Keeping Doors Open: The Effect of Unavailability on Incentives to Keep Options Viable

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Generel knowledge

Primární informace

Sekundární informace

Introduction

Imagine a student who is uncertain about whether he wants to become a computer programmer or a poet. If he wants to keep both options available, he has to keep taking classes in both majors. On the other hand, keeping both options open has its own cost. Double majoring implies that the student has to divide his time and effort and take classes in both fields-leading him to become proficient in both, but an expert in neither. Along similar lines, consider a person pursuing two potential relationships. As long as this romantic decision maker spends sufficient time with each of her potential romantic partners, she can keep them both as viable future relationships. However, once she starts spending more time with one and neglecting the other, the neglected party is likely to move on and become unavailable. Given the possible loss of the second romantic option, our enthusiastic dater might try to spend at least some of her time with her less-preferred partner, largely to maintain the viability of the relationship. However, much like the student with the double major, "keeping doors open" has its costs, drawing valuable time and energy away from the more promising relationship.

Double majoring and dating are just two examples of cases where one must invest extra time and effort to keep options available. The main questions asked here are whether the threat of future unavailability makes less-desirable options seem more appealing and whether this causes individuals to overinvest in these options. In other words, do doors that threaten to close appear more attractive than doors that remain open? And if so, will individuals overinvest just to keep them open?

From a naive, rational perspective, one could expect that the value of an option (having the ability to make a choice) would be based solely on the expected utility of the outcomes it represents. From a psychological perspective, however, there are two primary reasons why the subjective value of an option can exceed its expected value: a desire for flexibility and aversion to loss.

Initial evidence for the value of flexibility was proposed by Brehm (1956), who showed that people are willing to sacrifice consumption pleasure to increase freedom of choice (see also Simonson 1990, Gilbert and Ebert 2002). The desire for flexibility is not limited to humans; even pigeons exhibit it (Catania 1975). Such preference for flexibility implies that individuals can get utility

(pleasure) from simply "having the right to choose" (keeping options open) prior to making a final choice.

Evidence for aversion to loss dates back to Kahneman and Tversky (1979).1 The most relevant application of this aversion to loss is the case of endowment effect (Kahneman et al. 1990, 1991; Bar-Hillel and Neter 1996; Carmon and Ariely 2000), showing that ownership, or even deliberation (Carmon et al. 2003), can increase attachment and hence valuations. Support for aversion to loss was also provided in the context of risky choice, in particular the rejection of a pair of mixed gambles (Markowitz 1952, Williams 1966). Although options for items are very different from the items themselves-for example, the possibility of dating a person is a very different experience from actually dating that person-and although it is not possible to own an option in the same way it is to own an item, losing an option (opportunity loss) is closely related to the loss of an item. Namely, the loss of an option also implies the loss of the item. Based on this similarity in terms of loss and the large influence of loss on decision making (Tversky and Kahneman 1991), it can be argued that individuals will also experience the general aversion to loss and a pseudo-endowment effect for options. The general aversion to loss implies that the utility that individuals get from simply having the "right to choose" (keeping options open) is not a utility, but rather disutility or pain that can accompany the loss of options.

In summary, the current work asks two questions: First, whether the threat of unavailability increases the perceived value of an option; and second, if so, whether the higher valuation comes from a desire for flexibility or from aversion to loss. Four experiments were designed to provide initial answers to these questions.

Experiment 1: Effect of Decreased Availability

Results and Discussion

First, we compared how door-switching behavior varied across the two conditions. A comparison of the average number of room switches (door-clicks) revealed that switching was more likely to occur in the decreased-availability condition ($M = 16.70$) than in the constant-availability condition ($M = 7.47$; $t(156) = 7.82$, $p < 0.001$).

Next, we examined how the tendency to switch rooms in the two option-availability conditions changed as a function of the total number of clicks used (click number). Note that the click number is a measure of both the learning and the expected value of keeping options open, both reducing the motivation for switching. First, as the click numbers increase, respondents have more experience, better estimation of the distributions, and thus a reduced need to explore the different options. Second, the expected benefit of exploring different options is reduced with the click number because the time horizon during which this information can be used is reduced. To analyze the effect of the click number, clicks were divided into 10 blocks of 10 clicks each. An overall 2

(option-availability) by 10 (block) ANOVA revealed a significant main effect for option availability ($F(1, 1550) = 306.27$, $p < 0.0001$), a significant main effect for block ($F(9, 1550) = 5.61$, $p < 0.0001$), and a significant interaction effect between option availability and block ($F(9, 1550) = 3.82$, $p = 0.0001$). As can be seen in Figure 2, there was a decreased tendency to switch rooms later in the game. However, even in the last block of 10 clicks, more switching occurred in the decreased-availability condition ($M = 1.27$) than in the constant availability condition ($M = 0.75$; $F(1, 155) = 8.23$, $p = 0.0047$). More important, there were interesting differences in how the tendency to open other doors changed as a function of block in the two conditions, as indicated by the interaction. In particular, while respondents in the constant-availability condition switched the most during the first block, respondents in the decreased-availability condition switched the most during the second block-which was the first time they encountered a threat of option elimination.

It is worth contrasting the behavior of the respondents to an optimal strategy benchmark, which in this experiment was to select a single room and remain there during the entire game, which would have earned the highest possible payoff due to the implicit opportunity cost of 3¢ for each room switch (door-click). Relative to this standard, the respondents in Experiment 1 gave up 11% of their profits (8% in the constant-availability condition and 14% in the decreased-availability condition) as a consequence of switching rooms, which occurred on the average of 12 times per respondent. Note that in this experiment, respondents had to discover the underlying payment distribution based on experience, and therefore had to switch to learn about the doors-that is, payoffs. Accordingly, the reduction in payment cannot be taken as evidence of any irrational behavior. Experiment 2 more carefully examined normative expected behavior in such cases.

In summary, Experiment 1 showed a main effect for option availability. Decision makers' interests in alternative options seemed to increase when they were threatened by their unavailability.

Experiment 2: Effects of Knowledge on the Desire to Keep Doors Open

Results and Discussion

As in Experiment 1, the main dependent measure was the frequency of room switches across the different conditions, analyzed in a 2 (option-availability) by 3 (information) between-subjects ANOVA. The overall ANOVA (Figure 3a) revealed a main effect for option availability ($F(1, 99) = 56.66$, $p < 0.001$), replicating the main results of Experiment 1. The overall ANOVA also revealed an effect for information ($F(2, 99) = 6.99$, $p < 0.001$), showing that the no-prior-information conditions induced more switching than did the other two conditions ($F(1, 101) = 12.78$, $p < 0.001$), which were not different from each other ($F(1, 61) = 1.85$, $p = 0.18$). Finally, the analysis showed a nonsignificant interaction between option availability and information ($F(2, 99) = 1.32$, $p = 0.27$), demonstrating that the addition of information did not change the effect of option availability on switching behavior; that is, respondents with no prior information about the

distributions exhibited the same reaction to the threat of disappearance as respondents who had more information (either descriptive or practice) about these distributions. There were a few respondents who wanted to end the experiment as fast as possible, not switching rooms at all. These respondents increased the standard errors in general but most profoundly when the mean switching was higher, which is the decreased-availability condition.

While these results demonstrate that additional information does not reduce the effect of option availability, they do not rule out rational explanations for the observed effect. For example, had respondents needed 15 clicks per room to learn its payoff distribution, respondents in the decreased-availability conditions would have had to switch rooms at least six times, while respondents in the constant-availability conditions would have had to switch only twice. To examine more carefully such possible explanations, we constructed three other measures: pecking, elimination point, and click investment.

First, we examined pecking, the number of times that respondents switched to another room, clicked in that room once, and switched back (the result remains the same if we define pecking as switching to another room and switching back without clicking inside the room, or as a combined measure). From the perspective of gaining information about the payoffs, we could consider such pecking behavior as an irrational overinvestment in keeping options open because it provides little information (one more sample) at a high cost (three clicks-one for switching away, one for sampling the payoffs, and one for switching back). ANOVA analysis revealed that pecking behavior was more frequent in the decreased-availability condition ($M = 0.36$) than in the constant-availability condition ($M = 0.07$; $F(1, 99) = 5.97$, $p = 0.016$), suggesting that in the face of a threat that options could become unavailable, respondents showed "irrational" behavior more often. More important, the effect of information on pecking was not significant ($F(2, 99) = 0.682$, $p = 0.508$), nor was the interaction between option availability and information ($F(2, 99) = 0.435$, $p = 0.649$), suggesting that the different amounts of information had no effect on respondents' overinvestment in keeping options open.

In a second attempt to examine the irrational aspect of keeping doors open, the number of clicks from the start of the experiment in which each respondent stopped visiting each of the three rooms was computed and compared across the different conditions. For each respondent, the smallest number of the three was the first time he or she eliminated a door from his or her consideration-which we termed the elimination point. We reasoned that the comparison of this elimination point could demonstrate the amount of investment in learning across different conditions. If respondents overinvested in options to keep them, then their elimination point would be later (larger). An overall ANOVA (Figure 3b) revealed a main effect for option availability ($F(1, 99) = 44.67$, $p < 0.001$), a nonsignificant effect for information ($F(2, 99) = 0.322$, $p = 0.725$), and a significant interaction effect between option availability and information ($F(2, 99) = 4.76$, $p = 0.011$). These results indicate that although respondents felt that they did not need to revisit their least preferred room relatively early in the process (as indicated by the elimination point in the constant-

availability condition: M = 9.8), they kept the least preferred option viable for longer in the decreased-availability condition (M = 27.14). Moreover, the practice-information condition showed that the addition of practice information actually increased the difference between the constant-availability and decreased-availability conditions, as the interaction suggested (Figure 3b).

The third attempt to examine the irrational aspect of keeping doors open used the behavior of respondents in the constant-availability condition to create a normative standard from which to evaluate the behavior of the decreased-availability condition. This analysis assumed that clicks that took place early in the process are best viewed as an investment of search costs to accumulate enough information3 to determine which room to stay in. Based on this idea, we computed click investment, which is the number of clicks participants invested before they settled down in one of three doors. This measure captures the amount of information that respondents felt they need to determine which option to pursue. This analysis is particularly useful as a test of whether the increased number of switching in the decreased-availability condition was due to rational information search, as illustrated in the example with 6 and 2 switches above. The overall ANOVA revealed a main effect for option availability ($F(1, 99) = 64.99$, $p < 0.001$), showing that the decreasing availability leads the higher click investment in options (M = 10.07), compared with the constant-availability condition (M = 4.49). Moreover, the results also showed a nonsignificant effect of information ($F(2, 99) = 0.33$, $p = 0.72$), suggesting that respondents overinvest in information search in the face of the possibility that the option would become unavailable, irrespective of their informational state. These results are also in accord with the results of the later trials in Experiment 1 (Figure 2), showing that even when participants had more information (in the last block of 10 clicks), the effect of option availability was pronounced.

In summary, the results of Experiment 2 replicated Experiment 1 by showing that decreased availability increases the tendency to invest in keeping options open. More important, Experiment 2 demonstrates that this effect could not simply be attributed to information. Providing respondents with more experience (in the practice-information condition) or telling them explicitly about the distributions (in the descriptive-information condition) decreased overall switching behavior a bit, but it did not change the effect of decreased availability on switching (the difference between the two option-availability conditions). Combined with the results of Experiment 1, these findings suggest that there is an inherent tendency to keep options open, even when doing so is costly. Experiment 2 also provided initial evidence that people are overzealous in their preference for keeping options open beyond the level that could be attributed to investment in learning (based on the analyses of pecking, elimination point, and click investment).

Experiment 3: Effects of Cost Saliency on the Desire to Keep Options Open

Results and Discussion

An overall ANOVA of door-clicks indicated a significant main effect for option availability ($F(1, 82) = 13.41$, $p < 0.001$), a marginal effect for cost ($F(1, 82) = 3.48$, $p = 0.066$), and a nonsignificant interaction between option availability and cost ($F(1, 82) = 0.38$, $p = 0.539$). As can be seen in Figure 4, the effect of option availability replicated the previous experiments, showing that decreased availability caused more switching behavior ($M = 13.26$) than constant availability ($M = 5.36$). The effect of cost revealed that switching was more frequent, but only marginally so, in the implicit-cost condition ($M = 10.8$), compared with the explicit-cost condition ($M = 6.65$). Although the cost manipulation was marginally significant, the important aspect is that the magnitude of the cost effect ([lambda] = 3.48) was much lower than that of the option-availability effect ([lambda] = 13.41). Most important, the nonsignificant interaction between option availability and cost illustrates that the desire to keep options open persisted even when the cost was more explicit, and even when its magnitude was twice as large. Finally, the amount of experience in this experiment was higher (100 clicks instead of 50), which allowed us to look at trials in which respondents had more experience-the effects of availability and cost persisted throughout the 100 clicks.

In summary, Experiment 3 suggested that the tendency to keep options open persists when the cost is explicit and doubled. While making the cost explicit and twice as large increased the amount of attention respondents paid to switching, and thus slightly reduced it, this cost did not prevent them from having increased interests in alternatives when there was a threat that these alternatives will be eliminated.

Experiment 4: Aversion to Loss vs. Flexibility

Results and Discussion

There were five conditions in Experiment 4, two of which were a replication of the main option-availability manipulation (constant availability and decreased availability) and three of which were reactivation-related decreased-availability conditions with reappearance cost of 0¢, 6¢, and 30¢. An overall ANOVA of the switching behavior revealed a main effect for option availability ($F(4, 90) = 2.73$, $p = 0.034$).

First, we examined whether these results replicated the previous experiments. As can be seen in the left side of Figure 5, the main result was replicated-switching in the constant-availability condition ($M = 6.06$) was lower than switching in the decreased-availability condition ($M = 12.76$; $t(31) = 2.83$, $p < 0.01$). Next, we investigate the effect of using distributions of different means for the different rooms, comparing the constant and decreased-availability conditions in Experiment 4 with Experiment 1, where all options had the same expected value. Using a 2 (experiment: equal/unequal distributions) by 2 (option availability) between-subjects ANOVA, the results revealed an effect of availability ($F(1, 186) = 32.52$, $p < 0.0001$), confirming our previous finding of the effect of option availability. The results also showed a marginally significant effect of the experiment, where respondents switched more in Experiment 1 ($M = 12.11$) than in Experiment 4

(M = 9.52; F(1, 186) = 3.66, p = 0.057). Although marginally significant, this result is consistent with the idea that the different means provided the respondents with reasons to switch less. Furthermore, the interaction between experiment and option availability was not significant, demonstrating that unequal distributions did not change the effect of option availability on the desire to keep options open. To further support this idea, we replicated Experiment 1 (N = 35), with distributions averaging 2.5, 3, and 3.5. These results showed that respondents in the decreased-availability condition switched significantly more (M = 10.13) than respondents in the constant-availability condition (M = 4.26; t(33) = 3.17, p < 0.001).

With the knowledge that Experiment 4 replicated the previous experiments, we next examined which of the two theories (future flexibility of choices and aversion to loss) was better supported. Recall that we were interested in the relationship between the reactivation conditions to the constant- and decreased-availability conditions, and particularly in the comparison between these conditions and the 0¢ reactivation condition.

First, in comparing the reactivation conditions with the constant- and decreased-availability conditions, we asked whether the three reactivation conditions would be similar to the constant-availability condition, thus supporting the future flexibility explanation, or whether they would be similar to the decreased-availability condition, thereby supporting the aversion to loss explanation. As can be seen in Figure 5, the switching behaviors in the three reactivation conditions were not different from each other (M = 11.58; F(2, 55) = 0.74, p = 0.484), and they were also not statistically different from the decreased-availability condition (M = 12.76; F(1, 73) = 0.32, p = 0.5735). The three reactivation conditions, however, were significantly different than the constant-availability condition (M = 6.06; F(1, 72) = 9.34, p < 0.001). These results provide support for aversion to loss over future flexibility as the driving force underlying the desire to keep doors open.

Next, in comparing the 0¢ reactivation condition with the constant- and decreased-availability conditions, we asked whether the 0¢ reactivation condition would exhibit similar switching to the constant availability (to which it was logically equivalent) or to the decreased availability, which could be the case if aversion to loss is the force that causes individuals to switch more in the face of the threat of options unavailability. This result (Figure 5) indicates that the switching behavior in the 0¢ reactivation condition (M = 10.38) is more similar to that of the decreased-availability condition (t(40) = 0.72, p = 0.475) than that of the constant-availability condition (t(40) = 2.50, p = 0.016), suggesting that in our set-up, aversion to loss plays a larger role than flexibility.

These results can also provide a hint as to whether the effort to keeping doors open is driven by utility (or pleasure from having more options) or disutility (or pain from having options disappear). The higher switching in the reactivation conditions (in particular, the 0¢ reactivation condition) compared with the constant-availability condition suggests that it is the disutility of having options disappear that is the driving force.

It is also interesting to examine the impact of the magnitude of a reactivation fee on switching behavior. The lowest amount of switching occurred in the 0¢ reactivation condition (M = 10.38), followed by the 30¢ reactivation condition (M = 12.12) and the 6¢ reactivation condition (M = 13). But there was no statistical difference between these conditions ($F(2, 55) = 0.74$, $p = 0.484$). This lack of sensitivity to the magnitude of the cost can be taken as another indication that the tendency to keep doors open is not due to a rational cost-benefit analysis.

In sum, the different ways of looking at the results of Experiment 4 all point to the same conclusion-that the threat of availability of options is aversive, and hence, respondents are willing to invest to reduce the possible experience of loss. This effect can be termed aversion to loss, or disappearance aversion, similar in some ways to the general principle of loss aversion.

General Discussion

The current work examines a basic aspect of human behavior that extends from interpersonal relationships to abstract monetary options-valuations of options. The experiments attempted to shed some light on how individual decision makers evaluate options by examining how the threat of option unavailability influences the value of the options. Experiment 1 demonstrated that the possibility that the options will become unavailable in the future increases investments in them to keep them from disappearing. Experiment 2 tested whether this effect can be due to information, and, in addition, added three more fine-grained measures (pecking, click investment, and elimination point) to test whether the effort respondents expanded to maintain options open can be rationally explained; it cannot. Experiment 3 tested whether the distinction between implicit and explicit cost is the reason that our respondents overinvested in keeping doors open; it was not. Finally, Experiment 4 contrasted two psychological theories-flexibility and aversion to loss-as possible mechanisms for the overinvestment in keeping options open. The results from this experiment point to aversion to loss as being the more powerful of the two (at least in our set-up).

In a further test of aversion to loss, we created a new measure aiming at examining whether the room that respondents "gave up on" first (elimination point) was one for which they had more or less information about compared with the one they "gave up on" second (second elimination point). We argue that from an informational point of view, subjects should abandon a room they have more information about, because the amount of information indicates their certainty in the quality of the room. On the other hand, from an aversion to loss perspective, a room that had attracted more clicks might also have a higher attachment associated with it, thus leading to a lower tendency to abandon such a room. Analyzing this measure in Experiment 2 revealed that the respondents were four times more likely to first abandon rooms they have less information about, thus supporting the attachment and aversion to loss ideas. Moreover, the increased impact of availability on the practice-information condition in Experiment 2 strongly supported the aversion to loss explanation (Figure 3). The experience of actual feeling of the losses of the options during

the practice trials seemed to cause respondents to be even more resistant to experiencing more losses during the actual trial.

In summary, the experimental evidence presented suggests that individuals value options in a way that is different from the expected value of these options, and, in particular, that decision makers overvalue their options and are willing to overinvest to keep these options from disappearing. Based on the results of Experiment 4, we believe that the desirability of keeping options open is a kind of disutility from loss rather than utility from "having more options to choose from."

In a world where maintaining options has no cost, such a tendency would have been nonconsequential. However, we believe that in most day-to-day cases, there is substantial cost to keeping options open, which would lead to erroneous behavior. There are many situations in which decision makers encounter trade-offs between the future availability of options and their maintenance costs. We have already mentioned dating and choosing a major in college. Other examples include trade-offs between focusing on one's current work and looking for new employment elsewhere; whether to specialize in a way that suits one's current employer or instead to invest in skills that are valued by other potential employers. These results might also shed light on one of life's greater mysteries: Why do some people channel surf rather than, for example, enjoy a single movie? The answer might be the fear of losing other options.

These results might also be generalized to one-shot cases. For example, when buying a new computer, consumers face the dilemma of deciding whether to buy a system that suits their current needs or purchase an expandable system (e.g., more slots for cards, and more memory) that is more expensive but could better fit their uncertain future needs. In this case, the main source of the dilemma is the uncertainty as to whether future expansion will be needed, compared with the current additional cost. Our computer buyer is faced with a situation that is analogous to the door game one click before a door disappears. She can take a costly action at purchasing time to ensure that the expansion option remains available to her whether she subsequently decides to expand or not.

Other examples in which consumers face "disappearing" options are deciding whether to purchase an extended warranty when buying a new electronic product and deciding whether to buy pictures of one-self on whitewater rafting trips. In such cases, consumers are given the opportunity to act on the options (the warranty or the pictures), while realizing this is their only opportunity to take this action, and that not acting on the options is irreversible and may cause the "pain" of losing these options. We suspect that the effectiveness of such tactics is based on the option's nonavailability in the future, which would cause these options to be perceived more favorably and to be acted on more frequently.

There remain numerous unanswered questions. For example, what are the mechanisms that underlie the fear of losing options? What is the relationship between keeping options open and indecision, particularly when deciding means committing to one out of a multitude of other

possibilities (see also Amir 2004)? What is the impact of options' prospective lifetime and unavailability on their subjective value? Faced with a large number of options, would decision makers still value options (Iyengar and Lepper 2000)? What is the number of options people would like to keep? Finally, under what conditions will individuals want to actively eliminate options? We keep these research opportunities open for the future.

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2.

Catania, A. C. 1975. Freedom and knowledge: An experimental analysis of preference in pigeons. J. Experiment. Anal. Behavior 24 89-106.

A leap from the be-
havior of pigeons to conclusions about the
human condition would, of course, be presumptuous,
no matter how tempting it miglht
be to draw implications from pigeons' preferences
for freedom and knowledge. It may be
reasonable to assume, however, that organisms
preferring situations that include alternatives
and informative stimuli would be more likely
to survive and therefore would have a reproductive
advantage over organisms that did not
have such preferences. But this implies that
the preference for freedom and knowledge can

arise phylogenetically.

Kahneman, D., J. L. Knetsch, R. H. Thaler. 1991. The endowment effect, loss aversion, and status quo effect: Anomalies. J. Econom. Perspectives 5(Winter) 193-206.

These anomalies are a

manifestation of an asymmetry of value that Kahneman and Tversky (1984) call

toss aversion—the disutility of giving up an object is greater that the utility

associated with acquiring it.

Carmon, Z., D. Ariely. 2000. Focusing on the forgone: How value can appear so different to buyers and sellers. J. Consumer Res. 27(3) 360-370.

The gap between selling and buying prices is typically

described as a manifestation of loss aversion (cf. Bar-Hillel

and Neter 1996). Thus, when an item is a part of one's

endowment, giving it up is foreseen as a loss, whereas

passing up the opportunity to obtain the same item is

perceived as a forgone gain. According to the basic idea

of loss aversion—that losses have greater hedonic impact

than gains (Kahneman and Tversky 1979; Tversky and

Kahneman 1991)—letting go of an item is more painful

than not obtaining this same item. The gap between selling

and buying prices presumably reflects this difference in pain.

3. Prostudování původního zdroje mi pomohlo lépe pochopit pojmy, které autor článku často používá.

4.

Už se vám někdy stalo, že si při rozhodování mezi více možnostmi chcete udržet obě volby stále dostupné – nechávat si tzv. otevřené dveře? Například studujete dva obory na vysoké škole, protože vám bylo líto rozhodnout se jen pro jeden, který vás více zajímá a toho druhého se vzdát. V takovém případě musíte ale energii, kterou investujete do studia, rozdělit mezi dva obory, místo toho, abyste se plně ponořili do jedné oblasti a stali se v ní expertem.

Vědci Ariely a Shin se snažili vysvětlit podobné chování ve čtyřech experimentech, ve kterých respondenti hráli počítačovou hru. Hráči měli za úkol nasbírat co nejvíce bodů, za které byli odměněni po skončení experimentu skutečnými penězi. V každé hře měli k dispozici omezený počet kliknutí a mohli je využít tak, že klikali na různé věci po místnosti a tím získávali body, nebo kliknutím na dveře a projitím do jiné místnosti. Místnosti se lišili v počtu bodů, které v ní byly ukryty. Ukázalo se, že lidé více přecházeli z místnosti do místnosti při experimentální podmínce, ve které se nevyužívané dveře postupně zmenšovaly, až nakonec zmizeli úplně. Toto jednání vypadá jako iracionální vzhledem k omezenému počtu kliknutí, přesto tato tendence střídat jednotlivé místnosti zůstala i poté, když byli respondentům dány informace o různé hodnotě místností a o penalizaci za používání dveří. Vědci si to vysvětlují tím, že lidé mají averzi ke ztrátě některé možnosti, proto ve hře využívali reaktivizace zmizelých dveří i za cenu, že je to bude stát ztrátu bodů. Tímto pro nás nedosažitelné možnosti získávají větší hodnotu, než by měly původně.