Sample proposal for 1-factor design

The Effects of Marijuana on the Accuracy of Facial Identification

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The Effects of Marijuana on the Accuracy of Facial Identification

Criminal activities predominantly take place due to narcotics or by individuals under the influence of narcotics. Marijuana, in particular, is one of the most commonly used drug by individuals between the ages of 16-24, which is also the age range of most victims of assault and robbery (Yuille, Tollestrup, Marxsen, Porter, Herve, 1998). In these cases, more often the victim is the only witness, so it is important to determine whether or not the influence of marijuana (THC) will have any noticeable effect on the individuals ability to correctly identify a face after only a brief glimpse. The presence of THC in the body of an individual is expected to cause a disruption in both the storage, and the retrieval of short term memory. Past research has shown that marijuana is less detrimental to a person’s recognition ability, but can have a higher effect on the individuals’ recall ability (Yuille, et al., 1998).

In another study using the effects of alcohol on memory, individuals both under the influence and not under the influence of alcohol were witness to a crime (Yuille & Tollestrup, 1990). Some individuals were interviewed immediately following the incident, and all individuals were interviewed one week following. It was found that alcohol effected the amount recalled in both the immediate interview, as well as in the delayed interview, though alcohol did not seem to influence the individuals ability to pick out the suspect from a selection of photographs. However, if the suspects photo was not present, the likelihood of a false identification increased when alcohol was involved. The immediate interview seemed to help those intoxicated individuals’ ability to recall more information or more specific details in the following interview one week following.

As prior research has shown, I predict that the effects of THC will influence the accuracy of an individuals capabilities in selecting a suspects photo from a police lineup. I also expect that with increasing amounts of consumed THC the number of false or incorrect identifications will increase. I also expect that those individuals in the placebo condition will be effected and their accuracy in selecting the correct suspect will decrease due to their own beliefs on the effects of marijuana on memory.
Method

Subjects

This study will consist of 60 participants, 30 males and 30 females, who describe themselves as ‘casual’ marijuana smokers.

Design

The study will use a one way factorial design (THC smoked by subject: Cigarette of 0.90%, Cigarette of 1.24%, Placebo Cigarette and Control) to determine whether the amount of THC consumed through smoking a marijuana cigarette will have an effect on the identification of faces in police lineups.

Procedure

The participants will be randomly assigned to one of four groups (30 people per group, each having equal gender distributions). Those individuals in group 1 and 2 will inhale smoke from marijuana cigarettes, group 3 will be asked to inhale smoke from a placebo cigarette, while those in group 4 will not inhale any smoke. There will be a brief, five minute delay, prior to all subjects being shown a slide of the 15 target faces, each face being shown for approximately 30 seconds. Roughly 72 hours after this, participants will return for the identification portion of the experiment, whereby they are shown multiple police lineups with one of the target faces present. Participants are to correctly identify the ‘suspect’, and may only correctly identify a maximum of fifteen target faces out of fifteen. Subjects will not be informed of the correctness of their choices until after the study has concluded, and only if express interest is shown by the subject.

Results

A one factorial analysis of variance (ANOVA) will be conducted to determine the effects of the use of marijuana (THC) on the accuracy of witnesses recall of a crime and their ability to correctly identify a suspect from a police lineup. It is hypothesized that those individuals under the influence of THC will have an increase in the number of incorrect or false identifications, while those individuals in the control group will have zero to no mistakes. Individuals in the placebo group are believed to make more errors than the control group, though not as many as those actually under the influence of THC. This will be tested using a simple effects analysis on the different levels of THC for each group (See hypothesized data table below).
References

Table 1
Hypothetical Results

<table>
<thead>
<tr>
<th>Level of THC</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.90%</td>
<td>10</td>
</tr>
<tr>
<td>1.24%</td>
<td>7</td>
</tr>
<tr>
<td>Placebo</td>
<td>13</td>
</tr>
<tr>
<td>Control</td>
<td>15</td>
</tr>
</tbody>
</table>
Research Project Design Specifications

Independent Variable: Level of THC
   Level 1: 0.90%
   Level 2: 1.24%
   Level 3: Placebo
   Level 4: Control

Dependent variable: number of correct identifications
   Minimum score: 0   Maximum score: 15