God's Fingerprints

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Contents

1	Reproducibility and Real Data		
	1.1 Some Truth	5	
	1.2 Critical Thinking, Analytics, and Reproducibility	5	
2	Today's agenda	7	
3	Motivation	9	
4	Marathon Kids	11	
	4.1 About this data	11	
	4.2 More about this data	12	
	4.3 Some fun data for you	12	
	4.4 The Full Data Set	14	
5	Our Quiz	15	
6	Exodus 20 (NIV)	17	

4 CONTENTS

Reproducibility and Real Data

1.1 Some Truth

"All models are wrong, but some are useful."

- George Box, 1976, Journal of the American Statistical Association

1.2 Critical Thinking, Analytics, and Reproducibility

Today's agenda

- Biology
- Vaccines
- Dataset 1 (Marathon Kids; size, means and correlation?)
- Per Dr. Suzie Smith, a quiz
- Tensions
- A few quotes
- See if we've had fun

Motivation

Like father, like daughter.



Marathon Kids

Let's evaluate trainers. Calculate:

- 1. the mean pre for each trainer
- 2. the mean post for each trainer
- 3. the correlation between pre and post for each trainer

4.1 About this data

trainer	pre	post
1	55.3846	97.1795
1	51.5385	96.0256
1	46.1538	94.4872
1	42.8205	91.4103
1	40.7692	88.3333
1	38.7179	84.8718

4.2 More about this data

trainer	n
1	142
2	142
3	142
4	142
5	142
6	142
7	142
8	142
9	142
10	142
11	142
12	142
13	142

4.3 Some fun data for you

Marathon Kids Data

4.4 The Full Data Set

trainer	pre	post
1	55.38460	97.1795000
1	51.53850	96.0256000
1	46.15380	94.4872000
1	42.82050	91.4103000
1	40.76920	88.3333000
1	38.71790	84.8718000
1	35.64100	79.8718000
 1	33.07690	77.5641000
	28.97440	74.4872000
	26.15380	71.4103000
1	23.07690	66.4103000
1	22.30770	61.7949000
1	22.30770	57.1795000
1	23.33330	52.9487000
1	25.89740	51.0256000
1	29.48720	51.0256000
$\frac{1}{1}$	32.82050	
		51.0256000
$\frac{1}{1}$	35.38460	51.4103000
1	40.25640	51.4103000
1	44.10260	52.9487000
1	46.66670	54.1026000
1	50.00000	55.2564000
1	53.07690	55.6410000
1	56.66670	56.0256000
1	59.23080	57.9487000
1	61.28210	62.1795000
1	61.53850	66.4103000
1	61.79490	69.1026000
1	57.43590	55.2564000
1	54.87180	49.8718000
1	52.56410	46.0256000
1	48.20510	38.3333000
1	49.48720	42.1795000
1	51.02560	44.1026000
1	45.38460	36.4103000
1	42.82050	32.5641000
1	38.71790	31.4103000
1	35.12820	30.2564000
	32.56410	32.1795000
1	30.00000	36.7949000
 1	33.58970	41.4103000
 1	36.66670	45.6410000
1	38.20510	49.1026000
	29.74360	36.0256000
1	29.74360	32.1795000
1	30.00000	29.1026000
$\frac{1}{1}$	32.05130	26.7949000
	35.89740	25.2564000
$\frac{1}{1}$	41.02560	25.2564000
1	44.10260	25.6410000
1	47.17950	28.7180000

Our Quiz

Exodus 20 (NIV)

1. You shall have no other gods before me.

- 2. You shall not make for yourself an image in the form of anything in heaven above or on the earth beneath or in the waters below...
- 3. You shall not misuse the name of the Lord your God...
- 4. ______???
- 5. "Honor your father and your mother...
- 6. You shall not murder.
- 7. You shall not commit adultery.
- 8. You shall not steal.
- 9. You shall not give false testimony against your neighbor.
- 10. You shall not covet your neighbor's house. You shall not covet your neighbor's wife, or his male or female servant, his ox or donkey, or anything that belongs to your neighbor.