Statistics – chapter 3

**The association between two categorical vars – the contingency table**

The aim is to explore the **relationship**, if any, between the variables

**An association** (aka, dependence) **between two vars exists if a particular value for one var is more likely to occur with certain values of the other var**

Such associations can be explored via: (not explored in this chapter)

* **cross-tabulation** and/or,
* **the chi-square test**

***Explanatory and Response variables***

An **explanatory variable** is what you manipulate or observe changes in (e.g., caffeine dose), this is aka **expected cause (or result explaining variable) - Independent**

A **response variable** is what changes as a result (e.g., reaction times), this is aka the **expected effect (or respond to explaining variable)** **- Dependent**

The words “explanatory variable” and “response variable” are often interchangeable with other terms used in research

| **Cause (what changes)** | **Effect (what’s measured)** |
| --- | --- |
| [Independent variable](https://www.scribbr.com/methodology/independent-and-dependent-variables/#independent) | [Dependent variable](https://www.scribbr.com/methodology/independent-and-dependent-variables/#dependent) |
| Predictor variable | Outcome/criterion variable |
| Explanatory variable | Response variable |

In general, two variables are independent if the conditional percentage distributions of the response (given the categories of the explanatory) are **equal**