Results

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Key Roles of Results

The Results should answer the following questions.

- What did I find?

- What did I not find?

- What did I find that I was not expecting to find? (e.g. that contradicts my hypotheses)

- Tell a story!!!

What to include in My Results?

- Highlight those results that answer your research question

- Include text, table, figure, chart, map…

- From easiest descriptions to most complex analyses

- Demographic variables

- Main findings focusing on the research question

- Subgroup analyses

When to Use What?

Use a Table	Use a Figure	Use text
To show **Many** and **precise** numerical values	*To show* **Trends** **Patterns** **Relationships** **Sequence of events**	*When* *You don't have* extensive or complicated data to present/ When it's peripheral data

When to Use What? (cont.)

Use a Table	Use a Figure	Use text
To compare Data values **Characteristics among related items** **Items with several shared characteristics or variables**	*To summarize* **Research results**	*When* **Putting your data into a table would mean creating a table with 2 or fewer columns**

General Guidelines Regarding Tables and Figures

- Ensure that display items are self-explanatory
- Refer, but don't repeat
- Be consistent
- Give clear, informative titles
- Adhere to journal guidelines
- Use the technical words in the footnotes

Guidelines for Tables

- Combine repetitive tables

- Divide the data

- Watch the extent of data in your tables

- De-clutter your table

- Avoid empty cells

- Order rows and columns logically

- Highlight a relevant result while referring to a table

What's Wrong with this Table?

		number	percent
sex	Males	20	%25
	female	60	%75
Age group	10-20	10	13.5%
	20-30	14	18.5%
	30-40	50	67.5%
education	None	30	36.5%
	With education	52	63.5%

Guidelines for figures

- Ensure image clarity

- Use legends to explain the key message

- Label all important parts

- Give specifics

What's Wrong with this Figure?
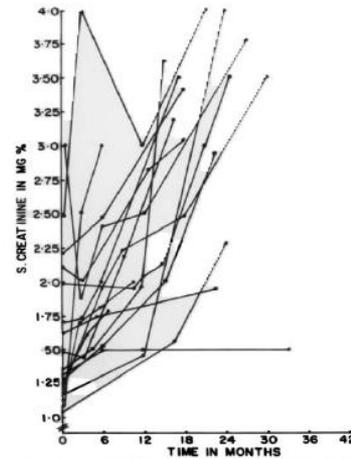

Figure: *Example*

FIG. 2 : S. CREATININE LEVELS ON FOLLOW-UP IN GROUP I PATIENTS

How Should I Comment on my Tables and Figures?

- Showing not telling
- Avoid phrases such *as can be seen* and *we can see.*
- Simply put the figure or table reference in brackets at the end of the sentence.
- Do not repeat the information that should already be contained in the table.
- You just need to point out the key result or trend that the figure or table conveys.

How Should I Comment on my Tables and Figures?(cont.)

ORIGINAL VERSION (OV)	REVISED VERSION (RV)
1 As can be seen in Figure 1, levels of intolerance were highest during late adolescence.	Levels of intolerance were highest during late adolescence (Figure 1).
2 We can see from Table 2 that in the control group, values for early adolescence (13–15) were 6.5. On the other hand, values for mid adolescence (16–17) were 6.7.	Values for early adolescence were lower than for mid adolescence: 6.5 versus 6.7 (Table 2).
3 Figure 1 shows that levels of intolerance are 9, 15 and 20 during early, mid and late adolescence, respectively.	Levels of intolerance are highest during late adolescence (Figure 1).

Example of a Well-prepared Table

- The title clearly describes what the table is about.
- The column heads are descriptive and clearly indicate the nature of the data presented.
- The data is divided into categories for clarity.

Table 2. Stomach Sample Composition of the Main Prey Groups Consumed by Macaroni Penguins during Chick-rearing (Based on Total Wet Mass of Prey Components in All Samples Combined).

| | Total (n = 53) [a] | | Guard (n = 35) | | Crèche (n = 18) | |
	(g)	(%)	(g)	(%)	(g)	(%)
Euphausiids	2760.3	69	2169.7	83	590.6	43
Fish	884.2	22	424.5	16	459.7	33
Amphipods	327.4	8	6.8	<1	320.6	23
Cephalopods	10.9	<1	1.0	<1	9.9	1
Total	3982.8	100	2602.0	100	1380.8	100

[a]Data on the mass and composition of stomach contents from individual birds is given in Table S2
doi:10.1371/journal.pone.0000831.t002

Example of a Well-prepared Table (cont.)

- It is self-contained and can be understood quite well even without reference to the entire paper.

- Superscript letters and notes are used to offer additional, clarifying information.

- Sufficient spacing is present between columns and rows; the layout is clean; and the font is legible.

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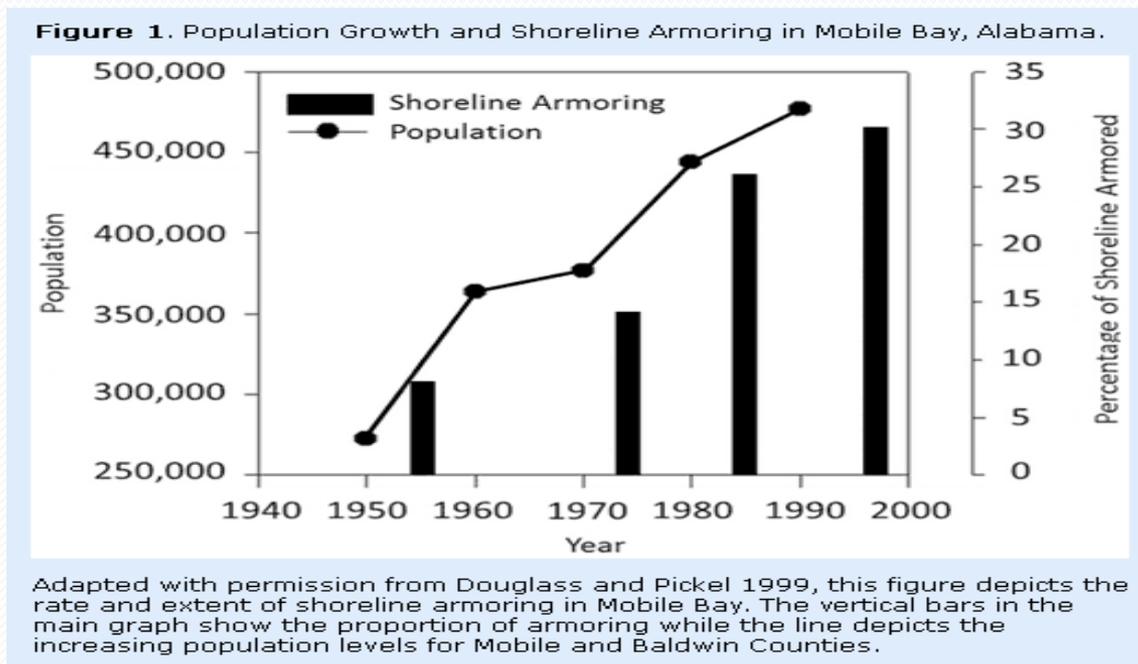
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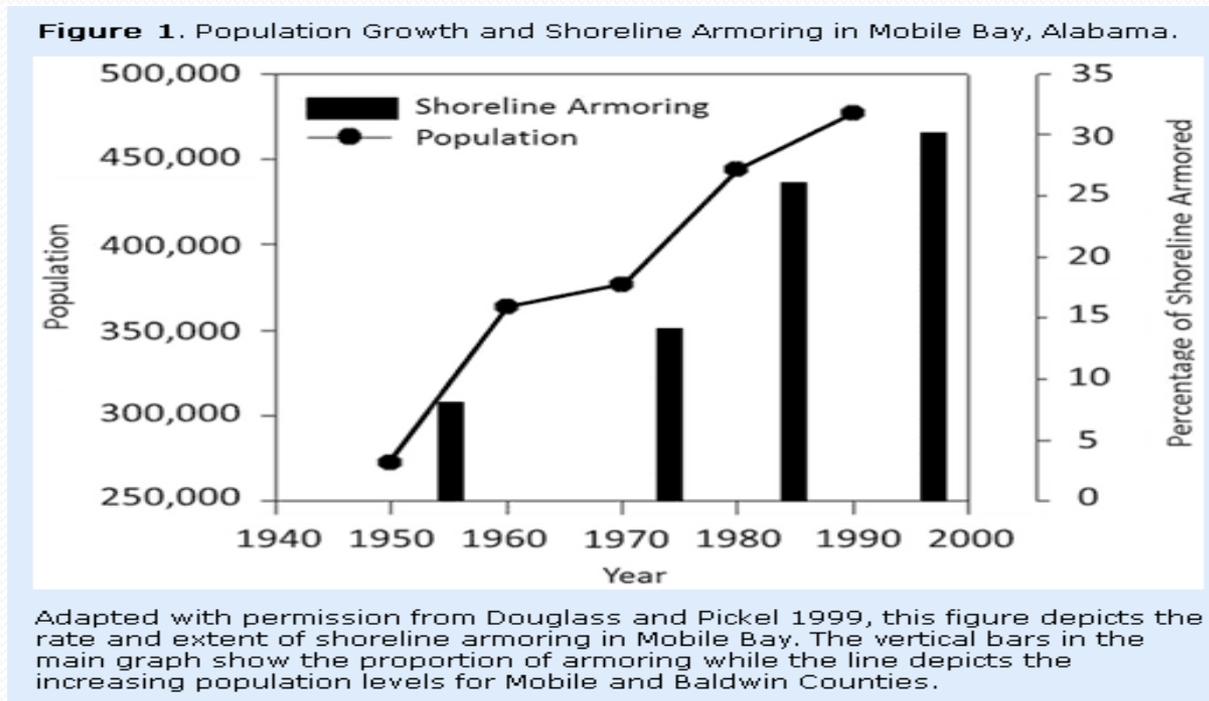doi:10.1371/journal.pone.0000831.t002

Example of an Effective Figure (Graph)

- It uses an informative title that immediately tells the reader what to expect in the graph below.
- The axes are labeled clearly.
- The key clearly identifies what each element in the graph stands for.

Figure 1. Population Growth and Shoreline Armoring in Mobile Bay, Alabama.

Adapted with permission from Douglass and Pickel 1999, this figure depicts the rate and extent of shoreline armoring in Mobile Bay. The vertical bars in the main graph show the proportion of armoring while the line depicts the increasing population levels for Mobile and Baldwin Counties.

Example of an Effective Figure (Graph)

- A figure legend at the bottom draws the reader's attention to the key points in the graph.
- A note at the bottom acknowledges the source.
- The graph is 2-dimensional, with no clutter.

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Should I Report Any Negative Results?

- Yes!

- You may have got negative results for such reasons:

  - your hypothesis was incorrect and needs to be reformulated

  - you had a bad experimental design and / or low statistical power

  - "Bad Data"

- Negative data are frequently commented on in the Discussion

- How about accidental findings?

Reporting versus Interpreting?

Example1: We found no extraneous elution peaks on chromatograms of the initial sample, indicating that sample one was indeed very pure.

Example2: Injection of meterex caused an increase in pulmonary arterial pressure.

Fact: Injection of meterex was followed within 5 seconds by an increase in pulmonary arterial pressure.

Which One Do You Prefer?

- P value or Confidence Interval ?

- Standard deviation Or Standard Error?

- Frequency or Percentage?
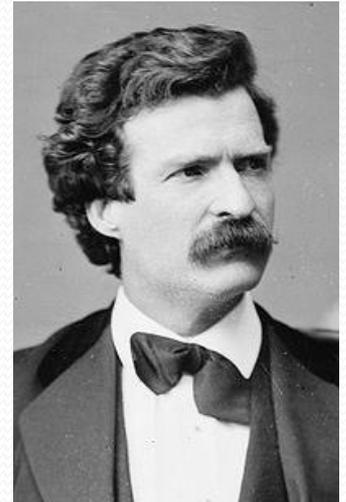
Frequent Mistakes in Result Section

- Failure to provide the data that is critical to answering the research question
- Adding interpretation to the findings
- Inadequate statistical evidences
- Over presentation of unnecessary details
- Present accidental findings
- Repeating the data from tables and figures in the text
- Repeating the statistical methods in the result section

"There are three kinds of lies: lies, damned lies, and statistics."

Samuel Langhorne Clemens

Pen name: **Mark Twain**

(November 30, 1835 – April 21, 1910)

Thank You!