



在网络游戏中设置自我控制机制



近年来，网络游戏沉迷问题愈益引起教育者、家长和公众的关注。社会科学的研究预言，在网络游戏玩家中有的人会意识到自己在面对游戏诱惑时存在自我控制问题，而这些能够意识到自我控制问题的玩家会主动采取措施，自愿对玩网络游戏进行自我限制。经济学家基于一款在线拼字游戏设计了一种激励自我控制的推力或助推*机制，做了一个大规模社会实验，为我们分析网络游戏玩家的自我控制问题提供了难得的数据。你的团队将有机会利用此数据建立模型，分析网络游戏玩家的行为模式，并提出自己的网络游戏防沉迷自我约束机制。

制。

实验中的游戏属于消闲型可重复在线拼字游戏，每轮游戏历时 3 分钟，两轮游戏之间间隔 45 秒。实验游戏中的自我控制承诺机制分为“游戏前”自我设限和“游戏中”自我设限。“游戏前”设限是玩家在开始游戏前自愿选择游戏的轮数；“游戏中”设限是在游戏进行中玩家自愿选择是否最多再多玩一轮。当游戏进行到限定的条件时，玩家将自愿被服务器禁玩一定时段。这里提供的实验观测数据的时间跨度包括自我限制承诺机制设立前的 30 个月和设立这种干预机制后的 54 个月。游戏及自我控制设置的详情可参见游戏网站 www.wordsplay.net。实验观测数据可在 www.immchallenge.org.cn “新闻”栏目下下载。为了理解问题的情境，你可能需要亲自体验这款拼字游戏。

- 1) 根据观测数据，请对本实验建立网络游戏玩家的行为模型，并利用数据分析自我控制机制对游戏玩家行为的影响。你需要选取和定义合适的变量以度量自我控制机制对玩游戏所带来的改变。
- 2) 试比较“游戏前”设置和“游戏中”设置两种不同的自我控制承诺对游戏行为影响的差别。
- 3) 一款游戏对玩家通常有一个有效期或寿命，即玩了一段时期之后，玩家最终会放弃这款游戏。根据你的模型，请分析自我控制机制在约束玩家的同时，如何影响游戏对玩家的有效期或寿命？并讨论自我控制在短期行为和长期收益之间的选择上对游戏玩家的意义。
- 4) 你的上述模型及分析是基于短时和弱社交网络游戏，对于更具社交性和时间更长的网络游戏，自我控制机制对游戏玩家行为的影响则会变得复杂，那么，你会对自我约束机制的设置以及分析模型做怎样的调整？
- 5) 基于你的上述工作，试针对你熟悉的某款游戏给游戏制作公司写一份不超过两页纸的建议书，提出你的玩家自我控制机制的设计。

你的团队所提交的方案应包含 1 页“总结摘要”和一份 1-2 页的建议书，其正文不可超过 20 页（总页数限于 23 页以内）。附录和参考文献应置于正文之后，不计入 23 页之限。

*推力或助推指为解决自我控制缺乏问题而提供一种非强迫性助力，在不妨碍选择自由的前提下，引导人们做出可预期和有益的决策。此概念最早由芝加哥大学布斯商学院理查·塞勒教授提出。参(1) https://en.wikipedia.org/wiki/Nudge_theory (2) <https://www.nobelprize.org/prizes/economic-sciences/2017/press-release/>



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(简体 繁體 English)

在網絡遊戲中設置自我控制機制



近年來，網絡遊戲成癮問題愈益引起教育者、家長和公眾的關注。社會科學的研究預言，在網絡遊戲玩家中有的人會意識到自己在面對遊戲誘惑時存在自我控制問題，而這些能夠意識到自我控制問題的玩家可以主動採取措施，自願對玩網絡遊戲進行自我限制。經濟學家基於一款在線拼字遊戲設計了一種激勵自我控制的推力或助推*機制，做了一個大規模社會實驗，為我們分析網絡遊戲玩家的自我控制問題提供了難得的數據。你的團隊將有機會利用此數據建立模型，分析網絡遊戲玩家的行為模式，並提出自己的網絡遊戲防成癮自我約束機制。

實驗中的遊戲屬於消閒型可重複在線拼字遊戲，每輪遊戲歷時 3 分鐘，兩輪遊戲之間間隔 45 秒。實驗遊戲中的自我控制承諾機制分為“遊戲前”自我設限和“遊戲中”自我設限。“遊戲前”設限是玩家在開始遊戲前自願選擇遊戲的輪數；“遊戲中”設限是在遊戲進行中玩家自願選擇是否最多再多玩一輪。當遊戲進行到限定的條件時，玩家將自願被服務器禁玩一定時段。這裡提供的實驗觀測數據的時間跨度包括自我限制承諾機制設立前的 30 個月和設立這種干預機制後的 54 個月。遊戲及自我控制設置的詳情可參見遊戲網站 www.wordsplay.net。實驗觀測數據可在 www.immchallenge.org.hk “新聞”欄目下下載。為了理解問題的情境，你可能需要親自體驗這款拼字遊戲。

- 1) 根據觀測數據，請對本實驗建立網絡遊戲玩家的行為模型，並利用數據分析自我控制機制對遊戲玩家行為的影響。你需要選取和定義合適的變量以度量自我控制機制對玩遊戲所帶來的改變。
- 2) 試比較“遊戲前”設置和“遊戲中”設置兩種不同的自我控制承諾對遊戲行為影響的差別。
- 3) 一款遊戲對玩家通常有一個有效期或壽命，即玩了一段時期之後，玩家最終會放棄這款遊戲。根據你的模型，請分析自我控制機制在約束玩家的同時，如何影響遊戲對玩家的有效期或壽命？並討論自我控制在短期行為和長期收益之間的選擇上對遊戲玩家的意義。
- 4) 你的上述模型及分析是基於短時和弱社交網絡遊戲，對於更具社交性和時間更長的網絡遊戲，自我控制機制對遊戲玩家行為的影響則會變得複雜，那麼，你會對自我約束機制的設置以及分析模型做怎樣的調整？
- 5) 基於你的上述工作，試針對你熟悉的某款遊戲給遊戲製作公司寫一份不超過兩頁紙的建議書，提出你的玩家自我控制機制的設計。

你的團隊所提交的方案應包含 1 頁“總結摘要”和一份 1-2 頁的建議書，其正文不可超過 20 頁（總頁數限於 23 頁以內）。附錄和參考文獻應置於正文之後，不計入 23 頁之限。

*推力或助推指為解決自我控制缺乏問題而提供的一種非強迫性助力，在不妨礙選擇自由的前提下，引導人們做出可預期和有益的決策。此概念最早由芝加哥大學布斯商學院理查·塞勒教授提出。參(1)

https://en.wikipedia.org/wiki/Nudge_theory (2) <https://www.nobelprize.org/prizes/economic-sciences/2017/press-release/>



The Self-Control Mechanism in Online Gaming



In recent years, cyber-game addiction has been increasingly concerned by educators, parents and the public. Research in social science predicts that some players of online game have a degree of self-awareness that they have self-control problems when facing gameplay temptation, and those who identify themselves with self-control problems would take the initiative to restrict their gameplaying with voluntary commitment. Based on a casual online scrabble game, economists have designed a nudge* mechanism for incentivizing self-control and conducted a large-scale social

experiment, which provides valuable data for analyzing the self-control's impact on gameplaying. Your team will have the opportunity to use this dataset to build your models in analyzing the behavioral change of online gameplaying influenced by the self-control devices, and propose your solution of self-restraint mechanism for anti-addiction of excessive online gameplaying.

The game in the experiment is a leisure-type repetitive online scrabble board game. Each round of game lasts for 3 minutes, with an interval of 45 seconds between two rounds. Two types of self-control commitment devices are built in the game: "ex-ante" self-control device and "in-game" self-control device. The "ex-ante" device sets the number of rounds of games the player voluntarily chooses before starting the game; the "in-game" device asks whether the player voluntarily chooses to play at most once during the game. When the limit set by the player him/herself via the device is reached, the player will be voluntarily blocked by the server from playing for a certain period of time. The time span of the experimental observation dataset provided here covers 30 months before the implementation of the self-control commitment device and 54 months after the establishment of such intervention device. Details of the game and self-control setting can be found on the game website www.wordsplay.net. In order to understand the context of the problem, you may like to experience this online scrabble game by yourself. Experimental observation dataset can be downloaded from "News" column at www.istm.info.

- 1) Based upon the dataset of the observations, please establish your mathematical model for the online gameplaying behavior in this experiment, and use the data to analyze the impact of self-control device on the gameplaying. You will need to choose and define suitable variables to measure the behavioral change resulted by the self-control device.
- 2) With your modeling, please compare if there exist any differences between the two ways of self-control commitment on gameplaying in this experiment.
- 3) Gameplaying usually has a certain lifespan such that player would give up playing this game at the end. With your model, please analyze how the self-control device will influence the lifespan of gameplaying



whereas restraining and reducing playing time. Also, please discuss the implications of self-control device on the choice between short-term behavior and long-term benefits for the gameplayers.

4) Your above modeling and analysis are based on the short and repetitive game with weak social networking function. For strong social networking and longer online games, the influence of self-control mechanism on gameplaying behavior would become complicated. Then how would you re-design the self-control device and adjust your analytical model?

5) Based on your above work, please write a letter of no more than two pages to the game production company to propose a design of self-control of gameplaying for a game that you are familiar with.

Your submission should include a 1-page Summary Sheet and a Proposal Letter of 1-2 pages. Your solution body cannot exceed 20 pages for a maximum of 23 pages with Summary Sheet and Letter inclusive. The appendices and references should appear at the end of the paper and do not count towards the 23 pages limit.

** A nudge is any aspect of choice architecture without mandates and forbidding freedom of choice that encourages people to make predictable and beneficial decision in solving the problem of lack of self-control. The term is coined by Professor Richard H. Thaler of the University of Chicago Booth School of Business. Please refer to (1) https://en.wikipedia.org/wiki/Nudge_theory (2) <https://www.nobelprize.org/prizes/economic-sciences/2017/press-release/>*