### Comparing scientific articles

#### PRIMARY Articles

**Primary research article**
- Articles with [first-hand information or original data](#) on a topic that usually has not been interpreted, evaluated, or analyzed.
  (also called primary literature, original research articles, research articles, empirical articles)
  - **Scholarly/academic resource**
  - **Peer-reviewed/refereed**
  - **Primary source**
  - Includes all or most IMRaD components (Introduction, Methods, Results, and Discussion)
  - In-depth account
    - *Example:* Journal articles of original research (e.g. research articles in *Nature*)

#### SECONDARY Articles

**Non-primary research articles**
- Articles covering research or popular topics done by others that usually analyzes, evaluates, interprets, re-packages, summarizes or reorganizes information reported in the primary literature.
  (May include journal/popular/magazine/news articles)
  - **Scholarly/academic resource**
  - **Generally not peer-reviewed/refereed**
  - **Secondary source**
  - **Generally no or few IMRaD components**
  - Generally no in-depth account
  - Generally evaluated by non-expert editorial staff
  - *Example:* Articles that provide substantive news or general interest (e.g. news articles in *Nature*)

#### Other notable examples:

- **Conference proceedings**
  - (Published record of a conference or other meeting sponsored by a society or association)
  - **Scholarly/academic resource**
  - **Generally not peer-reviewed/refereed**
  - **Primary source**
  - Includes some variation of IMRaD components

- **Technical reports**
  - (Articles describing research or other scientific developments)
  - **Scholarly/academic resource**
  - **Generally not peer-reviewed/refereed**
  - **Primary source**
  - May include some variation of IMRaD components

- **Reviews**
  - (Articles that summarize or provide an overview of the published literature on a specific topic, e.g. systematic reviews, meta-analyses)
  - **Scholarly/academic resource**
  - **Peer-reviewed/refereed**
  - **Secondary source**
  - Includes some variation of IMRaD components

- **Trade journal articles**
  - (Articles that focus on a specific industry or trade and are published by trade associations)
  - **May be scholarly/academic resource**
  - **Not peer-reviewed/refereed**
  - **Secondary source**
  - **Usually no IMRaD components**

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**NOTE TO SELF –** Examine individual articles carefully because some publications mix characteristics of primary and secondary articles.