

Jokes in Statistics

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¹Web: <http://www.yihui.name>; This is an invited talk at the Capital University of Economics and Business. Slides made in \LaTeX with beamer.

- This presentation is mainly based on “Gary C. Ramseyer’s first internet gallery of statistics jokes” with his kind permission. It’s a good chance for novices in statistics to remember some English terms, while for those who have mastered some basic knowledge about statistics, you may try to understand what on earth is funny in those jokes :-)
- For more jokes in statistics, please visit:
<http://www.ilstu.edu/~gcramsey/Gallery.html>
- Paragraphs led by an asterisk “*” are comments of Prof. Gary, and my own complements are right behind his remarks. (Titles of slides are added by myself.)

Outline

some selected topics...

- 1 Analysis of Variance
- 2 Correlation and Regression
- 3 Moments
- 4 Bayesian Statistics
- 5 Central Tendency
- 6 Hypothesis Testing
- 7 Degree of Freedom
- 8 Data Collection & Distribution
- 9 Randomness and Sampling
- 10 Innumeracy
- 11 Chance and Probability
- 12 Experimental Design
- 13 Statistician Traits
- 14 Statistician vs. Other Professions

ANOVA – Compare Group Means

Means? Variances?

A naive researcher approached a statistician one day about analyzing some data.

Researcher: “How do I test the difference between four treatment group means?”

Statistician: “Perform an Analysis of Variance.”

Researcher: “But I don’t want to test the difference in the group *variances!*”

Statistician: “You aren’t! You are comparing the ratio of the variation between the group means to the combined variation within the groups to see if it is beyond chance.”

ANOVA – Compare Group Means (cont'd)

Means? Variances?

Researcher: “You simply don’t understand. You persist in talking about *variation* which does not interest me in the least!”

Statistician(Exasperated and Angry): ” O.K. I have an alternative for you which is called the *Interocular Test*. Just examine any difference in the means and if it STRIKES YOU RIGHT BETWEEN THE EYES, declare it significant!!!”

ANOVA – Compare Group Means (cont'd)

Means? Variances?

*

Isn't it rather ironic that the significance of the differences between a set of means can be tested by the ratio of two variances? Sir Ronald Fisher was very cagey when he perfected this seemingly contradictory procedure. This little story is my own so you know where to shoot the barbs.

F-statistic for ANOVA

A factor has r levels A_1, A_2, \dots, A_r , and under level A_i there are n_i samples; $X_{ij} \sim N(\mu_i, \sigma^2)$. The Null Hypothesis:

$$H_0 : \mu_1 = \mu_2 = \dots = \mu_r.$$

$$\begin{aligned} SS_{\text{total}} &= SS_{\text{error}} + SS_{\text{treatments}} \\ \sum_{i=1}^r \sum_{j=1}^{n_i} (X_{ij} - \bar{X})^2 &= \sum_{i=1}^r \sum_{j=1}^{n_i} (X_{ij} - \bar{X}_i)^2 + \sum_{i=1}^r (\bar{X}_i - \bar{X})^2 \\ F &= \frac{SS_{\text{treatments}}/(r-1)}{SS_{\text{error}}/(n-r)} \sim F(r-1, n-r) \end{aligned}$$

Celebrate your birthday every day

and immortality you'll gain...

It is proven that the celebration of birthdays is healthy. Statistics show that those people who celebrate the most birthdays become the oldest.

*

This one is credited to S. den Hartog by way of Joachim Verhagen's Science Jokes page.

A bold prediction using regressions

you were alive yesterday; you are alive today; so...

Two statisticians were traveling in an airplane from LA to New York. About an hour into the flight, the pilot announced that they had lost an engine, but don't worry, there are three left. However, instead of 5 hours it would take 7 hours to get to New York. A little later, he announced that a second engine failed, and they still had two left, but it would take 10 hours to get to New York. Somewhat later, the pilot again came on the intercom and announced that a third engine had died. Never fear, he announced, because the plane could fly on a single engine. However, it would now take 18 hours to get to New York.

A bold prediction using regressions (cont'd)

you'll be alive forever... again!

At this point, one statistician turned to the other and said, "Gee, I hope we don't lose that last engine, or we'll be up here forever!"

*

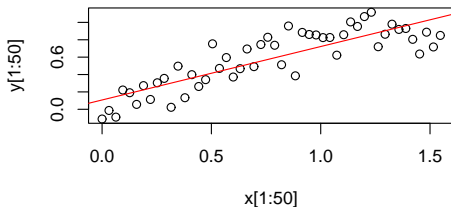
This was found at the Dynamic StatisticsTM software site of Key Curriculum Press at Fathom

A bold prediction using regressions (cont'd)

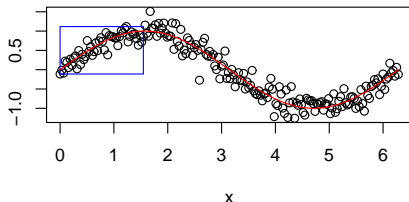
sometimes regressions are no better than blind guesses?

```
x = seq(0, 2 * pi, length = 200)
y = sin(x) + rnorm(length(x),
  0, 0.2)
par(mfcol = c(2, 1), mar = c(4.2,
  4, 3, 0.1))
plot(x[1:50], y[1:50], main =
  "A Perfect Regression!")
abline(lm(y[1:50] ~ x[1:50]),
  col = "red")
plot(x, y, main = "But the FACT is...")
rect(x[1], min(y[1:50]), x[50],
  max(y[1:50]), border = "blue")
lines(x, sin(x), col = "red")
```

A Perfect Regression!



But the FACT is...



Never get married!

or you'll get a divorce...

A team of researchers from a large eastern university in the US has recently published a monumental finding. The team discovered what the leading cause of divorce is. It is *marriage!!!* You see, everyone who has been divorced has been married first.

*

Well, I wonder what journal was responsible for propagating in print this causal relationship. I was told the same journal had advocated a temporary moratorium on marriage as an attempt to cut the divorce rate. Thanks to Jonathan Schinhofen for suggesting this bit of sheer tomfoolery.

Cauchy distribution is always busy!

and never trouble him...

What's the question the Cauchy distribution hates the most?

Got a moment?

*

This is only funny if you are steeped in mathematical statistics.
Thanks go out to S. Gomatam for contributing this odd one.

Sometimes a moment is long!

when you are not in love?...

Day of the quiz:

Professor: “OK students, you have fifteen minutes to plot the bivariate distribution between A and B, fifteen minutes to compute the correlation between A and B, and 5 SECONDS to compute the kurtosis of B.”

One student stands up very worried: “Excuse me Professor, how can we possibly compute a kurtosis in 5 SECONDS?”

Sometimes a moment is long! (cont'd)

NO! when you are in an exam of statistics...

The Professor looks at the class very reassuring: “No need to be worried, kids, IT TAKES ONLY A MOMENT!!”

*

Sorry this joke got lost in my notes. But, I want to take this moment to thank Marcello Gallucci of the Free University in the Netherlands for this little tidbit of humor.

Sometimes a moment is long! (cont'd)

what's this “moment”?

$$\begin{aligned}\text{Kurt}(X) &= \frac{\sum_{i=1}^n (x_i - \bar{x})^4}{n(s^4)} - 3 \\ &= \frac{\sum_{i=1}^n (x_i - \bar{x})^4}{n\left(\frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})^2\right)^2} - 3\end{aligned}$$

In R, a line of code is enough for computation:

```
sum((x - mean(x))^4)/(length(x) * var(x)^2) - 3
```


A Bayesian has great imaginations!

what's he thinking about all day long...

A Bayesian is one who, vaguely expecting a horse, and catching a glimpse of a donkey, strongly believes he has seen a mule.

*

This got lost in the shuffle last spring. A belated thanks to Ken Lienemann.

A Bayesian has great imaginations! (cont'd)

Which component is the horse, the donkey, and the mule respectively?

The great and simple formula:

$$P(A|B) = \frac{P(AB)}{P(B)} = \frac{P(A)P(B|A)}{P(B)}$$

Frequentists always love repeated trials!

repeat again and again to approximate the probability with the frequency...

A Bayesian and a Frequentist were to be executed. The judge asked them what were their last wishes. The Bayesian replied that he would like to give the Frequentist one more lecture. The judge granted the Bayesian's wish and then turned to the Frequentist for his last wish. The Frequentist quickly responded that he wished to hear the lecture again and again and again and again...

*

Thanks to Xiao-Li Meng for this subtle humor.

A terrible fact about the number of your legs!

we have more legs than average...

Did you know that the great majority of people have more than the average number of legs? It's obvious really; amongst the 57 million people in Britain there are probably 5,000 people who have got only one leg. Therefore the average number of legs is:

$$((5000 * 1) + (56,995,000 * 2))/57,000,000 = 1.9999123$$

A terrible fact about the number of your legs! (cont'd)

we have more legs than average...

Since most people have two legs...

*

Thanks to Joachim Verhagen's Science Jokes for this play upon numbers.

On average everything is just fine!

the mean is usually not robust...

Did you hear about the statistician who had his head in an oven and his feet in a bucket of ice? When asked how he felt, he replied, "On the average I feel just fine."

*

Thanks to George Litman for reminding me of the first statistics joke I had ever heard. This just might be the granddaddy of them all.

Test the data until it's (un)able to reject H_0

usually such a way doesn't count...

Did you know that if you torture the data long enough, that eventually it will confess?

*

Does this include using the Chinese water torture? Thanks Cliff Lee from Caterpillar for passing this one my way.

Marriage means loss of freedom!

guys, I'd like to suggest you not marry again...

Two unbiased estimators were sitting in a bar. The first says, "So how do you like married life?" The other replies, "It's pretty good if you don't mind giving up that one degree of freedom!"

*

A big thank you to Bert Bishop for submitting this.

Marriage means loss of freedom! (cont'd)

take the χ^2 -statistic as an example...

Suppose X_1 and X_2 follow $N(0, 1)$ (i.i.d), then $X_1^2 + X_2^2 \sim \chi_2^2$,
however, when they got married as \bar{X} , the tragedy happened...
 $(x_1 - \bar{X})^2 + (x_2 - \bar{X})^2 \sim \chi_1^2$ (only *one* degree of freedom left)... Oh,
poor guys!

Large numbers mean normality?!

in the eye of statistics, everything is “normal”?...

What do you call a tea party with more than 30 people?

A Z party!!!

*

This is a great one from Stacey Ecott. I always thought a Z party was a roomful of slumbering statisticians listening to a keynote address at a convention.

Never abandon the so-called “outliers”!

this is actually a quite serious problem...

I'm not an outlier; I just haven't found my distribution yet!

*

Thanks to Ronan Conroy in Dublin, Ireland for this real cute one. I have also been searching for my distribution throughout my entire career.

Be careful of your questionnaires!

Checking some questionnaires that had just been filled in, a census clerk was amazed to note that one of them contained figures 121 and 125 in the spaces for “Age of Mother, If Living” and “Age of Father, if Living.”

“Surely your parents can’t be as old as this?” asked the incredulous clerk.

“Well no,” was the answer, “but they would be IF LIVING!” was the answer.

*

Is this telling us that census data is biased on age of parents? Thanks Michele McIndoe for sending me this neat little joke.

Larger sample size is always better!

just destroy all the products to know the quality...

One day there was a fire in a wastebasket in the Dean's office and in rushed a physicist, a chemist, and a statistician. The physicist immediately starts to work on how much energy would have to be removed from the fire to stop the combustion. The chemist works on which reagent would have to be added to the fire to prevent oxidation. While they are doing this, the statistician is setting fires to all the other wastebaskets in the office. "What are you doing?" they demanded.

Larger sample size is always better! (cont'd)

just destroy all the products to know the quality...

“Well to solve the problem, obviously you need a large sample size”,
the statistician replies.

*

This is one of my favorites. Thanks again to Hugh Foley.

Errors are only “errors”!

you may also call “errors” “disturbances” ...

When a statistician is pounding a nail with a hammer but misses the nail and hits his thumb, what do we call it?

Sampling Error

When a statistician is pounding a nail with a hammer but misses the nail and hits his thumb 10 CONSECUTIVE times, what do we call it?

A Biased Statistic

Errors are only “errors”! (cont'd)

we cannot make mistakes all the time, so...

How do we correct for the bias?

Tell the statistician to place his thumb directly on the nail and then strike his thumb with the hammer!!!

*

We have all heard the expression, “I’m all thumbs.” In this situation that is literally true. I hate to admit that during a weak moment this funnyism hit me. Anyway, thanks to all the reviewers who gave me two thumbs up in my mailbox on this one!

Do you believe a too accurate number?

oh, it's too accurate to believe...

“79.48% of all statistics are made up on the spot.” - John A. Paulos

*

Thanks to Bill Weaver for this quickie!

There are 10 kinds of people

– those who understand binary system and those who don't...

Did you know that there are *three* kinds of statisticians – those that can count and those that can't.

*

A big thank you to a fellow Hawkeye, John Creyer, for a great chuckle.

$$60 - 40 \neq 20?$$

perhaps...

A friend was bragging to a statistician over coffee one afternoon how two-day volatility in the stock market had treated his holdings rather kindly. He chortled, "Yeah... yesterday I gained 60% but today I lost 40% for a net gain of 20%."

$60 - 40 \neq 20?$ (cont'd)

perhaps...

The statistician sat in horrified silence. He finally mustered the courage and said, “My good friend I’m sorry to inform you but you had a net loss of 4%!!!”

*

My little tale above illustrates how pervasive innumeracy is in our society. Always remember, “Percent of What?”

A clever prisoner

A prisoner had just been sentenced for a heinous crime and was returned to his cell. An inquisitive guard could not wait to ask him about the outcome.

Guard: "What did you get for a sentence?"

Prisoner: "I could choose life or 100 years."

Guard: "And what did you choose?"

A clever prisoner (cont'd)

Prisoner: “Well, life, obviously. Statistically speaking that is shorter.”

*

This convict obviously knew a little about statistics but was lacking in common sense. Thanks go out to Coen Bernaards from UCLA for sending this one my way.

Tragedy about marriage again!

should I leave this room now...

50% of marriages end in divorce. Thus *if you don't file for divorce, your wife will.*

*

This is a cute little variation of all the 50-50 jokes. But wait a minute! This says the probability of any marriage ending in divorce is one. Sorry I don't have an attribution on this one.

Never tell a lie!

nor tell several lies...

Three roommates slept through their midterm statistics exam on Monday morning. Since they had returned together by car from the same hometown late Sunday evening, they decided on a great little falsehood. The three met with the instructor Monday afternoon and told him that an ill-timed flat tire had delayed their arrival until noon. The instructor, while somewhat skeptical, agreed to give them a makeup exam on Tuesday.

Never tell a lie! (cont'd)

nor tell several lies...

When they arrived the instructor issued them the same makeup exam and ushered each to a different classroom. The first student sat down and noticed immediately the instructions indicated that the exam would be divided into Parts I and II weighted 10% and 90% respectively. Thinking nothing of this disparity, he proceeded to answer the questions in Part I. These he found rather easy and moved confidently to Part II on the next page. Suddenly his eyes grew large and his face paled. Part II consisted of one short and pointed question...

Never tell a lie! (cont'd)

nor tell several lies...

“Which tire was it?”

*

This is my own homegrown joke that was motivated by the dramatic increase in grandmother deaths on the day of an examination!

How to avoid traffic accidents?

There was this statistics professor who, when driving his car, would always accelerate hard before coming to any Intersection, whip straight through it , then slow down again once he'd got past it. One day, he took a passenger, who was understandably unnerved by his driving style, and asked him why he went so fast over intersections. The statistics professor replied, "Well, statistically speaking, you are far more likely to have an accident at an intersection, so I just make sure that I spend less time there."

*

To a colleague of mine who just had his driver's license suspended, thanks for telling me this one.

How to get the answers of a T/F test?

just flip your coin...

An undergraduate psychology major was totally hung over for the final exam in abnormal psychology. He was somewhat relieved to find that the exam was a true/false test. He had taken a basic stat course and did remember his professor once performing a coin flipping experiment. Since his brain was pretty mushy he decided to flip a coin he had in his pocket to get the answers for each question. The psychology professor watched the student the entire two hours as he was flipping the coin... writing the answer... flipping the coin... writing the answer, on and on. At the end of the two hours, everyone else had left the room except for this one student.

How to get the answers of a T/F test? (cont'd)

and flip your coin again to “check” your answers...

The professor walks up to his desk and angrily interrupts the student, saying: “Listen, it is obvious that you did not study for this exam since you didn’t even open the question booklet. If you are just flipping a coin for your answer, why is it taking you so long?”

The stunned student looks up at the professor and replies bitterly (as he is still flipping the coin): “Shhh! I am checking my answers!”

*

This is real cute but unfortunately I don’t have an attribution for it.
Can anyone claim it?

It's hard for two events happening simultaneously!

so commit suicide in case others should kill you too... then you'll be safe

A man who travels a lot was concerned about the possibility of a bomb on board his plane. He determined the probability of this, found it to be low but not low enough for him. So now he always travels with a bomb in his suitcase. He reasons that the probability of two bombs being on board would be infinitesimal.

*

Contributed by Eugene A. Berg -Thanks! Taken from Innumeracy by John Allen Paulos.

Study hard on statistics!

or you'll lose your money...

A LOTTERY IS A TAX ON PEOPLE WHO DON'T UNDERSTAND STATISTICS!!

*

How True!! How True!! Thanks go out to Alvaro Montenegro Garcia for this contribution.

Probability = Frequency?

surely not...

A patient asked his surgeon what the odds were of him surviving an impending operation. The doctor replied they were 50/50 but he'd be all right because the first fifty had already died!!

*

There are a lot of variations of this theme floating around. It reminds me of the coin flipping experiment where a gambler is certain that a tail must appear after ten straight heads. Anyway, thanks to Peter Davies from Oxon in the UK for sending me this little tidbit.

One-sided v.s. two-sided

The statistician was asked by his friend why he always used the urinal on the far end.

He replied: “Oh, that is a no brainer. There is half the probability of being sprayed by someone else.”

*

Once again this illustrates how repressed statisticians are. They would never be caught in the middle of a group for fear the person on either side would strike up a conversation. Thanks to Graeme Quinlan from Australia for passing this on.

The control group is always important!

A statistician's wife had twins. He was delighted. He rang the minister who was also delighted. "Bring them to church on Sunday and we'll baptize them," said the minister. "No," replied the statistician. "Baptize one. We'll keep the other as a control."

*

Sorry I lost the attribution on this one. Does anyone want to claim credit?

Double-blinded? Triple-blinded?

oh, that's really blind enough...

What is a triple-blinded, completely randomized case-control clinical drug trial?

One in which the patients do not know which drug treatment they are receiving, the nurses do not know which drug treatment they are administering, and the physicians conducting the study do not know what they are doing!!!

Double-blinded? Triple-blinded? (cont'd)

oh, that's really blind enough...

*

I have always wondered why physician's recommendations from medical research studies change almost every six months. Thanks to Kenn Finstuen from Texas for another dandy. This should immediately be recognized by Stanley and Campbell in their work that classifies types of experimental designs.

Useless statisticians

Three men are in a hot-air balloon. Soon, they find themselves lost in a canyon somewhere. One of the three men says, “I’ve got an idea. We can call for help in this canyon and the echo will carry our voices far.” So he leans over the basket and yells out, “Helllloooooo! Where are we?” They hear the echo several times.)

Fifteen minutes pass. Then they hear this echoing voice: “Helllloooooo! You’re lost!!” One of the men says, “That must have been a statistician.” Puzzled, one of the other men asks, “Why do you say that?” The reply: “For three reasons. (1) he took a long time to answer, (2) he was absolutely correct, and (3) his answer was absolutely useless.”

Useless statisticians (cont'd)

*

Does this truly characterize a good statistician? This bit of humor has been floating around for sometime. Sorry I don't have an attribution for it.

It's easy to be wise after the events

A statistician is someone who is skilled at drawing a *precise* line from an *unwarranted* assumption to a *foregone* conclusion.

*

This one has been rattling around in my brain but I seem to have trashed the email of the kind person that sent me this. Someone please step forward and claim this!

We need data mining in a bikini!

in order to find what's crucial...

Statistics are like a bikini; What is revealed is interesting; What is concealed is crucial.

*

Thanks go out to R. Taylor for this little tidbit.

The Top Ten Reasons To Become A Statistician

- 1 Deviation is considered normal.
- 2 We feel complete and sufficient.
- 3 We are “mean” lovers.
- 4 Statisticians do it discretely and continuously.
- 5 We are right 95% of the time.
- 6 We can legally comment on someone’s posterior distribution.
- 7 We may not be normal but we are transformable.
- 8 We never have to say we are certain.
- 9 We are honestly significantly different.
- 10 No one wants our jobs.

The Top Ten Reasons To Become A Statistician (cont'd)

*

This one was sent anonymously through my Guestbook.

Importance of a control group

And there was the statistician who was asked how her husband was and replied “Compared with whom?”

*

Almost forgot this quickee from the same Ronan Conroy. Thanks!

Are you significant?

or, what's your P-value?...

Old statisticians never die they just become nonsignificant.

*

This is my own quote. My students tell me I am only significant at the .10 level so how am I to interpret this?

Never argue with a statistician!

ARGUING WITH A STATISTICIAN IS A LOT LIKE WRESTLING WITH A PIG. AFTER A FEW HOURS YOU BEGIN TO REALIZE THE PIG LIKES IT.

*

We now know that statisticians, among their many other outstanding talents, are also skilled debaters. Thanks go out to Steve Carlson of Bedford, NH for forwarding this joke to me.

Statisticians or accountants?

the “account” must be balanced (on average the balance should be 0)

A Physicist, a Biologist, and a Statistician see two people enter a house, and then after some time, they see three people leave the house.

The Physicist concludes, “My initial observation must have been incorrect.” The Biologist concludes, “Clearly, the two reproduced...” The Statistician concludes, “Well, if one more person enters the house, then there will be no-one in the house!”

*

A big thanks to Paul Dickman for this subtle piece of humor that many of my friends just don't understand.

Proof That All Odd Numbers Are Prime

Mathematician – 3 is prime, 5 is prime, 7 is prime, the rest follows by induction.

Statistician – 3 is prime, 5 is prime, 7 is prime, 9 is experimental error so throw it out, 11 is prime, 13 is prime, the rest follows by induction.

Computer Scientist – 3 is prime, 5 is prime, 7 is prime, 9 is prime, ...

*

Thanks Beth Clarkson from Boeing. I still think it is a good joke!

We need assumptions all the time!

There were a physicist, a circus strong man, and a statistician marooned on a desert island. A box of canned food washes ashore, and the question is how to open the cans. The physicist suggests dropping them from the trees so that they break open. The strong man says that's too messy. Instead, he will rip the cans open with his bare hands. The statistician says that's still too messy, but he knows how to open the cans without making a mess. "First," he says "assume we have a can opener."

*

Electric or manual? Thanks Robert Frick for your contribution.

Statisticians never make explanations!

What's the difference between a physicist, a mathematician, and a statistician?

The physicist calculates until he gets a correct result and concludes that he has proven a fact.

The mathematician calculates until he gets a wrong result and concludes that he has proven the contrary of a fact.

Statisticians never make explanations! (cont'd)

The statistician calculates until he gets a correct result about an obviously wrong proposition and concludes NOTHING, because the explanation is the task of the scientist who consulted the statistician.

*

Thanks to Robert Hacker from Austria for this one. I hope I have not done damage to the underlying humor in the translation.

Statisticians are very careful!

As a biologist, a physicist, and a statistician are riding on a train through Wisconsin, they pass a herd of cows, one of which is completely white. “Oh look, there are white cows in Wisconsin,” says the biologist. “You mean,” says the physicist with an air of superiority, “there is at least one white cow in Wisconsin.” “No,” says the statistician, “there is at least one cow in Wisconsin that’s white on at least one side!”

*

This is a new slant on an older stat joke! Thanks to Steve George of Amherst College who was told this by the late Julian Gibbs a chemist and former president of Amherst.

Statistics can give you any results!

A mathematician, applied mathematician and a statistician all apply for the same job. At the interview they are asked the question, what is $1+1$. The mathematician replies, "I can prove that it exists but not that it is unique." The applied mathematician after some thought replies, "the answer is approximately 1.99 with an error in the region of 0.01." The statistician steps outside the room, mulls it over for several minutes, and eventually in desperation returns and inquires,

Statistics can give you any results! (cont'd)

“so what do you want it to be?”

*

A big thank you goes out to Mike Greyling of the University of Witwatersrand in Johannesburg, South Africa for this revealing joke.

I'd like to thank Prof. Gary for his kind permission:

Hi Yihui:

... You may certainly use these jokes in your October lecture . All I ask is that you cite the appropriate credit...

Gary C. Ramseyer

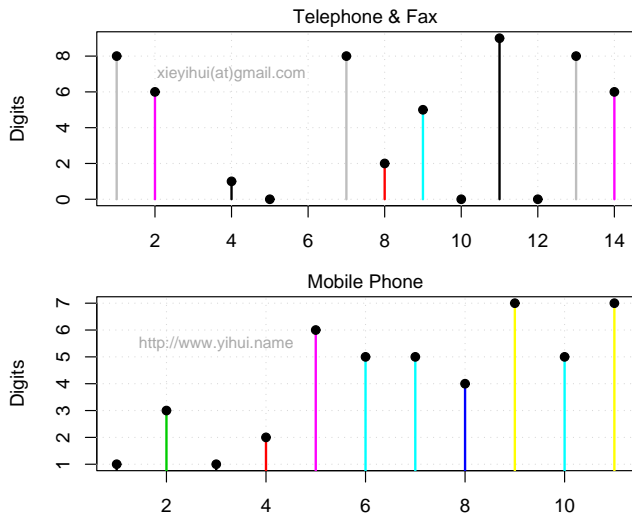
Emeritus Professor of Psychology

Illinois State University

<http://www.ilstu.edu/~gcramsey>

Thanks!

This is Your Name Card?! -____-!!



Thank You!
Any Questions?