

Rules of Data visualization
(asynchronous component of lecture 3)

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How to Make a Good Plot

1. Show the data.
2. Make patterns easy to see.
3. Display magnitudes honestly.
4. Draw graphics clearly.

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How to Make a Bad Plot

1. Hide the data.
2. Make patterns hard to see.
3. Display magnitudes dishonestly.
4. Draw graphics unclearly.

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Mistakes in displaying data

Mistake 1. Hide the data

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Mistake 1: Hide the data

How to hide data:

- Provide only statistical summaries.
- Over-plotting.

How to reveal data:

- Present all data points, while allowing all to be seen.

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Not Showing Data, Just Summaries

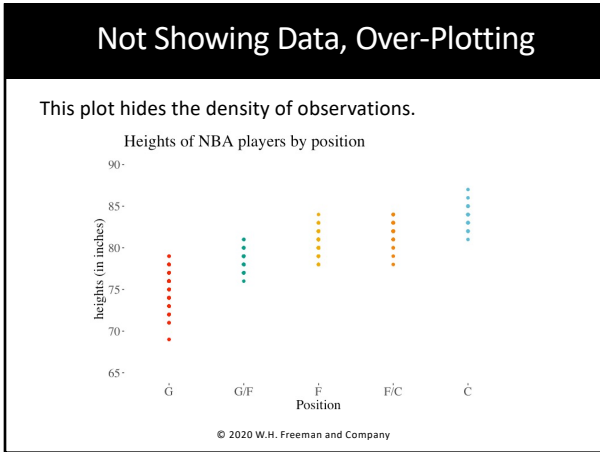
This plot hides the variation within positions.

Mean heights of NBA players by position

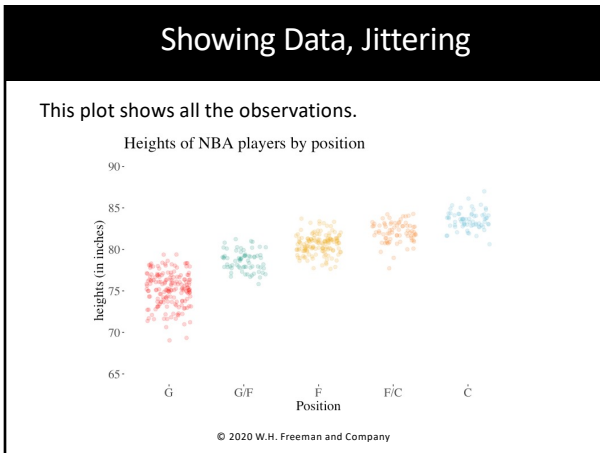
Position	Mean Height (inches)
G	~65
G/F	~65
F	~65
F/C	~65
C	~65

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Mistakes in displaying data

Mistake 2. Making patterns hard to see

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Mistake 2: Making Patterns Hard to See

How to hide patterns:

- Make one plot and call it good.
- Use unreasonable scales.
- Arrange factors nonsensically.

How to reveal patterns:

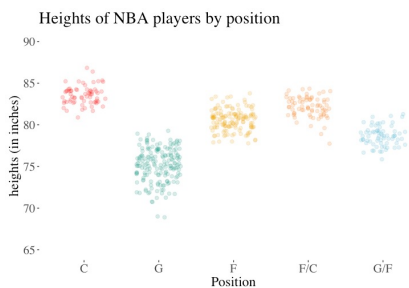
- Explore multiple potential plots.
- Use appropriate scales.
- Arrange factors meaningfully.
Arrange in order for ordinal, by mean for nominal.

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Nonsensical Order Hides Patterns

Non-intuitive ordering of factors hides patterns.

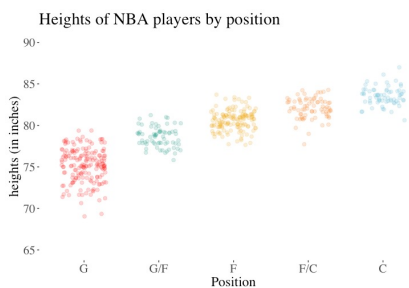


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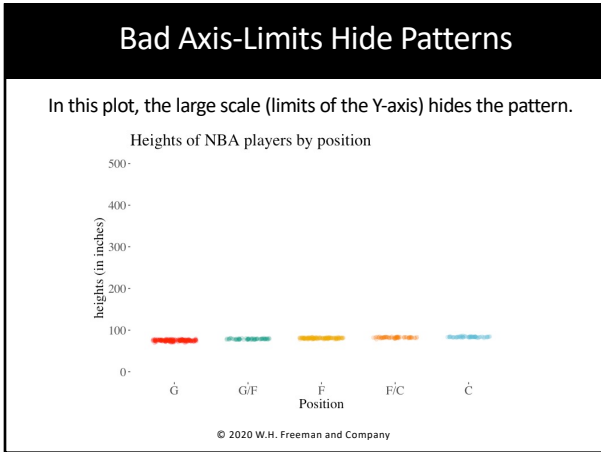
Nonsensical Order Hides Patterns

Intuitive ordering of factors hides patterns.



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