

Illusory Correlation

An illusory correlation is the perception of a relationship between two variables when, in reality, no such relationship exists. When individuals believe that a relationship exists, they are more likely to notice their joint occurrence and, conversely, are less likely to remember the many times when there is no coincidence of events. Loren J. Chapman (1927-) first coined the term “illusory correlation” and was influential in its development. Illusory correlations help explain why, for example, people erroneously believe that weather changes trigger arthritis pain (Redelmeier & Tversky, 1996). Aside from reinforcing superstitions, illusory correlations can also lead to stereotyping.

In his first study, Chapman (1967) presented subjects with two arrays of words. The subjects were then asked to report the frequency of a word from one array being paired with a word from a separate array. Even though the words were presented with equal frequency, the subjects reported a higher frequency for word pairs that (a) differed visually from the others (e.g., unusually long words) and (b) had shared semantic meaning (e.g., cat and dog). In subsequent experiments, Chapman demonstrated that illusory correlation was able to account for systematic error when expert diagnosticians administered conventional psychodiagnostic tests such as the Draw-a-Person Test (DAP) and the Rorschach (Chapman & Chapman, 1967, 1969; Golding & Rorer, 1972). Furthermore, training designed to reduce the effect of illusory correlation had minimal effect (Kurtz & Garfield, 1978).

The illusory correlation plays an important role in stereotyping. Stereotyping is defined as generalizations about a group of people in which each group member is assumed to have the same characteristics (Gerrig & Zimbardo, 2002). Hamilton and Gifford (1976) argued that negative behaviours and minority groups both get a disproportionate amount of attention because

they are comparatively rare. Thus, when negative behaviours are performed by minorities, these behaviours create a strong memory, leading to the impression that members of the minority group are more likely to behave negatively compared to individuals belonging to the majority group. This combination of rare behaviour and rare group leads to distinctiveness-based illusory correlation. Furthermore, once a stereotype is established, it can be perpetuated based on an individual's expectations about the differences between social groups, leading to an expectancy-based illusory correlation (Hamilton & Rose, 1980).

Unlike previous experiments whereby individuals had access to the two elements which

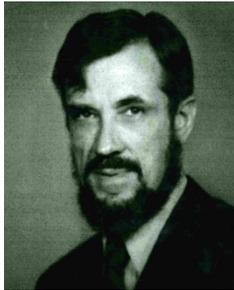


Figure 1 - Loren J. Chapman, Ph.D.
(courtesy of
University of
Wisconsin-Madison)

combined to form a correlation, Denrell and Le Mens (2011) demonstrated that even when information about the second element is derived sequentially, illusory correlations still occur. For example, suppose that there is no correlation between creativity and agreeableness in other people – both are equally likely or unlikely to be present. However, if a subject believes that a relationship between creativity and agreeableness exists, as soon as it is learned that an individual is creative, the subject will also assume that the

same individual is agreeable. Denrell and Le Mens argue that their theory provides an alternative explanation for illusory correlation since, instead of relying on biased information processing or selective attention to different pieces of information, the phenomenon of illusory correlation can be explained by the human tendency to seek positive experiences.

See also [Attribution](#); [Availability Heuristic](#); [Cognitive Bias](#); [Prejudice](#); [Self-Fulfilling Prophecy](#); [Stereotype](#)

References

- Chapman, L. J. (1967). Illusory correlation in observational report. *Journal of Verbal Learning and Verbal Behavior*, 6, 151-155. doi:[10.1016/S0022-5371\(67\)80066-5](https://doi.org/10.1016/S0022-5371(67)80066-5)
- Chapman, L. J., & Chapman, J. P. (1967). Genesis of popular but erroneous diagnostic observations. *Journal of Abnormal Psychology*, 72, 193-204. doi:[10.1037/h0024670](https://doi.org/10.1037/h0024670)
- Chapman, L.J., & Chapman, J.P. (1969). Illusory correlation as an obstacle to the use of valid psychodiagnostic signs. *Journal of Abnormal Psychology*, 74, 271-280.
doi:[10.1037/h0027592](https://doi.org/10.1037/h0027592)
- Crocker, J. (1981). Judgment of covariation by social perceivers. *Psychological Bulletin*, 90, 272-292. doi:[10.1037/0033-2909.90.2.272](https://doi.org/10.1037/0033-2909.90.2.272)
- Denrell, J., & Le Mens, G. (2011). Seeking positive experiences can produce illusory correlations. *Cognition*, 119, 313-324. doi:[10.1016/j.cognition.2011.01.007](https://doi.org/10.1016/j.cognition.2011.01.007)
- Gerrig, R. J. & Zimbardo, P.G. (2002). *Psychology and Life* (16th ed.). Boston, MA: Allyn & Bacon. <http://www.apa.org/research/action/glossary.aspx?tab=18>
- Golding, S.G. & Rorer, L. (1972). Illusory correlation as an obstacle to the use of valid psychodiagnostic signs. *Journal of Abnormal Psychology*, 80, 249-260.
doi:[10.1037/h0033711](https://doi.org/10.1037/h0033711)
- Hamilton, D.L. (1979). A cognitive-attributinal analysis of stereotyping. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 12, pp. 53-84). New York: Academic Press.
- Hamilton, D.L., & Gifford, R. (1976). Illusory correlation in interpersonal perception: A cognitive basis of stereotypic judgments. *Journal of Experimental Social Psychology*, 12, 392-407. doi:[10.1016/S0022-1031\(76\)80006-6](https://doi.org/10.1016/S0022-1031(76)80006-6)

Hamilton, D.L., & Rose, T.R. (1980). Illusory correlation and the maintenance of stereotypic beliefs. *Journal of Personality and Social Psychology*, 39, 832-845.

doi:[10.1037/0022-3514.39.5.832](https://doi.org/10.1037/0022-3514.39.5.832)

Kurtz, R.M., & Garfield, S.L. (1978). Illusory correlation: a further exploration of Chapman's paradigm. *Journal of Consulting and Clinical Psychology*, 46, 1009-1015.

doi:[10.1037/0022-006X.46.5.1009](https://doi.org/10.1037/0022-006X.46.5.1009)

Redelmeier, D.A., & Tversky, A. (1996). On the belief that arthritis pain is related to the weather. *Proceedings of the National Academy of Science*, 93, 2895-2896.

doi:[10.1073/pnas.93.7.2895](https://doi.org/10.1073/pnas.93.7.2895)