Status quo bias in behavioral economics and its applications

Yuxinyang Xiong

University College London, London, UK

Abstract. The question of how individuals making decisions is of crucial interest in the field of economics and many other subjects. Evidences indicate that coming to the real-world decisions, many of people may tend to just stick with the default option instead of calculating the exact expected utility and making the most rational choices. In this paper, I will focus on this phenomenon and the psychological principles behind this. Results of empirical experiments and three specific applications including political elections, organ donations, school choices will be discussed.

Keywords: Status quo bias; Political elections; Organ Donors; Education.

1. Introduction

Tracing back to the 18th century, insights from human psychology can be already discovered in the classical approach to economics. For example, the psychological principles of individual behaviors found in Adam Smith's "The theory of moral sentiments" etc. Though, advent of the neoclassical approach and formulation of "expected utility" framework led to disappearance of psychological insights by the middle of the 20th century by assuming agents always make stable preferences and rational choices, massive empirical results (e.g., Allais& Ellsberg paradoxes) demonstrate that many of the assumptions of the EU frameworks are indeed unrealistic, heuristics used by people's brain in solving problems do make systematic biases.

Insights into behavioral economics and psychological plausibility thus seem essential, in reality, behavioral economics has now even become the mainstream of economics. In this essay, I will then focus on one of the biases lead by those psychological heuristics—the status quo bias. I used plenty of reliable experimental results and real-world applications to demonstrate the significant effects of status quo bias on people's decision-making process. The possible contribution of this paper is that it gives a new version of looking at this psychological problem. Instead of looking merely at theoretical explanations, the detailed real-world examples may help readers better understand the importance and applications of status quo framing. Inferences and possible mitigating methods will also be included.

2. Explanation and influence of status quo bias

In 1988, "status quo bias" was first introduced in an article written by William Samuelson and Richard Zeckhauser- "Status quo bias in decision-making". In their article, the existence of this bias is demonstrated through several empirical experiments. One of the most famous examples in this article is about inheriting a large amount of money and then selecting a wise investment decision among several options. Researchers found that participants in the neutral version (no previous experiments) will treat all the choices equally without tendentiousness while most participants in the status quo version (money was already invested in some specific fields before) will always stick with their status quo. Their preference to status quo will becomes greater when the number of choices increases. With many other decision-making experiments in this field, researchers conclude status quo bias as "an alternative became significantly more popular when it was designated as the status quo1. Also, the advantage of the status quo increases with the number of alternatives" [1].

Existence of status quo bias can be explained through several psychological principles. The first idea behind it is about the "prospect theory"—a combination of loss aversion and endowment effect. Loss aversion states that "the disutility of giving up an object is greater than the utility associated with acquiring it" while the endowment effect stated that "people often demand much more to give up an object than they would be willing to acquire it" [1]. Refer to figure1, these theories can be

shown by the greater slope of value function in the loss domain, namely, people will always experience more regret when they switching away from the original point than remaining unchanged. Neutral reference point is indeed crucial in people's decision process. Prospect theory alone however cannot always explain fully the existence of status quo bias, other factors like cognitive costs, sunk costs etc. are needed when there's no framing of gains or loss.

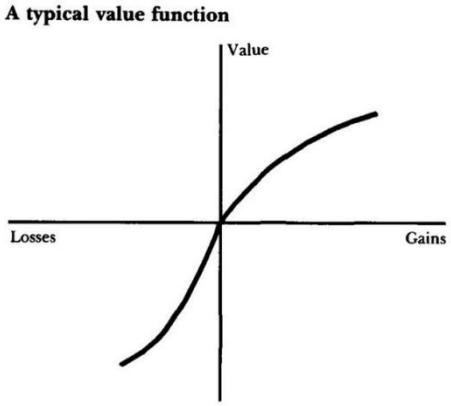


Figure 1. Value function
Source: Thaler, R. H and Sunstein, C.R. (2009) Nudge: Improving decisions about health, wealth, and happiness.

Status quo bias does play a very important role in many of the real-life decisions. It can first influence people's trivial everyday decisions. For example, customers may find that they're used to order exactly the same food from one restaurant even if some new items are added to the menu. Moreover, status quo bias can also have an impact on more significant social issues— education, health system, political election and so on. Facing with status quo bias, we need to amend our typical theories to fit the fact (notion of stable preference order must be abandoned in favor of a preference order that depends on the current reference level1) or using some common handling methods (e.g., simplify the process of making decisions, quantify the benefits of switching, assign cost to "doing nothing" etc.) to mitigate the bias. We will explain these issues further in the next [3] applications.

3. Applications

3.1 Political election: Incumbency advantage

Going to the application section, status quo bias can first influence political election heavily, generally speaking, incumbent will always have a huge political advantage over the other challengers. The experimental results in William Samuelson and Richard Zeckhauser's 1988 journal article "Status quo bias in decision making" demonstrated this argument clearly—when there're 2 candidates in an election contest, the candidate who is the incumbent officer would claim an election victory by a margin of 59% to 41%. When there're multiple candidates (assuming 4), the incumbency advantage becomes even larger with a margin to win of 38.5% to 20.5%. Many of the real-world data about this phenomenon can also be found. In the United Stated, it's striking that incumbent in the congressional elections enjoy an advantage with an electoral edge of 12% [2]. According to the federal figures, 91% of house incumbent and 84% of senate incumbent won the re-election in the 2018 congressional elections. Besides, 7 out of last 10 presidential elections with incumbent have resulted in successfully re-election. Status quo bias greatly influence UK's politics as well. Estimates state that in the UK, over half of the parliamentary seats are actually "safe seats" which means that a large percentage of the incumbents can indeed remain in their positions. Refer to Timothy Edward Hallam (2019), incumbency advantage is significant for nearly all parties including Conservatives, Labour, Liberal Democrats etc.

and this effect is strong enough to change the election results of around 10-15 seats.

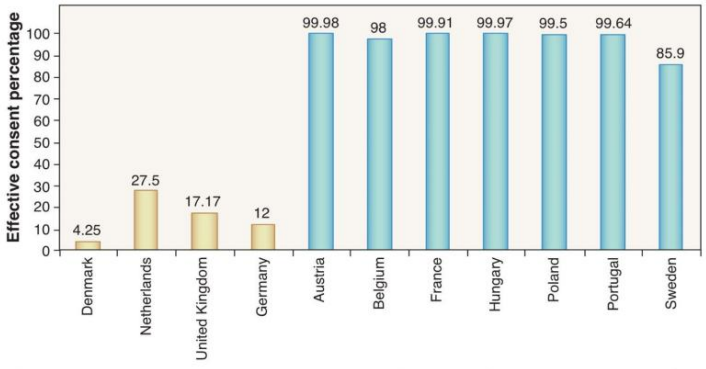
Incumbency advantage led by status quo bias may bring serious outcome in a nation's political system. Many people believe that this phenomenon will hinder democracy since the election process of deciding a government will be narrowed down to a smaller pool of candidates and the voice of some underrepresented groups or race will be just ignored. Besides, with older and less diverse government bodies, there will be less reforms or novel policies. However, a Korean research shows that incumbency may have little or even negative effects in some areas where democracy is relatively newly established. (Due to under-provision of public goods, corruption etc.)3. With a re-elected government, we can also see many of the benefits since government will become less short-sightedness, many of the long-run policies can be better launched. Whether status quo bias applied in the election contest is a good thing really depends on the size of its positive and negative effects.

John Theilmann and Allen Wilhite State some methods to mitigate incumbency advantages in their 1995 article "Congressional Turnover: Negating the Incumbency Advantage". The most representative methods government can use is "term limit"—to raise turnover rates and increase competition for seats or "financial limit"—limit on candidate funding in congressional campaign. Though both methods share quite a lot of political difficulties, we indeed see a decline of incumbency advantage in US these years in conjunction with these policies, increasing party loyalty, and straight-ticket voting etc. [4].

3.2 Health system: Organ donors

Status quo bias can also heavily influence people's health and countries' medical system. This can be reflected in the application of organ donation. Typically, there're three modes of making choice in the situation of organ donation. Opt-in (explicit consent) means that the default is not to be a donor, optout (presumed consent) means that the default is to be a donor while there's no default in the neutral situation. In Eric Johnson and Dan Goldstein's online experiment (2003), participants are divided to these 3 different groups. As we can see from the results, the default does matter a lot. Only 42% of the Opt-in participants consent to be donors while 82% of the Opt-out participants consent to do that. Surprisingly, 79% of the participants in the neutral version agreed to donate their organs5. Real world data shows that the effect of status quo on consent rate is also significant among countries. Less than

30% of the population will be willing to donate their organs in countries using Opt-in system like German, United Kingdom etc. while in the Opt-out system counties like Austria, Belgium etc., an average of 95% of the population will consent. Moreover, we also wonder that do increases in the consent rate actually lead to an increase in the real donation rates. The results from a regression model indeed show a strong conclusion— "When donation is the default, there's a 16.3% increase in donation" [5]. To sum up, a such small change in the default can save thousands of people's lives, status quo bias does play a very important role in the process of organ donation and human well-being.



Effective consent rates, by country. Explicit consent (opt-in, gold) and presumed consent (opt-out, blue).

Figure 2. Effective consent rates, by countries
Source: Johnson, E, J., Goldstein, D. (2003) Do default save lives? Science, 302(5649):1338

According to the data, as of Jan 2006, more than 90,000 Americans were on waiting lists for organ while around 60% on it still pass away since there're no proper organs. The divergence between demand and supply of organs is still increasing with a growth rate of 12% per year1. Several mitigating methods should now be used. Of course, the permission of a market in organs or barter exchange can help to boost organ donors, however, this is not a prevalent method since it violates the morality base line. Other methods opposed by governments including the encouragement of Opt-out system or the implementation of routine removal (compulsory donation) then seems necessary. Though routine removal cannot be used comprehensively by any state, the utilization of this in some specific organs like "corneas" does bring substantial positive effect. And although there's always political tension from libertarian parties criticizing the intervention of government on such personal issue, we believe that the benefit of doing this in fact greatly outweighs the loss. One real-world example of a wise mitigation method is the "Illinois First Person Consent registry (2006)" which helped to attract more than 2.3 million registered donors. The central idea of it is that the consent from donor's family will not be required when a person is going to consent1 .

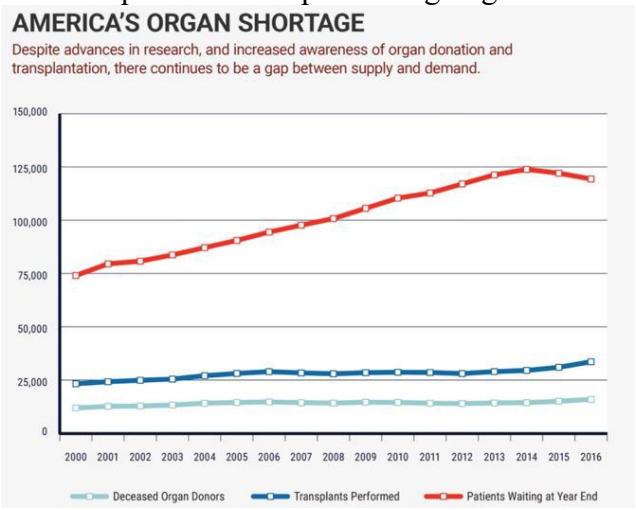


Figure 3. America's organ shortage
Source: —Organ Procurement and Transplantation Network (OPTN) (2016)

3-3. Education: School choices

The last application given in this essay is about education—the school choice. In American politics, "school choices" is now an intensely polarizing issue. The great libertarian economist Milton Friedman holds the view that introducing competition among schools is always the best way to improve children's education. However, another group of people question that—in real world without rational assumptions all hold, do more choices actually help when coming to schools? A real-world example of "No child left behind law in 2001" signed by president Bush demonstrated indeed weaken the argument of more choices1. This federal law was intending to raise the accountability of public schools through setting up standards of tests. According to the data given by Worcester, Massachusetts, 12/55 public schools were in the lists of "improvement is needed" for 2 consecutive years while 5/55 public schools were in that list for at least 3 consecutive years. In fact, 4,700 students (1/5 of the student population) in that summer had the right to transfer to different schools. However, only 1 student switched to other school and almost all the other students keep in their status quo after six months. Officials and school managers are surprised about this result, the validity of increasing choices to students comes into question.

As economists, we do believe that more choices and competition will be beneficial, however, with the existence of status quo bias in choosing school, we cannot try to increase quality of education by simply given more school choices. According to Richard, H, Thaler and Cass, R, Sunstein (2009), "The major problem and the principal concern here is that it's not echoing to make lots of choices

available and then hope parents choose wisely". We need to implement some other methods accompanied by increasing school choices to ensure our children's "right to good education". First, with better and simpler information, choices made by students and parents can be improved. The empirical experiment in Charlotte, North Carolina shows that when parents are given by a "fact sheet" of much simpler information, a large percentage of them will switch from their original school to better school. Besides, ministry of education and other government departments need to propaganda the importance of education school's influence on students' future development through media publicizing. "School system really need to put parents in a position to think through their decision carefully". Moreover, though it is quite difficult, if government can raise the average level of education quality and randomly assign students to schools, problems of status quo bias will be diminished.

4. Conclusion

To sum up, I introduce the concept of status quo bias and the three applications in this article. Researchers find that this bias does play an important role in many aspects of human's daily life, ranging from politics, to education, to medical system, etc. Validity of the assumption of "rational agents" is coming to be questioned. Amendments to Neoclassical economic theory is necessary and we need to pay more attention on how to better handle with this bias, what is the efficient mitigating methods.

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