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CORRECTION OF STATISTICS

ALEKOS CHARALAMPOPOULOS

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Abstract: **The statistic was wrongly founded. The mathematical hope of the function f(x) must not be multiplied by the function f(x), nor must its moments.**

They are taken as accurate philosophical conclusions for mathematics and statistics. Mathematics and statistics reflect states or movements of the universe and depend on philosophy.

They are different the arithmetic mean, dispersion, curvature and asymmetry of the normal distribution, such as normal, binomial and Poisson distribution.

Some formulas of combinatorial analysis are explained differently.

Keywords: **philosophical conclusions, mathematics and statistics.**

1. INTRODUCTION

The statistics as a whole is on the wrong footing. Mathematical hope, dispersion, etc. it is wrong and we will give the right formulas. The mathematics that we have proposed will be used.

The normal distribution, binomial distribution, and Poisson distribution will be used as a result to correctly represent the arithmetic mean, dispersion, curvature, and asymmetry.

With the advent of my cosmic theory[1], the unity of philosophy, physics, mathematics and all sciences is established. Here the mathematical operation 0. ∞=1, explained by my philosophy, that zero, which is God, captures in its imagination the infinite and affects it by turning it into an infinite ether, that is, the unit. The effect is the multiplication of zero by infinity.

2. METHODOLOGY

In methodology is the application of philosophical conclusions to mathematics, where they need philosophy. So, 0. ∞=1.

Induction is used in almost all reasoning, but abduction is also partially used. Mathematics is considered as the short, concise, symbolic and figurative expression of reality, mathematics is universal, since it expresses states of our universe. So is statistics.

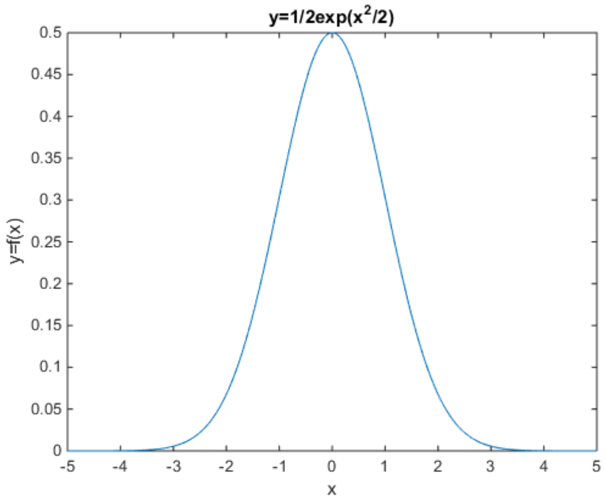
THE NORMAL DISTRIBUTION

We have the standard normal distribution (We'll see below why this is it),

$$f(x) = \frac{1}{2}e^{-x^2/2} \qquad .$$

[1] THE TOTAL THEORY, International Journal of Mathematics and Physical Sciences Research, Apr2020-Sept2020

This one has a diagram,



If x is the number of men who have rated morality. We consider that the morality of human beings is rated from -10 the worst, up to +10 the best, then probably the population of the earth in terms of its morality, is distributed between -10 and 10 and the fewest have great morality in the center and most are divided between moderate good or even mild bad morality on either side of the center of x and they dwindle as they get closer to the very bad or the very good.

The overall probability is one and we will show it. That's 100%. The probability of being the maximum excellent is 50% and there is no man, it is zero people. The probability $P(X=x_i) = f(x_i)$

The mathematical hope, the arithmetic mean,or else the expected value, for the established statistic, is,[2]

$$\sum_{i=1}^{n} x_i\, P(X = x_i) = \sum_{i=1}^{n} x_i\, f(x_i) = \sum xf(x)$$

In the standard normal distribution, in f(x)=0. 25, (2 5%), correspond to -1 and +1 people, or if they are billions of people of the earth, to 1,0000.0 00,000 bad people and 1,000.0 00,000 good people, These 2,000.0 00,000 people, have a probability of 0. 25 to appear, i.e. here xf(x)=50.000.000.000% . As you understand, this does not make sense, and therefore the arithmetic mean belongs either to the distribution f(x), or to the number of people x and not to xf(x) .

In the standard normal distribution, the mean of x is,

$\bar{x}$= 1/2 (x_{max}+x_{min})= 1/2 (∞+(-∞))=0

To find the mean Ef(x), we will apply the mathematics that we introduced with our work, DERIVATIVIES AND INTEGRAL OF THE DESCRETE MATHEMATICS[3]

But first to find the total probability,

$$\int_{-\infty}^{\infty} f(x) = \int_{-\infty}^{\infty} \frac{1}{2} e^{-x^2/2}\, \Delta x = \frac{1}{2} \Delta x e^{-\Delta x^2/2} \quad =1$$

It is the probability unit, as $\Delta x = \infty - (-\infty) = 2\infty$ and $e^{-\Delta x^2/2} = 0$=1/. ∞The $0.\ \infty = 1$ arises philosophically, the effect of zero on infinity, gives creation, unit. So we demonstrate why the standard normal distribution is,

$$f(x) = \frac{1}{2} e^{-x^2/2}$$

The mean of the function is,

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[2] PROBABILITIES AND STATISTICS Murray Spiegel, p. 76

[3] INTERNATIONAL JOURNAL OF MATEMATICS AND PHYSICAL SCIENCES REASERCH, Oct 2022, March 2023

$$\overline{f(x)} = \frac{1}{2}(f(x)_{max} - f(x)_{min}) = \frac{1}{2}(e^{\frac{-\infty^2}{2}} - e^{\frac{-(-\infty)^2}{2}}) \quad =0$$

So, the product of the two mathematical hopes, the two arithmetic means is,

$$E(f(x))E(x)=0x0=0$$

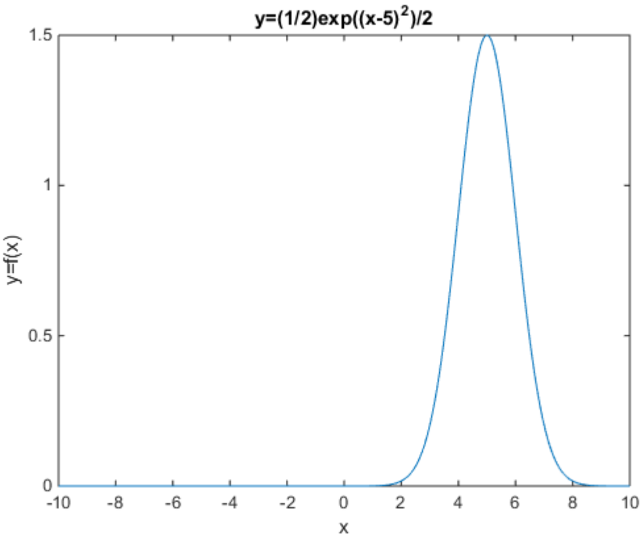
This is the expected value, the mathematical hope of the standard normal distribution.

NORMAL DISTRIBUTION WITH ARITHMETIC MEAN

That's it,

$$f(x) = \frac{1}{2}e^{-(x-\mu)^2/2} \qquad .$$

For arithmetic mean μ=5, the distribution is diagrammatic,



DISPERSION

As we have seen, there is no point in mathematical hope, the multiplication xf(x). So, in dispersion, we do not multiply by f(x).

Then the dispersion of x will be,

Where(x)= E[(X-μ)^2]

For the standard normal distribution μ=0, so,

$$\text{Var}(x)= E[(X=x)^2] == \frac{1}{2}(x_{max}^2 - x_{\min}^2) = \frac{1}{2}(\infty^2 - (-\infty)^2) = 0$$

The dispersion is infinite, since it does not end, +x and -x, tend these to infinity, since the distribution does not approach the x-axis. Therefore, the formula of normal distribution is the one we gave,

$$f(x) = \frac{1}{2}e^{-(x-\mu)^2/2} \qquad .$$

And not the one that the statistics gives

$$f(x) = \frac{1}{\sigma\sqrt{2\pi}}e^{-(x-\mu)^2/2\sigma\text{^}2}$$

ASYMMETRY AND CURVATURE

Curvature is,

$$\sigma_3 = E[(X=x)^3 = \frac{1}{2}(x_{max}^3 - x_{\min}^3) = \infty$$

And the asymmetry,

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$$\sigma_4 = E[(X=x)^4 = \frac{1}{2}(x_{max}^4 - x_{\min}^4) = 0$$

Generally, for distributions, the asymmetry is,

$$\sigma_4 = E[(X-\mu)^4]$$

And the curvature is,

$$\sigma_3 = E[(X-\mu)^3]$$

COMBINATIONS-PROVISIONS

We have the 52 cards of a deck, The possible combinations of 52 cards and with respect to the layout (abc different from bca, bac, cba, cab, cba), we will have 52! combinations, so far we agree.

We have,

$$n\,P_r = n(n-1)(n-2)\ldots\ (n-r+1).$$

$$_nP_n = n(n-1)(n-2)\ldots 1 = n!\ = n(n-1)(n-2)\ldots (n-r+1)(n-r)\ldots 1)$$

$$_nP_r = n!/(n-r)!$$

This interpretation of the combinations $_nP_r$ is, the combinations n(n-1). . . (n-r+1) valid if cancelled (n-r)! combinations by n! But also interpreted as follows: from future throw (n-r)! times of objects from total n objects, will not occur n P_r=n!/(n-r)! combinations, if they happen (n-r)! .

Now let's look at the

$$_nC_r = \binom{n}{r} = \frac{n!}{r!(n-r)!}$$

$$= n\,P\,r/r! = n(n-1)(\ n-2)\ldots (n-r+1)\ /r!$$

$$= \frac{n(n-1)(n-2)\ldots(n-r+1)}{r(r-1)(r-2)\ldots 1}$$

This is interpreted as follows: n P_r=n!/(n-r)! combinations, provided that they occur r! (n-r)! combinations. All in the future of testing.

To see the binomial distribution, after seeing the development of the binomial,

$$(p+q)^n = p^n + \binom{n}{1}p^{n-1}q + \binom{n}{2}p^{n-2}q^2 + \ldots.. + \binom{n}{n}q^n$$

THE BINOMIAL DISTRIBUTION

That's it,

$$f(r) = r\binom{n}{r}qp^{n-r}$$

for r= 1,2,3,,,,r and not r=1,2,3,... n, and,

$$(p+q)^n = p^n + \binom{n}{1}p^{n-1}q + \binom{n}{2}p^{n-2}q^{2+} + \ldots + \binom{n}{r}p^{n-r}q^r + \binom{n}{r-1}p^{n-r-1}q^{r-1} + \cdots + \binom{n}{n}q^n$$

$$(p+q)^n - \binom{n}{r-1}p^{n-r-1}q^{r-1} + \ldots + \binom{n}{n}q^n =$$

$$= p^n + \binom{n}{1}p^{n-1}q + \binom{n}{2}p^{n-2}q^2 + \ldots + \binom{n}{r}p^{n-r}q^r = f(r)$$

This result means that the binomial theorem is wider than the binomial distribution and therefore r=1,2,3,... ,r. If r=1.2,3,..,. n, then it is the binomial theorem.

The mathematical hope is,

$$E(f(x)) = E(y) = 1/2\ (f(x)_{max} + f(x)_{min}) = 1/2\ )(\binom{n}{r}p^{n-r}q^r + p^n$$

And the mean of r is,

$$E(r)= 1/2\ (r_{max}+r_{min})= 1/2\ r \text{ για } r=0,1,2,3,...,r$$

The dispersion is,

$$Var(x)= E[((R=r)- 1/2r\ )^2]= \frac{1}{4}r^2 \quad \text{becouse } r_{min}=0$$

Curvature will be,

$$\sigma_3 =E[((R=r)- 1/2\ r)3] = (1/8)r^3$$

Και η ασυμμετρία,

$$\sigma_4 =E[((R=r)- 1/2\ r)4] =(1/32)r^4$$

THE POISSON DISTRIBUTION

That's it,

$$f(x)=P(X=x)=\frac{\lambda^x e^{-\lambda}}{x!} \qquad \text{for } x=0,1,2,3,\dots,\infty, \quad (\Delta x=\infty).$$

The probability of this distribution is,

$$P(X=x)=\int_0^\infty \frac{\lambda^x e^{-\lambda}}{x!}\Delta x = \Delta x\frac{\lambda^{\Delta x} e^{-\lambda}}{\Delta x!} = \frac{\lambda^{\Delta x} e^{-\lambda}}{(\Delta x-1)!} = \frac{\infty . e^{-\lambda}}{\infty} = e^{-\lambda}$$

The average of the distribution is,

$$\overline{f(x)} = \frac{1}{2}(f(x)_{max} - f(x)_{min}) = \frac{\lambda^\infty e^{-\lambda}}{\infty!} - \frac{\lambda^0 e^{-\lambda}}{0!} = 0$$

The mean on the x-axis,

$$\bar{\bar{x}}= 1/2\ (x_{max}+x_{min})= 1/2\ (\infty+0)= \infty$$

The dispersion is,

$$Var(x)= E[(X=x)^2]= \frac{1}{2}(x_{max}^2-x_{\min}^2) =\frac{1}{2}\infty^2 - 0 = \infty$$

Curvature and asymmetry are infinite.

EPILOGUE

The statistic was wrongly founded. The mathematical hope of the function f(x) must not be multiplied by the function f(x), nor must its moments.

They are taken as accurate philosophical conclusions for mathematics and statistics. Mathematics and statistics reflect states or movements of the universe and depend on philosophy.

They are different the arithmetic mean, dispersion, curvature and asymmetry of the normal distribution, such as binomial and Poisson distribution.

Some formulas of combinatorial analysis are explained differently.

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