

Master ESA — Analyse des données qualitatives

# Sur la mauvaise utilisation des statistiques

Exemples tirés du blog de Ben Orlin

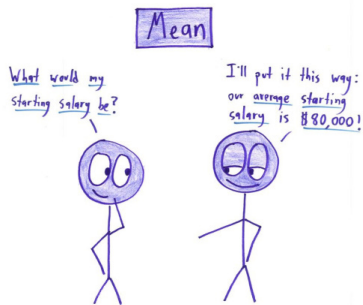
<https://mathwithbaddrawings.com/2016/07/13/why-not-to-trust-statistics/>

Nils Berglund

MAPMO, Université d'Orléans

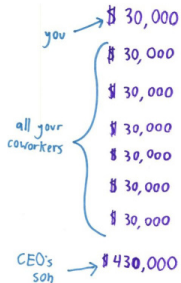
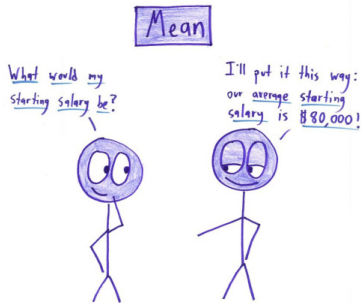
2016

# 1. La moyenne



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# 1. La moyenne



Average: \$80,000.



## 2. La médiane

Median

So, why should I  
invest with you?



Well, not to brag, but  
my fund has a median  
gain of 8% per year!



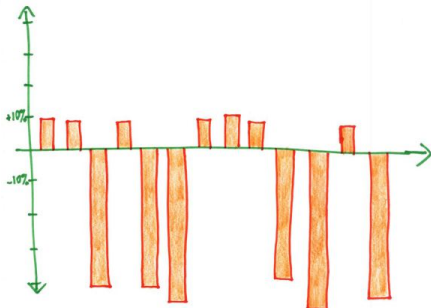
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### 3. Le mode

Mode

How are you doing  
on your tests?



My modal category  
is 70-80%!



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### 3. Le mode

Mode

How are you doing  
on your tests?



My modal category  
is 70-80%!



please don't ask  
about the mean...



Score Category	Number of Tests
90s	0
80s	0
70s	2
60s	1
50s	1
40s	1
30s	1
20s	1

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## 4. Le domaine

Range

Our students come from a  
wide range of  
Socioeconomic  
backgrounds...



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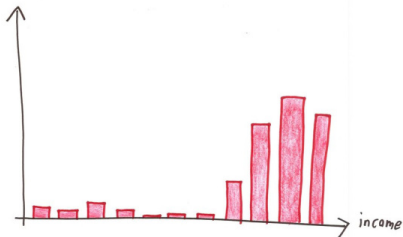
## 4. Le domaine

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Our students come from a wide range of socioeconomic backgrounds...



number of students



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## 5. Le coefficient de corrélation

Correlation  
Coefficient

Try our energy drink —  
it's highly correlated with  
performance!



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# 5. Le coefficient de corrélation

Correlation  
Coefficient

Try our energy drink —  
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performance!



athletic  
performance

professional athletes we  
paid to guzzle the stuff  
↓  
...



amount of  
drink consumed

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## 6. La variance

Variance

These results are  
a disaster!



Sure, they look bad,  
but there's a lot of variance!  
Don't rush  
to judgment.



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## 6. La variance

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