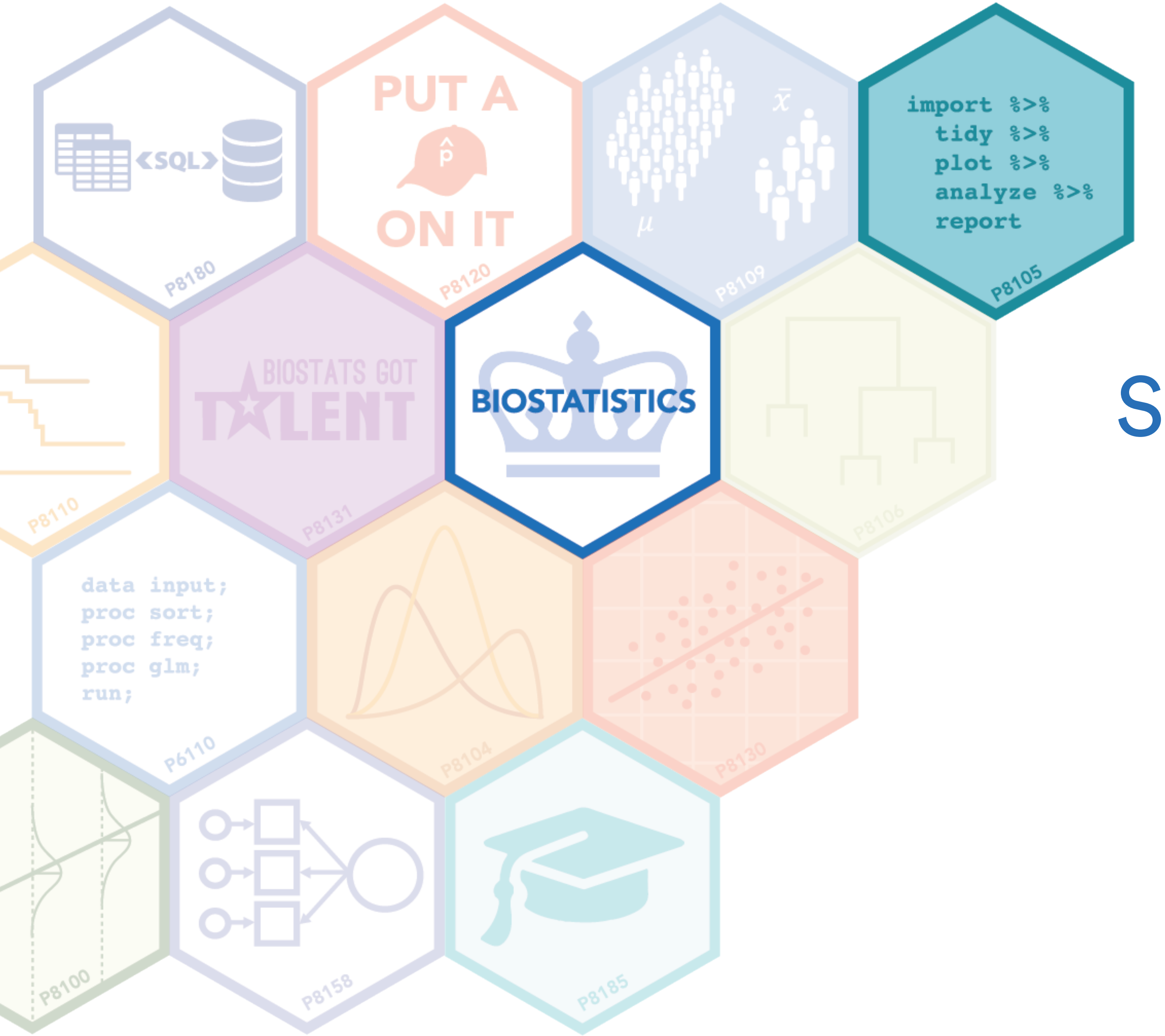

STRINGS AND FACTORS

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Department of Biostatistics

Strings vs Factors

- They both look like character vectors, but:
  - Strings are just strings
  - Factors have an underlying numeric structure with character labels sitting on top

- Factors generally make sense for variables that take on a few meaningful values
  - Sex
  - Race
  - BMI category

- Strings make sense for less structured character values

Strings vs Factors in R

- Sort of a long story

- Base R, in a variety of ways, has some biases towards factors
  - e.g. for a real long time, character variables were factors when imported using read.csv
- This bias stems from historical use
  - R is a statistical language
  - Factors make more sense for classical statistical analysis (e.g. determining race disparities in health outcomes)

- Not so clear there should still be a bias
  - Some folks are upset by base R's preference …

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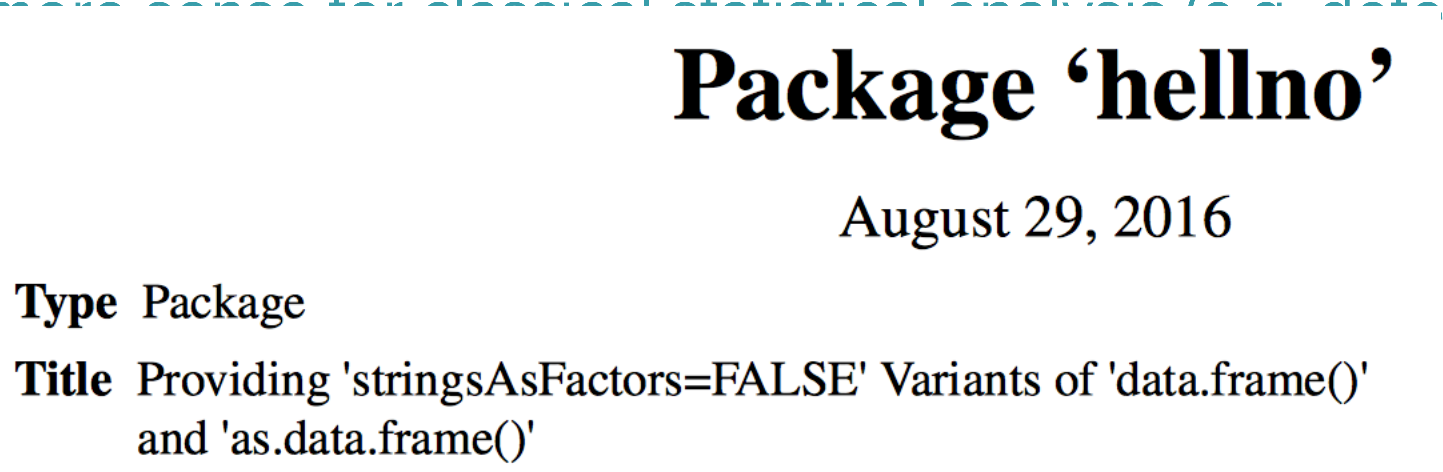

Package ‘hellno’

August 29, 2016

Type Package

Title Providing 'stringsAsFactors=FALSE' Variants of 'data.frame()' and 'as.data.frame()'

Common string operations

- There are lots of things you can do with strings
- Some are very common:
  - Concatenating: joining snippets into a long string
  - Shortening, subsetting, or truncating
  - Changing cases
  - Replacing one string segment with another

- The stringr package is the way to go for the majority of your string needs

Regular expressions

- String operations are “easy” when you know exactly what you’re looking for
- When you know a general pattern but not an exact match, you need to use **regular expressions**
    - Instead of looking for the letter “a” you might look for any string that starts with a lower-case vowel

- Regular expressions take some getting used to

Factors

- Controlling factors is critical in several situations
  - Defining reference group in models
  - Ordering variables in output (e.g. tables or plots)
  - Introducing new factor levels

- Common factor operations include
  - Converting character variables to factors
  - Releveling by hand
  - Releveling by count
  - Releveling by a second variable
  - Renaming levels
  - Dropping unused levels

- The forcats package is the way to go for the majority of your factor needs
  - (forcats = “for cats”; also an anagram of “factors”)

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