

## A Brief Introduction of New Methods to Investigate the Mismatch between indicators of “Fear of Crime” Over Time

F. J. Castro Toledo<sup>1</sup>, J. O. Perea García<sup>2</sup>, S. Wallot<sup>2</sup>, P. Mitkidis<sup>2</sup>.

<sup>1</sup> CRÍMINA. Centro para el estudio y prevención de la delincuencia, Universidad Miguel Hernandez, fj.castro@crimina.es

<sup>2</sup> Interacting Minds Center, Aarhus University

The concept of “fear of crime” (FOC) has occupied much of the criminological literature since the 1960s. The relevance of the concept is made manifest when confronted with the apparent functional disconnection of this phenomenon with real, or “objective” crime. To put it simply - societies rated as “very safe” (according to a fixed set of parameters) have been reported to be perceived by the subjects as “very threatening”, and vice versa. Whereas the methods that we present in this study would become an innovation in the field of experimental criminology [1], the critical perspective of the precision and validity of previous investigations of FOC on which this line of research builds refers back to the foundational work of ie., [2] or [3], who pointed out that most of the confusion in the discussion was due to the lack of distinction between the emotion (what we feel, or experience) and the cognition (what we think) of FOC. As such, the concept of FOC is very likely to bear different conclusions depending on whether the approach of the study is emotional, or cognitive [4,5]. In the following research protocol, we will conceive the emotion of fear as “a distinctive mental state, a feeling state, which includes physical responses that prompt or restrain motivated behaviour” [6]. That is, exploring fear as a strictly emotional phenomenon, even if it might be processed as part of mental dynamics of a more cognitive nature. Exploring the emotional aspects of fear would allow us to reliably measure the physiological correlates of fear that have so far been identified, such as the activation of the autonomous nervous system, or a disturbance in the digestive, respiratory or cardiovascular apparatus, among others [7,8]. Additionally, we will investigate processes of memory encoding, retention, and recall in situations in which subjects experience fear. This will not only add to the available data, but also help us interpret previous data by tracking the development of experiences of FOC as a function of processes of memory in the subject, departing from a naturalistic “seed experience” [9].

### Research questions and Predictions

1. Will participants show more physiological responses associated with fear when fulfilling the same task in conditions of poor luminosity?

*Prediction: Participants will show more physiological responses associated with fear when fulfilling the same task in conditions of poor luminosity.*

2. Will participants report higher rates of FOC in the post-hoc questionnaires if they previously rated the area as more threatening?

*Prediction: Participants who previously rated the area as more threatening will report higher rates of FOC in the post-hoc questionnaires, regardless of their own physiological responses during the experiment.*

3. Will physiological measurements be a good predictor of the results obtained in the questionnaire? Or, inversely, will it be possible to correlate results obtained in the questionnaire with co-occurrent physiological measures?

*Prediction: It will not be possible to establish a correlation between certain patterns of physiological measures and results in the questionnaire, or vice-versa.*

4. Will participants in the control condition show a better recall of the items in the confounding task, and when questioned about the instructions and researcher's outfit?

*Prediction: Participants in the control condition will perform better at recall in the confounding task, and when questioned about the instructions and researcher's outfit.*

### **Method**

A naturalistic task in an urban environment (Brabrand at Aarhus, Denmark) during the night time.

- *Between subject* design
- A simple task with factors hypothesized to affect the fear of crime as IV (high/low luminosity)
- Conditions:
  - *High luminosity*
  - *Low luminosity*

### **Stimuli**

Depending on the condition, a part of the path that participants will be required to walk by as part of the task will be in good / poor in conditions of luminosity. All participants will count empty bottles of wine, and cans of beer as part of the confounding task. In order to achieve poor conditions of luminosity, street lights were covered with opaque textiles.



*Ilustración 1. Researcher covering the streetlights for the experimental condition*

All stimuli were equipped with LED lights. Beer cans had white lights, and bottles of wine had red lights. The stimuli were placed in two stretches. The first stretch contained three bottles of wine, and one beer can placed two street lights from each other, beginning with the second street light. The third item was a beer can. All of these stimuli had lights that were constantly on.

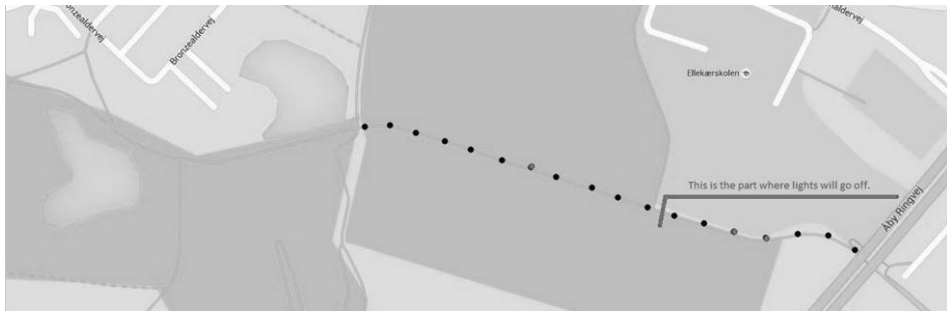


*Ilustración 2. Items used as part of the confounding task*

The second stretch began at the point where the variables were introduced, which corresponded with the 11<sup>th</sup> street light. The first of the stimuli in this stretch was a bottle of wine with a flashing light. The rest of the stimuli consisted of five beer cans. The second and fourth cans after this bottle had flashing lights. The rest of the lights were fixed. The stretch had 18 lights in total.

### **Setting**

A naturalistic, urban setting (see below) after daylight. Participants will be required to walk from one point to the other as part of the experimental task.



**Ilustración 3. Map of the Urban Setting**

### **Subjects**

- 16 voluntary participants recruited through Cognition and Behavior Lab's "SONA" system.

### **Procedure**

1. Participants are prescreened to control for their familiarity with the area, as well as their perception of risk associated to that area (relative to other areas in/around Aarhus) with a test specifically designed to obtain these data.
2. Participants are equipped with gear to measure their heart rate.
3. Participants are presented with a confounding task that requires them to walk along the path in the image above - they will be asked to count empty bottles and beer cans, that they will have to report at the end of the task (see details in the section immediately below).
4. For participants in the "low luminosity" condition, we will manipulate lighting conditions so that  $\sim\frac{1}{3}$  of the path is dark.
5. After the task, all participants will fill out a questionnaire with confounding items (including measurements of their performance in the confounding task), as well as items assessing their FOC.
6. As part of the questionnaire, participants will also be questioned about the instructions that they were administered at the beginning of the task, as well as about a salient aspect of the researcher's outfit that introduced them to the task (who will at that point be absent).
7. A week after their corresponding session, participants will be administered a standardized test measuring their perception of FOC for the time period comprehending the experimental task. They will again be tested in relation to their recall of the confounding task, about the instructions for the task, and salient aspects of the researcher's outfit.

### **Confounding task**

As part of the experiment, participants will be asked to count empty bottles of wine and beer cans. The choice of such stimuli is motivated by their significance in terms of lack of social control. At the end of the experiment, participants will be tested in order to assess whether factors contributing to FOC could hinder their processes of memory encoding, retention, and recall. These questions will be repeated in the questionnaire that is to be administered a week after the experimental task.

The stimuli appeared in a sequence composed of two bottles of beer, followed by a can, followed by another bottle of beer every two street lights. The start of the variable stretch was marked by a bottle of wine by the 11<sup>th</sup> street light. The first of these stimuli was a bottle of wine with a light that flashed on and off. All the next stimuli were beer cans, of which the second and fourth after the bottle also had lights that flashed on and off.

### **Measures**

1. Pre-test ratings of fear of crime.
2. Autonomic responses (heart-rate).
3. Memory recall of the confounding task.
4. Memory recall of instructions for the task, and the researcher's outfit.
5. Body movement index
6. Post questionnaire items (with autonomic response, right after the distractor task).
7. Post questionnaire items (a week after the experimental task).

### **Referencias**

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