# Interactive of Status Quo Bias and Sunk Costs from Behavioral Economics Perspective

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**Abstract.** As a core irrational decision-making phenomenon in behavioral economics, status quo bias profoundly affects individual and social decision-making. This paper explores the similarities and differences between status quo bias and sunk costs and their applications in real-life scenarios through case studies and experimental research. It is found that both are driven by loss aversion, but sunk cost emphasizes the constraints of historical inputs on current decision-making, while status quo bias is maintained by the anchoring effect of potential loss avoidance and default options. Based on the case studies of brand loyalty, luxury consumption and investment choice experiments of Apple users, this paper suggests that enterprises can optimize status quo bias through enhanced user stickiness design, while individuals need to reduce irrational decision-making through risk assessment and long-term perspective. The study further points out the limitations of sunk cost theory in explaining dynamic decision-making scenarios. The sunk cost theory, which aims to explain that people's decisions are interfered with by past inputs, does not focus on the causes of the interference and the changeability of the intensity of the interference. For example, the personal preferences of the decision maker, the complexity of the decision-making environment, etc. HOWEVER, the status quo bias theory of behavioral economics is more dynamic and can further explain why these status quo decisions arise.

**Keywords:** Status Quo Bias, Sunk Costs, Behavioral Economics, Loss Aversion, Decision Optimization.

## 1. Introduction

Traditional economics has long assumed of "fully rational human beings"; however, this paradigm has suffered many setbacks in explaining real-world decision-making. Herbert Simon proposed the theory of "limited rationality" in the 1950s, pointing out that human decision-making is limited by cognitive resources and information processing [1]. In 1979, Daniel Kahneman and Amos Tversky put forward the "prospect theory" to reveal the impact of loss aversion on decision-making, which became the cornerstone of behavioral economics and pointed directly to the core mechanism of status quo bias [2]. And in 1988, Samuelson and Zeckhauser first clearly defined status quo bias through the experiments of investment choice, proving that the default option has a significant impact on decision-making. bias, demonstrating the anchoring effect of default options on decision making [3].

Status quo bias, as a core irrational phenomenon in behavioral economics, profoundly shapes individual and social decision-making. At the individual level, consumers cling to established choices due to learning costs or identity, leading to inefficient resource allocation. At the marketing level, brands utilize status quo bias to achieve their business goals through ecological closure, or scarcity strategies to strengthen user stickiness.

This paper aims to answer the following questions: What are the limitations of sunk cost theory in explaining complex decisions? How do status quo bias and sunk costs interact through loss aversion mechanisms? Which status quo biases can be optimized by behavioral design? Which status quo biases have adaptive value?

## 2. Status Quo Bias Cases

### 2.1. Brand Loyalty for Apple Phones

#### 2.1.1. Apple's Case Description

Global Smartphone Market 2022 data shows that 85% of Apple users choose to continue buying the same brand when replacing their device [4]. Apple's iPhone user loyalty is regarded as a model in the field of consumer electronics, behind which is not only the advantage of product performance, but also stems from the dual mechanism of behavioral economics and psychology. Status Quo Bias is reflected in the deep dependence on the iOS ecosystem:

The Apple ecosystem is a powerful set of connected experiences built through the deep integration of hardware, software and services. It aims to provide users with a seamless, efficient and highly collaborative environment. Its core advantage lies in the seamless collaboration and data synchronization between devices. First, is the collaborative function of multi-device linkage: iPhone, iPad, Mac, Apple Watch, Air Pods and a series of other products and devices can be used to quickly transfer files by AirDrop and relay tasks using the Handoff function. For example, if a user, using an iPhone, takes photos, the Handoff function can quickly transfer those photos to an iPad or MacBook, which is convenient and fast for the user to edit. Second, Apple has unique service bundles such as iMessage and FaceTime. iMessage, among others, enhances users' dependence on the ecosystem due to its unique special effects for sending messages - once they switch to another system, they will not be able to use these fun texting effects or receive friends' special effects messages from their friends.

#### 2.1.2. Bias Analysis

Once a consumer buys an iPhone and starts using connected devices such as iCloud, Air Pods, Apple Watch, etc., the perceived cost of switching to Android increases significantly [5]. Such costs include not only the financial investment, for example, repurchase the data cable but also the cognitive burden of learning a new operating system and the psychological resistance to data migration-users' default view of "status quo" as a lower-risk option.

The nature of users' concerns about abandoning the Apple ecosystem stems from the loss aversion tendency in prospect theory [6]. Specifically, users perceive switching brands as a dual risk of "loss of existing convenience" and "weakening of social identity," while maintaining the status quo is perceived as a "safe strategy" to avoid potential losses."

### 2.2. Hermès Consumption

#### 2.2.1. Hermès's Case Description

Hermès has successfully built a unique user loyalty system through limited supply and allocation system. Consumers' decision-making mechanism for acquiring scarce goods, such as the platinum bag, which requires them to maintain a high level of consumption over a long period of time, can be attributed to the interaction of the following behavioral economics and social psychology factors, the sunk cost effect that reinforces continued investment

The core strategy of it is called "absolute scarcity", that is, the artificial creation of specific products "unavailability", the most classic bags: Birkin and Kylie bags and other core products using a strictly limited supply, stores all year round no spot. The pre-spend mechanism, which is interpreted as loyalty to a particular brand, allows consumers to be recognized as the "most suitable" owner of a core product only if they have consumed a large amount of the brand. The accumulation of spending is usually the result of the purchase of other goods, such as finished clothes, scarves, furniture items, etc. The amount of spending on Hermès' high-end products is also a major factor in the brand's success. In this process, consumers start with entry-level products such as silk scarves and perfumes and are gradually guided to higher-priced categories, forming a consumption ladder. In addition, high-level Hermès customers can customize rare leathers and colors, but have to wait several years, a move designed to turn "waiting time" into a test of brand loyalty.

### 2.2.2. Bias Analysis

In summary, the fact that consumers are trapped in the “behavioral cage” of Hermès can be attributed to the interaction of behavioral economics and social psychology factors that reinforce the sunk cost effect of continued investment:

According to Arkes & Blumer [7] individuals tend to justify prior decisions through continuous investment to avoid cognitive dissonance. Secondly, it is the closed-loop design of the brand strategy: Hermes locks consumers into the “input-reward” cycle through the combination of scarcity marketing and psychological ownership [8]. The allocation system not only increases short-term sales, but also maximizes long-term user stickiness through the dual mechanism of sunk costs and social pressure. Consumers are categorized into “occasional buyers”, “ordinary VIPs” and “top collectors”, with high-level customers enjoying privileges such as preferential purchasing rights and private preview sessions. In addition, high-level customers will have an exclusive sales advisor, SA, who holds the customer's purchasing record and quota allocation, and the customer needs to maintain a long-term relationship with SA in order to obtain information on rare products.

## 2.3. Kodak's Innovation Dilemma

### 2.3.1. Kodak’s Case Description

As the absolute dominant player in the film photography industry in the 20th century, Kodak's decline is a profound revelation of how the sunk cost fallacy and status quo bias at the organizational level combined to cause the company to miss the window of technological change. 1975, Kodak engineer Steven Sasson successfully developed the world's first prototype of a digital camera, which was supposed to usher in a new era of the imaging industry but was hidden away for 20 years due to a clash of interest with the core of the company. This invention, which was supposed to usher in a new era for the imaging industry, was deliberately kept under wraps for two decades because it conflicted with core company interests. When Kodak was finally forced to turn to the digital market in the early 2000s, Canon, Sony, and other latecomers had already built up a complete technological ecosystem, and Kodak ultimately filed for bankruptcy protection in 2012. This poor decision reveals the status quo bias at the organizational level - firms are resistant to change because they are overly reliant on established paths to success, and ultimately fall into the “innovator's dilemma” [9].

### 2.3.2. Bias Analysis

How does this case exemplify a combination of sunk costs and status quo bias? The main bias pathways can be categorized into two.

First, it was due to Kodak's huge investment in the film business, which created structural sunk costs that were difficult to part with. As of the 1990s, Kodak had more than 100 film plants and supporting chemical production lines around the world, with equipment that was so specialized that it could not be transformed to produce digital components. The cost of remodeling the film production site at its Rochester, USA headquarters alone was estimated at $5 billion (1996 market value).

Second, Kodak relied too heavily on established perceptions, resulting in a much greater willingness to maintain the status quo. Kodak's adoption of ROI ,return on investment, as a core assessment metric led business units to reject digital projects that required long-term investment. For example, in 1995, when the digital camera division applied for $100 million in start-up capital, it was rejected because “it would not be able to exceed film profitability within ten years,” while Fujifilm had already invested $320 million in digital R&D in the same year. At the same time, Kodak's executive team, mostly from the chemical engineering department, the formation of a “technology cartel” to defend the interests of film. The digital team, which advocated transformation, was marginalized, and decision-making became an irrational monopoly of power.

# 3. Theoretical Analyses

The formation and reinforcement of status quo bias can be attributed to the loss aversion theory in behavioral economics, the endowment effect, and the symbolic value interaction in social psychology, and its mechanism of action can be systematically analyzed through the three-dimensional framework of explicit cost, implicit cost, and social identity.

## 3.1. Synergistic Reinforcement of Loss Aversion and Psychological Ownership

Loss aversion, as the underlying logic of status quo bias, is further amplified by long-term usage behavior in brand loyalty scenarios. Consumers form psychological ownership of a particular brand through continuous use, i.e., they subjectively perceive the brand's function or trademark as a “self-extension” [10]. For example, Apple users have internalized the operating logic of iOS as their “default cognition” due to their long-term adaptation to the system, and any switching behavior requires cognitive reconstruction costs. This psychological bonding is intertwined with the sunk cost effect - users believe that “the time and effort invested cannot be recovered” [11], and thus consider maintaining the status quo as the optimal strategy to avoid wasted inputs and new learning costs, and to avoid “double losses”. “And the cost of new learning, the optimal strategy.

## 3.2. Explicit Versus Implicit Costs

Decision-making costs can be broken down into two categories: explicit and implicit:

Explicit cost refers to directly quantifiable resource inputs. Taking the Apple ecosystem as an example, if users switch to Android devices, they need to re-adapt to file transfer, cross-device collaboration, such as between laptops and cell phones, due to the loss of the original AirDrop function, and such costs will form a physical barrier.

Hidden costs: Social identity and emotional dependence. Apple “family bucket” users through the unified design language and brand identity (Apple Logo) to obtain a sense of belonging to the group, the use of its products has become a symbol of “self-confidence” and “technological elite” identity. The use of their products has become a symbol of “self-confidence” and “technological elite” [12]. Abandoning the brand may trigger the risk of weakening the social identity and exacerbate the tendency to maintain the status quo.

## 3.3. Social Identity and Scarcity

In the luxury sector, the mechanisms of status quo bias maintenance are further tied to social identity. Brands create artificial scarcity through limited supply and allocation systems [13], transforming goods into social status access credentials. Consumers are forced to keep consuming in order to maintain their “privileged” status and accumulate the allocation quota, forming a closed loop of “sunk cost-social status”. This process is in line with the definition of the Van Buren effect, which states that “the higher the price of a commodity and the more difficult it is to obtain, the more significant its symbolic value is, and the more consumers tend to consolidate their social capital by maintaining the status quo”.

For Kodak, the decision to innovate was a difficult one. As a global leader in film photography, Kodak's management viewed digital technology as a “sure loss” to film revenues and its potential gains as “probable gains”. Under these assumptions, Kodak was unwilling to relinquish its social position as the leader in film photography, and its organizational structure and culture were solidified around the film business. This inertia has caused the company to anchor its technology path as the “default option” [3], even when the external technology environment has changed in a disruptive way.

# 4. Behavioral Optimization: A Dual Perspective for Businesses and Individuals

To address the irrational stickiness of status quo bias, optimization paths need to be proposed at both the level of corporate strategy design and individual cognitive intervention.

### 4.1. How Companies Use Bias

Enterprises can turn status quo bias into sustainable competitive advantage through technological closure and symbolic value reinforcement: On the technological level, Apple raises the cost of ecological switching through exclusive features, such as iMessage effects and AirDrop without the need for third-party applications, i.e., it forces users to rely on the established ecosystem through a high-compatibility internal system with low external compatibility. In terms of brand loyalty, Hermes ritualizes the consumption behavior with an allotment system, so that consumers gradually internalize the brand identity in the process of investing time and money [14]. Scarcity is not only a marketing strategy, but also a core element of user self-identity.

### 4.2. How Individuals Break Through Prejudice

First, the basic principle of excluding sunk costs from decision-making should be followed: according to behavioral economics guidelines, decisions should focus on marginal costs and future benefits rather than historical inputs. For example, when considering whether to replace a cell phone, users should exclude the sunk costs of “having used Apple for three years” and focus on the functional gains of the new device.

Social Identity Unbundling: Through reflective consumption, such as “Does the brand define personal values?” Weakening the social dependency of brands. Research has shown that consumers who are able to distinguish between instrumental needs, such as product functionality, and expressive needs, such as identity, can significantly reduce the intensity of status quo bias [15].

## 5. Conclusion

Through the analysis of the three cases of Kodak, Apple products and Hermes, we can clearly see the dialectical relationship between traditional economics and behavioral economics. Traditional economics assumes that individuals are completely rational and that decisions are based only on the trade-off between future costs and benefits, but behavioral economics research shows that human decisions are often significantly influenced by psychological biases and situational factors. While sunk cost theory partially explains the irrationality of “staying in a failed project” (e.g., Kodak's excessive persistence in the film business), it struggles to cover the more complex behavioral patterns that underlie the status quo bias, as well as the development of other theories in behavioral economics.

Kodak's case shows that in the complex environment of technological iteration, the tendency of firms to resist change due to path dependence and sunk costs is amplified; while the stickiness of Apple users to the ecosystem reveals another possibility - when the status quo itself is assigned a high value, the decision to maintain the status quo is not necessarily ” irrational”, but may instead become a strategy to build competitive advantage. Hermès has shaped consumers' positive expectations of the future through scarcity and brand narratives, so that consumers tend to actively choose to “maintain” their loyalty to its products even in the face of high prices. This contrasts with the passive “loss aversion” in the traditional sunk cost theory, suggesting that positive emotions may drive people to embrace the present more positively rather than simply avoiding past losses.

Taken together, these three cases reveal the multidimensional nature of economic decision-making: sunk costs are only the theoretical basis for decision-making, while various interactions, such as the strength of status quo bias, future expectations, and so on, jointly shape human behavior.

## References

[1] Simon H A. A behavioral model of rational choice. The quarterly journal of economics, 1955: 99-118.

[2] Kahneman D, Tversky A. Prospect theory: An analysis of decision under risk. Handbook of the fundamentals of financial decision making: Part I. 2013: 99-127.

[3] Samuelson W, Zeckhauser R. Status quo bias in decision making. Journal of risk and uncertainty, 1988, 1: 7-59.

[4] Counterpoint Research, 2022.

[5] Polites G L, Karahanna E. Shackled to the status quo: The inhibiting effects of incumbent system habit, switching costs, and inertia on new system acceptance. MIS quarterly, 2012: 21-42.

[6] Kahneman D, Tversky A. Prospect theory: An analysis of decision under risk. Handbook of the fundamentals of financial decision making: Part I. 2013: 99-127.

[7] Arkes H R, Blumer C. The psychology of sunk cost. Organizational behavior and human decision processes, Vol. 35. 1985.

[8] Kapferer J N, Bastien V. The luxury strategy: Break the rules of marketing to build luxury brands. Kogan page publishers, 2012.

[9] Christensen C M, Raynor M, McDonald R. 17. Disruptive innovation. Harvard business review, 2015, 93(12): 44-53.

[10] Pierce, J. L., Kostova, T., & Dirks, K. T. Toward a Theory of Psychological Ownership in Organizations. Academy of Management Review, 2001, 26(2): 298–310.

[11] Arkes H R, Blumer C. The psychology of sunk cost. Organizational behavior and human decision processes, 1985, 35(1): 124-140.

[12] Belk R W. Possessions and the extended self. Journal of consumer research, 1988, 15(2): 139-168.

[13] Kapferer J N, Bastien V. The luxury strategy: Break the rules of marketing to build luxury brands. Kogan page publishers, 2012.

[14] Han Y J, Nunes J C, Drèze X. Signaling status with luxury goods: The role of brand prominence. Journal of marketing, 2010, 74(4): 15-30.

[15] Berger J, Heath C. Where consumers diverge from others: Identity signaling and product domains. Journal of consumer research, 2007, 34(2): 121-134.