Reply to PCIRR decision letter reviews #595: Bown et al. (2003) replication and extensions

We would like to thank the editor and the reviewers for their useful suggestions and below we provide a detailed response as well as a tally of all the changes that were made in the manuscript. For an easier overview of all the changes made, we also provide a summary of changes.

Please note that the editor's and reviewers' comments are in bold with our reply underneath in normal script.

A track-changes comparison of the previous submission and the revised submission can be found on: https://draftable.com/compare/IXoidprUBHpL

A track-changes manuscript is provided with the file: "PCIRR-S1-RNR-Bown-etal-2003-replication-extension-Registered-Report-main-manuscript-track-changes.docx" (https://osf.io/uk8dn)

Summary of changes

Below we provide a table with a summary of the main changes to the manuscript and our response to the editor and reviewers:

Section	Actions taken in the current manuscript
Introduction	Ed & R1: We added descriptions of the scenarios and spelt out the relative dimensions of the targets and lures to facilitate understanding. R1: We clarified Figures 1-3 were summaries of the designs of Bown et al. (2003) and our replication.
Methods	R1: We removed the bullet points in Table 9.
Discussion	Ed & R1: We added a planned discussion for Stage 2 about the validity of using an online survey. Ed & R2: We added a planned discussion for Stage 2 about the generalizability of the results to populations in non-Western cultures.

Note. Ed = Editor, R1/R2 = Reviewer 1/2

We note that we are not familiar with the titles and ranks of the reviewers, and looking for that information proves tricky. To try and err on the side of caution, we refer to all reviewers with the rank Dr./Prof. We apologise for any possible misalignments and are happy to amend that in future correspondence.

Reply to Editor: Dr./Prof. Patrick Savage

> **This Stage 1 protocol has now been reviewed by two experts with experience in PCI-RR and open science. Both reviewers are enthusiastic about the study and recommend only relatively minor changes. I agree, and am optimistic that I could recommend In Principle Acceptance without further peer review to an appropriately revised version that addresses their concerns. In particular, please ensure that you:**

Thank you for the reviews, feedback, and the invitation to revise and resubmit. The feedback was valuable, and we addressed each point in detail below.

> **1) are explicit about the limitations on generalizability from your proposed online recruitment, and**

Response: Thank you for your comment. We recognise that the transition to an online survey introduces certain variations from the target article. However, we have made concerted efforts to minimize the potential impacts on the results. For example, we implemented attention checks and randomize the order of the studies within our online survey. We also agree that these variations could be considered as a limitation on the generalizability of our replication.

Action: Based on Dr./Prof. Gakuto Chiba's comments, we added a planned discussion for Stage 2 about the validity of using an online survey. Also, based on Dr./Prof. Hu Chuan Peng's comments, we added a planned discussion for Stage 2 about the generalizability of results to populations in non-Western cultures.

> **2) clarify Figs. 1-3 and the Introduction to more clearly summarize earlier in the manuscript what Bown et al.'s key "nightclub", "bank", and "casino" studies actually involved. (Readers should not have to wait until the Methods section to learn about these details for the first time).**

Response: Thank you for raising this issue. We agree that more context needs to be provided to facilitate understanding of the figures.

Action: We have included descriptions of the scenarios and spelt out the relative dimensions of the targets and lures under the "Empirical demonstration'.

Reply to Reviewer #1: Dr./Prof. Gakuto Chiba

> **It is important to conduct replication studies under different conditions, and I believe this paper, which aims to achieve direct replication for the Bown et al. target paper for the first time, is very valuable. I myself conducted a replication study last year and published it in an international academic journal via PCI-RR. Drawing from that experience, I will propose several points for improvement and correction this time.**

Thank you for your time and thoughtful feedback.

> **Improvements**
>
> **1. Except for Stage 1 Snapshot, this paper briefly touches on Study 1 and Study 2 related to the Bown et al. target article for the first time in lines 173 to 175, but the content is only about the results, and at this stage, it is unclear what each scenario indicates. I think it is necessary to explain the scenarios beforehand.**
> **- In general, it seems that the caption explanations in the Figures are insufficient. Particularly, Figures 1, 2, and 3 were presented without information on their scenarios, making it difficult to interpret the Figures.**

Response: Thank you for the helpful feedback. We agree.

Action: We added a description of the scenarios in the "Empirical demonstration" section:

> "In the nightclub scenario of Study 1, participants were asked to select a nightclub from a choice set consisting of three nightclubs - two targets (Diesel and Cherish) and a "lure" (Atom) separated to two directions (North and South). One direction had two night clubs - a target and the lure, and the opposite direction had the other target nightclub. Therefore, one direction always offered more choice, two clubs compared to one. The three nightclubs differed in terms of entrance fees and levels of enjoyment. The targets differed on price and enjoyment - Club Diesel charged a higher entrance fee but offered a higher level of enjoyment compared to Club Cherish. The "lure", Club Atom, was dominated by Club Diesel, charging a higher entrance fee but providing the same level of enjoyment. The experiment manipulated which club was coupled with the lure to offer more choice. Participants first chose the direction they wanted to go, and then selected the nightclub they would like to visit if further choices were available. They found that a nightclub target was more likely to be selected when it was coupled with a lure than when presented alone. We summarised the targets and lure options in Figure 1, and the study design and choices in Table 4.

> Similarly, in the bank scenario of Study 1, participants were asked to choose from three possible savings options offered by two different banks, meaning that one bank offered more choice - two saving options compared to one. The three accounts differed in terms of their interest rates and notice periods for withdrawal. Specifically, Account B offered a lower interest rate in exchange for an immediate withdrawal, compared to Account A. Unlike the first scenario, in this scenario the "lure", Account L, was not dominated by either of the targets, but instead served as a compromise between the two targets. The experiment manipulated which bank offered the lure, thereby offering more choice. Participants first chose the bank they wanted to visit, and then selected their preferred saving account if further choices were available. They found that a saving account target was more likely to be selected when it was coupled with a lure in a bank that offered more choice than when in a bank where it was the only option. We summarised the targets and lure options in Figure 2, and the study design and choices in Table 5.
>
> In the casino scenario of Study 2, participants were asked to choose a spinner placed on two different tables. One of the tables had a "lure" spinner, yet Study 2 also manipulated the type of lure - one lure was dominated (worse than both targets), and one lure was conflicted (compromise between the two targets). The spinners differed in terms of their payoffs and probabilities of winning. Target Spinner A had a higher probability of winning but a lower payoff compared to target Spinner B. In one condition, lure Spinner C was a conflicted lure to both target spinners A and B, offering a higher probability of winning but a lower payoff. In the other condition, lure Spinner D was dominated by both spinner targets, featuring a lower probability of winning with the same payoff as Spinner A, and a lower payoff with the same probability of winning as Spinner B. Therefore, this experiment manipulated both which table offered the lure, thereby offering more choice, as well as the type of lure. Participants first chose the table, and then selected the spinner they would like to play if further choices were available. They found that a spinner target was more likely to be selected when it was coupled with a lure in a table that offered more choice than when in a table where it was the only option, regardless of lure type, with a stronger effect for the conflicted lure. We summarised the targets and lure options in Figure 3, and the study design and choices in Table 5."

- **The line 176-177 of this paper states 'We summarised the designs of the three scenarios from Bown et al.'s (2003) Studies 1 and 2 in Figures 1 to 3,' but it seems that the actual Figures also include replication designs. This caused some confusion.**

Response: Thank you for catching that. That was an oversight, apologies.

Action: We removed the specific reference to Bown et al. (2003) in the main text, and to figures 1 and 3 for which we made price adjustments, we added a note that:

> "The figure includes both the values originally used in Bown et al. (2003) and the replication.", which was followed by the existing text - "Prices in the replication were doubled, to adjust for inflation between the years 2003 and 2024."

- **The design of the online experiment form is very attractive, and I like it. Online implementation is well-suited for extensive data collection and can lead to cost reductions. However, transitioning experiments online could potentially deviate from the target article as much as randomizing all scenarios. While I'm not very knowledgeable about psychology, I feel that environmental factors can influence the level of concentration and motivation towards experiments. If reproducibility cannot be ensured, I believe it's important to address this issue as well.**

Response: Thank you for your positive feedback regarding the design of our survey. In any replication, it is difficult to assess what environmental factors may influence motivation and concentration. Articles very rarely document details about the context, and unless stated explicitly or tied to theory, there is an implicit assumption, or hope, that these tend to be noise, and that the phenomenon would extend beyond that. Otherwise, if the phenomenon would only work with undergraduates in Leeds in the early 2000s, then it would severely limit the relevance and importance of their insights, and in this case a replication would help us better understand that we need to readjust our understanding of the generalizability of the phenomenon.

We have had a lot of experience with replications of classics in the decision making literature, and based on those we have reason to believe that minor changes in context or shift to an online sample should not have much of an impact.

Our team has completed over 120 preregistered replications, and the majority of them are successful replications, summarised in https://mgto.org/core-team/. We take many measures to ensure high quality data collection, and in several replications we documented similar effects across undergraduate, CloudResearch on MTurk, and Prolific samples.

Examples: In our Ziano et al. (2021), Brick et al. (2021), Chandrashekar et al. (2022), Imada et al. (2022), and others MTurk and Prolific samples, at times using different geographic locations (US versus UK) and different designs, showed very similar results. In Chandrashekar et al. (2021) and Ziano et al. (2021), we had very similar results comparing online samples in the US to Hong Kong undergraduate samples. In addition, there is a Brazilian team that has taken our replications, translated those to Portuguese and ran these with Brazilian samples, showing very

similar results (https://osf.io/preprints/psyarxiv/fh597; https://psyarxiv.com/4u98x/; https://osf.io/preprints/psyarxiv/gavh9).

Action: To address this point, and discuss generalizability of our replication, we added a planned discussion for Stage 2 in the Discussion section.

> 'Following on Dr./Prof. Gakuto Chiba's comment, we will discuss the validity of online surveys and its robustness to reproduce findings of the target article.'

References

Examples from our team:

Brick, C., Fillon, A., Yeung, S., Wang, M., Lyu, H., Ho, J., Wong, S., & Feldman, G. (2021). Self-interest is overestimated: Two successful pre-registered replications of Miller and Ratner (1998). *Collabra: Psychology*, 7(1), 23443. DOI: 10.1525/collabra.23443.
[Article] [Preprint] [Open materials/data/code]

Chandrashekar, S., Adelina, N., Zeng, S., Chiu, Y., Leung, Y., Henne, P., Cheng, B., & Feldman, G (2022). Defaults versus framing: Revisiting Default Effect and Framing Effect with replications and extensions of Johnson and Goldstein (2003) and Johnson, Bellman, and Lohse (2002). *Meta Psychology*, 7. DOI: 10.15626/MP.2022.3108
[Article] [Preprint] [Open materials/data/code] [Open peer review]

Chandrashekar, S. P., Yeung, S., Yau, K., Cheung, C., Agarwal, T. K., Wong, C., Pillai, T., Thirlwell, T. N., Leung, W., Li, Y., Tse, C., Cheng, B., Chan, H., & Feldman, G. (2021B). Agency and self-other asymmetries in perceived bias and shortcomings: Replications of the Bias Blind Spot and extensions linking to free will beliefs. . *Judgment and Decision Making*, 16(6), 1392-1413. DOI: 10.17605/OSF.IO/3DF5S
[Article] [Preprint] [Open materials/data/code]

Imada, H., Chan, W., Ng, Y., Man, L., Wong, M., Cheng, B., & Feldman, G. (2022). Rewarding more is better for soliciting help, yet more so for cash than for goods: Revisiting and reframing the Tale of Two Markets with replications and extensions of Heyman and Ariely (2004). *Collabra: Psychology*, 8 (1): 32572. DOI: 10.1525/collabra.32572
[Article] [Preprint] [Open materials/data/code]

Ziano, I., Wang, Y. J., Sany, S., Ngai, L., Lau, Y., Bhattal, I., Keung, P., Wong, Y., Tong, W., Cheng, B., Chan, H., & Feldman, G. (2021). Perceived morality of direct versus indirect harm: Replications of the preference for indirect harm effect. . *Meta Psychology*, 5. DOI:

10.15626/MP.2019.2134
[Article] [Preprint] [Open materials/data/code] [Open peer review]

Ziano, I., Xiao, Q., Yeung, S. K., Wong, C. Y., Cheung, M. Y., Lo, C. Y. J., ... & Feldman, G. (2021). Numbing or Sensitization? Replications and Extensions of Fetherstonhaugh et al.(1997)'s "Insensitivity to the Value of Human Life". *Journal of Experimental Social Psychology*, 97, 104222. DOI: 10.1016/j.jesp.2021.104222
[Article] [Preprint] [Open materials/data/code]

Brazilian team examples based on our replications:

Borborema, R. S., de Moraes Ferreira, M., da Silva, A. L. M., Bastos, R. V. S., Fatori, D., Feldman, G., … Batistuzzo, M. C., Prof. (2023, May 26). Inaction Inertia Effect: Foregoing Opportunities as a Consequence of an Initial Failure to Act - a Replication-Extension Study in the Brazilian Population. https://doi.org/10.31234/osf.io/4u98x

de Moraes Ferreira, M., Santiago, M. Y. T., Seda, L., Batistuzzo, M. C., Prof., Bastos, R. V. S., Borborema, R. S., & Fatori, D. (2023, December 20). Replication of the "money illusion" effect in a Brazilian sample. https://doi.org/10.31234/osf.io/fh597

Seda, L., Martins, I. T. C., Lisbôa, T., Batistuzzo, M. C., Prof., & Fatori, D. (2023, December 19). Theoretical Maturation Of The "Bias Blind Spot": A Preregistered Replication Study Of Pronin, Lin And Ross (2002) In A Brazilian Sample. https://doi.org/10.31234/osf.io/gavh9

- **In preparation for this issue, it might be beneficial to include instructions within the online experiment form regarding creating an environment conducive to concentration, such as ensuring the absence of people nearby. Alternatively, it could be helpful to inquire about the experimental environment at the end of the form to ensure control over the experiment location.**

Response: Thank you for the suggestion, but we do not consider that necessary. First, as we wrote in the previous paragraph, we have previously conducted many of those, with much success. Second, even if we were to know something about the context, we are unsure how that would help compared to the original, about which we know very little about. These effects should be more robust than background context.

It is not only our experience, but there is a lot of data about Prolific showing that their participants, who do tasks and take surveys for a living, take their work and answering surveys

very seriously, arguably more so than participant-pool undergraduates and convenience samples. In addition, we do take measures ensuring attentiveness, such as the attention checks before the survey that we indicated in our manuscript (we underlined the relevant parts):

> Participants first indicated their consent, with four questions confirming their eligibility, understanding, and agreement with study terms, which they must answer with a "yes" and required responses in order to proceed to the study. Three of the four questions also served as attention checks, with the order of the options being rotated (yes, no, not sure).

> - **Furthermore, based on my experience, in online experiments, there have been instances where experiments could not continue due to Wi-Fi communication issues, or participants had to temporarily interrupt the experiment and resume it after some time. To ensure data acquisition, it is necessary to provide specific instructions regarding Wi-Fi environments and how to conduct the experiment.**

Response: Thank you for sharing your experience.

In our vast experience, this was never needed. Participants on Prolific are professional workers who conduct all their Prolific work online, and therefore are well experienced with handling any possible issues regarding their technological environments.

We do not expect any benefits and honestly worry about potential pushback, if we were to ask professional online survey takers about their Wifi connection and ability to ensure a working technological environment.

> **Correction**
>
> - **Some parts of the 'Reason for change / Justifications' section in Table 9 were in bullet points (hyphens).**

Action: We removed the bullet points in Table 9.

> **The methodology and analysis pipeline in other aspects were well thought out and meticulously designed. I believe it will be challenging to recruit over 1000 participants for the experiment, but I am looking forward to seeing the research results.**

Response: Thank you.

Prolific provides a large and diverse participant pool with tens of thousands of active participants. We have previously recruited far larger samples than 1000 participants, and are confident we can easily recruit enough participants to meet our target sample size.

Reply to Reviewer #2: Dr./Prof. Hu Chuan-Peng

> **PCI-RR #595 is a close replication of Bown et al (2003). I highly appreciate the authors' effort to replicate a published paper. I am positive toward this manuscript because the rationale for choosing Bown et al (2003) as a target study to replicate is sound, the details are rich, and the materials and scripts are all open.**

Thank you very much for your time and support.

> **My only suggestion is that the authors need to be cautious about the generalizability of the results to populations in non-Western cultures as their participants will be sampled from online platforms.**

Response: Yes, we agree that generalizability is an issue, and discussing that is of value. We believe that running replications and making all pre-registrations, materials, data, and code help with future testing for that. We mentioned above a Brazilian team that is running our replications in a Brazilian sample in Portuguese, and have so far shown very similar results to ours with remarkable generalizability for decision-making phenomena. We hope others in different places in the world will also follow.

Action: We added a planned discussion of this point for Stage 2 in the Discussion section.

> 'Planned discussion in Stage 2: Following on Dr./Prof. Hu Chuan-Peng's comment, we will discuss generalizability of the results to other populations'

> **Below are my answers to the four questions that PCI-RR recommends.**
> **1A. The scientific validity of the research question(s)**
> **My comment: The research question is scientifically valid and can be justified by the previous publication and its citations and influence in the field of decision-making.**
>
> **1B. The logic, rationale, and plausibility of the proposed hypotheses (where a submission proposes hypotheses)**
> **My comment: As a replication, the hypotheses are logically derived from the target study and remain plausible.**
>
> **1C. The soundness and feasibility of the methodology and analysis pipeline (including statistical power analysis or alternative sampling plans where applicable)**
> **My comment: The methodology and analysis pipeline are robust and**

feasible, bolstered by the team's extensive experience in replicating decision-making studies. Their previous publications and well-maintained resources provide a solid foundation for the current study. The verification of scripts using simulated data further ensures the pipeline's feasibility.

1D. Whether the clarity and degree of methodological detail is sufficient to closely replicate the proposed study procedures and analysis pipeline and to prevent undisclosed flexibility in the procedures and analyses
My comment: Yes, all materials and scripts are open and available, they provide sufficient details for a close replication.

1E. Whether the authors have considered sufficient outcome-neutral conditions (e.g. absence of floor or ceiling effects; positive controls; other quality checks) for ensuring that the obtained results are able to test the stated hypotheses or answer the stated research question(s).

My comment: The authors added baseline conditions as extensions of the original study, which further ensures that the obtained results will effectively test the hypotheses.

Thank you very much for your positive feedback. They are encouraging and very much appreciated.