WHY TRUMP WON THE ELECTIONS – IN VIEW OF THE PROSPECT THEORY

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Abstract: In view of the behavioral approach and the prospect theory, the article tries to explain why an alternative is sometimes chosen, which compared to other options, leads to a worse and more uncertain expected outcome. The example analyzed is D. Trump's victory in the US presidential elections in 2016. The reasons why he won lie in the candidate's right strategy which takes into account the voting behaviour, and especially in the proper communication with voters, in the reflection effect and loss aversion. The validity of the prospect theory is sought not only in the political choices but also by means of a number of own studies examining its basic assumptions in Bulgarian conditions. Examples are given of applications in other fields.

Keywords: prospect theory, reflection effect, loss aversion.
JEL: D03, D72.

Introduction

The article focuses on the paradoxical in terms of rationality public elections where voters prefer the candidate or the platform which are both more risky and offer less prosperity. The past 2016 will be remembered with several examples of similar surprising and seemingly irrational events. The British voted to leave the EU. The United States preferred Donald Trump to Hillary Clinton. In Bulgaria, Rumen Radev decisively defeated Tsetska Tsacheva, and somehow over 2.5 million Bulgarians decided to radically reform the electoral system, changing it into a majority election system. There are a lot more examples, but these are enough to detect recurring trends. People prefer an alternative which in their opinion gives them a worse and more uncertain outcome to the opportunity that gives them a safer and better expected outcome.

Most political analysts and the media explain this paradox with degradation of individuals and societies – unawareness, lack of education and

low intelligence of voters, dissemination of discriminatory tastes, xenophobia and racism, use of manipulative personal political marketing and 'big data', interference by foreign governments, hacking attacks, and others. Perhaps some of these factors really exist, although there is no convincing evidence of their ability to critically affect election outcomes.

The thesis defended in the article is that in order to solve the paradox there is no need to refer to human stupidity, ignoble passions and conspiracy theories. A more convincing explanation is given by the prospect theory and the reflection effect in particular.

The application of this increasingly popular theoretical tool to the issues related to public choice is not new. It dates back to 1988, when George Quattrone and Amos Tversky used it to explain why governments gain advantage in times of positive economic development, while the opposition gain advantage in cases of difficulties. (Quattrone & Tversky, 1988). An interesting note on the issue by Christoph Heintz can be seen in the blog of the Vienna International Cognition and Culture Institute (ICCI) after the announcement of the US election results (Heintz, 2016 (Quattrone & Tversky, 1988).

The article aims to adapt and further develop these ideas. First, empirical evidence of the reflection effect will be presented by means of several own studies. Second, this evidence will be applied to explain the outcomes of the 2016 elections in the United States. Finally, examples will be given of other potential issues that can be successfully resolved by the prospect theory and the reflection effect.

Theoretical prerequisites

The 'reflection effect' consists in the different attitude towards risk in cases of gains and losses (Shermer, 2010, 134-135). A classic proof of the effect was given by an experiment made by Daniel Kahneman and Amos Tversky in 1981 with students from Stanford University and the University of British Columbia (Kahneman & Tversky, 1984). They had to make a choice out of two scenarios. The total number of respondents for each scenario is marked N and the percentage of those who chose each option is given in brackets.

Imagine you work for a disease control center. There is an unusual Asian disease which is expected to kill 600 people if no action is taken. You have to choose between two programmes aiming to combat the disease. The costs for both programmes are the same. You can only choose one programme due to resource constraints. Which programme would you choose?

Scenario 1 [N=152]:

Programme A: You will save 200 people. (72%)

Programme B: With a 1/3 probability you will save all 600 people while with a probability of two thirds you will not save anyone. (28%)

In the first scenario, the reference point is that 600 people will die of the disease if no action is taken. The outcomes are framed as two possible gains, measured by the number of the saved. Programme A offers a certain outcome. Programme B – a probable, although with the same expected value as the certain programme: 1/3*600 + 2/3*0 = 200. Participants in the experiment definitely preferred the certain perspective, which means that **they made a risk-averse choice in a case involving positive prospects.**

The other respondents were given a different formulation of the alternative programmes:

Scenario 2 [N=155]:

Programme C: 400 people will die. (22%)

Programme D: With a 1/3 probability no one will die, while with a probability of two thirds 600 people will die. (78%)

In the second scenario, prospects are framed as losses measured by the number of people who will die of the disease. With programme 'C', the loss is certain – 400 people will die. With programme 'D' it is probable, although with the same expected value as with the certain programme: 2/3*0 + 1/3*600 = 400. The respondents definitely preferred the risk perspective, which means that **they made a risk-seeking choice in a case involving negative prospects**.

Both cases are practically identical. The only difference between them is that in the first case prospects are described by the number of saved lives while in the second, by the number of lost lives. This change in formulation, however, causes a reversal of risk preference: from risk aversion the attitude changes to risk seeking. Reversing the attitude to risk when changing the description of risk options contradicts the assumptions of the neoclassical choice theory because it means that preferences are not double-compatible.

The Asian disease experiment was subsequently repeated in other countries, each time obtaining the same results. In 2016, the experiment was also carried out in Bulgaria with students from Nikola Vaptsarov Naval Academy. 480 students responded to the first scenario, 122 students to the second one. The obtained results did not differ. The certain programme 'A' with the 'winning' scenario received support of 63% and the risk programme 'D' with the 'losing' scenario received support of 70%.

To further verify and clarify the reflection effect, we also conducted another standard experiment including questions of an economic nature with

the same group. 480 students from Nikola Vaptsarov Naval Academy were asked the following questions:

Which would you prefer?

Scenario 1.

A – Certain profit of 475 BGN.

B – A probability of 25% to earn 2000 BGN and a probability of 75% to earn nothing.

Scenario 2.

C – Certain loss of 725 BGN.

D – A probability of 75% to lose 1000 BGN and a probability of 25% to lose nothing.

Although in Scenario 1 the expected value of risk return 'B' is higher than the certain profit 'A', 70% of the respondents prefer the certain gains. With profits, respondents prefer not to risk. However, with the same respondents, risk aversion changes into risk seeking when losses are expected. In Scenario 2, 63% of the respondents choose to risk, i.e. the reflection effect is evident.

The asymmetric attitude towards risk in the reflection effect can be easily explained by another asymmetry of human judgments – **the asymmetric attitude towards losses and gains** expressed in a **stronger sensitivity to losses than to profits**. This emotional deformation is known as **'loss aversion'** (Kahneman & Tversky, 1979); (Tversky & Kahneman, 1991).

Long ago, Adam Smith drew attention to the tendency to loss aversion. In his first major work 'Theory of Moral Sentiments', he pointed out that we suffer more when we fall from a better to a worse situation, than we ever enjoy when we rise from a worse to a better (Smith, 1759). Sigmund Freud also argued that we seek to avoid pain more than to find pleasure.

This points to perhaps the most important emotional distortion of behaviour, which is completely ignored by traditional economy: we prefer not to lose to the option to win. Contrary to the principles of rationality, **the hedonic impact of loss is more significant than the hedonic impact of gains of the same value**. Hence, there is one step to the explanation of the reflection effect: If loss aversion is more valuable than gains of the same value, then people will tend to risk when they expect losses, and will avoid risk when they expect gains.

For instance, a symmetric bet which gives a ½ probability of gaining a sum and a ½ probability of losing the same amount is unwanted for most. The dissatisfaction of losing a given amount with a probability of ½ is greater than the pleasure of the equal profit of the same amount. Expressed by the utility function, $U(-g) > -U(g)$, for each value of g. In order to accept such a bet, the

amount that can be gained should include a risk premium and be significantly greater than the potential loss.

Loss aversion can be determined and even measured by a simple experiment. Imagine a bet: you win X BGN if you toss the heads, and you lose 100 BGN if you toss the tails. How much should X be to agree to make the bet? For most people the answer is about 225 BGN i.e. the prospect of winning 225 BGN is equal to the prospect of losing 100 BGN (Kahneman, 2012). This means that loss hurts 2,25 times more strongly than profit is enjoyed. A close average amount of 196 BGN was also determined in an own survey conducted in 2015 with the participation of 254 students from Nikola Vaptsarov Naval Academy. These results (as well as the research results obtained in many other places) make it possible to define the following practical rule: **the likelihood of a loss is almost twice as stronger argument as the probability of profit of the same value, and if an activity can lead to a loss, the same will be worth only if it can give at least twice as much profit.**

The fear of loss and asymmetric treatment of losses and gains may well lead to **inconsistent decisions depending on whether the solutions are framed as profits or losses**. In the identical scenarios presented earlier, the change of formulation causes a significant proportion of participants to change their choice. A great number of other experiments substantiate this result (De Martino, Kumaran, Seymour, & Dolan, 2006).

The consequence is that with appropriate 'framing', the attitude to risk and the prospects of choice can change significantly. The way to achieve this is by **choosing a suitable reference point of choice**. To clarify, let us imagine a middle-aged man having 400,000 BGN. According to the standard economic interpretation, utility functions *U=U(X)*, which measure individual happiness, are positive towards the X results and its utility should be positive. In fact, this is not certain. The reason is that **perception depends on the reference point**. If this is how much money people in his social circle have, and for example, they have an average of one million, he will have the feeling that he is at a loss. If the important thing is that his fortune was estimated at 2 m a year ago, he would probably not be happy either. Unless he had the expectation that his wealth would vanish completely during that year.

The example demonstrates that it is more proper **to take into account relative, rather than absolute outcomes.** The easiest way to do this is to select a reference point *'R'* towards which to measure the *'X'* results. If the reference point is zero, there will be no difference to the standard economic interpretation. However, if the reference point is different, the utility estimate will be different. At first glance, the reference point does not radically change the traditional economic model, since it adds only one variable – the reference

point *'R'*. However, this is not the case. The change is radical due to the fact that **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.** The position of the reference point and the corresponding interpretation of the outcomes in the form of profits or losses may vary, depending on the context of choosing and framing the prospects suggested (as it is with the Asian disease) or on the change in the expectations of decision makers (the 'hedonic adaptation' phenomenon).

For instance, a reference point may be the status quo, i.e. the current state, the past welfare or consumption, the expectations, some social point of reference such as the income of others or the change of own income towards the change of the income of others, etc. In the example, the utility function will be of the type *U=U(X-R)*, and if wealth is assumed to be the reference point a year ago, the utility will be *U(-1.6 m BGN)*; if the wealth of others is assumed, it will be *U(-0.6 m)*; and if the expectations are assumed, it will be positive – *U(0.4 m BGN)*. Depending on the choice of a reference point, estimates of the utility would be heterogeneous and sometimes incompatible.

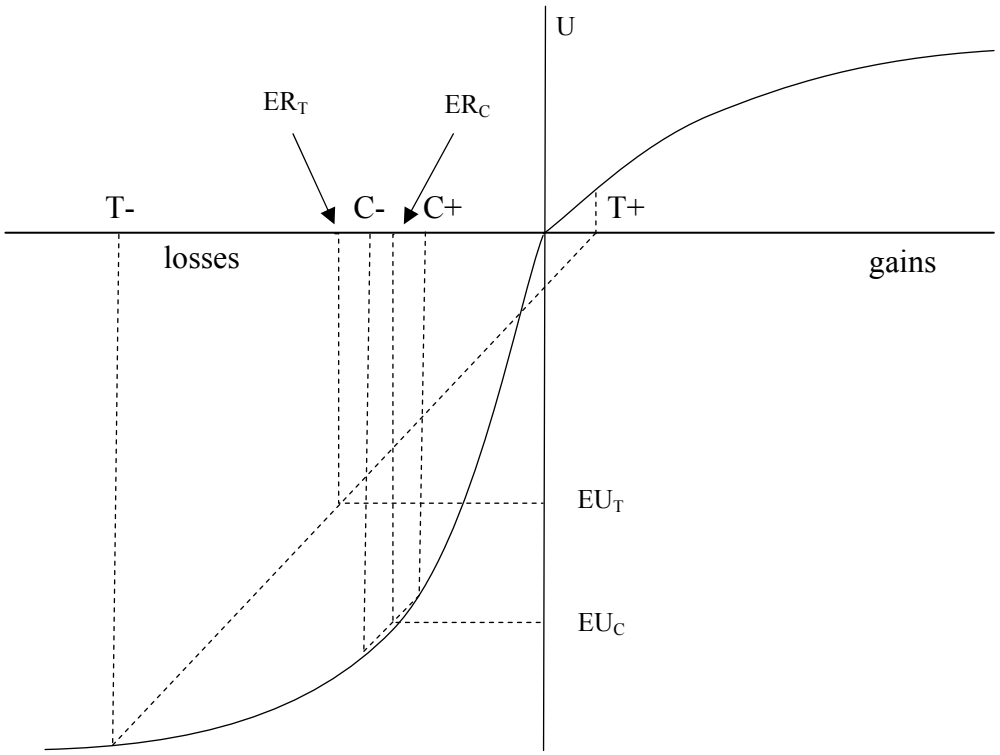
When we combine ideas about the different attitudes to risk with profits and gains, loss aversion and the dependence of the estimates on the choice of a reference point with decreasing marginal utility, we come to the basic theoretical instrument of the behavioral economy – the '**prospect theory**' (Kahneman & Tversky, 1979).

Unlike the utility function of the traditional for the economic analyses expected utility theory, which measures utility as a function of absolute wealth and is concave, the one of the prospect theory has an S-shape (see Figure 1) and the following characteristics: 1) It measures losses and benefits towards a reference point; 2) It is concave in cases of benefits (above the reference point) and convex in cases of a loss (below the reference point). This is due to the decreasing marginal utility and the reflection effect. 3) In the reference point it is asymmetrical and bending: the curve is sloping in cases of gains and it is steeper in cases of a loss. This is due to the role of the reference value and loss aversion.

The reflection effect in the battle for votes

The outcomes in the case of the political struggle between Clinton and Trump are shown in Figure 1. With some corrections, the presentation repeats the one we can see in Christoph Heintz's note (Heintz, 2016).

Figure 1. **Why did Trump win?**



According to most analysts and voters, Clinton is both the lesser 'evil' and the less risky choice. The thing, then, that brings Trump's victory can be explained by pursuing two strategies aiming at the first phase of the selection process – framing.[1]

Trump's **first strategy** is to create a sense of dissatisfaction with the status quo and to **frame the political vote as a choice in conditions of uncertainty and probable loss of prosperity**. Focusing on topics such as "Take Back Control", "Make America Strong Again", "Recover Jobs" draws the attention on today's losses towards past positions, and establishes as a reference point a previous state towards which the present and probably the future state of affairs will be a loss.

Towards this reference point, most voters expect both Clinton and Trump's government to lead to a loss. With Clinton, because she tends to

[1] The prospect theory distinguishes two phases in the selection process: framing and valuation. During the framing phase, decision makers construct mental representations of actions, unforeseen circumstances, and consequences related to a decision. During the valuation phase, they weigh the utility (a term replaced by Kahneman and Tversky with 'value') of every prospect and choose accordingly.

continue the status quo, and the status quo is perceived as a loss. Trump also creates a sense of loss because his personal qualities, experience and political positions give rise to a strong doubt that he will cope with presidential duties. So American voters had to choose the lesser of two evils.

It is true that H. Clinton and her team made a lot of attempts to avoid this reference point and replace it with another one – "What the situation was before Barack Obama took the lead". However, they did not properly evaluate the behavioral reactions of the voters. Their messages were mind-centered, and statistics and facts about economic growth, unemployment, poverty and crime prevailed. Although it looks right, it is impractical. Most voters rarely think thoroughly when deciding who to vote for; they avoid analyzing political platforms, and ignore the logic and statistics they are attacked with by Clinton's headquarters. Clinton's approach requires a mental effort by the audience, and people are usually distancing themselves from anything that reminds them or requires making efforts. Paradoxically, when a simple and straightforward explanation is offered, people not only perceive it quickly and effortlessly, but they also like it more, and consider it more serious and worthwhile (Cialdini, 2016, p. 184).

Trump's messages were much more sensitive to human nature and to the fact established by Kahneman and Tversky that thinking is dual and predominantly automatic rather than rational (Tversky & Kahneman, 1974). This also applies to political elections. Research has shown that uninformed and viewing too much TV voters decide who to vote for on the basis of the direct impulses of the automatic system, which provides quick and intuitive assessments and is highly dependent on emotions. The attributes of competence, 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, are determinant for them (Kahneman, 2012).

In response to Clinton's appeal to the reflective systems of voters, Trump turns to automatic thinking – he draws attention to scandalous statements about women, veterans, Latin Americans and Muslims, and ironical remarks to his political opponents, thereby expanding his original marginal positions; he replaces the issues of debate with easier ones, activating stereotypical reactions (immigrants, minorities, jobs, power and control of the media and politicians); he offers emotionally charged arguments to help prevent avoiding loss by voters ("We lost control over Washington", "Illegal immigrants steal your jobs, while China and Mexico take your business", "You lost your security", "They took away our confidence in the future"); he triggers group mechanisms for identification and protection, opposing "me and you, together" to "them"; he offers cognitively easy schemes, and with reiterating his logically linked, simple and

clear messages he creates an 'illusion of understanding' and control; his decisions are urgent and do not offer alternative ("This is the last chance to regain your social and financial status").

The facts show that voters, even those who are well informed, vote not according to their personal beliefs on political issues but are guided by their social identity and party loyalty (Achen & Bartels, 2016). That is why Trump exploits to the full potential the party loyalty of the Republican Party's supporters along with adding messages directly addressing the groups who have lost part of their economic and social status in recent years (the unemployed and the white men who have jobs but without college education) and the electoral regions (the so-called 'rusty' states – Pennsylvania, Ohio, Michigan and Wisconsin). This activates the voters, important for his strategy, and suppresses the desire of those he does not care about, to vote.

Proper targeting of political messages at the groups of losers and offering them in an easy-to-see and perceive form are the keys to expanding Trump's political influence. A number of studies prove that messages which are better 'visible' to 'target groups' are probably the most important factor for the pre-suasion effect of each message (Cialdini, 2016). Whether messages are true or superficial and fake is irrelevant to their perception, because the most important thing for them to be approved by voters' minds is whether they are clearly exposed and perceived with cognitive ease. Visibility directs automatic attention, while cognitive ease creates a sense of truth and gains credibility[2] (Kahneman, 2012).

[2] To test the effect of cognitive ease, in an own study, conducted in 2015, we asked 254 students three questions that provoke cognitively easy, and yet in most cases, wrong answers. The three questions repeated with small modifications the formulations of Shane Frederick's Cognitive Reflection Test (Frederick, 2005). The first question was: *"A tennis racket and a can of balls (together) cost 110 BGN. The tennis racket alone costs 100 BGN more than the can of balls. How much do the can of balls cost?"*. Most participants (64.52%) chose the impulsive answer – 10 BGN. It is intuitive and yet wrong. An elementary check indicates that if the balls are 10 BGN and the rocket is 100 BGN more expensive, the total price would be 120, not 110 BGN. However, the cognitive ease of the answer prevents one from doubting it and doing this check. Therefore, only 31.76% of the participants, students at technical universities who do not have any problems with mathematics and yet have the time they need, indicated the correct answer – 5 BGN. A similar result was obtained with the second question: *"If it takes 5 minutes for 5 machines to manufacture 5 appliances, how long would it take for 100 machines to manufacture 100 appliances?"* The correct answer – 5 minutes – was only indicated by 29.80% of the participants. The majority – 54.94% – indicated the easy answer of 100 minutes. The third question was: *"In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half the lake?"* 41% of the respondents indicated the correct answer. A large number chose the impulsive answer – 24 days. However, that question was probably perceived by the participants as cognitively more difficult. Therefore, a higher percentage used their cognitive systems and indicated the correct

A number of sociological studies substantiated Trump's good communication strategy, but they also revealed that it was not enough to compensate for his weaknesses. They indicated that the expected outcome in case he governed would be worse than it was expected if Clinton governed the country. Returning to the model in Figure 1, the expected outcome with Clinton is marked as ER_C, and that with Trump as ER_T, $ER_C > ER_T$. That would make Trump unelectable. However, his **second strategy** started taking effect.

Compared to Clinton, he builds a more unpredictable image, making the **outcome of his government much less secure**. Attitudes towards Clinton's government are related to continuity and taking small risks. In the figure, the deviations from the expected outcome in case she governs, the ER_C is between C- and C+, and those for Trump's government fluctuate much more around the expected ER_T result – from T- and T+. Figuratively speaking, they move from destroying everything to being able to honour his promises to 'revive' America.

For the purposes of our analysis, it is irrelevant whether Trump's 'risky' image is deliberately built or not. What is important is that due to the reflection effect and the tendency to risk when anticipating a loss, the stronger fluctuation around the expected outcome creates an advantage and a condition that the expected utility of his government EU_T proves to be higher than the expected utility of Clinton's government EU_C (see Figure 1). When voters anticipate a loss, the argument "I will ensure stability and predictability" works against the candidate and invalidates their "I know more and I can more" messages even when the latter are perceived as credible. An example for this is not only Hillary Clinton's unsuccessful campaign in the US, but also Tsetska Tsacheva's campaign in Bulgaria. Similarly, the UK supporters of Britain being part of the EU were wrong in insisting that the exit hides greater risks. **When people are not satisfied with the prospects, uncertainty is an advantage, not a disadvantage.**

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answer, compared to the previous two questions. The results are not surprising. In the study, to all the three questions, 29.9% indicated the wrong answer, while in the original Frederick study, involving 3428 students – 33%. At least one wrong answer was given by 85.1% of the surveyed students in our own study and 83% of the students in the Frederick study. Obviously, even if people understand mathematics and logic enough, and although they can solve the problem in general, they rarely use their knowledge. They tend to give the first answer that comes to their mind and do not question this answer if it is obtained with cognitive ease.

Conclusion

The analysis demonstrates that it is entirely rational for the majority to make a choice leading to an expected worse and more uncertain outcome than its alternatives. This is not a consequence of information problems, voters' educational and intellectual deficits or manipulations, but a natural product of the reflection effect. The reason why in times of crisis voters often support radical politicies and politicians is that they try to avoid losses and make disproportionate efforts to re-establish their positions when they feel they are losing.

Support for the Brexit, the 'non-systematic' politicians of the Trump type, and even for the 'Islamic State' is a practical proof, while application of the analysis can also be found in questions such as why students cheat in exams and why those who have lost a positive perspective are more prone to risk and deviant behaviour.

Similar behavioral responses also imply conclusions about the methods by which the desired effect can be achieved. For instance, fear of deteriorated reputation and sanctions to be used as key motivators rather than enouragement (the power of sanctions will be similar to twice as considerable encouragement); taxation to use primarily taxes levied at the source rather than those to be paid subsequently; unemployment benefits to be initially higher than the established levels but to decrease over time, to arouse a feeling of higher losses and to encourage the unemployed to take risks and readily accept jobs offers; training to be based on mistakes rather than on good examples; marketing to focus on missed benefits rather than on benefits received ("you will lose ... if not ..." instead of "you will win ... if ..."); dietetics – on health damage from excess weight and the high risk of early death rather than on how better thinner people feel; the fight against smoking – on the harm to health rather than on reducing expenses.

One must be careful, of course, when using fear, because instead of convincing people it can lead to a denial of the problem. People have enough mechanisms to reduce anxiety if it is too much – over-optimism is triggered ("it will not happen to me") or refuge is found in self-deception ("by the time consequences occur, a solution will be found"). Therefore, it is always important to carefully filter out the facts about consequences and to expose them to their full extent along with proposing a particular solution formulated through practicable steps. Similar approach works well everywhere – from the fight against overweight and smoking (Blanton, Snyder, Strauts, & Larson, 2014) to counteracting climate change and global warming (Feinberg & Willer, 2011).

The reflection effect and loss aversion are also important in explaining a number of issues difficult for the traditional economic theory. They could be the main cause of the following: sellers and buyers find it difficult to reach an agreement and good deals are not signed (Knetsch, 1989); investors do not close down losing positions, even when they are aware of the little chances they have for improving them, and close down profitable positions too quickly due to the excessive fear that the market could change and they would lose (Odean, 1998) (Fisher, 2003); consumers are differently susceptible to price increases and decreases (Hardie, Johnson, & Fader, 1993); bad news on income does not affect consumption (Shea, 1995); credit card fees are included in prices (Thaler & Sunshine, 2014); potential losses of pre-received bonuses has a stronger impact than potential benefits of a bonus after obtaining the outcome (Fryer, Levitt, List, & Sadoff, 2012), etc.

When studying the above mentioned, as well as many other events, the prospect theory has significant comparative advantages over traditional approaches. Although it does not aim at explaining everything, it can successfully improve the understanding of human behaviour and allow for more accurate predictions and more effective impact policies and instruments (Camerer, Loewenstein, & Rabin, 2004).

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