

Original

Contrast effect on the perception of the severity of a criminal offence



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ABSTRACT

All the participants (undergraduate students) were exposed sequentially (one by one) to 5 brief descriptions of different actions constituting criminal offences according to the Spanish Penal Code. Each description was accompanied by the specific name of the offence, and the range of the jail sentence length (in months) that might be imposed for the offence according to this penal code. The participants were asked to choose within this range a penalty for each case as a function of the severity that was perceived in the description of the facts. The participants in Group SEVERE were initially exposed to the descriptions of four relatively severe offences. The participants from Group MILD, however, were initially exposed to four less severe offences. The fifth offence to which the participants were exposed was the same in both groups—a description of a violent robbery. It was observed that participants in Group SEVERE imposed lighter penalties for the robbery with violence than participants in Group MILD. These results indicate that our perception of the severity of a criminal offence can be modulated by the severity of other actions to which we have previously been exposed.

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El efecto de contraste en la percepción de la gravedad de un delito

RESUMEN

Todos los participantes (estudiantes universitarios de grado) fueron expuestos secuencialmente (de una en una) a 5 descripciones de diferentes hechos constitutivos de delito según el Código Penal Español. Cada descripción iba acompañada del nombre del delito y del rango de duración de la pena de cárcel (en meses) que debe ser impuesta según este código penal. Se les solicitó a los participantes que en función de la gravedad que percibiesen en cada uno de los 5 hechos descritos eligiesen una pena dentro de los rangos contemplados por la ley. Los participantes del grupo GRAVES fueron expuestos primero a las descripciones de cuatro delitos relativamente graves. Los participantes del grupo LEVES, sin embargo, fueron inicialmente expuestos a 4 delitos menos graves. El quinto delito al que los participantes fueron finalmente expuestos fue el mismo en los dos grupos, un delito de robo con fuerza. Se observó que los participantes del grupo GRAVES impusieron penas menos severas al delito de robo con fuerza que los participantes del grupo LEVES. Estos resultados indican que nuestra percepción de la gravedad de un delito puede verse modulada por la gravedad de otras acciones a las que hemos sido previamente expuestos.

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Palabras clave:

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Across the centuries, humans have attempted to make sense of the mechanisms that allow us to represent in our mind the aspects or objects of our real world surroundings. In other words, how do

we internalise this reality? Consider the following example: if there is enough light in my room, I “see” an object in front of me. And this experience of perceiving—“seeing” that object—seems to be immediate and automatic. I will also assume, without noticing, that the representation that my brain has created of that object is a reliable copy of the *real* object. This understanding of perception as an immediate process capable of generating in our mind an exact copy of reality is called *direct realism* or *naïve realism* (e.g., [Henle, 1974](#)).

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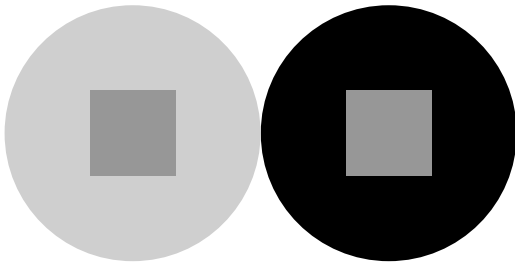


Figure 1. Example of a Sensorial Contrast Effect with Visual Stimuli.

Note. The effect consists of perceiving the square situated inside the circle on the left as darker than the square situated inside the circle on the right (although both squares are made of the same tone of grey).

Nevertheless, it has been shown from different fields (mainly Physiology and Psychology) that the representation of the world created by our mind does not have a direct equivalent in the “real” physical world. This is due primarily to a variety of physiological and psychological processes that mediate between the real object and the perceived one. We can find an example of this by examining what we perceive while looking at the image presented in [Figure 1](#).

Looking at this image we perceive two circles (a grey circle on the left and a black circle on the right) and the fact that each of those has a grey square inside. Moreover, there is a strong likelihood that we will perceive the grey square on the left to be darker than that on the right, although this perception does not correspond with reality—both squares are the same colour. The fact that the same physical stimulus (the percentage of light reflected by both squares) can generate two different perceptions (two different tones of grey) clearly shows that while the physical aspect does affect what we perceive, it does not always determine this perception. To be more specific, the perceptive illusion of the previous example is described as a *contrast* effect. In the example illustrated in [Figure 1](#), the perceived magnitude of an attribute of the squares (i.e., the darkness of their grey tone) depends on the greater or lesser presence of that attribute in the adjacent areas. There is a tendency to overestimate the darkness of the square on the left because its adjacent area is lighter (i.e., a positive contrast) and, concurrently, there is a tendency to underestimate the darkness of the square on the right because its adjacent area is darker (a negative contrast).

A relevant feature of this contrast effect is its generality. In particular, this effect is not only restricted to the visual domain, but can be found with sapid (e.g., [Bennett & Mackintosh, 1999](#); [Meiselman & Halpern, 1973](#)), tactile (e.g., [Rodríguez & Angulo, 2014](#)), auditory (e.g., [Trehub, 1973](#)), and emotional stimuli (e.g., [Rafaeli & Suttorm, 1991](#)), among others. This ubiquity indicates that the mechanisms involved in the effect are the result of a general way of processing information in the brain. But what is the reason for this style of processing? One answer lies in the fact that a major function of our brain is to make use of the enormous volume of incoming information that it receives in order to quickly make sense of the surrounding environment. In particular, the brain cannot analyse all this information in any great detail. Thus, rather than conducting precise computations on all of the data, it uses simple rules that help to make sense of reality. Of all the information available, our brain only analyses the parts that are indicated by these rules. For example, to estimate the magnitude of the characteristics of the surrounding stimulation (e.g., the grey tone of the squares in [Figure 1](#)), the brain only takes as a reference some values, usually the values of the closest stimuli (in the example in [Figure 1](#), the tone of the circular areas surrounding the square). In general, all of the simplifying mechanisms that help our brain to make sense of the surrounding stimulation are known as *heuristics*.

Although the use of heuristics usually allows us to rapidly make accurate estimations, it can at other times lead us to make some

mistakes. Given that these errors are due to the use of mechanisms or information processing strategies, they are systematic. That is, they occur in multiple situations and are committed by the majority of people, whether they are experts or naïve to the situation in which the decision is being made. Those mistakes that are a consequence of the use of heuristics are called *cognitive errors* or *cognitive biases* (e.g., [Kahneman, 2011](#); [Kahneman & Frederick, 2002](#); [Kahneman, Slovic, & Tversky, 1982](#); [Kahneman, Slovic, & Tversky, 1982](#))

The influence of heuristics on humans goes beyond perception. Our emotions, plans, decision-making processes, and behaviour are all dependent on our perceptions. Therefore, given that the use of heuristics can bias our perceptions, these biases can be present in any aspect of our lives. For example, the perceptions and decisions of judges, medical doctors, politicians, consumers, investors in the stock market, voters, etc. are based on heuristics and, therefore, are susceptible to the effects of cognitive errors (e.g., [Pohl, 2004](#)).

The objective of the present study is to contribute to a better understanding of the cognitive errors that can emerge in one such scenario, i.e., when perceiving the severity of criminal offences. We are all exposed to a number of criminal acts on a regular basis, with judicial agents (judges, lawyers, prosecutors, etc.) being exposed to a particularly high number of criminal acts during the course of their daily working lives. But, additionally, people who do not work in the judicial area are exposed to these types of acts, for example, by receiving information about these events in the local and mass media. The different consequences and nature of the variety of criminal acts will cause them to differ in their severity. Given that the contrast effect appears to be a general phenomenon, then it seems quite likely that the perception of the severity of a criminal act (the target crime) will be affected by the perceived severity of other criminal offences to which we have previously been exposed (the pre-exposed crimes). More specifically, a given action (the target) will be perceived as being more (or less) severe when it is presented in a context in which fewer (or more) severe actions have recently been encountered. Consider, for instance, a case in which two newspapers, A and B, include very similar information about a criminal act. In newspaper A, the information about that target crime is surrounded by information about more severe actions, whilst in newspaper B the information about the target is surrounded by information regarding much milder actions. A contrast effect would be demonstrated if the severity of the target crime was perceived to be greater by the readers of newspaper B in comparison with readers of newspaper A. We can also consider another instance in which two judges are exposed to very similar cases involving the same target crime. One of the judges has been pre-exposed (e.g., during the previous hearings that day) to criminal actions more severe than the target crime. The other judge however, has been pre-exposed to less severe crimes. If the perception of the severity of a criminal offence is a result of objective appreciations, both judges should perceive the target crime to be of the same severity and should impose the same penalty for the offence. However, if a contrast effect is also present in this type of situation, the judge pre-exposed to more severe crimes would perceive the target crime to be less severe than the judge pre-exposed to milder crimes. Using a sample of non-judicial participants (student volunteers), the present study will attempt to examine whether such a contrast effect can be found.

Experiment

We made use of an experimental design with two groups (see [Table 1](#)). All of the participants (undergraduate students) were given a written description of five different acts constituting criminal offences according to the Spanish Penal Code (see [Appendix](#)).

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