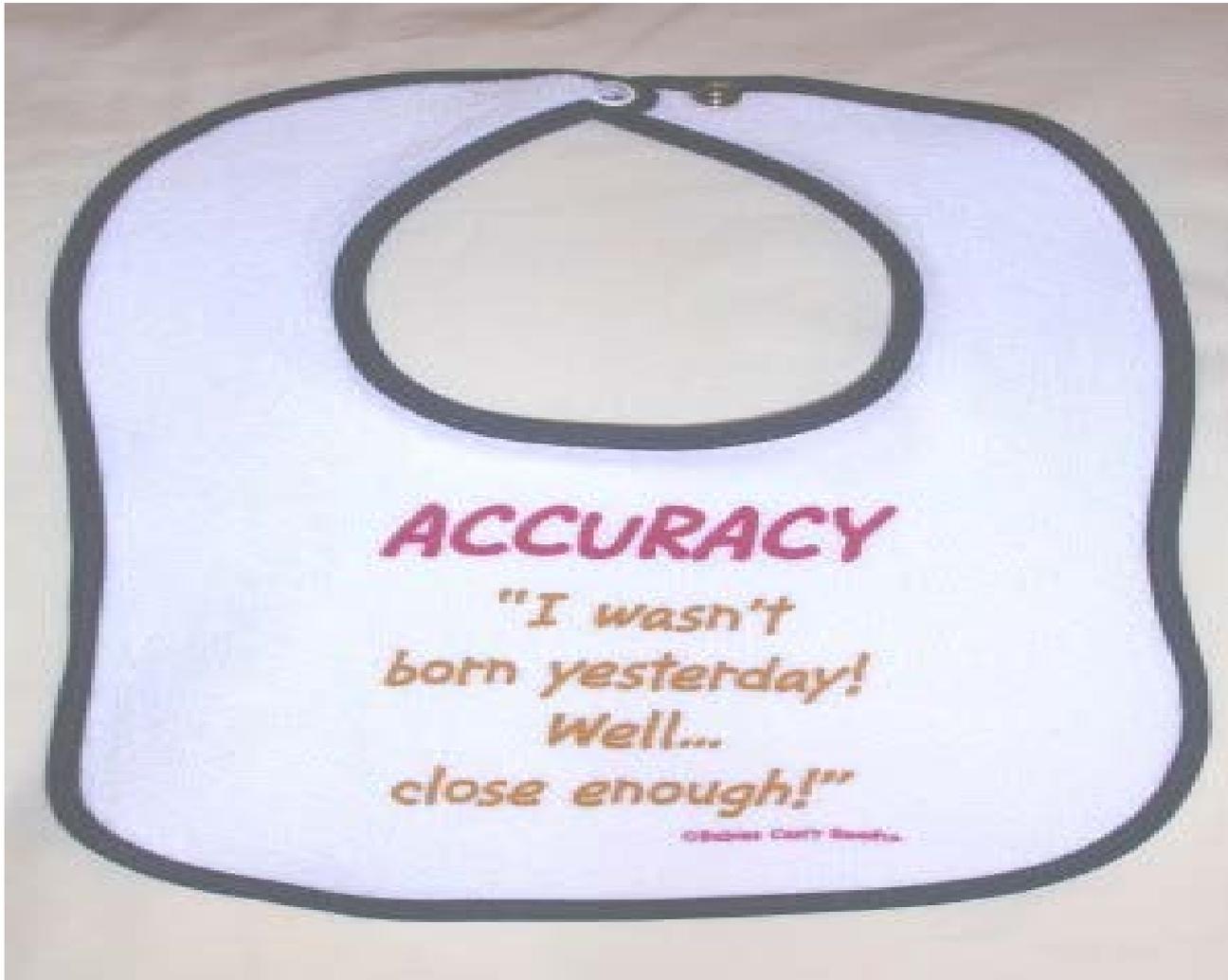




Accuracy and Precision

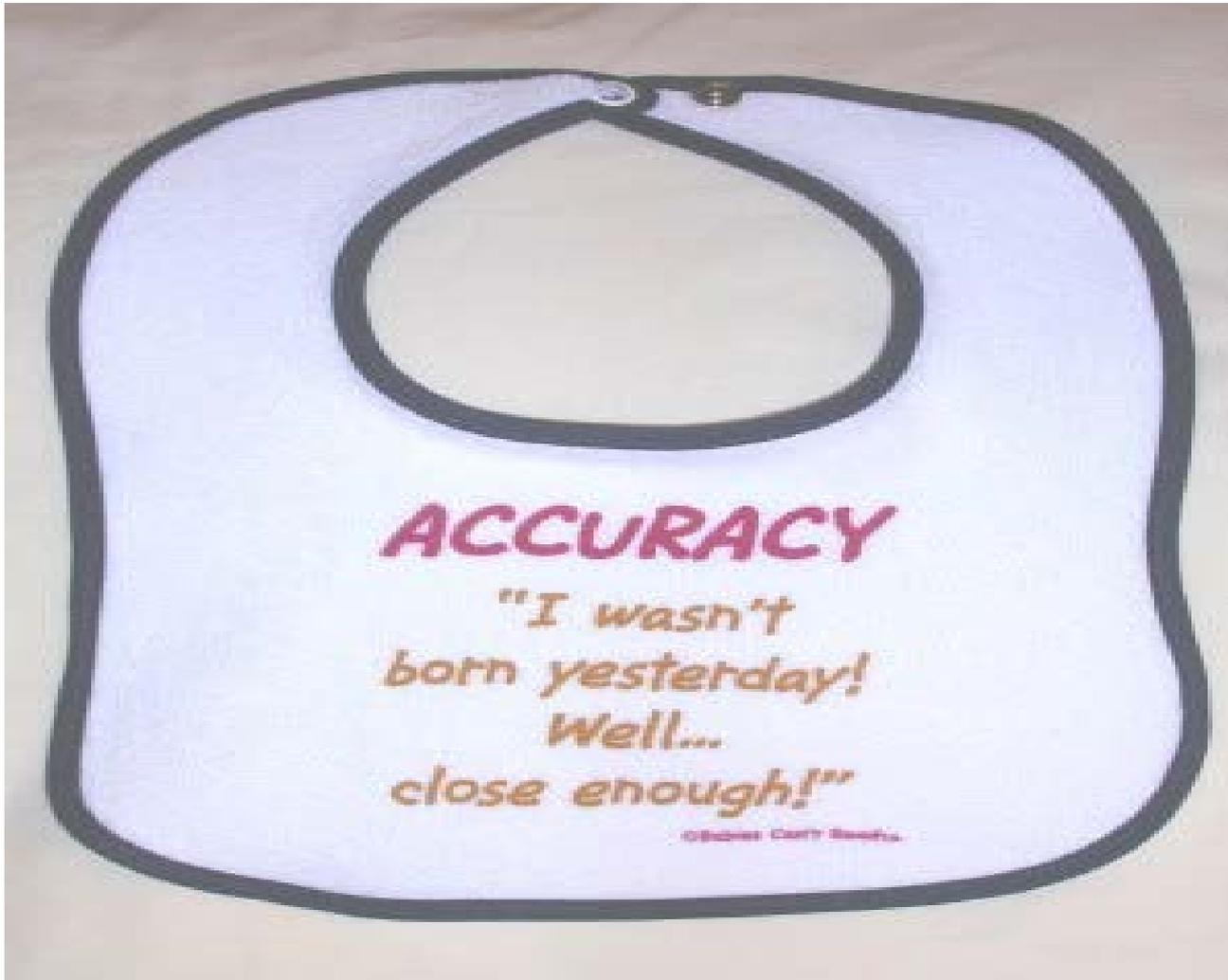
It's all about the data



ACCURACY

*"I wasn't
born yesterday!
Well...
close enough!"*

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All measurements have an inherent error—instrument errors, method errors, or human error.



Accuracy

- The extent to which a measurement approaches the true value of a quantity
(from Chemistry: Visualizing Matter)



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- Accuracy is associated with measured values, for example, measurements of the concentration of a chemical in seawater.

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(from Chemistry: Visualizing Matter)
- Accuracy is associated with measured values, for example, measurements of the concentration of a chemical in seawater. *Accuracy is how close to the accepted or true value a measurement is.* (from <http://bell.mma.edu/~jbouch/Glossary/Accuracy.html>)



Precision

- The degree of exactness or refinement of a measurement (from Chemistry: Visualizing Matter)



Precision

- The degree of exactness or refinement of a measurement (from Chemistry: Visualizing Matter)
- A measure of the reproducibility of a particular measurement



Precision

- The degree of exactness or refinement of a measurement (from Chemistry: Visualizing Matter)
- A measure of the reproducibility of a particular measurement
- Gives information on the scale markings of the measuring instrument



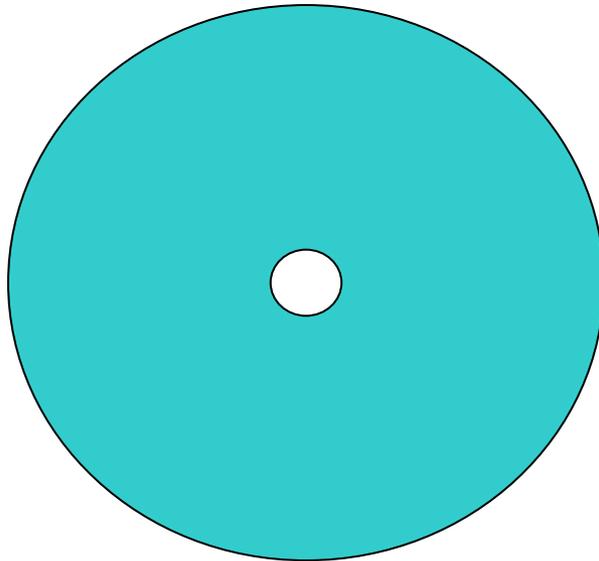
Precision

- The degree of exactness or refinement of a measurement (from Chemistry: Visualizing Matter)
- A measure of the reproducibility of a particular measurement
- Gives information on the scale markings of the measuring instrument
- Communicated using “significant figures”

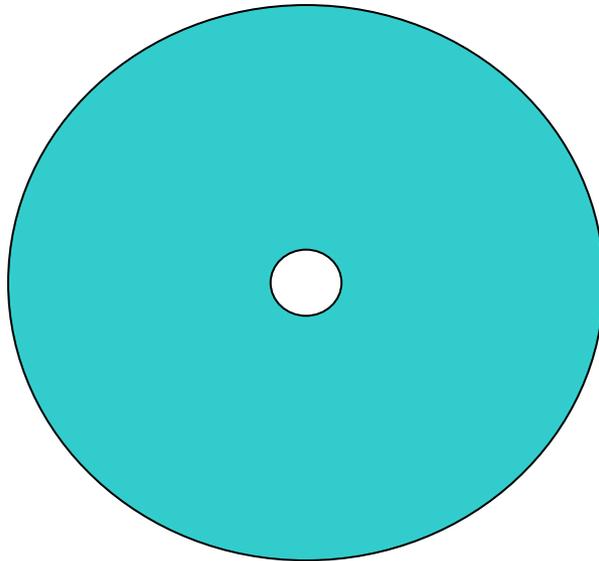
Precision

- The degree of exactness or refinement of a measurement (from Chemistry: Visualizing Matter)
- A measure of the reproducibility of a particular measurement
- Gives information on the scale markings of the measuring instrument
- Communicated using “significant figures”
- Precision measures how far from the mean or average of replicate measurements a particular measurement lies. (from <http://bell.mma.edu/~jbouch/Glossary/Accuracy.html>)

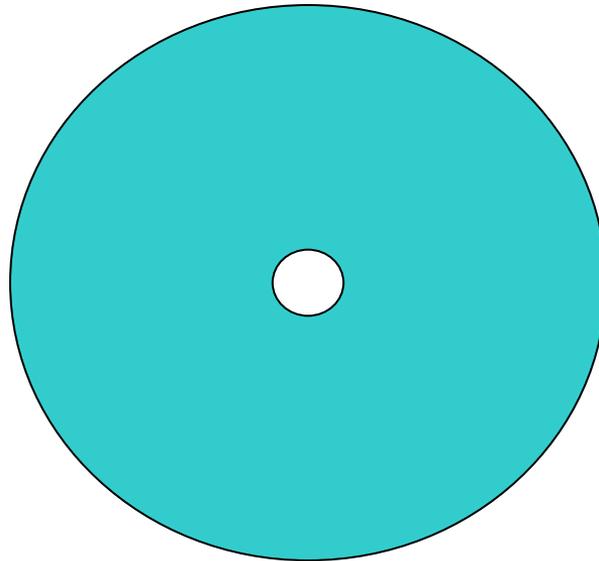
Good accuracy, good precision



Good accuracy, poor precision



Precise, but not accurate



Neither accurate nor precise

