underlines a significant difference into people´s values and their attraction to leave the union. Additionally, these attitudes come related to the information exposed above, linked to age and education level of the supporters.
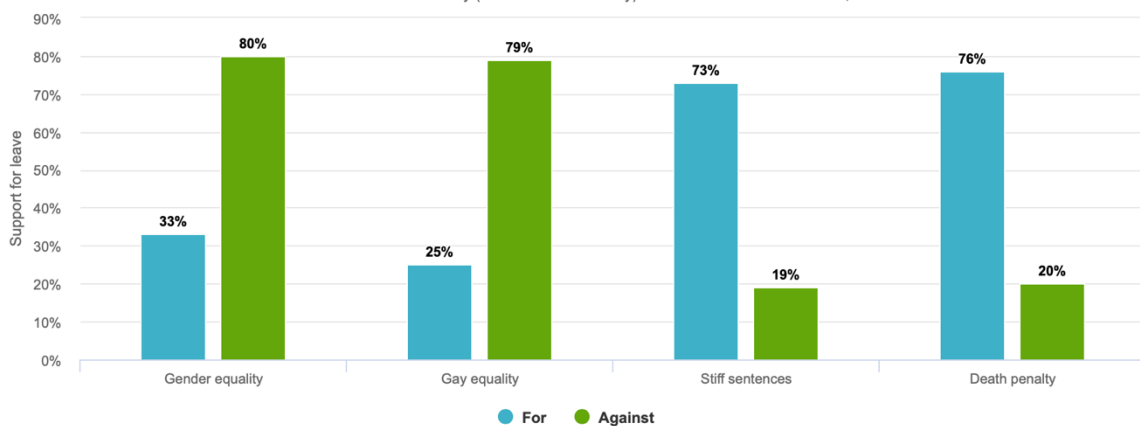
Figure 9: Source: British Election Study, 2015; Predicting Brexit Vote Intention

Respectively, another central trigger towards the Leave choice was the migration. According to the study conducted by Daniel May and his colleagues (May & Arancibia, 2021), the attitude and knowledge on immigrants' contribution to the state´s economy influenced the decision. Yet, there was a majority that pronounced their fear to immigration and multiculturalism despite the economic benefits it might have bring to the country. As an example, serves the rural labour force contracted on seasonal demand by the British farmers from EU labour force (Swales & Baker, 2016), voting the leave directly contradicted farmers' economic interest (see Chapter 2.2.).

Concluding on the research regarding the Leave supporter profile, there are three main findings that will serve to continue this analysis and sustain this thesis´s hypothesis. Firstly, household income or individual´s economic state matters. Voters that have felt marginalised economically, lacking the skills and possibilities to prosper in a globalised economy were more likely to adopt Brexit as a solution, not rationalising that the effect of such choice is most probably to disfavour them. Secondly, strongly linked to the first argument is the education level. The division of educational attainment directly influenced people´s perception on liberal views and sense of satisfaction with the current situation. Thirdly, the geographic factor that proves the impact of the communities on individual´s choice through the "interaction effect" and also through the lack of opportunities presented in certain regions thus creating a "left behind" sensation.

4.1.2 Dark Nudges in the Leave Campaign

Otto von Bismarck once said, "Politics is gambling for high stakes with other people´s money". Certainly, circumstances and political mechanisms evolved over time, but the essence might as well remain the same. There are rigorous regulations that are applied to the electoral campaigns in order to maintain an equitable and fair competitivity along the parties and not cross the thin line of persuading the voters. However, due to the relatively new trend of social media campaigns (reference to year 2016), there was lack of supervision on the online platforms allowing the spread of doubtful information and loud ideological messages.

In the following part of the chapter, the Leave campaign is outlined, highlighting the behavioural economic pivots it has been constructed upon. An important role in the structuring of the campaign has been played by Cambridge Analytica and their implication in

breaking the personal data and making the voters more malleable towards the interest of Leave party instead of their own economically – rationale motives.

As early evidence of Cambridge Analytica interference comes with the leaked conversation of Dr Emma Briant with Andy Wigmore, a political activist known for the work on the Leave.EU who comments on the interference of Cambridge Analytica, "identifying where these people are and what matters to them…methods used by mathematicians that came up with probabilities of the area that are most concerned with EU…" (Wigmore, 2017). Further in her own investigation, Dr. Emma Briant states that in the 2016 election, there have been produced messages engineered to maximise emotional and psychological impact (Briant, 2018). Her statement has a direct link to testing this thesis´s hypothesis and identifying these mechanisms and messages as behavioural economics mechanisms.

The central theory of behavioural economics that explains human´s tendency towards a riskier and more uncertain choice is the prospect theory involving the loss – aversion bias. As explained in chapter 1, when the individual is dissatisfied with their current economic/life state they are more likely to adapt the risky scenario and not be afraid to lose as they don't have what to lose, or at least it is what they think. It has been confirmed in several studies exposed in the literature review, as well when determining the Leave supporters being marginalised and in lack of opportunities and progression. The same attitude can be seen in the Figure 11 representing the survey of British citizens upon their current economic situation with a bigger majority of perceiving it "somewhat bad".
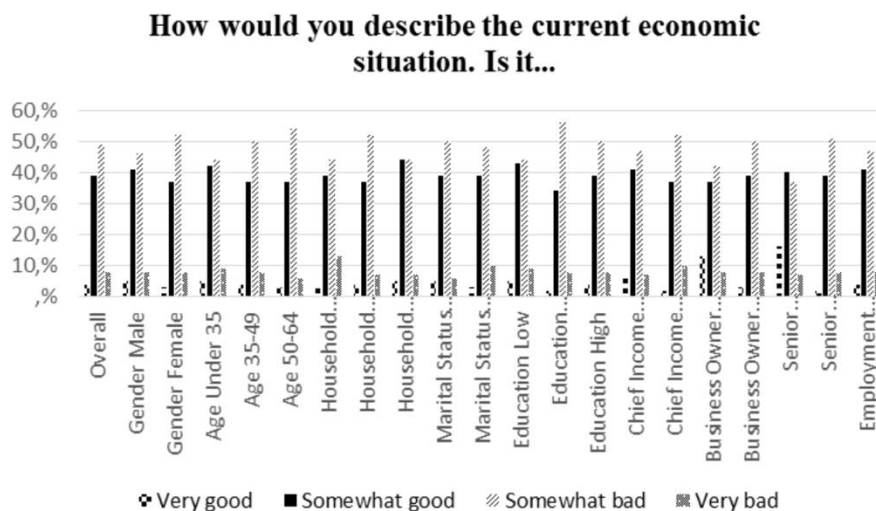

Figure 10: Source: Ipsos Public Affairs, 2017; UK economic situation survey prior to 2016 referendum

Underlying the premise of prospect theory and the risk – seeking attitude of the voters due to the mentioned motives, it is also important to mention their bounded rationality on the European Union membership. The limited information on the benefits of the membership as well as on the consequences in case of withdraw highlights the impossibility of taking a rational and acknowledgeable selection. Quoting Dominic Cummings, campaign director of Vote Leave, "I am not aware of a single MP or political journalist who understands the single market… the number of people who do is tiny." According to Tessa Buchanan´s survey study, there are less than a half of British participants that fully understood the EU terms used during political debates. Another indicator that shows the lack of awareness is the Google Trends on the next day post referendum where the most search-for result was "What is EU?". Consequently, it is certain that most of British citizens were in lack of knowledge and awareness when making the choice.

However, when appreciating the situation and understanding individual´s needs and vision, it is easier to catch one´s attention by knowing what it is they want to hear. With the use of microtargeting, multiple digital tools at hand and nudging specialists the Leave campaign have acquired their final success. People would feel marginalised, sensing that they lost the boat of globalisation and now lack the opportunities their country has to offer, they fear for immigrants that come and take their jobs or social help, what would they desire for correcting the actual status?

Nobel Prize winner Richard Thaler endorsed the fact that the Leave campaign is more appealing to people´s guts, commenting that few voters would engage in a cost-benefit analysis (2016). The confession of Dominic Cummings, the political strategist who was the mastermind of the Brexit leave campaign, also called the Maquiavelo of Brexit,[6] confirmed the emotional triggers used during the electoral race. "We began with the slogan of 'Take Control' but amended it to 'Take Back Control' as: 'back' plays into a strong evolved instinct— we hate losing things, especially control" (2017). The main slogan of the Leave campaign was "Take BACK control", from a nudge analysis, it gave the sensation of the lost control over their own country, bringing a sense of nostalgic nationalism and offering the

---

[6] Association made by "La Vanguardia" in the article "Dominic Cummings, el Maquivelo del Brexit";
https://www.lavanguardia.com/internacional/20190817/464105560476/dominic-cummings-brexit-reino-unido-perfil.html

possibility of gaining it back through making the leave vote even more appealing. According to the British Election Study report (2016), control was a primary issue.

Figure 11: Source: http://www.voteleavetakecontrol.org/why_vote_leave.html, 2016; Leave Campaign Slogan

The Leave Campaign has been mostly constructed on a framing effect. The pictures below extracted from the advertising online posts show how the European Union has been exposed as the villain that discards the country, affecting even the most vulnerable ones. Phrases such as "deeper into poverty", "cost us more and more" or presenting issues of social injustice by saying "EU protectionism puts African farmers at disadvantage" or "Turkey entering the EU will destroy it´s stability" provokes emotional triggers and alarms the individuals.

Figure 12:Source: BeLeave campaigner Shahmir Sanni; Example of BeLeave campaign message

Figure 13: Source: http://www.voteleavetakecontrol.org/why_vote_leave.html; "If we vote to stay in the EU message"

Additionally, the winning card of the Leave campaign was the topic of immigration. It has been exposed through a framing effect as the other mentioned subjects, but with a special emphasis. By being particularly salient on the topic of immigration, the Leave Campaign managed to touch upon the availability bias which resulted in a determinant factor of voting Leave. Arguments framed in terms of moral values of the audience can be persuasive (Feinberg & Willer, 2015).

As Cialdini points "the amount of news coverage can make a big difference in the perceived significance of an issue among observers as they are exposed to the coverage" (Cialdini, 2021). The media has the undoubtful power of drawing attention to themes of high matter, it also creates the availability bias in our mind for utter easiness and familiarity with the subject. During the last month of the campaign, immigration stories covering raise incrementally. This was also the time when 40% of voters have been concluding their final decision (Ashcroft, 2016). Ironically, most Leave campaigners such as D. Cummings (2017) and A. Wigmore (2017) recognize the importance of immigration subject to their campaign and even refer to it as their "top subject".

Figure 14: Source: Leave campaign; Example of immigration sensibility among Leave voters

Political decisions are affected by System 1 (Thaler & Sunstein, 2021). By forming biases and basing the campaign on mental shortcuts can bring win to the table as proved earlier through some of the emotional examples set up by the Leave campaign. Aside the slogans, mottos and misinformation used to influence the British citizens, the number and frequency of such posts had a big importance and impact on their decisions as well. The Leave team has invested 98% of their budget into the targeted digital marketing campaign. In the Figure 16 below, based on an analysis done within an initiative on Computational Propaganda (Howard & Kollanyi, 2016), there is a out percentage on the Leave hashtags and

posts that confirm the exceeding effort into persuading the voters, therefore creating the availability bias.

Perspective	N	%
Remain (#strongerin, #remain, #voteremain, #votein, #bremain, #labourin, #votestay, #intogether, #labourinforbritain, #greenerin)	363,217	20
Leave (#brexit, #voteleave, #leaveeu, #takecontrol, #betteroffout, #voteout, #beleave, #brexitthemovie, #euistheproblem, #brexitbustour)	993,176	54
Neutral (#euref, #eureferendum, #inorout, #eudebate, #june23)	475,233	26
Occurrence of All Above Hashtags	1,831,626	100

Figure 15: Source: Politicalbots.org, Philip Howard, 2016; UK Referendum perspective of hashtags used on Twitter

A similar approach was used in the Trump´s campaign which is analyzed in the following section. According to Dr. Emma Briant´s investigation, both Brexit and Trump campaigns were developed in parallel, moreover, the BeLeave campaigners manifested their admiration to the evolution of Trump campaigns in the conducted interviews (Briant, 2018).

4.2 US 2016 Presidential Election – Trump´s Make America Great Again

In parallel with the previous presented case study on Brexit campaign, this section follows the same path of analysis through the US 2016 Trump Presidential Campaign. The first part is analysing Trump's voters' profiles, their common interests, and traits. While the second focuses on identification of the behavioural economics tools during the campaign creation. The results of the investigation indicate abusive use of emotional triggers characterised through fake news, propaganda and loud affirmations. Not only it has been proven that the Trump campaign would be responsible of creating personal and targeted nudges, it has also used various heuristics for creating sense of societal insecurity and a prone attitude towards an uncertain candidature.

4.2.1 Trump's targeted supporters

In 2016 presidential election, more than 56% of the U.S voting-age population have expressed their civic and democratic right to choose the leader of the country. The studies and demographical analysis conducted after the voting have highlighted that overall, Trump's supporters are white individuals, mostly men with no college degree as represented in Figure 17 below. Additionally, a fact to highlight is the community type they were part of, in case of

D. Trump's supporters there were fewer urban located citizens, most of the supporters were place in suburban (53%) and rural (35%) communities.
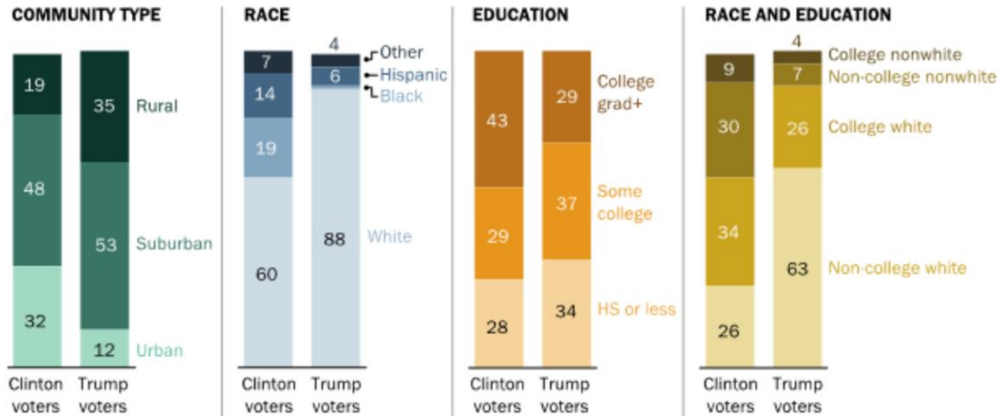

Figure 16: Source: PEW Research Centre, 2016; https://www.pewresearch.org/politics/2018/08/09/an-examination-of-the-2016-electorate-based-on-validated-voters/; The demographic profiles of Trump and Clinton

Regarding the income level of Trump´s supporters, the majority were forming the middle class with an annual income between $50, 000 and $199,999 (CNN, 2016). Unlike the Leave Campaign study case, the people he addressed were not marginalised and there is no assumption that they were passing through severe economic difficulties. Although, according to several opinion polls they were not fully satisfied with their economic condition which also served as a reason for inclination for change.

Ideologically, D. Trump´s supporters were mostly having conservative views, their main preoccupations were immigration, terrorism and Muslims. They have affiliated with the fear of losing their jobs due to international trade and foreigners migration flow and were generally viewed as unsatisfied with the country´s development direction. The quality they appreciated the most at Trump´s candidature and policy is the hope of change that he might bring to the American political scene.

Although, Trump´s supporters' profile is not as firmly defined through demographical indicators, there is further analysis on how the Cambridge Analytica has extracted data and conducted psychological tests for a better understanding of the auditory and their vulnerabilities.

4.2.2 Make America Great Again- Behavioural Economics Strategy

The rise and victory of Donald Trump is still a subject of debate and research. Political analysts have not yet found an ultimate explanation of the phenomena. He marked the history of politics by being a polarized figure, entering the White House with xenophobic and fearful tactics, misogyny, paranoid conspiracy theories and promoting isolationist international policies. Both his supporters and opponents describe him as a political earthquake.

The tools used by politicians in order to win the elections have become varied and more skilled over time, with the advance in technology, data and understanding the human mind. It is now easier to manipulate and persuade unaware individuals into personal interests by emotional triggering. A new highly controverted tendency is the microtargeting. When applied to politics, microtargeting is the ability to dissect the voter population into very specific segments and customize messaging to them (Gizzi, 2018). The implication of Cambridge Analytica and other data breaching, the ethical matters of this practice are still to be discussed. Does being nudged and behaviourally targeted impede the freedom of choice that is so vital when voting? Still, Trump´s campaign strategy was built upon many behavioural pillars, including the Cambridge Analytica´s proved implication.

Firstly, when comparing Donald Trump and Hilary Clinton candidature, the first primarily lacks experience in politics, presents more extreme and populist scenarios and therefore is a riskier choice in the election process. Considering the premise of the Prospect Theory, the risk-seeking attitude is mostly met when the individual is feeling trapped and has not that much to lose. In terms of economic situation prior and during the year 2016, most American citizens have been perceiving their economic situation as "somewhat good" according to a survey conducted by Ipsos Public Affairs (see Fig.17). Taking into consideration multiple research and polls, B. Obama left the presidency office on a high note with a favorable view and outstanding performance in history.

In order to apply the Prospect Theory and create a national risk – seeking attitude, Trump´s strategy started with creating a sense of dissatisfaction with the status quo. "Make America Great Again" was the slogan of his campaign and in these four words, he managed

to capture both optimism and pessimism for the American legacy. As underlined in the previous case study exemplification on Brexit, the word "AGAIN" plays a central role and places a feeling of patriotism and long-lost greatness which must be reconciled. It is directly addressed to people who felt marginalised under Obama´s presidency, thus the middle – age white men with no considerable background education and middle-class income. Another example of such declaration is "The American dream is DEAD, but if I get elected president, I will bring it BACK" (Trump, 2016). By making such statement accordingly to the Prospect Theory he puts the *Reference Point* to a negative value and thus nurtures the risk – seeking attitude. "The reference point that decision makers use is chosen by the automatic system of thinking, making it subjective and subject to their emotions and intuition" (Kanev, 2017).
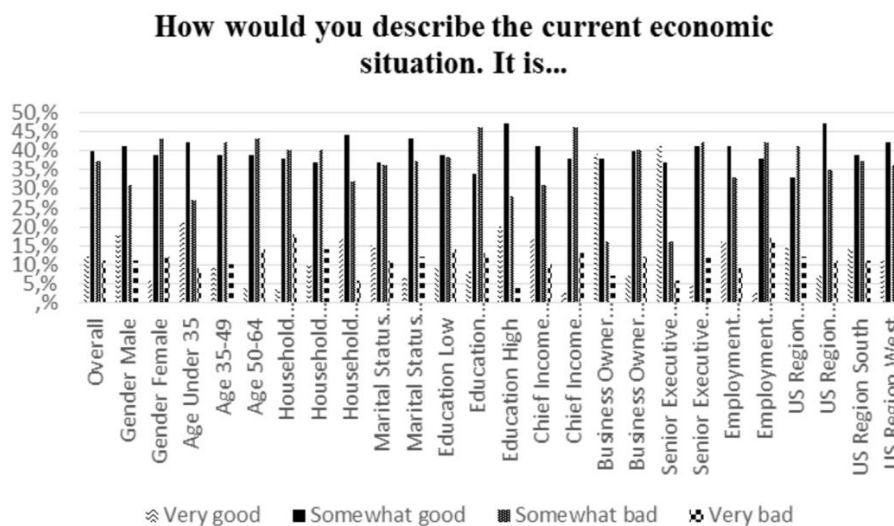

Figure 17: Source: Ipsos Public Affairs 2017; US economic situation survey prior to 2016 election

Donald Trump´s campaign was founded on emotional subjects such as immigration, lost jobs and the power of elites. His statements were extreme, lacking political correctness and framing a world of crimes conducted by the immigrants ("they bring in drugs and crime" – about Mexicans) lost jobs because of international trade ("we have beat China") and terrorism blamed on Muslims ("We are letting them drag America down"). Him making remarks about these minorities group gave the possibility to identify with his core target and build an affiliation. After establishing the connection with the core group of supporters, he motivated them with loud sayings such as "win, win, win and win" with a restauration of the lost jobs, bringing manufacture back at home. Other extreme and bold solutions were

building the Mexican wall, deporting immigrants and even implying a complete travel ban on Muslims.

Consequently, aside from the creation of a framing effect and negative perception of status quo, he acted on the loss aversion bias. He displayed himself as the only solution to the problems, the only one who is used to winning and would speak truthfully without any censorship. He created the scene of a broken America that only he could fix. One of the advantages of Donald Trump was his experience in communication, he knew how to speak to people in an effort to be persuadable and convincing. While Hilary Clinton was perceived as preserving the status quo, continuing Obama´s initiatives and therefore not making America great again.

Moreover, the behavioural economics mechanisms used in Trump´s campaign is the attractiveness to System 1. Clinton´s approach required a mental effort by audience, their messages were mind- cantered and statistical, which in addressing the public seems impractical (Kanev, 2017). H. Clinton was acting on a bias of political correctness, providing complex mechanisms to solve the existing national and international issues, but her focus was rather on Jobs and Economy, Healthcare and Gun Regulation. She highlighted and pin pointed important matters on the political agenda, but when using behavioural economics it is not about what she was saying, rather how she was saying it. On the other hand, Trump was characterised as "fun to watch" (Klein, 2016), he was being treated as the star of a reality show, representing political entertainment to the nation. His behaviour and words were something new for the American public, phrases such as "isn´t it better than listening to a long boring speech?" would spark the interest and spread the coverage.

Research has proved that when uniformed and consuming TV media or online media, the decision is made upon automatic thinking – system 1. Human´s system 1, as established by D. Kahneman and A. Tversky is driven by emotional and more sensitive messages, rather than conducting a cost – benefit analysis of the proposed political strategies. Loud and aggressive arguments such as "We lost control over Washington", "You lost your security", "They took away our confidence in future" provide a direct pulse in the behavior of the voter. Hence, the attributed of competence of voting outcome is mostly assessed not by the analysis of platforms and statistical facts, but mostly by the shape and expression of the face, the body language and the intonation of the candidates (Kahneman, Thinking Fast and Slow, 2012).

Similarly to the Leave EU campaign, Trump´s strategy was to create an artificial villain out of the immigrants, mostly Muslims that would bring terrorism and steal the US jobs.

Due to the reason that Donald Trump was such an innovative and unprecedented appearance on the political scene, the media was increasingly covering and streaming the memorable moments, and although most of them were not as advantageous for Trump´s reputation, they increased the availability bias. According to Harvard University research, the coverage of Donald Trump overwhelmingly outperformed the coverage of Hilary Clinton (Faris, Roberts, & Etling, 2017). The media landscape was asymmetric and operated differently for both candidates, the preference is illustrated in Figure 18 below extracted from the same study.
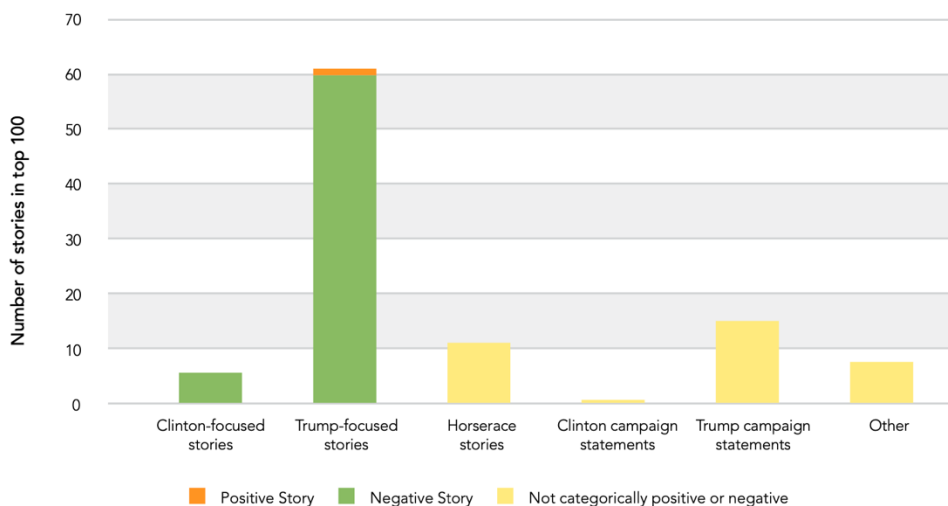

Figure 18: Source: Berkman Klein Centre at Harvard University, ssrn.com/abstract = 3019414; Valence and focus of the 100 most linked-to stories

The same study (Faris, Roberts, & Etling, 2017) highlights that both liberal and conservative media consumers are acting on a behavioural bias that supports the willingness to believe misleading information that aligns with group identities and worldviews. The data suggest that the "fake news" framing effect that succeeded in the 2016 campaign was a distraction. The spread of fake news was widely shared and linked in the favor of Donald Trump, according to the database of a study conducted by Hunt Allcott and Matthew Gentzkow (2017), there were 115 pro-Trump fake stories that have been shared for over 30 million times on Facebook. The heuristics and biases that are created behaviorally by the consummation of such content has a direct effect on the way people perceive and make their

decision, therefore, it is to be stated that Cambridge Analytica who managed the digital campaign of Donald Trump nudged the American citizens.

The actions took by the Cambridge Analytica scandal are referred to as "the dark nudges", as studied before, for a correct nudging implementation, the choice architect has to know well the auditory. Cambridge Analytica has collected data on the potential Trump voters as the first step of their strategy and later began the behavioural targeting through Facebook. During the first stage, it has been proved that they conducted various personality test, aside from having demographic data on the American citizens (Briant, 2018). Figure 19 is an illustration of the kind of personality test conducted with the aim of measuring and categorizing the auditory. Phase 2 after the identification of persuadable individuals was to constantly provide personalized triggering content so that they would change their minds of made their decision toward Trump´s candidacy.

Figure 19: Source: Cambridge Analytica; OCEAN personality model test

There are certain revelations on how the Cambridge Analytica within the Project Almo designed especially for Donald Trump´s campaign nudged people in the desired direction. According to an interview with Chanel4News, former insider states "The mission was to make people click and engage which was possible through extremely negative content, …we would fuel fear and division, …. we would undermine Clinton´s Black supporters." (Reyes, 2020). Moreover, the quantity of such visual ads exceeded 5.9M, fact that explained through behavioural economics lenses interferes with the system 1 perception, framing effect and availability bias.

The spread of fake news, conspiracy theories, viral misinformation coverage and aggressive statements worked for the New York businessman Donald Trump to achieve the victory of the White House. The "Make America Great Again" campaign proves the need for

more regulations and media literacy among the citizens for avoiding the dark nudges and shortcut effects they have on the human mind. From political microtargeting to framing effects, it has been proved that individuals are persuadable when identifying their emotional triggers, when displayed in comparison, the sensitive matters weigh more than the possible cost-benefit analysis.

4.3 Conclusion

This chapter provides evidence sustaining the hypothesis of the thesis. As summarized in Tables 3 and 4 below, following up on the conducted analysis through Chapter 4 on the Leave EU campaign during the UK´s referendum and Trump´s presidential campaign in 2016, the voters' profiles have been identified alongside several behavioural economic tools. Considering that the result of both campaigns has been a victorious one, it is certain to say that using maximised emotional nudges has undermined the economic self–interest of the individuals.

Firstly, the targeted citizens that have been submitted under the manipulative practice share a similar profile in both UK and US. They are mostly of white ethnicity, with conservative views on life and a low level of education. Resulting from the conducted examination, the mentioned profile is more vulnerable to artificially created emotional triggers. Secondly, the structuring of both Brexit and the Trump campaigns relies on analogous pillars identified as behavioural economics practices. Therefore it has been certified the creation of primary a sense of dissatisfaction with the status quo among the citizens, then the framing of a common evil which came in form of the UE or terrorism and respectively maximizing emotional triggers through the slogans and speculations during the campaigns with the knowledge of the functioning of mental shortcuts.

Voter´s Profile Indicators	United Kingdom Pro-Brexit	United States Pro-Trump
Region	The majority of South England, including Northeast, Northwest, East Midland etc	Ohio, Florida, Iowa, Michigan, Pennsylvania, Wisconsin and marked Republican states
Age Range	66+	Middle aged (40+)
Nationality/ Ethnicity	White British	White American
Social Class/ Income	Household income < 20000	Middle class Income: $50.000 - $199.9999
Education	No higher degree qualification	High school or less
Personal beliefs/ Values	Conservative views	Less open/ conservative views

Table 3: own elaboration; UK: pro-Brexit and US: pro-Trump voters´ profile

	Bias and heuristics:	Indicators:	Leave EU campaign:	Trump´s 2016 presidential campaign:
Behavioral economic evidence	Loss – aversion bias	Proved risk-seeking attitude	Current dissatisfaction of the marginalised British citizens	Seeking a riskier attitude through creating discontent with the status quo
	Framing effect	Created common issue/evil – relies on the way of offering a certain information	EU – exposed as the main villain to UK´s development	Muslims are the main threat through terrorism allegations (mainly unfounded)
	System 1 – automatic thinking	Sensitive and emotionally triggering messages	"The EU will cost us more and more"; "deeper into poverty"; "Turkey entering will destroy stability";	"We lost control over Washington"; "They took away our confidence in future"; "The American dream is dead";
	Availability bias	Excessive presence on media coverage, TV and social media platform	Oversharing of hashtags, media stories and coverage of the Leave messages, 54% Brexit content on Twitter, compared to 20% for Remain party	Trump covered top stories were 6 times more covered than Clinton related news
	Nudges	Cambridge Analytica involvement	"Vote Leave, take BACK control" Recognized algorithms for identifying the main EU concerns and using them	"Make America Great AGAIN" OCEAN personality test, to craft personalised nudges

Table 4: Source: own elaboration; Analysis result of US and the UK 2016 campaign

Conclusion

The purpose of the following section is to primarily present the results of the analysis and the contribution this thesis brings to the topic of investigation. Secondly, it unfolds recommendations for future research in relation to the use of behavioural economic tools within various aspects of social and political life.

This work argues that advancements in the learning of human behaviour may lead to manipulative abuses, therefore by the applicability of such practices the free will of an individual is undermined raising ethical doubts. Particularly, this thesis analysed behavioural economics practices by approaching the voting choice of citizens through the UK Brexit Referendum and the 2016 US Presidential Election. The results of case studies investigation in the prism of behavioural economics theory prove the use of mental shortcuts for influencing one´s decision and therefore the campaigner acting as a choice architect. The examination has been conducted in accordance with the methodology, by the use of quantitative and qualitative data extracted from academic sources and accredited polling/survey sites. It recreated the main points of pro-Brexit and pro-Trump campaigns explaining their behavioural importance and the exact effect they had on the targeted individuals. By maximizing the emotional perception of the external events, people tend to act irrationally, the fact that the *homo economicus* does not recognize in the traditional economics textbook.

The literature on the relationship between the development of behavioural economics as a better understanding of human behaviour and the manipulative power it holds focuses mostly on the beneficial approach for corrective practices that contribute to people´s welfare. At the same time, as stated throughout this work, knowledge has neutral power, and it can be used both for good and malicious causes. Behavioural science is a great way of finding small tweaks that can make a substantial difference to behaviour (Harford, 2022). The nudges are sometimes described as controversial practices because of the constraint it carries in one's behaviour. This paper contributes insight on its the more persuasive and manipulative impact on society. It is thus capable of undermining the power of democracy if gone too far. Individual´s unawareness and lack of ability to identify the practices used against his

economic interest might cause societal frustrations and regrets later, as was in the case of Brexit and Trump.

The hypothesis of this research has not been rejected due to proof of using the behavioural economic tools in the analysed case studies on the 2016 referendum and electoral campaigns. Accordingly, the main conclusion of this research is that the use of such knowledge may lead to abuses and create ethical issues in society alongside the beneficial practices revised in chapter 2.

As a further suggestion on the highlighted societal problem of advancements in human behaviour, two are highlighted. First, considering the fact that behavioural economics is still an emerging field and consequently less regulated in sensitive practices such as electoral campaigns or any other practice that undermines the objective decision making of an individual, it would be recommendable to aliment the development of the field, in meantime imposing more regulations. The next solution is related to the individuals' protective mechanisms against the manipulative practices. By raising awareness that our mind automatically perceives facts and numbers in a certain way when filtering information through our System 1 of thinking, people will be more conscious and grounded in their important decision-making process, such as, in this example, the election of the future of their country that highly implies economic well-being too.

The study´s limitations have rooted in the deficit of official campaign materials due to the declared elimination of the online content as a result of the Cambridge Analytica scandal. For more proof that sustains the Machiavellian practices in the referred study cases, additional campaign materials for analysis would have been welcomed. The limit was intended to be overcome by retrieving archived press articles mentioning the slogans and debates of the campaigns.

The research ought to be followed by conducting a behavioural analysis of the propaganda mechanisms. Due to the recent events affecting the world, particularly the Ukrainian – Russian war, more experts talk about the dangers of propaganda and people´s wrongful perception of events. Forming a closed society with no external source of information, only the one filtered by the government is another case of abusive practice toward someone´s decision-making process and elimination of autonomous thinking.

Bibliography

Abdukadirov, S. (2016). *Nudge Theory in Action: Behavioral Design in Policy and Markets* . Arlington, Virginia, USA: PalgraveMacmillan.

Abramowitz, A. (2016). Will time for change mean time for Trump? *Political Science & Politics 49*, 659-660.

Academy, S. (2012). *Risk Managmeent for Entreprise and Individuals.* Saylor Academy . Obtenido de https://saylordotorg.github.io/text_risk-management-for-enterprises-and-individuals/s00-license.html

Allcott, H., & Gentzkow, M. (2017). Social Media and Fake News in the 2016 Election. *Jorunal of Economic Perspectives - Vol. 31*, 211 - 236.

Anonymous. (2016). League of Nationalists. *The Economist* .

Ashcroft, L. (24 de June de 2016). *www.lordashcroftpol ls.com*. Obtenido de https://lordashcroftpolls.com/2016/06/how-the-united-kingdom-voted-and-why/

Aspromourgos, T. (1986). On the origins of the term 'neoclassical'. *Cambridge Journal of Economics*.

Barker, M. (May de 2018). Cambridge Analytica, "Nudge Theory", and "figures of the audience". *Journal of Audience and Reception Studies*.

Barker, M. (May de 2018). Editorial introduction: Cambridge Analytica, Nudge Theory and figures of the audience. *Participations: Journal of Audience and Reception Studies*, pág. 3.

Bordalo, P. (2016). Stereotypes . *The Quarterly Journal of Economics*, 1753-1794.

Briant, E. (November de 2018). *data.parlament.uk.* Obtenido de http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/digital-culture-media-and-sport-committee/disinformation-and-fake-news/written/92380.html

Briant, E. (2018). *Three Explanatory Essays Giving Context and Analysis to Submitted Evidence* . London.

Buchanan, L. (2006). A Brief History of Decision Making . *Harvard Business Review*.

Buchanan, T. (2019). Brexit behaviourally: lessons learned from the 2016 referendum. *Mind and Society* .

Carroll, L. (22 de July de 2016). *The Poynter Institute*. Obtenido de politifact.com: https://www.politifact.com/article/2016/jul/22/hillary-clintons-top-10-campaign-promises/

Cialdini, R. (2021). *Influence: The Psychology of Persuasion.* New York: Harper Collins Publushers.

CNN. (23 de November de 2016). *edition.cnn.com*. Obtenido de https://edition.cnn.com/election/2016/results/exit-polls

Craig, P. (11 de July de 2016). *ssrn.com.* Obtenido de https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2807975

Cummings, D. (9 de January de 2017). *dominiccummings.com.* Obtenido de https://dominiccummings.com/2017/01/09/on-the-referendum-21-branching-histories-of-the-2016-referendum-and-the-frogs-before-the-storm-2/

Cummings, D. (9 de January de 2017). *dominiccummings.com.* Obtenido de https://dominiccummings.com/2017/01/09/on-the-referendum-21-branching-histories-of-the-2016-referendum-and-the-frogs-before-the-storm-2/

De-Wit, L. (2017). *What's your bias? The surprising science of why we vote the way we do.* London : Elliott & Thompson Limited.

Dustmann, C., & Tommaso, F. (2014). The Fiscal Effects of Immigration to the UK. *Economic Journal*.

Faris, R., Roberts, H., & Etling, B. (August de 2017). *The Berkman Klein Center for Internet & Society Research Publication Series.* Obtenido de http://nrs.harvard.edu/urn-3:HUL.InstRepos:33759251

Feinberg, M., & Willer, R. (2015). From Gulf to Bridge: When Do Moral Arguments Facilitate Political Influence? *Personality and Social Psychology Bulletin Vol. 41*, 1665-1681.

Fisher, S., & Renwich, A. (2018). The UK's referendum on EU membership of June 2016: how expectations of Brexit's impact affected the outcome. *Acta Polit.*

Fox, C. (2002). Forecasting Trial Outcomes: Lawyers Assign Higher Probability to Possibilities That Are Described in Greater Detail. *Law and Human Behavior Vol. 26.*

Galbraith, J. (2017). Europe and the World after Brexit. *Globalizations Vol.14*, 164 - 167.

Gernsberg, H. (1925). The Isolator. *Science and Invention vol. 13*.

Gizzi, D. (2018). The Ethics of Political Micro - targeting. *Data-Driven Investor*.

Glaeser, E. (2003). PSYCHOLOGY AND THE MARKET. *American Economic Review* .

Goodwin, M., & Heath, O. (2016). Brexit vote explained: poverty, low skills and lack of opportunities. *Joseph Rowntree Foundation*.

Green, S. L. (May de 2002). Rational Choice Theory: An Overview. *Baylor University Journal*.

Gunawan, S. (2017). Hilary Clinton´s presidential campaign rhetoric: Making America whole again. *Kasetsart Journal of Social Sciences*.

Hakhverdian, A. (2013). Euroscepticism and education: A longitudinal study of 12 EU member states, 1973–2010. *SAGE Journals*.

Halpern, D. (2019). *Inside the nudge unit: how small changes can make a big difference* . Penguin books.

Harari, Y. N. (2015). *Sapiens: A Brief History of Humankind.*

Harford, T. (6 de May de 2022). What nudge theory got wrong . *Financial Times*.

Harp, D. (2019). *Gender in the 2016 US Presidential Election: Trump, Clinton and Media Discourse.* New York: Routledge.

Heintz, C. (15 de November de 2016). *Cognitionculture.net.* Obtenido de http://cognitionandculture.net/blogs/christophe-heintz/does-prospect-theory-explain-trump-and-brexit-votes/

Howard, P., & Kollanyi, B. (2016). Bots, #StrongerIn, and #Brexit: Computational Propaganda during the UK-EU Referendum. *COMPROP*.

John, P. (2018). *How far to nudge?* London: Edward Elgar Publishing.

Johnson, D., & Brown, L. (2018). *Campaigning for president 2016.* New York: Routledge.

Kahneman, D. (2012). *Thinking Fast and Slow.* Farrar, Straus and Giroux.

Kahneman, D. (2013). *Thinking, Fast and Slow.* New York: Farrar, Straus and Giroux.

Kaiser, M., & Bernauer, M. (2020). The Power of Green Defaults: The Impact of Regional Variation of Opt-Out Tariffs on Green Energy Demand in Germany. *Ecological Economics 174*.

Kanbur, R., & Pirttilä, J. (September de 2014). Lessons from behavioural economics for policy-making. *UNU-WIDER Policy Brief*.

Kanev, D. (2017). Why Trump won the elections - in view of the prospect theory . 12-25.

Kapeliushnikov, R. (2015). Behavioral economics and the 'new' paternalism. *Russian Journal of Economics* , 81-107.

Kaufman, E. (7 de July de 2016). *It´s not the economy, stupiud: Brexit as a story of personal values*. Obtenido de lse.ac.uk: https://blogs.lse.ac.uk/politicsandpolicy/personal-values-brexit-vote/

Klein, E. (21 de February de 2016). Donald Trump's rise is a scary moment in America. (VOX, Entrevistador)

Lab, T. D. (2020). *decisionlab.com*. Obtenido de https://thedecisionlab.com/biases/loss-aversion/

Liptak, A. (18 de March de 2018). Cambridge Analytica's use of Facebook data was a 'grossly unethical experiment'. *The Verge* .

Logan, G. (1980). Attention and automaticity in the Stroop and priming tasks: Theory and data. Cognitive Psychology,. 523 - 553.

Low, D. (2012). *Behavioral Economics and Policy Design* . Singapore: Civil Service College Singapore.

Mallard, G. (2018). *Bounded Rationality and behavioral economics* . Routledge.

Mance, H. (2016). Britain has had enough of experts, says Gove. *Financial Times*.

May, D., & Arancibia, S. (2021). Understanding UK farmers´Brexit voting decision: A behavioural approach . *Journal of Rural Studies* , 281 - 293.

Mills, S. (2020). Personalized Nudges . *Cambridge University Press*.

Movement, E. (2017). *The consequences of a British exit from the European Union.* Brussels: europeanmovement.eu.

Mullainathan, S. (2000, October). *www.nber.org/papers.* Retrieved from https://www.nber.org/system/files/working_papers/w7948/w7948.pdf

Nagatsu, M. (2015). History of Behavioral Bconomics. En J. Wright, *International Encyclopedia of the Social and Behavioral Sciences* (págs. 443-449). Elsevier.

O´Toole, F. (2016). Brexit is being driven by English nationalism. And it will end in self-rule. *The Guradina* .

Parrish, S. (2016). *fs.blog*. Obtenido de https://fs.blog/availability-bias-cognitive-distortion/

Parrish, S. (2020). *fs.blog*. Obtenido de https://fs.blog/bias-conjunction-fallacy/

Quattrone, G., & Tversky, A. (1988). Contrasting rational and psychological analyses of political choice . *The American Political Science Review*, 719 - 736.

Remnick, D. (9 de November de 2016). An American Tragedy. *The New Yorker*.

Reyes, L. (4 de November de 2020). Former Trump campaign insider on 'Project Alamo' speaks out. (Channel4News, Entrevistador)

Rosefielde, S. (2017). *Trump´s Populist America.* New Jersey: World Scientific Publishing Co.

Santos, M. J. (2018). Analysing the Trump and Brexit voters . *Euromed 10th edition*.

Sears, D., & Funk, C. (1990). The limited effect of economic self-interest on the political attitudes of the mass public . *The Journal of Behavioral Economics Vol.19*, 241 - 271.

Solek, A. (2014). Behavioural economics approaches to public policy. *Journal of International Study Vol.7* , 33-45.

Staff, P. (26 de 11 de 2019). *harvard.edu.* Obtenido de https://www.pon.harvard.edu/daily/negotiation-skills-daily/the-drawbacks-of-goals/

Study, B. E. (7 de November de 2016). *https://www.britishelectionstudy.com*. Obtenido de https://www.britishelectionstudy.com/bes-findings/what-mattered-most-to-you-when-deciding-how-to-vote-in-the-eu-referendum/#.YkjFJi2w0_U

Sunstein, C. (30 de March de 2012). *obamawhitehouse.archives.gov*. Obtenido de https://obamawhitehouse.archives.gov/blog/2012/03/30/informing-consumers-through-smart-disclosure

Sunstein, C. (2016). *The Ethics of Influence: Governement in the Age of Behavioral Science* . Cambridge University Press.

Sunstein, C. R. (2016). *The Ethics of Influence: Government in the Age of Behavioral Science* . Cambridge Studies in Economics, Choice and Society.

Sunstein, C., & Thaler, R. (2003). Libertarian Paternalism. *Economic Review*.

Swales, D., & Baker, S. (20 de September de 2016). The impact of Brexit on the UK agricultural workforce. *Horizon: AHDB*.

Thaler, R. (1987). The January Effect. *Economic Perspectives Vol.1*, 197 - 201.

Thaler, R. (20 de June de 2016). (MarketWatch, Entrevistador)

Thaler, R. (2016). *Misbehaving: the Making of Behavioral Economics.* W.W. Norton & Company.

Thaler, R. H. (2021). *Nudge: the Final Edition.* Penguin Books.

Thaler, R., & Sunstein, C. (2021). *Nudge: The Final Edition.* Penguin Books.

Trump, D. (9 de November de 2016). *time.com.* Obtenido de https://time.com/4564440/donald-trump-wins-2/

Tversky, A., & Kahneman , D. (1974). Judgment Under Uncertainty: Heuristics and Biases. *Science vol.185*, 1124 - 1131.

Tversky, A., & Kahneman , D. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica: Journal of the Econometric Society Vol.47*, 263-291.

UK, E. C. (25 de September de 2019). *electoralcommission.org.uk.* Obtenido de https://www.electoralcommission.org.uk/who-we-are-and-what-we-do/elections-and-referendums/past-elections-and-referendums/eu-referendum/results-and-turnout-eu-referendum

Wigmore, A. (4 de Octover de 2017). Leave. EU methods in relation to Cambridge Analytica. (D. E. Briant, Entrevistador)

Wilkinson, N. (2018). *An introduction to behavioral economics .* London : PALGRAVE.