

# Exploring the Impact of Atypical Events on Regret: Analysis Through Hitchhiker, Car Accident, and Robbery Scenarios\*

Reproduction of ‘The impact of past behaviour normality on regret: replication and extension of three experiments of the exceptionality effect’ (Lucas Kutscher & Gilad Feldman, 2018)

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2024-02-13

This study aims to replicate Kutscher and Feldman’s findings, which examine regret based on the norm theory. According to norm theory, an individual’s activity can be categorized as either typical or atypical with the latter, on the other hand, eliciting a stronger emotional response. We focused on replicating three specific scenarios: hitchhiking, car accidents, and robberies. Examining how people recalled their behaviour in these specific scenarios helped our perception of the emotion of regret. This replication is consistent with the original study.

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\*Code and data are available at: <https://github.com/UofT-DailinLi/Impact-of-Atypical-Events-on-Regret.git>. A replication of various aspects in this paper are available at: <https://doi.org/10.1080/02699931.2018.1504747>

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# 1 Introduction

Regret is an uncomfortable state of mind that encompasses feelings of sorrow and distress over unfortunate events, perceived personal failures, losses, violations, deficiencies, or errors (Gilovich and Medvec 1995). It associates to many things in our daily life. Matters of regret can include both acts done and opportunities missed; they may extend from intentional actions to those that are involuntary or happenstance; they could be tangible actions carried out or purely thoughts, whether self-initiated or by others; and they might constitute ethical or legal violations, or be actions that are neutral in terms of morality and law (Gilovich and Medvec 1995).

From the original paper (Kutscher and Feldman 2019), norm theory (Kahneman and Miller 1986) posits that people cognitively categorize events as either typical or atypical, with atypical events eliciting more potent responses because typical occurrences are more readily recalled, thus simplifying the generation of counterfactual scenarios for atypical events. The greater ease of conjuring these hypothetical alternatives for atypical outcomes amplifies the sensation of regret when the results are unfavorable. For instance, people’s habitual behaviors are more memorable and mentally prominent, which facilitates the construction of customary ‘what if’ scenarios in contrast to an anomaly. Consequently, departures from one’s usual behavior are perceived as more changeable and evoke stronger feelings of regret.

We replicate the paper by Kutscher and Feldman (2019) with replicating and focusing the three scenarios of the experiment:

- Hitchhiker-scenario
- Car accident scenario
- Robbery scenario

The original paper used R (R Core Team 2021) for data processing and analysis in its replication package, we use R (R Core Team 2021) as well for all data wrangling and analysis and R packages tidyverse (Wickham et al. 2019) to produce the figures.

## 2 Data

### 2.1 Data Source and Methodology

All of the data for REGRET and COMPENSATION contained 344 observations, and 21 VARIABLES were taken from the data underlying Kutscher and Feldman’s study (Kutscher and Feldman 2019), which was collected as a questionnaire. The questionnaire recipients read a scenario in which a robbery occurred at a grocery store. In the first scenario (routine behaviour), Mr. Paul visited the store he frequented. In the second scenario (self-produced exception), the main character went to another store because he wanted a change of scenery.

In the third scenario (other produced exception), Mr. Paul is forced to patronize another store because the store he frequents is closed for construction, and he runs into a robbery taking place in the store. In the next question, we ran a compensation measure followed by a regret measure. Respondents were asked how much money Mr. Paul should receive in compensation for his loss—scale from 0 to 10: 0\$ to 1000000\$. The next question was: assume no compensation was given to Mr. Paul. How much regret does he feel over the situation? Scale 1 from no regret to 5, very strong regret.

## 2.2 Attributes

## 3 Results

### 3.1 fig1

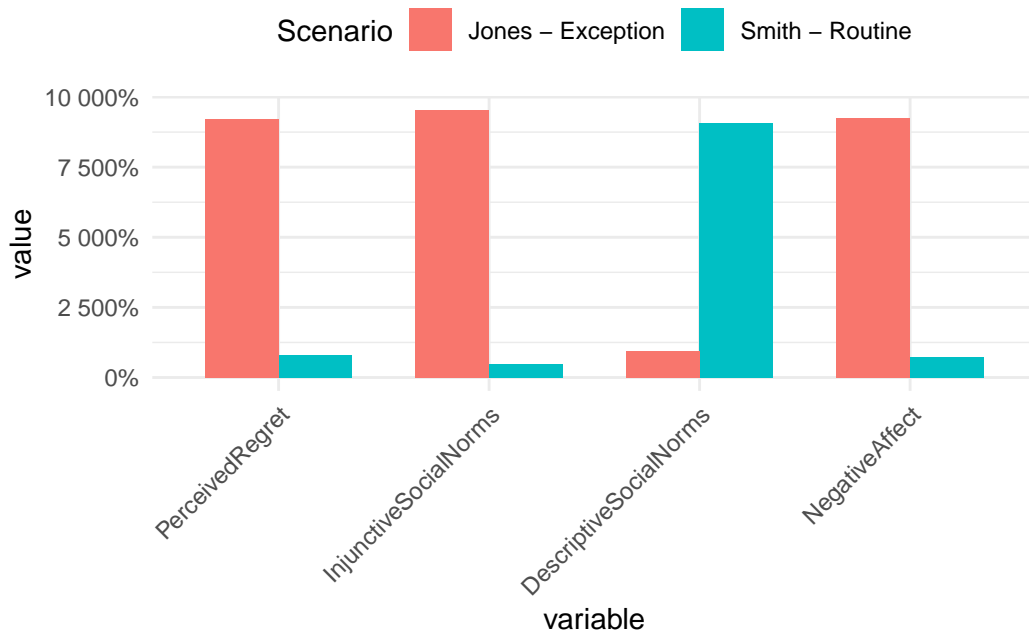


Figure 1: Proportions for perceived regret, injunctive social norms, descriptive social norms, and negative affect

Figure 1 shows the evaluation results of participants in two different scenarios: Mr. Jones, who never uses his car to pick up hitchhikers, and Mr. Smith, who often uses his car to pick up hitchhikers, were also picked up by themselves yesterday. After the car was robbed by the people, it was different in all aspects. In the Perceived Regret assessment, the proportion of regret towards Mr Smith was relatively low (7.9%). In contrast, the regret for Mr. Jones reached 92.1%, which was significantly higher than the former. Similar to regret in Injunctive

Social Norms, Mr. Smith and Mr. Jones were at 4.7% and 95.3% respectively. This suggests that most people view Mr. Jones (who never picks up hitchhikers) as more common in society, and therefore feel a greater sense of regret for what happened to him. In addition, another reason is that Mr. Jones encountered extremely low-probability events on rare occasions, which is even more unacceptable. As for Descriptive Social Norms, it is naturally the opposite of the first two. Mr. Smith's proportion is extremely high, reaching 90.6%, while Mr. Jones's is only 9.4%. In addition, as the chart shows, a strong sense of regret will bring about Negative Affect. Therefore, the proportion of Negative Affect in Mr. Jones' scene is very high, 92.7%. The proportion in Mr. Smith's scenario was lower, 7.3%. Based on the above results, it can be seen that most participants believe that Mr. Jones is more in line with social rules than Mr. Smith. However, because the two have also experienced small-probability negative events, participants will gain more in Mr. Jones's scenario. Feelings of regret and experiencing negative emotions. shows the evaluation results of participants in two different scenarios: Mr. Jones, who never uses his car to pick up hitchhikers, and Mr. Smith, who often uses his car to pick up hitchhikers, were also picked up by themselves yesterday. After the car was robbed by the people, it was different in all aspects. In the Perceived Regret assessment, the proportion of regret towards Mr Smith was relatively low (7.9%). In contrast, the regret for Mr. Jones reached 92.1%, which was significantly higher than the former. Similar to regret in Injunctive Social Norms, Mr. Smith and Mr. Jones were at 4.7% and 95.3% respectively. This suggests that most people view Mr. Jones (who never picks up hitchhikers) as more common in society, and therefore feel a greater sense of regret for what happened to him. In addition, another reason is that Mr. Jones encountered extremely low-probability events on rare occasions, which is even more unacceptable. As for Descriptive Social Norms, it is naturally the opposite of the first two. Mr. Smith's proportion is extremely high, reaching 90.6%, while Mr. Jones's is only 9.4%. In addition, as the chart shows, a strong sense of regret will bring about Negative Affect. Therefore, the proportion of Negative Affect in Mr. Jones' scene is very high, 92.7%. The proportion in Mr. Smith's scenario was lower, 7.3%. Based on the above results, it can be seen that most participants believe that Mr. Jones is more in line with social rules than Mr. Smith. However, because the two have also experienced small-probability negative events, participants will gain more in Mr. Jones's scenario. Feelings of regret and experiencing negative emotions.

### 3.2 fig2

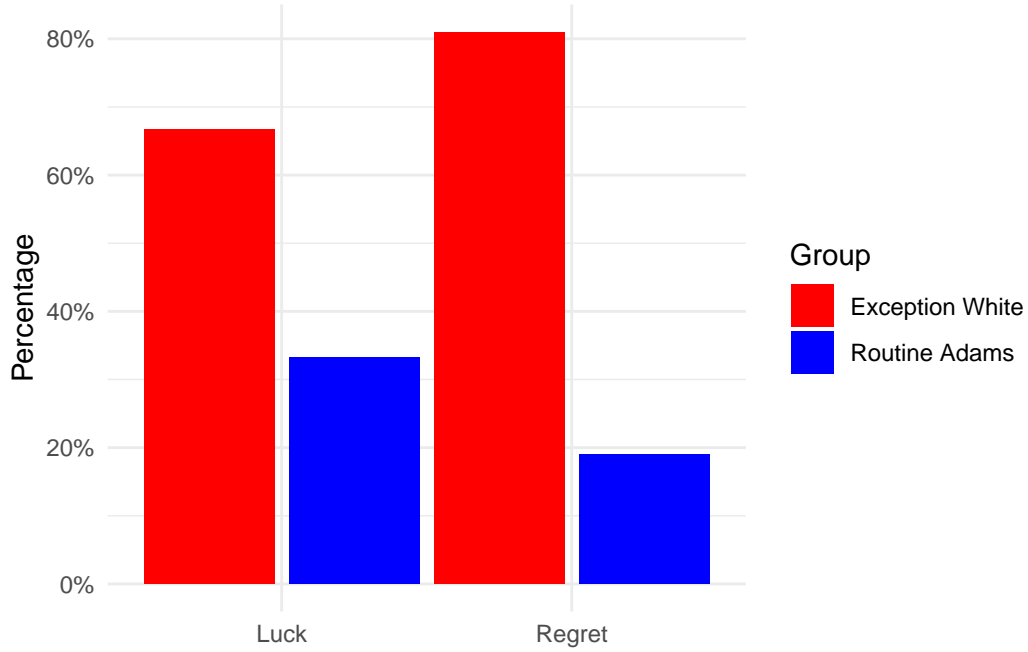


Figure 2: Proportions for perceived regret and luck

The figure named Figure 2 is a replication of Figure 2 in the original paper, and it shows the proportions for perceived regret and luck in two Groups, which are Mr. Adams with the circumstance of routine and Mr. White with the circumstance of the exception. According to the table 2, the proportion of perceived regret for the group of Mr. Adams with the circumstance of routine is 19%, which 19 percents of participants in the experiment feels that Mr. Adams was more upset over the accident for the second scenario. In contrast, the proportion of perceived regret for the group of Mr. White with the circumstance of the exception is 81%, which 81 percents of participants in the experiment feels that Mr. White was more upset over the accident for the second scenario. What's more, the proportion of perceived luck for the group of Mr. Adams with the circumstance of routine is 33.3%, which 33.3 percents of participants in the experiment supposes that Mr. Adams was less lucky. Instead, the proportion of perceived luck for the group of Mr. White with the circumstance of the exception is 66.7%, which 66.7 percents of participants in the experiment supposes that Mr. White was less lucky.

### 3.3 fig3

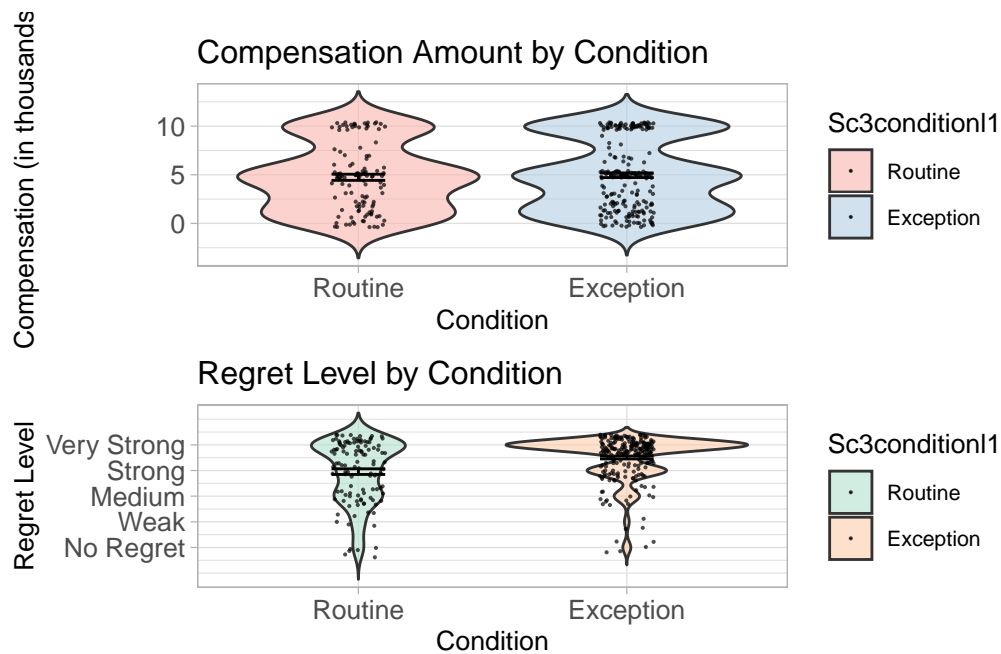


Figure 3: Victim compensation and regret with exception conditions combined

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