Glossary

curvilinear relationship Occurs when the line of best fit between two variables is curved, not straight.

interaction effect Occurs when two or more independent variables are jointly related to a dependent variable, and their combined influence is different than the summed influence of each variable alone. Researchers can investigate interaction effects using the elaboration model or by using *interaction variables* as independent variables in regressions.

interaction variable Created by multiplying the values on two or more variables together for every case. Interaction variables are used as an independent variables in regressions in order to assess *interaction effects*. Also called an interaction term.

linear transformation A *transformation* where the relative sequence of cases and the relative distance between the cases remains the same in the original variable and the transformed variable.

log odds The *natural log* of the odds of something occurring. Log odds theoretically range from negative infinity to positive infinity. Logistic regression coefficients are expressed as log odds but are typically converted to *odds ratios* or *odds* when reporting results.

logarithmic transformation A *non-linear transformation* where each value on the original variable is expressed as a common base number raised to an exponent, and that exponent is assigned as the value on the transformed variable; also called a log transformation. Base 2 and base 10 logarithmic transformations are commonly used in the social sciences. Researchers use logarithmic transformations to make highly skewed variables more normally distributed.

logistic regression A type of regression used to make predictions about a dichotomous dependent variable.

Nagelkerke's R^2 A pseudo-R^2 that is commonly used to assess the overall fit of a logistic regression; it ranges from 0 to 1. Although it is conceptually similar to the R^2 of a linear regression, it cannot be interpreted in exactly the same way.

natural log (log$_e$) A *logarithmic transformation* using Euler's constant *e* (2.71828 . . .) as the common base number. Natural log transformations are commonly used because the distribution of a natural log has many useful statistical properties.

non-linear transformation A *transformation* where the relative sequence of cases remains the same in the original variable and the transformed variable, but the relative distance between the cases changes. *Logarithmic transformation*s are non-linear transformations.

odds Show the number of times that something occurs relative to the number of times that it does not occur. Odds theoretically range from 0 to positive infinity. In logistic regression, the probability that the dependent variable has the value "1" is transformed into odds, before being transformed into *log odds*.

odds ratio Compares the odds of something occurring in two different groups; the odds of something occurring in the first group are expressed as a ratio of the odds of that thing occurring in the second group. In logistic regression, the natural exponents of the unstandardized slope coefficients are odds ratios.

quadratic variable Created by squaring the value on a ratio-level variable for every case; also called a quadratic term, a squared variable, or a squared term. Quadratic variables (used as independent variables) allow researchers to use linear regression to predict *curvilinear relationship*s.

transformation Replacing the values on a variable with values that are a mathematical function of the original value. Researchers sometimes transform variables before using them in regressions.