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## Fate or fight: Exploring the hedonic costs of competition

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## ABSTRACT

As a resource-allocation method, free competition is generally considered more efficient and fairer than binding assignment, yet individuals' hedonic experiences in these different resource-allocation conditions are largely ignored. Using a minimalistic experimental simulation procedure, we compared participants' hedonic experiences between a free-competition condition (in which participants could equally and freely compete for the superior resource) and a binding-assignment condition (in which the superior and inferior resources were unequally and irreversibly assigned to different participants). We found that individuals in the binding-assignment condition – even the disadvantaged ones – were happier than those in the free-competition condition. We attributed the effect to individuals' peace of mind, and supported the peace-of-mind notion by identifying two moderators: ease of social comparison and enjoyability of the inferior resource. In sum, this research highlighted the hedonic aspects of resource allocation methods and identified when accepting one's fate is hedonically better than fighting for the best.

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## Introduction

Resources are scarce. How to allocate scarce resources across individuals in a society and in an organization is a topic that has attracted the attention of social scientists for ages, with important social and policy implications. Traditionally, alternative resource allocation methods are compared and evaluated chiefly in terms of their economic efficiency (e.g., Kirzner, 1973; Makowski & Ostroy, 2001; Marris & Mueller, 1980) and their perceived justice (e.g., Aryee, Chen, & Budhwar, 2004; Beugré, 2009; Fischbacher, Fong, & Fehr, 2009; Lind & Tyler, 1988; Mayer, Greenbaum, Kuenzi, & Shteynberg, 2009; Skitka & Crosby, 2003; Sondak & Tyler, 2007). For example, allocations based on free competition are often regarded as efficient (e.g., Mankiw, 1998) as well as fair (e.g., Lind & Tyler, 1988).

Setting aside efficiency and fairness, different resource allocation methods also engender different hedonic experiences for the individuals affected by the methods. Virtually everyone wants to be happy (e.g., Diener, 2000; Diener, Lucas, & Scollon, 2009; Hsee, Yang, Li, & Shen, 2009), and understanding how individuals feel with different resource allocation methods is undoubtedly important. Despite its apparent importance, this is an understudied topic. Although various authors have complained about the stress and anxiety induced by free competition (e.g., D'Souza, Strazdins, Lim, Broom, & Rodgers, 2003; Glickstein, 2002; Nahum-Shani & Bamberger, 2011; Pearsall, Ellis, & Stein, 2009; Schor, 1992;

Wilkinson, 2001), there is little evidence from controlled experiments to support or refute these claims.

Indeed, it is difficult to study the relationship between resource allocation methods and hedonic experiences in the real world, because the real world involves too many confounding variables. If we find employees in firms that determine compensations through a free competition procedure happier than employees in firms that adopt other procedures, we will not know for sure whether the difference is due to allocation methods, or due to other factors, such as productivity and output, leadership style, and organizational culture.

Instead of studying this issue in the real world, the current research seeks to achieve the following more modest objectives: to introduce a minimalistic paradigm that allows researchers to simulate resource allocation in a controlled laboratory setting, and to use the paradigm to compare individuals' hedonic experiences in different resource-allocation conditions.

There are many ways to allocate resources. The present research focuses on two stylized and contrary conditions: binding assignment and free competition. In the binding assignment condition, superior and inferior resources are unequally and irrevocably assigned to different individuals so that some can enjoy the superior resource without risk of losing it, whereas others can only access the inferior resource without hope of accessing the superior resource. In the free competition condition, each individual can compete equally for the superior resource and the competition is continuous unless one side is willing to quit. Later in this article we will explore several other resource allocation conditions.

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The binding assignment and the free competition conditions each mimic aspects of real world resource allocation systems. The binding assignment condition mimics societies in which some are born rich and some are born poor, and social mobility is prohibited, and societies in which government or organizations assign desirable and undesirable jobs to different individuals and the assignment is binding. In contrast, the free competition condition is more similar to societies in which individuals are born equal and everyone may become richer or poorer depending on how competitive he or she is, and societies in which everyone can compete equally for the best jobs yet winners of the best jobs may lose their jobs if they do not stay competitive. Of course, free competition and binding assignment are two extremes of a continuum; most real-life systems lie in between. Nevertheless, many modern societies are moving toward the direction of free competition: social status becomes more mobile, job switches become less difficult.

### The paradigm

Our paradigm is inspired by social scientists' approach to studying complex high-stakes real-world issues, such as altruism and fairness considerations, using minimalistic low-stakes simulations, such as the dictator game and the ultimatum game (Camerer, 2003). As such, our priority in designing the paradigm is controllability, rather than external validity.

Our paradigm consists of two between-participants conditions: fate (simulating binding assignment) and fight (simulating free competition). In the fate condition, two participants are run at a time. They are seated in isolated cubicles separated by a divider, each facing a computer. The "resources" are a video (e.g., an episode of *Tom and Jerry*) and a related book (e.g., a picture book of *Tom and Jerry*). The video is pretested to be more enjoyable than the book (the statistics will be reported in each study), so the video is the superior resource and the book the inferior resource. The experiment lasts a fixed period, for example, 10 min, during which only one participant can watch the video. Who can watch the video is randomly determined by the experimenter at the outset and cannot be changed. The book is available to both participants, with one copy on each participant's table. Either participant can read the book at any time. That the book is available to both participants but the video is not mimics many real-world situations in which inferior resources are available to everyone but superior resources are limited. Besides watching the video or reading the book, participants are not given the opportunities to do anything else.

The fight condition is similar to the fate condition except that the participants can compete equally for the video. At the beginning of the experiment, half of the video image is displayed on one participant's screen and the complementary half is displayed on the other's screen. Any time during the experiment either participant can drag more of the video image toward his/her screen, and thereby away from the other's screen, by pressing a dedicated key on the computer. If the other participant does not press his/her key in response, the first participant can then watch the video fully on his/her screen without having to press the key any further. However, if both participants press their dedicated keys simultaneously, then the video will move toward the participant who presses his/her key at a faster rate. As in the fate condition, each participant also has a copy of the book on the desk, and he/she is told that it is up to them whether to read the book or to compete for the video.

All of these procedures are described to the participants before the experiment starts so that each participant knows the existence of the other participant and the method of allocation. However, the participants cannot see or talk to one another.

At the end of the experiment, participants are asked to rate their overall feelings during the experiment on a scale ranging from 1 (*not happy at all*) to 7 (*very happy*). We did not measure

moment-to-moment experience in our experiments because doing so may have interfered with other tasks (e.g., competition). Even though retrospective evaluations are sometimes fallible (e.g., insensitive to duration), there is no reason to believe that they are systematically biased in the present paradigm.

We wish to mention two features of the paradigm that do not resemble most real-world scenarios. First, in real life, resources are usually money and materials, and can be stored and drawn upon to produce other things; in our paradigm, resources are books and videos, and are for immediate hedonic consumption. Second, in real life, free competition often generates greater total output than binding assignment; in our paradigm, competition is zero-sum in total output – that is, it neither allows the pair of participants as a whole to view more of the video or read more of the book compared to the binding assignment condition. Although these features do not reflect reality, they are nevertheless important, because they enable us to control confounding factors that typically exist in real life. The reason we use books and videos rather than money as resources is that books and videos can be consumed within the experiment, their utility can be measured within the experiment, and there is no need to consider extra-experimental costs and benefits. The reason we keep competition zero-sum is that we want to manipulate allocation methods while holding everything else constant. If we allowed competition to generate greater total output (e.g., a longer video), we would not know whether any differences we find in hedonic experience are due to differences in allocation method or differences in video length. In this regard, our paradigm again mimics simulations such as the dictator game and the ultimatum game. These games also involve unrealistic features, for example, players cannot find out each other's identities, but such features are important, because they allow researchers to rule out confounding motivations that typically exist in real life, such as reputation concerns.

### The fate-better-than-fight hypothesis

Here are our main research questions: In the context of the paradigm introduced above, who are happier – those in the fate condition or those in the fight condition? What about the disadvantaged members in the fate condition who are not allowed to watch the video – are they happier or less happy than those in the fight condition?

Before conducting our main experiments to address these questions, we ran a pilot study to explore people's lay intuitions. In the pilot study, we recruited 22 college students (11 men,  $M_{\text{age}} = 22.4$ ) from a large public university (similar to participants in the main experiments), described our paradigm to them, and asked them to predict whether the fate participants or the fight participants would be happier, and whether the disadvantaged fate participants or the fight participants would be happier. (We described the procedures without using the words "fate," "fight," or "disadvantaged".) Most of the respondents (73%) predicted that the fight participants would be happier than the fate participants,  $z = 2.16$ ,  $p = .05$ , compared with 50%. Even more respondents (82%) predicted that the fight participants would be happier than the disadvantaged fate participants,  $z = 3.00$ ,  $p < .01$ , compared with 50%.

Here we are not interested in why the lay respondents made the predictions as they did (for discussions on possible affective forecasting biases, see Dunn, Brackett, Ashton-James, Schneiderman, & Salovey, 2007; Wilson & Gilbert, 2005). We mention these lay intuitions merely to suggest that the participants in our research were not special; unlike individuals with certain religious or cultural backgrounds who might prefer fate, our participants apparently preferred free competition.

But contrary to these lay predictions, we predict that participants in the fate condition will on average be happier than

participants in the fight condition, and that even the disadvantaged participants in the fate condition will be happier than participants in the fight condition. We refer to these hypothesized effects as the “fate-better-than-fight” effects.

Of these two effects, the first one – that fate participants are on average happier than fight participants – can be explained normatively, because watching the video in its entirety may be disproportionately better than watching it in fragments, and more fate participants than fight participants can watch the video in its entirety.

In contrast, the second hypothesized effect – that even the disadvantaged fate participants are happier than the fight participants – cannot be explained normatively, and it is the main focus of this research. Normatively, the disadvantaged fate participants are in a worse situation than the fight participants, because both the disadvantaged fate participants and the fight participants can read the book if they wish to, yet only the fight participants have the opportunities to watch the video if they fight.

Then why do we hypothesize that the disadvantaged fate participants will be happier than the fight participants? We propose that it is because of peace of mind. For most consumption experiences to be enjoyable, one needs peace of mind, namely, continuous attention without disruptions or worries. Watching the video or reading the book without disruptions or worries is enjoyable, but watching the video or reading the book with disruptions or worries can be painful. In the fate condition, both the advantaged and the disadvantaged participants can enjoy what they have with peace of mind: The advantaged fate participants can enjoy the video without disruptions or worries of losing it. The disadvantaged fate participants, because they have no hope (i.e., no opportunity) to access the video and no need to decide whether to fight, will likely accept their fate, ignore the video, and enjoy the book. On the other hand, the fight participants lack such peace of mind. They are neither able to enjoy the video nor willing to enjoy the book. They are unable to enjoy the video, because their rivals are competing with them and they cannot watch the video with continuity; they are unwilling to enjoy the book, because the opportunity to watch the video tantalizes them and they are unwilling to give up the opportunity and devote their attention to the book instead.

Our peace-of-mind notion can be further classified into two types. One is peace due to lack of opportunity, namely, that the disadvantaged fate participants have no hope (i.e., no opportunity) to watch the video, so they make peace with their fate and derive joy from the book. We call this type of peace of mind *opportunity-free peace*. The other type is peace due to lack of choice, namely, that the disadvantaged fate participants do not have the option to watch the video and so they do not need to agonize over whether to fight for the video or to read the book as the fight participants need to. We call this type of peace of mind as *choice-free peace*.

The existing literature has documented much richer evidence for the choice-free-peace notion than for the opportunity-free-peace notion. A number of studies demonstrate that individuals can sometimes be happier without the freedom of making choices than with (e.g., Botti & Hsee, 2010; Botti & Iyengar, 2004; Botti & McGill, 2006, 2011; Botti, Orfali, & Iyengar, 2009; Gilbert & Ebert, 2002; Luce, Bettman, & Payne, 2001), and happier with fewer choice alternatives than with more choice alternatives (e.g., Botti & Iyengar, 2006; Iyengar & Lepper, 2000; Liberman & Ross, 2006; Schwartz, 2000; Schwartz et al., 2002). For example, Botti and Iyengar (2004) found that participants were happier with the chosen food item among several unattractive alternatives if the choice was made by others than if the choice was made by oneself. In a different and more important decision context, Botti et al. (2009) observed that parents with premature babies who were in need of a medical treatment experienced less psychological

distress if the treatment choice was made by others than if it was made by the parents themselves. In another line of research, Gilbert and Ebert (2002) found that photography students who had made a decision about which photos to keep for themselves reported greater satisfaction with the photos which they had decided to keep if they had no option to change their minds than if they had the option. This intriguing finding seems consistent with both the opportunity-free-peace and the choice-free-peace notions, but in our opinion it primarily supports the choice-free-peace notion, because the key manipulation in the study was whether the students had the choice (option) to change their prior decision.

Whereas evidence for choice-free peace is substantial, evidence for opportunity-free peace is scant. The best evidence for the latter is from a field study by Smith, Loewenstein, Jankovic, and Ubel (2009). The authors tracked patients with either reversible or irreversible colostomies over a six-month period, and found that those with irreversible colostomies reported greater life satisfaction and better quality of life over time. The findings suggest that lack of hopes of recovery prompted the patients to accept their fate and adapt to their situation.

The primary purpose of this research is to demonstrate the fate-better-than-fight effects rather than to distinguish between choice-free peace and opportunity-free peace. Nevertheless, we will provide evidence that opportunity-free peace is a more viable explanation for the fate-better-than-fight effects than choice-free peace. That is, even if the presence or absence of choice is held constant, presence or absence of an opportunity to access the superior resource (the video) alone can make a difference in hedonic experience.

## Study 1: demonstrating the fate-better-than-fight effects

### Method

Study 1 was designed to demonstrate the basic fate-better-than-fight effects. Forty students (25 men,  $M_{\text{age}} = 21.2$ -years) recruited from a large public university participated in this study for a nominal payment. The study used the fate-vs.-fight paradigm described earlier. The video used in the experiment was an 8-min episode of an animated movie, *Doraemon*. The book was a corresponding *Doraemon* picture book. To minimize interference between the participants, the audio track of the video was muted during the experiment, and subtitles were displayed on the video screen. In a pretest, we asked 25 respondents similar to the participants in the main experiment, to rate the enjoyment of the video and the enjoyment of the book on a 7-point scale ranging from 1 (*not enjoyable at all*) to 7 (*very enjoyable*), respectively; the video was rated more enjoyable,  $M_s = 5.20$  and  $4.16$ ,  $SD_s = 1.12$  and  $1.43$ , respectively,  $t(24) = 3.80$ ,  $p < .01$ , thus verifying that the video was a superior resource and the book an inferior resource.

### Results and discussions

The results, summarized in Fig. 1, were consistent with our predictions. The fate participants were on average happier than the fight participants,  $t(38) = 3.25$ ,  $p < .01$ . Critically, even the disadvantaged fate participants, who were not allowed to watch the video, were happier than the fight participants, who could at least see some of the video if they wanted to,  $t(28) = 2.21$ ,  $p < .05$ .

We should note in passing that among the fate participants, the advantaged participants were even happier than the disadvantaged fate participants, and this pattern held in the other studies as well, though the difference was not always significant. These results were neither surprising nor theoretically important for the current research. The advantaged fate participants were happier,

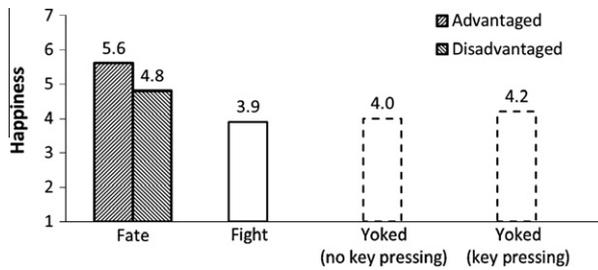


Fig. 1. Study 1 results, showing the basic fate-better-than-fight effects, and the similarity in happiness between the fight condition and the two yoked conditions.

presumably because the resource available to them (the video) was more enjoyable than the resource available to the disadvantaged participants (the book), and they were not always significantly happier, probably because there was some ceiling effect.

### Follow-up study: exploring underlying reasons

The most intriguing finding from Study 1 is that even the disadvantaged fate participants were happier than the fight participants. Why was that the case? There were three possible reasons. One was opportunity-free peace, namely, that the fate participants had no opportunities to watch the video and therefore accepted their fate and read the book instead. One was choice-free peace, namely, that the fate participants did not need to agonize about whether to fight for the video and therefore felt happier. The third possible reason was differential effort, namely, that the fate participants did not need to exert any effort (i.e., press the key) whereas the fight participants needed to exert effort to watch the video. Of the three explanations, the first two reflected the peace-of-mind notion.

To test the relative viability of the three explanations, we conducted a follow-up study after Study 1; it involved 40 additional participants (22 men,  $M_{age} = 22.5$  years) from the same participant pool. The study consisted of two conditions, both of which were yoked versions of the fight condition of Study 1, but neither condition allowed the participants to make any choices. The difference between the two conditions was that one did not require the participants to exert any effort (press any keys) whereas the other did. Specifically, in the yoked-no-key-pressing condition, participants were told that the scene of the video might move between their monitor screens, that at any given time either one participant could see the entire scene and the other participant could not or one participant could see part of the scene and the other participant could see the complementary part. Participants were also told that the movement was predetermined by the computer program and could not be changed.

The procedure for the yoked-key-pressing condition was identical to the yoked-no-key-pressing condition, except that each participant was asked to press a key (the same dedicated key as used by the fight participants in the main study) during the experiment for the same number of times as the fight participant to which he or she was yoked. Once the participant had pressed the key for the required number of times, a message appeared on the screen indicating that he/she had already done so. Everyone in the condition fulfilled this requirement.

In both conditions, the book was also available to each participant on his/her desk, and the participants were told that it was up to them whether to read the book or watch portions of the video that appeared on the screen. Thus, the yoked-key-pressing participants were matched with the fight participants on all dimensions except that they did not have a choice to make, namely, they did not need to decide whether to fight or not.

Our predictions were as follows. If the opportunity-free-peace explanation held, then the happiness level of both groups of yoked participants would be similar to that of the fight participants, and lower than that of the fate participants, because, like the fight participants and unlike the fate participants, the participants in the yoked conditions had hopes (opportunities) to watch the video. If the choice-free-peace explanation held, then the happiness level of both groups of yoked participants would be higher than that of the fight participants, and similar to that of the fate participants, because, like the fate participants and unlike the fight participants, the participants in the yoked conditions did not need to make any decisions. Finally, if the differential-effort explanation prevailed, then there would be a significant difference in happiness level between the two groups of yoked participants: those who had to press the key would be less happy than those who did not.

The results, summarized in Fig. 1, were most consistent with the opportunity-free-peace explanation and least consistent with the differential-effort explanation. First, there were no significant differences in happiness between the two groups of yoked participants,  $M_s = 4.00$  and  $4.20$ ,  $SD_s = 1.59$  and  $2.01$ ,  $t(38) < 1$ , *n.s.*, suggesting that effort (key pressing) was an unlikely cause for the fate-better-than-fight effects. Furthermore, the happiness level of the two groups of yoked participants was closer to that of the fight participants than to that of the fate participants. Specifically, on average the yoked participants were less happy than the fate participants in general,  $t(58) = 2.54$ ,  $p < .02$ , somewhat less happy than even the disadvantaged fate participants,  $t(48) = 1.85$ ,  $p = .07$ , and were not significantly different from the fight participants,  $t(58) < 1$ , *n.s.*

Put together, these results did not support the differential-effort explanation, and supported the peace-of-mind notion, especially the opportunity-free-peace account. It seemed that the mere presence of opportunities undermined happiness, even if the opportunities involved no choice. To the best of our knowledge, this was the first empirical evidence from a controlled experiment showing that hope (opportunity) alone could hurt.

Beside what has been examined above, there were several other potential explanations for why even the disadvantaged fate participants were happier than the fight participants. One was cognitive dissonance (Festinger, 1957), namely, that the disadvantaged fate participants felt happy because they changed their attitude to align it with their situation. However, cognitive dissonance usually occurs when people have opted into the situation themselves rather than when they are assigned to the situation, and in our experiment the fate participants were assigned to the disadvantaged situation. A second potential explanation was existence bias (Eideman, Crandall, & Pattershall, 2009), namely, that the fate participants felt happy because they judged the existing situation more favorably than alternative situations. However, the existence bias could equally apply to the fight participants, and could not explain why the fight participants were less happy. A third potential explanation was system justification (Jost & Hunyady, 2002; Jost & Van der Toorn, 2011; Kay, Jimenez, & Jost, 2002), namely, that the disadvantaged fate participants felt happy because they were motivated to accept and justify the status quo. Again, this explanation was unlikely because it could not explain why participants in the yoked conditions were also less happy than the disadvantaged fate participants. Obviously, cognitive dissonance, existence bias and system justification may play important roles in many situations; what we have argued here is that these factors were not necessary in explaining the findings in the current research.

### Moderators

We have now demonstrated the basic fate-better-than-fight effects and explored the underlying reasons. A question that naturally follows is: Is fate always better than fight? The answer is

no. According to the peace-of-mind notion, especially the opportunity-free-peace account, the reason why even the disadvantaged fate participants were happier than the fight participants is that they were able to ignore the video and that they were able to enjoy the book. This reasoning implies two pre-conditions for the fate-better-than-fight effects: first, the disadvantaged members were isolated from the advantaged members so that they could ignore the advantaged members and the video they were enjoying; and second, the disadvantaged members could derive joy from the book. These two pre-conditions, in turn, suggest two moderators: first, whether social comparison between the disadvantaged- and advantaged-fate participants is inhibited or facilitated, and, second, whether the inferior resource is enjoyable or unenjoyable. We elaborate on these factors in turn.

#### *Moderator 1: ease of social comparison*

Ease of social comparison refers to how hard or easy it is for the two participants in the experiment to see and hence compare with each other. It is manipulated in our experimental paradigm by the presence or absence of a divider between the two participants. In the social-comparison-difficult condition, a divider is present. This is the default (original) condition. In the social-comparison-easy condition, the divider is removed and each participant can see the face of the other participant but cannot see the other's screen or talk to the other.

It is well documented that people engage in social comparison with similar others and use the status of their peers, such as colleagues and neighbors, as points of reference to evaluate their own status (e.g., Festinger, 1954; Fujita, 2008; Luttmner, 2005; Vidyarthi, Liden, Anand, Erdogan, & Ghosh, 2010). Unlike most social comparison research, which manipulates the presence or absence of a reference other, or manipulates the status of the reference other, our research manipulates neither of these; instead, our ease-of-social-comparison manipulation only manipulates the salience of the reference other. For example, in both the social-comparison-easy and the social-comparison-difficult conditions, the disadvantaged fate participant knows that there is an advantaged fate participant sitting nearby and that he/she can enjoy the video in its entirety; the only difference between the two conditions is whether the disadvantaged participant can see the advantaged participant.

We predict that ease of social comparison will lower the happiness of the disadvantaged fate participants but will not symmetrically heighten the happiness of the advantaged fate participants (e.g., Duesenberry, 1949; Ferrer-i-Carbonell, 2005; Senik, 2009). It will lower the happiness of the disadvantaged fate participants, because when comparison is easy they have difficulty ignoring the advantaged members or concentrating on their book. Ease of comparison will not symmetrically heighten the happiness of the advantaged members, because it may produce two opposite effects: On the one hand, it makes the advantaged fate participants feel privileged and hence feel happy; on the other hand, it allows the disadvantaged participants to watch them and hence undermines their enjoyment of the video. Put together, we expect the overall effect of facilitating social comparison on the disadvantaged and the advantaged fate participants as a whole to be negative. The idea that social comparison can negatively affect happiness is reminiscent of research suggesting that African Americans living in racially integrated communities felt worse than African Americans living in segregated communities (Gerard & Millar, 1975; Rosenberg & Simons, 1972), though this phenomenon is probably multiply determined.

We also predict that the ease of social comparison manipulation will not exert as great an effect on the fight participants as on the fate participants, because competition already focuses the

attention of the fight participants on the video and on their rival regardless of whether they are isolated or not.

Put together, the analysis above leads to our next hypothesis (about the first moderator): The fate-better-than-fight effects will be stronger if social comparison is inhibited than if it is facilitated. This hypothesis predicts that in an experiment which manipulates both allocation method (fate vs. fight) and social comparison (inhibited vs. facilitated), there will be a 2-way interaction between the variables.

#### *Moderator 2: enjoyability of inferior resource*

By definition, the inferior resource is less enjoyable than the superior resource. However, in order for the disadvantaged fate participants to be happy, the inferior resource available to them must be at least marginally enjoyable. If it is utterly dreary, they will not be able to derive joy from it or feel happy. Thus, the enjoyability of the inferior resource is an important moderator for the fate-better-than-fight effects.

In our experimental paradigm, the enjoyability of the inferior resource is manipulated by what the inferior resource is. In the inferior-resource-enjoyable condition, the inferior resource is something marginally interesting, such as a picture book, as in Study 1; although less enjoyable than the video, it nevertheless enables the disadvantaged fate participants to kill time. In the inferior-resource-unenjoyable condition, the inferior resource is something utterly dull, such as a sheet of lab instructions; the disadvantaged fate participants can only read these dull instructions or sit there idly. Idleness, as existing research indicates, is aversive and is difficult to adapt to (e.g., Csikszentmihalyi, 2000; Hsee, Yang, & Wang, 2010; Mikulas & Vodanovich, 1993). Therefore, using the boring lab instructions instead of the picture book as the inferior resource will lower the happiness of the fate participants, especially that of the disadvantaged-fate participants. On the other hand, the inferior resource manipulation will not have as great an influence on the fight participants as on the fate participants, because the fight participants are competing for the video and how enjoyable the inferior resource is matters less.

This analysis leads to our next hypothesis (about the second moderator): The fate-better-than-fight effects will be stronger if the inferior resource is enjoyable than if it is unenjoyable. In other words, this hypothesis predicts a 2-way interaction effect in an experiment that manipulates both allocation method (fate vs. fight) and the inferior resource (enjoyable vs. unenjoyable).

## **Study 2: testing the two moderators**

### *Method*

The objective of Study 2 was threefold: to replicate the fate-better-than-fight effects, to test the moderating role of social comparison, and to test the moderating role of the inferior resource. One hundred and fifty-one students (81 men,  $M_{\text{age}} = 20.9$  years) were recruited from a large public university participated in this study for a nominal payment.

The study used the same paradigm described earlier. Participants were assigned to one of eight conditions that constituted a 2 (allocation method: fate vs. fight)  $\times$  2 (social comparison: difficult vs. easy)  $\times$  2 (inferior resource: enjoyable vs. unenjoyable) factorial design. The superior resource in the study was a 7-min episode of the animated film. In the inferior-resource-enjoyable condition, the inferior resource was a copy of a *Tom and Jerry* picture book. In the inferior-resource-unenjoyable condition, it was a sheet of lab instructions. A pretest ( $N = 27$ ) verified that the video was more enjoyable than the book, which, in turn, was

more enjoyable than the lab instructions ( $M_s = 6.22, 4.85, \text{ and } 1.96$ ,  $SD_s = 0.93, 0.77 \text{ and } 1.16$ , respectively;  $t(26) = 5.34, p < .001$  between the video and the book;  $t(26) = 10.55, p < .001$  between the book and the lab instructions). The ratings were made on a 7-point scale, greater numbers indicating greater enjoyability.

**Results and discussion**

Fig. 2 summarizes the results. Below we report the results concerning each of the three objectives of this study in turn: first, to replicate the fate-better-than-fight effects, second, to show the moderating effect of social comparison (i.e., a 2-way interaction between allocation method and social comparison), and, third to show the moderating effect of the inferior resource (i.e., a 2-way interaction between allocation method and inferior resource).

**The fate-better-than-fight effects**

These effects only concerned data in the comparison-difficult/inferior-resource-enjoyable condition, namely, the upper left quadrant of Fig. 2. Replicating the finding of Study 1, the fate participants were on average happier than the fight participants,  $t(31) = 2.62, p < .05$ ; and even the disadvantaged fate participants were also happier than the fight participants,  $t(21) = 2.11, p < .05$ .

**The moderating effect of social comparison**

This effect concerned data in the inferior-resource-enjoyable conditions only, namely, the upper left and the upper right cells of Fig. 2. A planned 2 (allocation method: fate vs. fight)  $\times$  2 (social comparison: difficult vs. easy) ANOVA yielded a significant 2-way interaction,  $F(1, 69) = 6.75, p < .02$ , hence supporting our proposition that inhibiting social comparison was necessary for the fate participants to be happier than the fight participants. The ANOVA found no significant main effect for either allocation method,  $F(1, 69) < 1, n.s.$ , or social comparison,  $F(1, 69) < 1, n.s.$  Further analyses found that the group of participants whose happiness was most affected by the social comparison manipulation was the disadvantaged fate participants: they were less happy when social comparison was facilitated than when it was inhibited,  $t(17) = 2.16, p < .05$ . The advantaged fate participants were not significantly

affected by the social comparison manipulation,  $t(20) < 1, n.s.$ , as consistent with our predictions. The fight participants, on the other hand, were somewhat happier when social comparison was facilitated than it was inhibited,  $t(30) = 1.80, p < .1$ , perhaps because the fight participants in the social-comparison-easy condition could coordinate with each other, even though they were not allowed to talk to each other.

**The moderating effect of the inferior resource**

This effect concerned data in the social-comparison-difficult conditions only, namely, the upper left and the lower left cells of Fig. 2. A planned 2 (allocation method: fate vs. fight)  $\times$  2 (inferior resource: enjoyable vs. unenjoyable) ANOVA revealed a marginally significant 2-way interaction,  $F(1, 73) = 3.67, p = .06$ , suggesting that the enjoyability of the inferior resource was probably important for the fate-better-than-fight effects to occur. The ANOVA also found a significant main effect for inferior resource,  $F(1, 73) = 4.22, p < .05$ , and no significant main effect for allocation method,  $F(1, 73) = 2.05, n.s.$  Further analyses found that the only group of participants whose happiness was significantly affected by the inferior resource manipulation was the disadvantaged fate participants; they were less happy when the inferior resource was lab instructions than when it was a picture book,  $t(16) = 4.59, p < .01$ .

**Discussion**

Study 2 lent support to our hypotheses concerning the moderating role of social comparison and the inferior resource. Although we designed the study only to test the two 2-way interactions (the two moderators), we nevertheless conducted a 2 (allocation method: fate vs. fight)  $\times$  2 (social comparison: difficult vs. easy)  $\times$  2 (inferior resource: enjoyable vs. unenjoyable) ANOVA for completeness, and found a marginally significant 3-way interaction effect,  $F(1, 143) = 3.50, p = .06$ . This interaction effect suggested that the two moderators were probably conjunctive to produce the fate-better-than-fight effects. That is, for the fate participants to be happier than the fight participants, both social comparison should be difficult and the inferior resource should be enjoyable. In Fig. 2, it means that the fate-better-than-fight effects occurred only in the upper left quadrant.

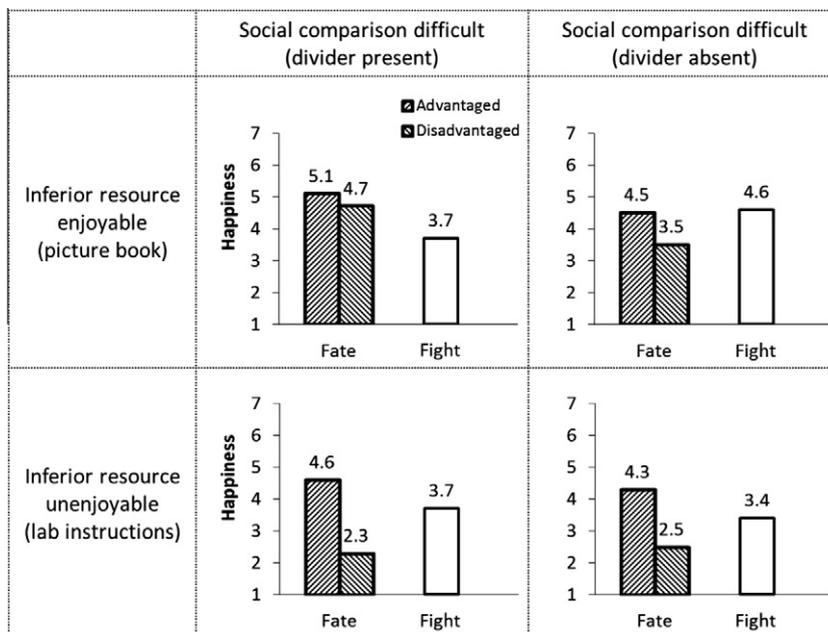


Fig. 2. Study 2 results, showing that the fate-better-than-fight effects arise only when social comparison is difficult and the inferior resource is enjoyable.

## Initial allocation vs. subsequent bindingness

So far, we have treated the fate and the fight conditions as if they were two conditions on a single dimension. Actually, they involve two dimensions: One is whether the initial allocation is made through assignment or through competition, and the other is whether the allocation is subsequently binding (not open to competition) or nonbinding (open to continuous competition). Thus, one can construct an experiment with a 2 (initial allocation method: assignment vs. competition)  $\times$  2 (subsequent bindingness: binding vs. nonbinding) between-participants design. In this experiment, what we have so far referred to as the fate condition is the condition in which the initial allocation is via assignment and the allocation is subsequently binding, and what we have so far referred to as the fight condition is the condition in which the initial allocation is via competition and the allocation is subsequently nonbinding.

According to our peace-of-mind notion, what influences hedonic experiences is the binding vs. nonbinding nature of an allocation. Binding allocation shatters hopes and engenders peace of mind, whereas nonbinding allocation keeps hopes alive and prevents peace of mind. Whether the initial allocation is through assignment or competition is not crucial.

This analysis leads to the last hypothesis of this research: The fate-better-than-fight effects are due to the binding nature of fate rather than due to its initial assignment method. This hypothesis implies that in the 2  $\times$  2 experiment outlined above, bindingness will have a significant effect on happiness, whereas initial allocation will not have a significant effect or will have a lesser effect. Study 3 tested this hypothesis.

### Study 3: separating subsequent bindingness from initial allocation

#### Method

Seventy-eight students (43 men,  $M_{\text{age}} = 21.2$  years) recruited from a large public university participated in this study for a nominal payment. The study again used the experimental paradigm described early. Participants were randomly assigned to one of four conditions: binding assignment, nonbinding assignment, binding competition, and nonbinding competition. These conditions constituted a 2 (initial allocation method: assignment vs. competition)  $\times$  2 (subsequent bindingness: binding vs. nonbinding) between-participants design. The binding assignment condition was identical to the original fate condition, and the nonbinding competition condition identical to the original fight condition. The nonbinding assignment condition was identical to the binding assignment condition except that initially the video was assigned to only one participant but after 15 s both participants could compete for it as in the fight condition, and the binding competition condition was identical to the nonbinding competition condition except that initially, both participants could compete for the video, but after 15 s the winner of the competition up to that point could watch the rest of the video without disruptions while the loser could not watch at all. In each condition the participants were told about the procedure in advance; for example, those in the binding-competition condition knew in advance that 15 s into the experiment, only the winner at that point could watch the rest of the video.

As in Study 2, the superior resource was an episode of the *Tom and Jerry* animated film and the inferior resource was a *Tom and Jerry* picture book. Since the purpose of this study was not to test the moderating effects of social comparison or inferior resource, social comparison was always difficult (the participants were always separated by a divider) and the inferior resource was always enjoyable (it was always the picture book), as was the case in Study 1.

## Results and discussion

Fig. 3 summarizes the results. In all but the nonbinding competition condition, the figure presents the results of the advantaged and the disadvantaged participants separately. Notice that in the nonbinding assignment condition the advantaged participants were those who were initially allowed to watch the video and the disadvantaged participants were those who were initially disallowed to watch the video, and that in the binding competition condition the advantaged participants were those who won the initial competition and could watch the video for the rest of the experiment and the disadvantaged participants were those who lost the initial competition and could not watch the video afterwards. Notice also that in the nonbinding competition condition there were no advantaged or disadvantaged participants, as everyone could equally and continuously fight for the video throughout the experiment.

We first performed a 2 (initial allocation method: assignment vs. competition)  $\times$  2 (subsequent bindingness: binding vs. nonbinding) ANOVA on the four groups of participants without making a distinction between advantaged and disadvantaged participants within each group. The ANOVA yielded a significant main effect for subsequent bindingness,  $F(1, 74) = 16.53$ ,  $p < .001$ , and no significant effects for initial allocation method or two-way interaction,  $F_s < 1$ . These results supported our proposition that what makes fate better than fight is not the initial allocation method per se, but the binding nature of the initial allocation.

Then we performed a number of more detailed planned comparisons across specific conditions. We first compared the two assignment conditions (the first and the second conditions in Fig. 3), and found that on average those in the binding assignment condition were happier than those in the nonbinding assignment condition,  $t(36) = 3.32$ ,  $p < .01$ , suggesting that an irreversible unequal assignment could be better than a reversible unequal assignment. We then compared the advantaged participants between the two conditions and the disadvantaged participants between the two conditions separately. Not surprisingly, the advantaged participants in the binding assignment condition were happier than the advantaged participants in the nonbinding assignment condition,  $t(17) = 2.43$ ,  $p < .05$ , indicating that those whose privilege is guaranteed are happier than those who may lose their privilege. But interestingly, even the disadvantaged participants in the binding assignment condition, who were initially treated unfavorably and were not allowed to change the unfavorable treatment afterwards, were also happier than the disadvantaged participants in the nonbinding assignment condition, who were initially treated unfavorably but were allowed to change their unfavorable situation afterwards,  $t(17) = 2.24$ ,  $p < .05$ , suggesting that there exist situations in which a fate that cannot be changed is better than one that can.

We also compared the two competition conditions (the third and the fourth conditions in Fig. 3), and found that those in the

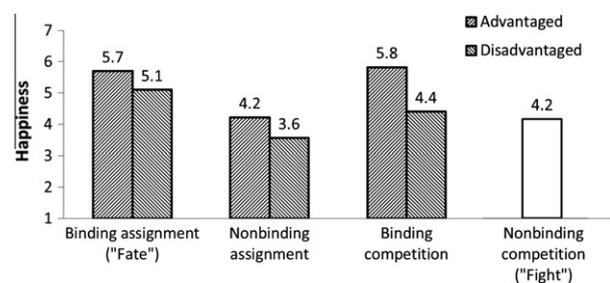


Fig. 3. Study 3 results, showing that the fate-better-than-fight effects are due to the binding nature of fate.

binding competition condition were on average happier than in the nonbinding competition condition,  $t(38) = 2.39, p < .05$ , suggesting that closed-ended competitions are better than open-ended competitions.

Finally, we compared the binding assignment condition and the nonbinding competition condition (the first and the last conditions in Fig. 3), namely, the fate and the fight conditions. We found that on average the binding assignment (fate) participants were happier than the nonbinding competition (fight) participants,  $t(36) = 2.88, p < .01$ ; and that even the disadvantaged fate participants were happier than the fight participants, though the difference was only marginally significant this time,  $t(26) = 1.77, p = .09$ . Overall, these results were consistent with the findings of Study 1 and Study 2.

In summary, Study 3 supported our proposition that what renders fate hedonically better than fight was its binding nature. Regardless of whether the initial allocation method was equal competition or unequal assignment, participants, including the disadvantaged ones, felt happier if the initial allocation was irreversible than if it was reversible.

## General discussion

Traditionally, the desirability of different resource allocation methods is evaluated in terms of their efficiency, productivity and fairness. The present research is an initial attempt at examining individuals' hedonic experiences in different resource allocation conditions in a controlled experimental setting. Contrary to lay intuitions, we found that individuals in an unequal assignment condition, including the disadvantaged individuals in that condition, were happier than individuals in an equal competition condition, but that this effect held only if the inequality was irreversible, the advantaged and the disadvantaged were segregated, and the disadvantaged were given some enjoyable alternative resource to consume.

In the rest of the article we will address several potential questions and explore the implications of our research.

### Potential questions

First, between the fate and the fight conditions, which did participants perceive to be fairer? To address this question, we at the end of Study 1 asked the participants in each condition to rate the fairness of the procedure in their condition on a 3-point scale ranging from 1 (*not fair at all*) to 3 (*very fair*). We found no significant differences between the two groups,  $M_s = 2.40$  and  $2.25$ ,  $SD_s = 0.75$  and  $0.85$ ,  $t(38) < 1, n.s.$  After they rated the fairness, we told the participants in each condition about the other condition and asked them which conditions was relatively fairer. This time, most (75%) of the participants considered the fight condition to be fairer,  $z = 3.16, p < .01$ , when compared with 50%. It appeared that the perception of fairness was relative. What these results suggested was that when evaluated in isolation, binding assignment was perceived to be as fair as free competition, but when juxtaposed, free competition was perceived to be fairer (see Hsee (1996) and Hsee and Zhang (2010) for discussions on isolated vs. comparative judgments).

Second, did the fate-better-than-fight effects occur because fate made participants happier or fight made participants less happy? To answer this question, we first need to answer the following question: happier or less happy than what? A possible benchmark for comparison was participants' baseline hedonic experience when they first entered the lab. To measure this baseline, we, while running Study 1, recruited another group of participants from the same participant pool ( $N = 20$ ), put them in the same lab, told them that they would soon participate in an experiment but did not

show them the video or the book, and asked them to report their feelings on the same rating scale as in Study 1. The mean rating was 4.05 ( $SD = 1.00$ ). A comparison of this result with the results of Study 1 (Fig. 1) revealed the following: First, the fate participants were on average happier than this baseline experience,  $t(35) = 2.53, p < .05$ , with the advantaged fate participants significantly happier,  $t(28) = 2.40, p < .05$ , and the disadvantaged fate participants somewhat happier,  $t(25) = 1.83, p = .09$ . Second, the fight participants were at about the same level as this baseline experience,  $t(34) < 1, n.s.$  In other words, relative to the initial feelings, participants in the fate condition became happier and participants in the fight condition did not.

Third, can fight (competition) ever be enjoyable? Existing research suggests that competition is enjoyable if it involves strategies, as in a game, or entails cooperation between players (e.g., Tauer & Harackiewicz, 2004). However, these activities were unlikely in our experiments, especially in the original competition condition in which participants could not see each other. We suspect that even in the real world, competitors often do not cooperate or coordinate with each other.

Finally, since participants were happier in the fate than in the fight conditions, would they choose to be in the fate condition if given a chance to repeat the study? We did not find such evidence from our research. Recall that in the pilot study most respondents incorrectly predicted the fight participants to be happier than the disadvantaged fate participants. To see whether participants who had gone through the experiment would predict more accurately, we posed the same prediction question to the participants in Study 1 after they had finished the experiment, and found that, still, most (73%) predicted greater happiness in the fight condition than in the disadvantaged fate condition and most (65%) chose to be in the fight condition if they were to repeat the study. Why did the participants fail to learn from their experiences? One possibility was overconfidence; they overestimated their chances to win the competition the next time. Another possibility was related to the non-comparative nature of the conditions, as mentioned before. In the experiment, each participant had been in only one condition and, whether they were happy or not, they would not know how much happier or less happy they could have been had they been in another condition. We speculate that this non-comparative nature reflects many real-life situations. In such situations, we are in only one of the resource allocation conditions, and we do not know how happy we would be if we were in an alternative condition. Like our experiment, life is often a between-subject design, and such a design is not conducive to learning from experience.

### Implications

The current research yields methodological, theoretical and applied implications. Methodologically, it studies a rich real-world issue in a minimalistic laboratory setting; it introduces a paradigm that allows researchers to manipulate a specified number of variables while holding everything else constant, and to examine participants' within-experiment experiences without the need to consider extra-experimental outcomes. Although these features differ from many real-world scenarios, they endow the paradigm with high controllability.

Theoretically, the current research advances the peace-of-mind notion that irreversible fate prompts one to make peace with it and feel happy. Furthermore, it breaks down the peace-of-mind idea into two different varieties: choice-free peace and opportunity-free peace. Although previous research has documented extensive evidence for choice-free peace, the present research offers initial evidence from a controlled laboratory experiment for opportunity-free peace.

Practically, the current research seeks to draw readers' attention to the hedonic aspects of different resource allocation conditions. Let us consider three sets of observations. First, Studies 1 and 2 found binding assignment to be hedonically better than free competition. Second, Study 3 found that what made binding assignment hedonically better was its binding nature, not its initial assignment method. Finally, existing literature on procedural justice as well as the fairness result of Study 1 suggests that people consider equal competition fairer than unequal assignment. Together, these observations imply that some combination of competition and bindingness, namely, the binding competition condition in Study 3, trumps the other conditions we have examined in this research, because it has the advantages of both bindingness and fairness.

Some of the systems in the real world are actually quite similar to the binding competition condition. An example is the tenure system in most colleges and universities in North America. Junior faculty are allowed to compete for a limited number of tenure slots, and the winners are guaranteed of their jobs whereas the losers have to leave. Nevertheless, many other real world systems are different. Employees in industries, such as the IT industry, and many parts of the world, especially in developing nations, lack long-term contracts, and may lose their jobs at any time if they do not stay competitive. This is more akin to the nonbinding competition condition. To the extent that organizations are concerned about the hedonic welfare of their employees, our research suggests that they may want to increase rather than decrease the friction of competition, for example, by offering long-term contracts and increasing the costs of job switches.

Although many people favor free competition, the current research suggests that accepting one's fate can be hedonically better than competing for the best.

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