

# Illusory Correlation

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Illusory correlation is the phenomenon of seeing the relationship one expects in a set of data even when no such relationship exists. When people form false associations between membership in a statistical minority group and rare (typically negative) behaviors, this would be a common example of illusory correlation. This happens because the variables capture the attention simply because they are novel or deviant. This is one way stereotypes form and endure. David Hamilton and Terrence Rose (1980) found that stereotypes can lead people to expect certain groups and traits to fit together, and they overestimate the frequency of when these correlations actually occur. People overestimate the core association between variables such as stereotyped groups and stereotypic behavior.

Chapman and Chapman (1971) studied the effect as it relates to psychodiagnostic signs. Their study showed that although projective testing is not helpful in the diagnosis of mental disorders, some psychologists continue to use such tests because of a perceived, illusory, correlation between test results and certain attributes. An example of a projective test is the "Draw a Person" test that asks patients to draw a person on a blank piece of paper. Some psychologists believe in a correlation between drawing a person with big eyes and paranoia. No such correlation exists, and when data that is deliberately uncorrelated is presented to college students they find the same illusory correlations that psychologists believe in.

This bias can be caused by, among other things, an event that stands out as unique. For example, "The only time I forget my pencil is when we have a test". This is most likely an illusory correlation. It could be caused by only a few other pencil-less tests, which stand out particularly well in memory.

## History

"Illusory correlation" was originally coined by Chapman (1967) to describe people's tendencies to overestimate relationships between two groups when distinctive and unusual information is presented. The concept was tested experimentally by David Hamilton and Robert Gifford in 1976. Rupert Brown and Amanda Smith (1989) also tested the hypothesis by conducting a study involving the academic staff at a British university. The results revealed that the staff had overestimated the number of female seniority staff and underestimated the number of male senior staff. This reflected that the academic staff inaccurately viewed the relationship between gender and seniority, showing that illusory correlations can exist in everyday situations.

Risen, Gilovich, & Dunning (2007) proposed in their research that a single distinct situation is sufficient enough to create a stereotypical association between a minority group and unusual behaviors. Risen asked research participants to read sentences that presented both common and uncommon behaviors. An example of these behaviors involved ownership of a pet sloth or something as simple as using a packet of ketchup. The results from the studies revealed that when

uncommon behaviors were read by the participants, they took longer processing the information, gave more thought as to how the behavior might apply to themselves, and were more likely to remember the behavior when compared to reading about common behaviors.

### Example

David Hamilton and Robert Gifford (1976) conducted a series of experiments that demonstrated how stereotypic beliefs regarding minorities could derive from inaccurate ideas from majority group members. To test their hypothesis, Hamilton and Gifford had research participants read a series of 39 sentences, which were associated with either Group A or B. Abstract groups were used so no previous stereotypes would influence results. Twenty-six out of the 39 sentences were associated with Group A, making it the majority, and 13 were associated with Group B, making it the minority. Positive behaviors were represented in 27 sentences and negative behaviors were described in 12. The following table summarises the information given.

#### **Behaviors Group A (Majority) Group B (Minority) Total**

Desirable	18 (69%)	9 (69%)	27
Undesirable	8 (30%)	4 (30%)	12
Total	26	13	39

Each group had the same proportions of positive and negative behaviors, so there was no real association between behaviors and group membership. Results of the study show that positive, desirable behaviors were not seen as distinctive so people were accurate in their associations. On the other hand, when distinctive, undesirable behaviors were represented in the sentences, the participants overestimated how much the minority group exhibited the behaviors.

### Explanations

Most explanations for illusory correlation involve psychological heuristics: information processing short-cuts that underlie many human judgments. One of these is availability: the ease with which an idea comes to mind. Availability is often used to estimate how likely an event is or how often it occurs. This can result in illusory correlation, because some pairings can come easily and vividly to mind even though they are not especially frequent. Representativeness is the degree of similarity between an individual and the most typical example of a category. This heuristic has been shown to underlie many illusory correlations: people may correlate sexually ambiguous interpretations of inkblots with homosexuality because those judgements resemble their idea of a typical homosexual person.

Illusory correlation can also be explained in terms of biases in hypothesis-testing behavior. People tend to test hypotheses in a one-sided way, searching for evidence consistent with their current

hypothesis. A parallel effect occurs when people judge whether two events, such as illness and bad weather, are correlated. They rely heavily on the number of cases where the two go together: in this example, instances of both pain and bad weather. They pay relatively little attention to the other kinds of observation (of no pain and/or good weather).

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