

The title*

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This study replicates Kutcher and Feldman’s research on how deviating from daily routine behaviors affects regret. By analyzing routine or exceptional behavior, we aim to quantify regret, social norms, negative consequences, luck and compensation. A voting mechanism among 684 participants was used to measure these parameters in a variety of situations, including Hitchhiker incidents, route changes leading to car crashes, and changes in shopping habits leading to robberies. Our findings are consistent with those of Kutcher and Feldman, but in conclusion we tend to suggest that exceptional behavior increases social sympathy but also increases the likelihood of social criticism when an accident occurs.

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*Code and data are available at:<https://github.com/Northboi/replication-of-impact-of-past-behaviour-normality-on-regret>

1 Introduction

Every day of life is about constantly achieving various goals, whether they are spiritual or physical. People live day by day and develop various daily habits on the way to achieve their goals, and people regard this daily routine as normality (cite1). Behaviors like eating lunch and listening to music are done to satisfy people's needs and goals. However, no one can guarantee that they will achieve every goal. Regret occurs when people are dissatisfied with some of the results they get. This emotion occurs as early as six years old (cite2). The child makes a choice between two boxes with prizes and regrets when the prize in the other box is better than the one he chose. This is because after comparing the results, the child wants to get the better one instead of holding on to the current one.

Some people believe that when people make changes in their daily routine behavior, no matter the results are good or bad. Those who changed their behavior regretted it more than those who did not change their behavior (cite3), and those who changed from the right option to the wrong option regretted more than those who directly chose the wrong option. Based on these concepts, Kutscher and Feldman started research. They selected a total of 684 participants (cite0) to vote for various parameters of the representative characters of exceptions and routines in different scenarios (for example, if the participant thinks that the character A who represents the exception in a certain scenario will be more regret, he will vote for A instead of character B in regret aspect. And we use the total number of votes to quantify the size of parameters such as regret or luck). In part 1 they examined whether people who took hitch-hikers as an exception and were robbed felt more regret than people who took hitchhiking as a routine behavior. In Part 2, it was studied that people who took an exceptional route home and were involved in a car accident were less lucky than those who were involved in a car accident while taking their usual route home. After studying the first two scenarios, Kutscher and Feldman further explored, in a third scenario involving a robbery at a store, how much regret individuals who view going to store A as a routine behavior should feel compared to those who see it as an exceptional behavior, as well as how much compensation they were believed should receive. In our process of reproducing their paper, we mainly study and analyze the following results:

In section 3.1, use table1 and figure1 to study whether people who hitchhiked and were robbed due to exceptional behavior have more regrets, social norms (injunctive and descriptive) and negative affect. In section 3.2, use table 2 and figure 2 to study whether people who are involved in a car accident due to changing their home route will regret it more. In section 3.3, use figure 3 and figure 4 to study whether people who were robbed due to the exception of changing stores are considered more regretful and deserve more compensation.

After analysis, we found that people who encountered bad situations due to exceptional behavior had more regrets, injunctive social norms, negative affect and bad luck, and were considered worthy of more compensation. People who encountered bad situations due to routine behavior simply had more descriptive social norms. Therefore, we obtained the same results for graphs and tables as the initial reproducing study from Kutscher and Feldman. In conclusion, we

believe that these results illustrate that under the same bad situation, people who do exceptional behavior are more likely to receive sympathy from society, but are also more likely to be criticized because of the harm caused by sudden changes.

2 Data

2.1 Data Source

The datasets used in this analysis are collected by Lucas Kutscher from Maastricht University, and Gilad Fledman from Maastricht University and University of Hong Kong[cite0]. Real life data is collected in two datasets, in order to replicate the classic experiments initialized by Kahneman and Miller’s [original] on norm theory. The experiments are dedicated to three various scenarios, which will be discussed in Section 2.1. The original experiments were created in 1986, and the datasets by Kutscher and Fledman will be collected in 2019. The datasets are chosen because Kutscher and Fledman modified and improved the design of the original experiment, making it more precise and unbiased; details on the improvement will be elaborate in Section 2.2. Moreover, the original experiment was conducted many years ago, which brings difficulties accessing the original data. For the reason above, datasets from Kutscher and Fledman are more appropriate for this analysis.

2.2 Attributes

2.2.1 Part 1: Hitch-hiker:

```
<table class="table" style="margin-left: auto; margin-right: auto;">
  <thead>
    <tr>
      <th style="text-align:center;"> Regret </th>
      <th style="text-align:center;"> Injunctive norms </th>
      <th style="text-align:center;"> Descriptive norms </th>
      <th style="text-align:center;"> Negative affect </th>
    </tr>
  </thead>
  <tbody>
    <tr>
      <td style="text-align:center;"> 1 </td>
      <td style="text-align:center;"> 1 </td>
      <td style="text-align:center;"> 2 </td>
      <td style="text-align:center;"> 1 </td>
    </tr>
```



```
 1 </td>  1 </td>  2 </td>  2 </td> </tr> <tr>  1 </td>  1 </td>  2 </td>  1 </td> </tr> </tbody> </table> | | | | | | | |
```

Mr. Jones, who avoids giving rides to any hitch-hacker, decided to lift a hitch-hacker yesterday, and ended up being robbed. Mr. Smith, who often gives rides to hitch-hackers regularly, decided to lift a hitch-hacker yesterday, and ended up being robbed. The original description of part 1 was stored in the variable “Sc1_text1”.

To ensure all participants fully understand the scenario before answering the measurement questions, three comprehension questions are asked: 1. “Who almost never takes hitch-hickers in his car?” choices: Mr. Jones, Mr. Smith 2. “Who frequently takes hitch-hickers in his car?” choices: Mr. Jones, Mr. Smith 3. “Who got robbed?” choices: Mr. Jones, Mr. Smith The results of the questions are recorded in the variables “Sc1_Quiz1”, “Sc1_Quiz2”, “Sc1_Quiz3” in sequential order. Only participants who answer correctly for the above questions can continue to answer the measurement questions that can be used in the data.

After passing the comprehension questions, four measurement questions are being asked, corresponding to four standards of measurement, regret, injunctive norms, descriptive norms, and negative affect, matching the variables “Sc1_regret”, “Sc1_socnorms1”, “Sc1_socnorms2”, “Sc1_combinednorms” in the data, respectively. These four measurement questions are: Regret - “Who do you expect to experience greater regret over the episode?” choices: Mr. Jones, Mr. Smith Injunctive norms - “Whose behaviour do you think will be more criticised by others in society?” choices: Mr. Jones, Mr. Smith Descriptive norms: Whose behavior do you think is more common in society?” choices: Mr. Jones, Mr. Smith Negative affect - “contemplating your previous answers about this scenario and factoring in both Mr. Jones and Mr. Smith personal routines and your perceptions of social norms and possible social criticism, who do you think overall experienced more negative feelings about the decision to take a hitch-hiker that day?” choices: Mr. Jones, Mr. Smith The corresponding texts are allocated in “Sc1_text2”, “Sc1_text3”, and “Sc1_text4”.

2.2.2 Part 2: Car accident

Mr. Adams, was driving on his usual route to home, and was involved in a car accident. Mr. White, was driving home, but on an alternate route that he barely visited before, then he was involved in a car accident. The original description of part 2 was stored in the variable “Sc2_text”.

Similarly, three comprehension questions are asked to ascertain participations’ understanding of Part 2: “Who was driving home after work on his regular route?”[cite0] choices: Mr. Adams, Mr. White “Who was driving on a route that he only takes when he wants a change of scenery?”[cite0] choices: Mr. Adams, Mr. White “Who was involved in an accident?”[cite0] choices: Mr. Adams, Mr. White, both Participants’ answers of the questions above are under the variables “Sc2_quiz1”, “Sc2_quiz2”, “Sc2_quiz3” in sequential order.

Participants that pass the comprehension questions, will be answering four measurement questions to weight regret, randomness, and luck in this scenario: Regret - “Who is more upset over the accident?”[cite0] choices: Mr. Adams, Mr. White Randomness for Mr. Adam - “Mr. Adams’ accident is just a random coincidence.”[cite0] choices: pick a number from 1 - 7, 1 means strongly disagree, and 7 means strongly agree Randomness for Mr. White - “Mr. White’s accident is just a random coincidence.”[cite0] choices: pick a number from 1 - 7, 1 means strongly disagree, and 7 means strongly agree Luck - “Which of the two do you think is less lucky?”[cite0] choices: Mr. Adams, Mr. White The corresponding texts are allocated in “Sc2_text2”, “Sc2_text3”. The results are stored under the variables “Sc2_regret”, “Sc2_random_1”, “Sc2_random_2”, and “Sc2_lucky” in order.

2.2.3 Part 3: Robbery

There are two distinct convenience stores around Mr. Paul’s neighborhood. Mr. Paul visits Store A more often than Store B. [Routine behavior condition][cite0]: Mr. Paul visited Store A last night, and encountered a robbery in the store. As a consequence, he lost his right arm due to a gunshot wound. [Self-produced exception condition][cite0]: Mr. Paul wanted a shift in routine last night, so he visited Store B, and encountered a robbery in the store. As a consequence, he lost his right arm due to a gunshot wound. [Other produced exception condition][cite0]: Mr. Paul visited Store B last night, because Store A was closed due to renovation. Then, he encountered a robbery in the store. As a consequence, he lost his right arm due to a gunshot wound. The original text for each condition is stored in variables “Sc3_C1_text”, “Sc3_C2_text”, “Sc3_C3_text”.

Besides Experiment 1, another Experiment was conducted by a new group of participants, who only answer questions for scenario 3, to avoid “concerns that exposure to questions in Part 1 and 2 somehow affected answers in Part 3” [cite0]. This part of the experiment is divided into three small scenarios, which are [Routine behavior condition], [Self-produced exception condition], [Other produced exception condition] as listed. Three comprehension questions are

included in Experiment 1 to test participants' perception for part 3. Since there are three small scenarios, the questions are asked repeatedly for distinct scenarios. Answers are stored under the variables "Sc3_C1_quiz1", "Sc3_C1_quiz2", and "Sc3_C1_quiz3" for [Routine behavior condition], "Sc3_C2_quiz1", "Sc3_C2_quiz2", and "Sc3_C2_quiz3" for [Self-produced exception condition], "Sc3_C3_quiz1", "Sc3_C3_quiz2", and "Sc3_C3_quiz3" for [Other produced exception condition]. Similar to the other two parts, participants can only process the measurement questions once they correctly answer the comprehension questions. Notice that these comprehension questions are not asked for Experiment 2: "Which convenience store does Mr. Paul visits frequently?"[cite0] choices: Store A, Store B "Which convenience store did Mr. Paul visited last night?"[cite0] choices: Store A, Store B "Did Mr. Paul lose the use of his right arm as a result of a gunshot wound?"[cite0] choices: Yes, No

After passing the comprehension questions, two measurement questions are asked to participants in both experiments, the texts are allocated in "sc3_c1_text2", "sc3_c1_text3", "sc3_c2_text2", "sc3_c2_text3", "sc3_c3_text2", "sc3_c3_text3" for each experiment. Notice that the same question asked in Experiment 1 and Experiment 2 are formulated with some variations. In Experiment 1, the questions are: Compensation - "How much money should Mr. Paul received compensation for his loss? (11-point scale: 0 representing 0\$ to 10 representing 1,000,000 dollar; typical award: 500,000 dollar)"[cite0] Regret - "assume there was no compensation given to Mr. Paul. How much regret does he feel over the situation? (1 - no regret to 5 - very strong regret)"[cite0]

In Experiment 2, the questions are altered into the form below: Compensation - "Mr. Paul seeks compensation for both the physical and psychological harm suffered. How much money should Mr. Paul receive in compensation?"[cite0] choices: 0 representing 0, 10 representing 1,000,000 Regret - "Assume there was no compensation given to Mr. Paul. How much regret does he feel about visiting store [A/B]?"[cite0] choices: choose number from 1 - 5, 1 represents no regret, 5 represents very strong regret The results of the questions are allocated in the variables "sc3_c1_compensation", "sc3_c1_regret", "sc3_c2_compensation", "sc3_c2_regret", "sc3_c3_compensation", and "sc3_c3_regret" for both experiments.

Furthermore, informations about each participants are also included in the data files, encompassing the following variables: "Q_TotalDuration" representing the total time in seconds that participant took to complete all questions, "age" representing the age of participants, "gender" representing the gender of participants, "serious" represents the seriousness of participants' responses. In addition, "Q53", "Q54", and "engunder" are three variables that are ambiguous in their meaning, since the author did not interpret them in the original paper, and no explanations are included in the datasets. Nevertheless, only responses of the measurement questions are in the usage of this analysis, so all other variables that are comparatively unrelated cannot alternate the final results.

The variables that are applied in this study are: "Sc1_regret", "sc1_socnorms1", "sc1_socnorms2", "sc1_combinednorms", "Sc2_regret", "Sc2_random_1", "Sc2_random_2", "Sc2_lucky", "Sc3_C1_quiz1", "Sc3_C1_quiz2", "Sc3_C1_quiz3", "Sc3_C2_quiz1", "Sc3_C2_quiz2", "Sc3_C2_quiz3", "Sc3_C3_quiz1", "Sc3_C3_quiz2", "Sc3_C3_quiz3".

If the question contains various answers, such as (choices: Mr. Jones, Mr. Smith), then 1 represents the first choice, and 2 represents the second choice. If the question involves rating, such as (1 – no regret to 5 – very strong regret)[@cite0], then the actual number represents the rating.

Below is a glimpse of the dataset, with the four responses variables of part 1 that will be used in the analysis:

2.3 Result

```
'data.frame':  347 obs. of  52 variables:
 $ Q_TotalDuration      : int  164 212 333 345 437 125 351 228 207 266 ...
 $ Sc1_text1            : int  1 1 1 1 1 1 1 1 1 1 ...
 $ Sc1_Quiz1            : int  1 1 1 1 1 1 1 1 1 1 ...
 $ Sc1_Quiz2            : int  2 2 2 2 2 2 2 2 2 2 ...
 $ Sc1_Quiz3            : int  4 4 4 4 4 4 4 4 4 4 ...
 $ Sc1_text2            : int  1 1 1 1 1 1 1 1 1 1 ...
 $ Sc1_regret           : int  1 1 1 1 1 1 1 1 1 1 ...
 $ sc1_text3            : int  1 1 1 1 1 1 1 1 1 1 ...
 $ sc1_socnorms1        : int  1 1 1 1 1 1 1 1 1 1 ...
 $ sc1_socnorms2        : int  2 2 2 2 2 2 2 2 2 2 ...
 $ sc1_text4            : int  1 1 1 1 1 1 1 1 1 1 ...
 $ sc1_combinednorms    : int  1 1 1 1 1 1 1 1 2 1 ...
 $ Q53                  : int  1 1 1 1 1 1 1 1 1 1 ...
 $ Sc2_text             : int  1 1 1 1 1 1 1 1 1 1 ...
 $ Sc2_quiz1            : int  1 1 1 1 1 1 1 1 1 1 ...
 $ Sc2_quiz2            : int  2 2 2 2 2 2 2 2 2 2 ...
 $ Sc2_quiz3            : int  4 4 4 4 4 4 4 4 4 4 ...
 $ Sc2_text2            : int  1 1 1 1 1 1 1 1 1 1 ...
 $ Sc2_regret           : int  1 2 2 1 2 2 2 2 1 1 ...
 $ Sc2_text3            : int  1 1 1 1 1 1 1 1 1 1 ...
 $ Sc2_random_1         : int  6 6 7 6 7 7 6 6 6 6 ...
 $ Sc2_random_2         : int  6 6 7 6 7 7 6 6 6 6 ...
 $ Sc2_lucky            : int  2 1 2 1 1 2 2 2 1 2 ...
 $ Q54                  : int  1 1 1 1 1 1 1 1 1 1 ...
 $ Sc3_C1_text          : int  1 NA 1 NA NA 1 NA NA 1 NA ...
 $ Sc3_C1_quiz1         : int  1 NA 1 NA NA 1 NA NA 1 NA ...
 $ Sc3_C1_quiz2         : int  1 NA 1 NA NA 1 NA NA 1 NA ...
 $ Sc3_C1_quiz3         : int  1 NA 1 NA NA 1 NA NA 1 NA ...
 $ sc3_c1_text2         : int  1 NA 1 NA NA 1 NA NA 1 NA ...
 $ sc3_c1_compensation: int  6 NA 6 NA NA 6 NA NA 1 NA ...
 $ sc3_c1_text3         : int  1 NA 1 NA NA 1 NA NA 1 NA ...
```



```

$ sc3_c1_regret      : int  4 NA 4 NA NA 4 NA NA 2 NA ...
$ Sc3_C2_text        : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ Sc3_C2_quiz1       : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ Sc3_C2_quiz2       : int  NA 2 NA 2 NA NA NA 2 NA NA ...
$ Sc3_C2_quiz3       : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ sc3_c2_text2       : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ sc3_c2_compensation: int  NA 2 NA 6 NA NA NA 5 NA NA ...
$ sc3_c2_text3       : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ sc3_c2_regret      : int  NA 4 NA 3 NA NA NA 4 NA NA ...
$ Sc3_C3_text        : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ Sc3_C3_quiz1       : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ Sc3_C3_quiz2       : int  NA NA NA NA 2 NA 2 NA NA 2 ...
$ Sc3_C3_quiz3       : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ sc3_c3_text2       : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ sc3_c3_compensation: int  NA NA NA NA 11 NA 6 NA NA 8 ...
$ sc3_c3_text3       : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ sc3_c3_regret      : int  NA NA NA NA 4 NA 3 NA NA 2 ...
$ age                : int  23 32 71 54 32 22 51 35 37 33 ...
$ gender             : int  1 2 2 1 1 2 1 1 2 1 ...
$ serious            : int  5 5 5 5 5 5 5 5 4 5 ...
$ engunder           : int  7 7 7 7 7 7 7 7 7 7 ...

```

Warning: attributes are not identical across measure variables; they will be dropped

```

<table class="table table-striped table-hover" style="margin-left: auto; margin-right: auto;
<caption>Part 1 (hitchhiker): Counts and proportions for perceived regret, social norms, and
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</tr>
<tr>
<th style="text-align:center;"> Character </th>
<th style="text-align:center;"> Count </th>
<th style="text-align:center;"> Percentage </th>
<th style="text-align:center;"> Count </th>
<th style="text-align:center;"> Percentage </th>
<th style="text-align:center;"> Count </th>

```

```

    <th style="text-align:center;"> Percentage </th>
    <th style="text-align:center;"> Count </th>
    <th style="text-align:center;"> Percentage </th>
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</thead>
<tbody>
  <tr>
    <td style="text-align:center;"> Routine Smith </td>
    <td style="text-align:center;"> 27 </td>
    <td style="text-align:center;"> 7.9% </td>
    <td style="text-align:center;"> 16 </td>
    <td style="text-align:center;"> 4.7% </td>
    <td style="text-align:center;"> 310 </td>
    <td style="text-align:center;"> 90.6% </td>
    <td style="text-align:center;"> 25 </td>
    <td style="text-align:center;"> 7.3% </td>
  </tr>
  <tr>
    <td style="text-align:center;"> Exception Jones </td>
    <td style="text-align:center;"> 315 </td>
    <td style="text-align:center;"> 92.1% </td>
    <td style="text-align:center;"> 326 </td>
    <td style="text-align:center;"> 95.3% </td>
    <td style="text-align:center;"> 32 </td>
    <td style="text-align:center;"> 9.4% </td>
    <td style="text-align:center;"> 317 </td>
    <td style="text-align:center;"> 92.7% </td>
  </tr>
</tbody>
</table>

```

Error setting working directory using rstudioapi. Please set manually if necessary.

```

'data.frame':  347 obs. of  52 variables:
 $ Q_TotalDuration      : int  164 212 333 345 437 125 351 228 207 266 ...
 $ Sc1_text1            : int   1 1 1 1 1 1 1 1 1 1 ...
 $ Sc1_Quiz1            : int   1 1 1 1 1 1 1 1 1 1 ...
 $ Sc1_Quiz2            : int   2 2 2 2 2 2 2 2 2 2 ...
 $ Sc1_Quiz3            : int   4 4 4 4 4 4 4 4 4 4 ...
 $ Sc1_text2            : int   1 1 1 1 1 1 1 1 1 1 ...
 $ Sc1_regret           : int   1 1 1 1 1 1 1 1 1 1 ...
 $ sc1_text3            : int   1 1 1 1 1 1 1 1 1 1 ...

```

```

$ sc1_socnorms1      : int  1 1 1 1 1 1 1 1 1 1 ...
$ sc1_socnorms2      : int  2 2 2 2 2 2 2 2 2 2 ...
$ sc1_text4          : int  1 1 1 1 1 1 1 1 1 1 ...
$ sc1_combinednorms  : int  1 1 1 1 1 1 1 1 2 1 ...
$ Q53                : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc2_text           : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc2_quiz1          : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc2_quiz2          : int  2 2 2 2 2 2 2 2 2 2 ...
$ Sc2_quiz3          : int  4 4 4 4 4 4 4 4 4 4 ...
$ Sc2_text2          : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc2_regret         : int  1 2 2 1 2 2 2 2 1 1 ...
$ Sc2_text3          : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc2_random_1       : int  6 6 7 6 7 7 6 6 6 6 ...
$ Sc2_random_2       : int  6 6 7 6 7 7 6 6 6 6 ...
$ Sc2_lucky          : int  2 1 2 1 1 2 2 2 1 2 ...
$ Q54                : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc3_C1_text        : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ Sc3_C1_quiz1       : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ Sc3_C1_quiz2       : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ Sc3_C1_quiz3       : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ sc3_c1_text2       : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ sc3_c1_compensation: int  6 NA 6 NA NA 6 NA NA 1 NA ...
$ sc3_c1_text3       : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ sc3_c1_regret      : int  4 NA 4 NA NA 4 NA NA 2 NA ...
$ Sc3_C2_text        : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ Sc3_C2_quiz1       : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ Sc3_C2_quiz2       : int  NA 2 NA 2 NA NA NA 2 NA NA ...
$ Sc3_C2_quiz3       : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ sc3_c2_text2       : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ sc3_c2_compensation: int  NA 2 NA 6 NA NA NA 5 NA NA ...
$ sc3_c2_text3       : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ sc3_c2_regret      : int  NA 4 NA 3 NA NA NA 4 NA NA ...
$ Sc3_C3_text        : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ Sc3_C3_quiz1       : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ Sc3_C3_quiz2       : int  NA NA NA NA 2 NA 2 NA NA 2 ...
$ Sc3_C3_quiz3       : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ sc3_c3_text2       : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ sc3_c3_compensation: int  NA NA NA NA 11 NA 6 NA NA 8 ...
$ sc3_c3_text3       : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ sc3_c3_regret      : int  NA NA NA NA 4 NA 3 NA NA 2 ...
$ age                : int  23 32 71 54 32 22 51 35 37 33 ...
$ gender             : int  1 2 2 1 1 2 1 1 2 1 ...
$ serious            : int  5 5 5 5 5 5 5 5 4 5 ...

```

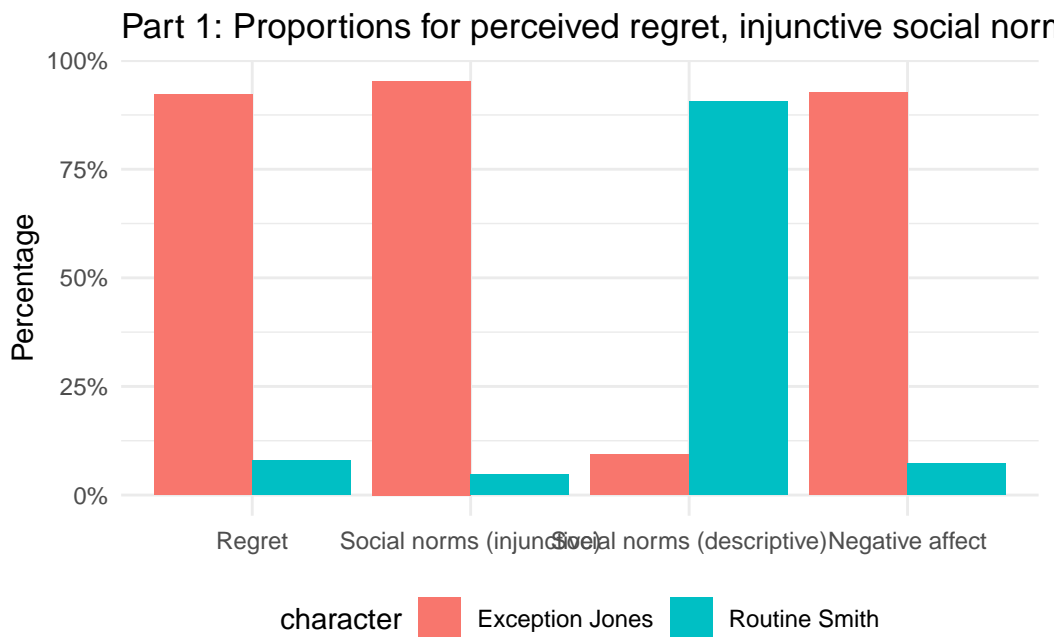
\$ engunder : int 7 7 7 7 7 7 7 7 7 7 ...

1 2 3
182 156 4

Mean age: 38.27976

SD of age: 11.55283

Warning: attributes are not identical across measure variables; they will be dropped



```
'data.frame': 347 obs. of 52 variables:
 $ Q_TotalDuration : int 164 212 333 345 437 125 351 228 207 266 ...
 $ Sc1_text1 : int 1 1 1 1 1 1 1 1 1 1 ...
 $ Sc1_Quiz1 : int 1 1 1 1 1 1 1 1 1 1 ...
 $ Sc1_Quiz2 : int 2 2 2 2 2 2 2 2 2 2 ...
 $ Sc1_Quiz3 : int 4 4 4 4 4 4 4 4 4 4 ...
 $ Sc1_text2 : int 1 1 1 1 1 1 1 1 1 1 ...
 $ Sc1_regret : int 1 1 1 1 1 1 1 1 1 1 ...
 $ sc1_text3 : int 1 1 1 1 1 1 1 1 1 1 ...
 $ sc1_socnorms1 : int 1 1 1 1 1 1 1 1 1 1 ...
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$ sc1_socnorms2      : int  2 2 2 2 2 2 2 2 2 2 ...
$ sc1_text4          : int  1 1 1 1 1 1 1 1 1 1 ...
$ sc1_combinednorms  : int  1 1 1 1 1 1 1 1 2 1 ...
$ Q53                : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc2_text           : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc2_quiz1          : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc2_quiz2          : int  2 2 2 2 2 2 2 2 2 2 ...
$ Sc2_quiz3          : int  4 4 4 4 4 4 4 4 4 4 ...
$ Sc2_text2          : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc2_regret         : int  1 2 2 1 2 2 2 2 1 1 ...
$ Sc2_text3          : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc2_random_1       : int  6 6 7 6 7 7 6 6 6 6 ...
$ Sc2_random_2       : int  6 6 7 6 7 7 6 6 6 6 ...
$ Sc2_lucky          : int  2 1 2 1 1 2 2 2 1 2 ...
$ Q54                : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc3_C1_text        : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ Sc3_C1_quiz1       : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ Sc3_C1_quiz2       : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ Sc3_C1_quiz3       : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ sc3_c1_text2        : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ sc3_c1_compensation: int  6 NA 6 NA NA 6 NA NA 1 NA ...
$ sc3_c1_text3        : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ sc3_c1_regret       : int  4 NA 4 NA NA 4 NA NA 2 NA ...
$ Sc3_C2_text        : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ Sc3_C2_quiz1       : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ Sc3_C2_quiz2       : int  NA 2 NA 2 NA NA NA 2 NA NA ...
$ Sc3_C2_quiz3       : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ sc3_c2_text2        : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ sc3_c2_compensation: int  NA 2 NA 6 NA NA NA 5 NA NA ...
$ sc3_c2_text3        : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ sc3_c2_regret       : int  NA 4 NA 3 NA NA NA 4 NA NA ...
$ Sc3_C3_text        : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ Sc3_C3_quiz1       : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ Sc3_C3_quiz2       : int  NA NA NA NA 2 NA 2 NA NA 2 ...
$ Sc3_C3_quiz3       : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ sc3_c3_text2        : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ sc3_c3_compensation: int  NA NA NA NA 11 NA 6 NA NA 8 ...
$ sc3_c3_text3        : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ sc3_c3_regret       : int  NA NA NA NA 4 NA 3 NA NA 2 ...
$ age                 : int  23 32 71 54 32 22 51 35 37 33 ...
$ gender              : int  1 2 2 1 1 2 1 1 2 1 ...
$ serious             : int  5 5 5 5 5 5 5 5 4 5 ...
$ engunder            : int  7 7 7 7 7 7 7 7 7 7 ...

```

```

<table class="table table-striped table-hover" style="margin-left: auto; margin-right: auto;
<caption>Part 2 (car accident): Counts and proportions for perceived regret and luck.</caption>
  <thead>
    <tr>
      <th style="empty-cells: hide;border-bottom:hidden;" colspan="1"></th>
      <th style="border-bottom:hidden;padding-bottom:0; padding-left:3px;padding-right:3px;text-align:
      <th style="border-bottom:hidden;padding-bottom:0; padding-left:3px;padding-right:3px;text-align:
    </tr>
    <tr>
      <th style="text-align:left;"> Character </th>
      <th style="text-align:center;"> Count </th>
      <th style="text-align:center;"> Percentage </th>
      <th style="text-align:center;"> Count </th>
      <th style="text-align:center;"> Percentage </th>
    </tr>
  </thead>
  <tbody>
    <tr>
      <td style="text-align:left;"> Routine Adams </td>
      <td style="text-align:center;"> 65 </td>
      <td style="text-align:center;"> 19.0% </td>
      <td style="text-align:center;"> 114 </td>
      <td style="text-align:center;"> 33.3% </td>
    </tr>
    <tr>
      <td style="text-align:left;"> Exception White </td>
      <td style="text-align:center;"> 277 </td>
      <td style="text-align:center;"> 81.0% </td>
      <td style="text-align:center;"> 228 </td>
      <td style="text-align:center;"> 66.7% </td>
    </tr>
  </tbody>
</table>

```

```

'data.frame':   347 obs. of  52 variables:
 $ Q_TotalDuration    : int  164 212 333 345 437 125 351 228 207 266 ...
 $ Sc1_text1          : int   1 1 1 1 1 1 1 1 1 1 1 ...
 $ Sc1_Quiz1          : int   1 1 1 1 1 1 1 1 1 1 1 ...
 $ Sc1_Quiz2          : int   2 2 2 2 2 2 2 2 2 2 2 ...
 $ Sc1_Quiz3          : int   4 4 4 4 4 4 4 4 4 4 4 ...
 $ Sc1_text2          : int   1 1 1 1 1 1 1 1 1 1 1 ...
 $ Sc1_regret         : int   1 1 1 1 1 1 1 1 1 1 1 ...

```

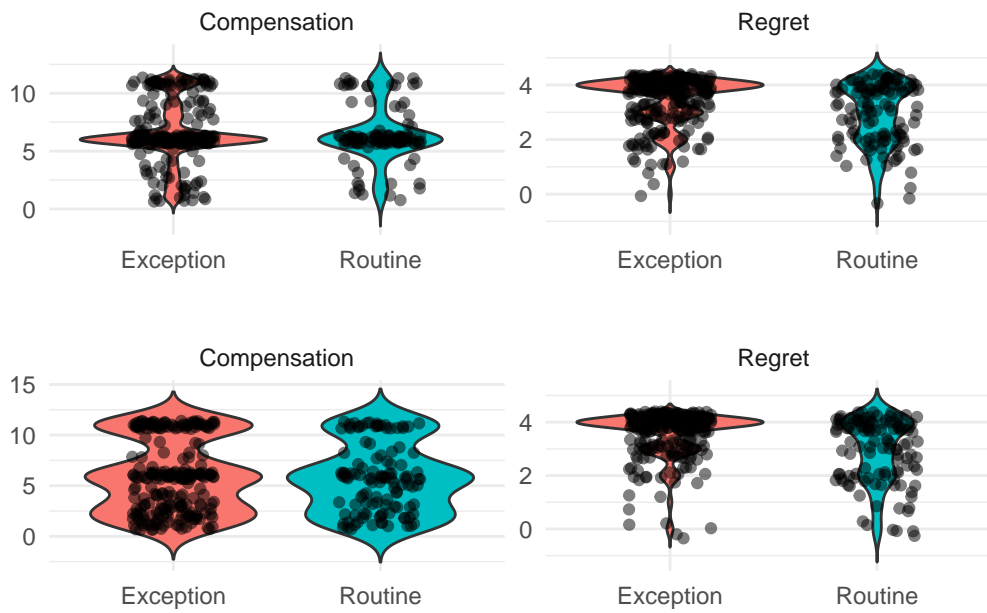
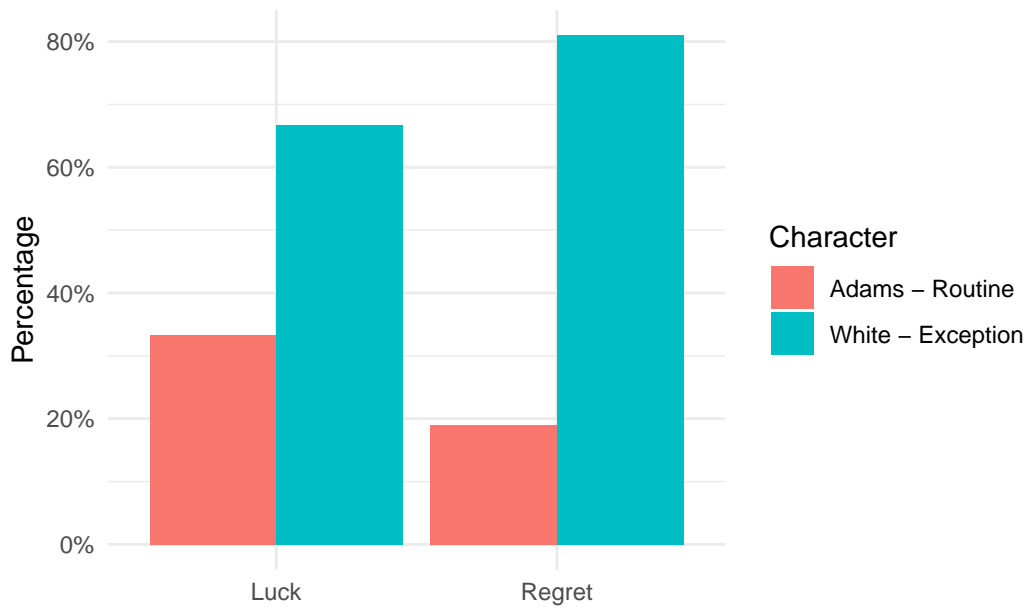
```

$ sc1_text3          : int  1 1 1 1 1 1 1 1 1 1 ...
$ sc1_socnorms1      : int  1 1 1 1 1 1 1 1 1 1 ...
$ sc1_socnorms2      : int  2 2 2 2 2 2 2 2 2 2 ...
$ sc1_text4          : int  1 1 1 1 1 1 1 1 1 1 ...
$ sc1_combinednorms  : int  1 1 1 1 1 1 1 1 2 1 ...
$ Q53                : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc2_text           : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc2_quiz1          : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc2_quiz2          : int  2 2 2 2 2 2 2 2 2 2 ...
$ Sc2_quiz3          : int  4 4 4 4 4 4 4 4 4 4 ...
$ Sc2_text2          : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc2_regret         : int  1 2 2 1 2 2 2 2 1 1 ...
$ Sc2_text3          : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc2_random_1       : int  6 6 7 6 7 7 6 6 6 6 ...
$ Sc2_random_2       : int  6 6 7 6 7 7 6 6 6 6 ...
$ Sc2_lucky          : int  2 1 2 1 1 2 2 2 1 2 ...
$ Q54                : int  1 1 1 1 1 1 1 1 1 1 ...
$ Sc3_C1_text        : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ Sc3_C1_quiz1       : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ Sc3_C1_quiz2       : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ Sc3_C1_quiz3       : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ sc3_c1_text2       : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ sc3_c1_compensation: int  6 NA 6 NA NA 6 NA NA 1 NA ...
$ sc3_c1_text3       : int  1 NA 1 NA NA 1 NA NA 1 NA ...
$ sc3_c1_regret      : int  4 NA 4 NA NA 4 NA NA 2 NA ...
$ Sc3_C2_text        : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ Sc3_C2_quiz1       : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ Sc3_C2_quiz2       : int  NA 2 NA 2 NA NA NA 2 NA NA ...
$ Sc3_C2_quiz3       : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ sc3_c2_text2       : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ sc3_c2_compensation: int  NA 2 NA 6 NA NA NA 5 NA NA ...
$ sc3_c2_text3       : int  NA 1 NA 1 NA NA NA 1 NA NA ...
$ sc3_c2_regret      : int  NA 4 NA 3 NA NA NA 4 NA NA ...
$ Sc3_C3_text        : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ Sc3_C3_quiz1       : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ Sc3_C3_quiz2       : int  NA NA NA NA 2 NA 2 NA NA 2 ...
$ Sc3_C3_quiz3       : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ sc3_c3_text2       : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ sc3_c3_compensation: int  NA NA NA NA 11 NA 6 NA NA 8 ...
$ sc3_c3_text3       : int  NA NA NA NA 1 NA 1 NA NA 1 ...
$ sc3_c3_regret      : int  NA NA NA NA 4 NA 3 NA NA 2 ...
$ age                : int  23 32 71 54 32 22 51 35 37 33 ...
$ gender             : int  1 2 2 1 1 2 1 1 2 1 ...

```

```
$ serious      : int  5 5 5 5 5 5 5 5 4 5 ...
$ engunder     : int  7 7 7 7 7 7 7 7 7 7 ...
```

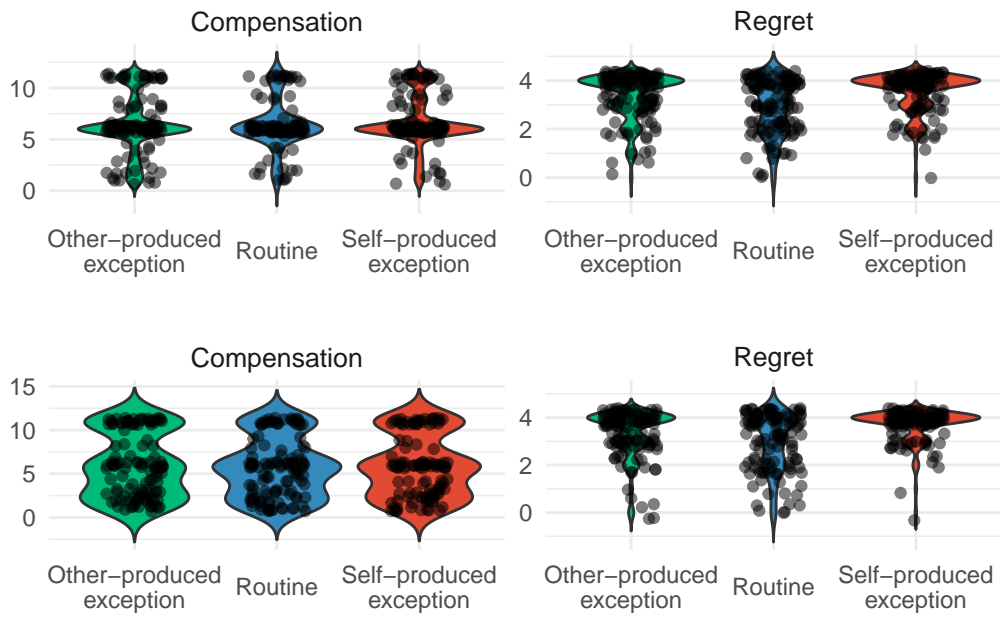
Part 2: Proportions for perceived regret and luck



```
TableGrob (2 x 1) "arrange": 2 grobs
  z      cells      name      grob
1 1 (1-1,1-1) arrange gtable[layout]
```



```
2 2 (2-2,1-1) arrange gtable[layout]
```



```
TableGrob (2 x 1) "arrange": 2 grobs
  z      cells      name      grob
1 1 (1-1,1-1) arrange gtable[layout]
2 2 (2-2,1-1) arrange gtable[layout]
```

2.4 Discuss

2.5 Conclusion