Altre variabili aleatorie

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un paradosso

American Heart Journal

An Obesity Paradox in Acute Heart Failure: Analysis of Body Mass Index and Inhospital Mortality for 108927 Patients in the Acute Decompensated Heart Failure National Registry

Gregg C. Fonarow, MD; Preethi Srikanthan, MD; Maria Rosa Costanzo, MD; Guillermo B. Cintron, MD; Margarita

Horwich TB, Fonarow GC, Hamilton MA, et al. The relationship between obesity and mortality in patients with heart failure. J Am Coll Cardiol. 2001;38:789-795

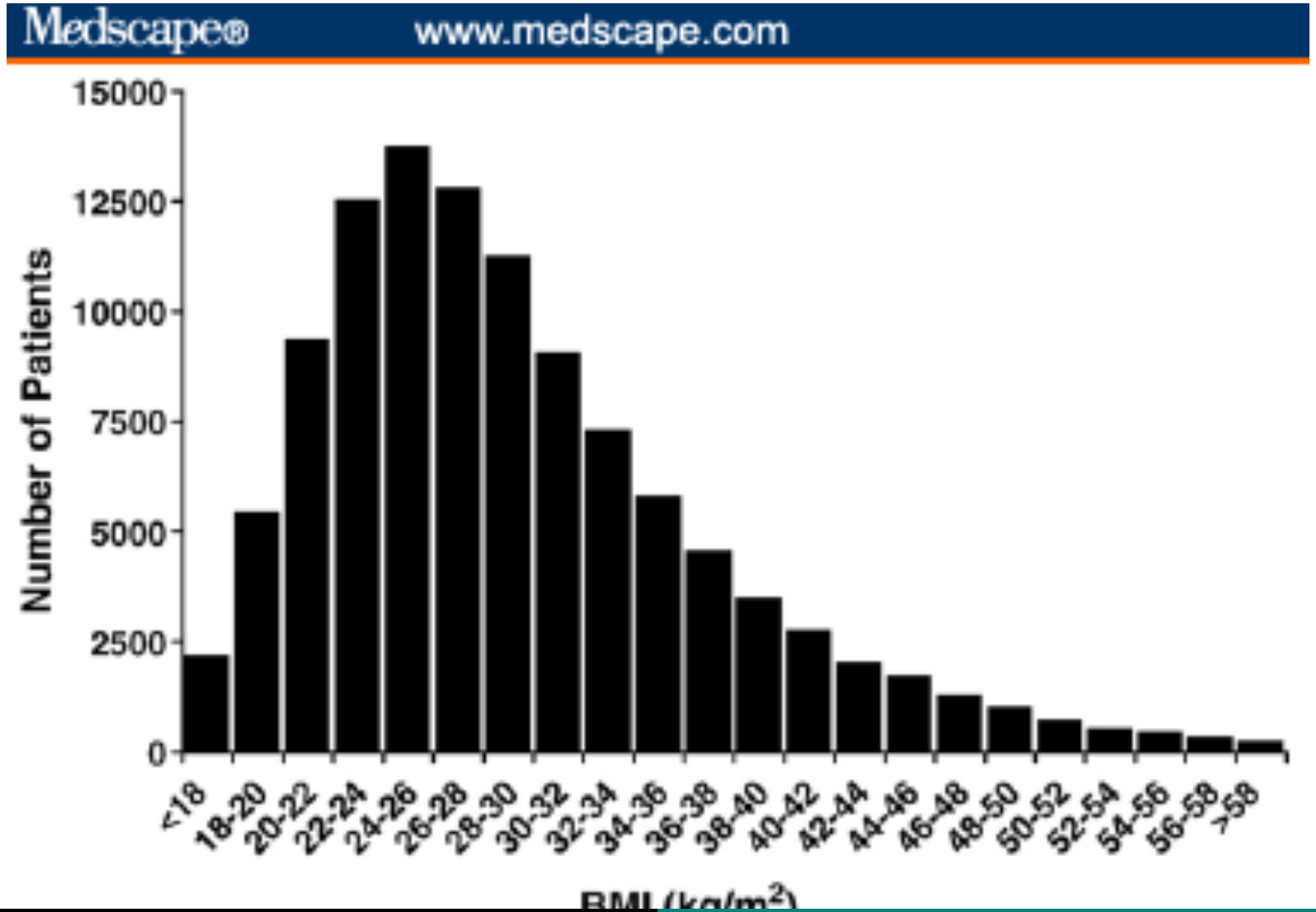
Lavie CJ, Osman AF, Milani RV, et al. Body composition and prognosis in chronic systolic heart failure: the obesity paradox. Am J Cardiol. 2003;91:891-894

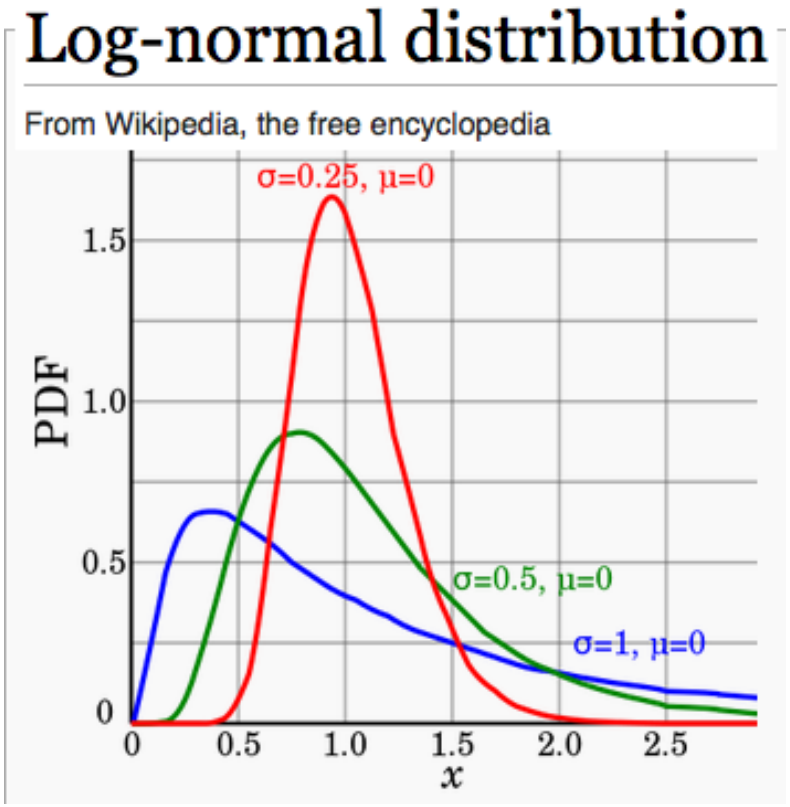
Lissin LW, Gauri AJ, Froelicher VF, et al. The prognostic value of body mass index and standard exercise testing in male veterans with congestive heart failure. J Card Fail. 2002;8:206-215

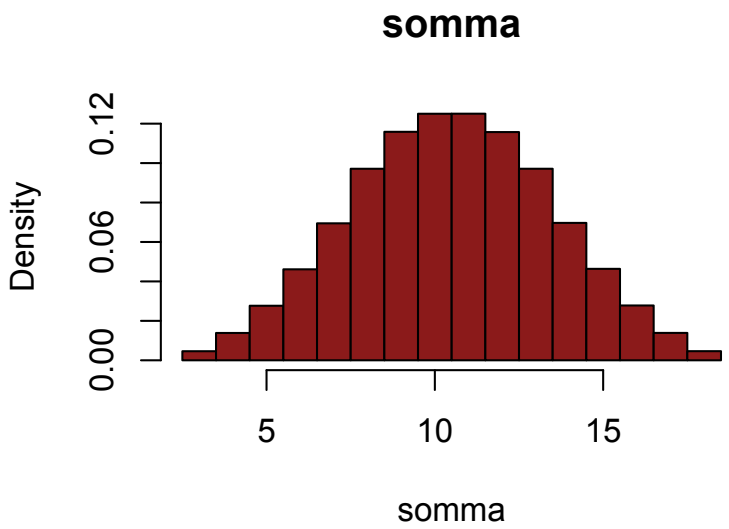
Davos CH, Doehner W, Rauchhaus M, et al. Body mass and survival in patients with chronic heart failure without cachexia: the importance of obesity. J Card Fail. 2003;9:29-35

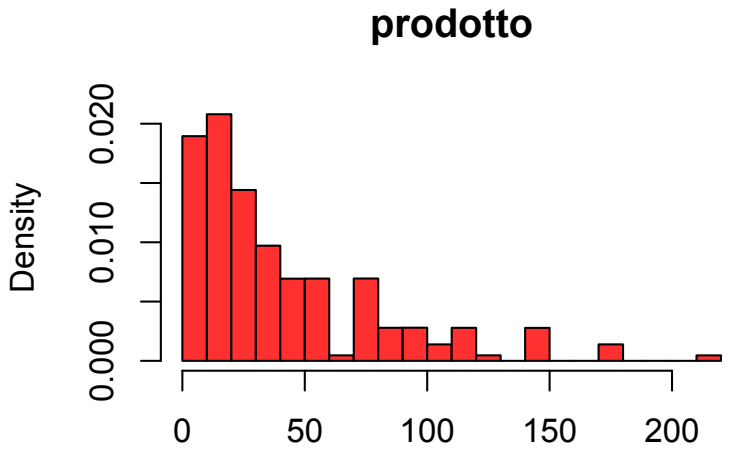
Curtis JP, Selter JG, Wang Y, et al. The obesity paradox: body mass index and outcomes in patients with heart failure. Arch Intern Med. 2005;165:55-61

una distribuzione non normale




Log-normal distribution
From Wikipedia, the free encyclopedia
σ=0.25, μ=0
σ=0.5, μ=0
σ=1, μ=0
PDF
1.5
1.0
0.5
0
0
0.5
1.0
1.5
2.0
2.5
x


somma
Density
0.00
0.06
0.12
5
10
15
somma


prodotto
Density
0.000
0.010
0.020
0
50
100
150
200

la distribuzione log-normale

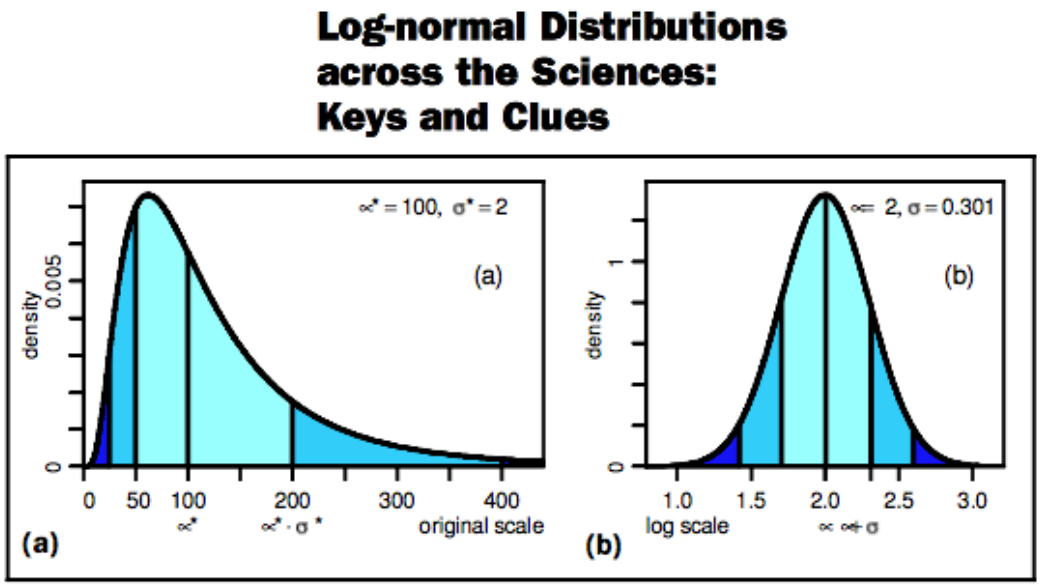
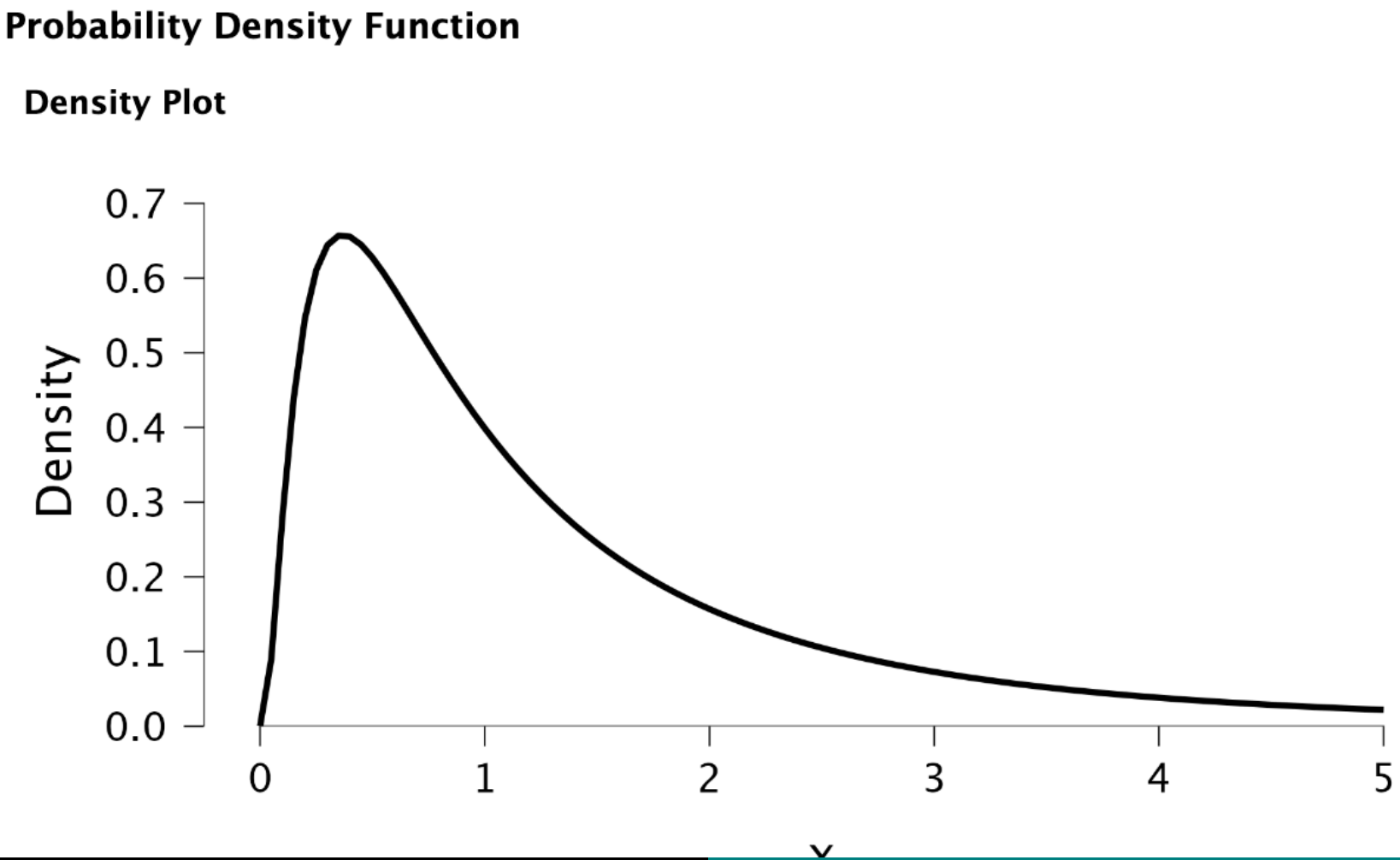


Figure 3. A log-normal distribution with original scale (a) and with logarithmic scale (b). Areas under the curve, from the median to both sides, correspond to one and two standard deviation ranges of the normal distribution.

Eckhard Limpert, et al.
Log-normal Distributions across the Sciences: Keys and Clues
`https://academic.oup.com/bioscience/article/51/5/341/243981`

la distribuzione log-Normale con JASP



la distribuzione log-Normale

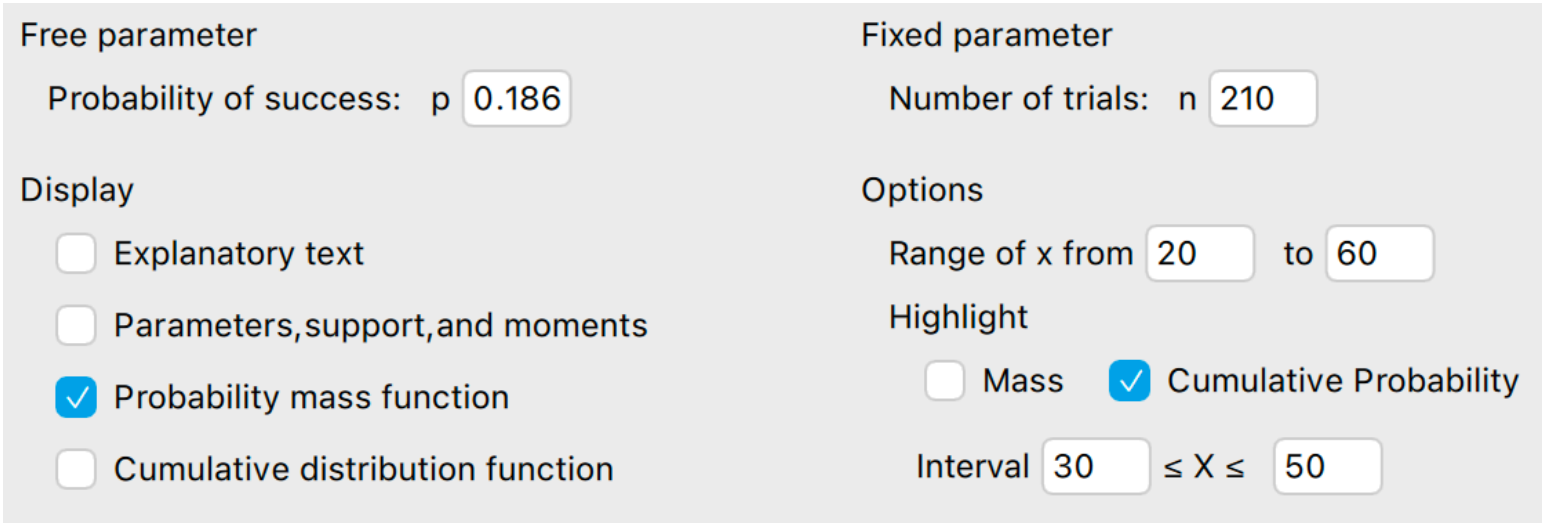
ESERCIZIO

- il dataset `magnagraecia.ods`
- Statistica Descrittiva
- variabile LDH4
- Split OUTCOME
- Basic Plots
  - Distribution Plots
  - Q-Q Plots

la distribuzione binomiale

- probabilità di **successo**: p
  - probabilità di insuccesso: $1 - p$
- numero di **prove** (trials): n

la distribuzione binomiale



Example (probability)

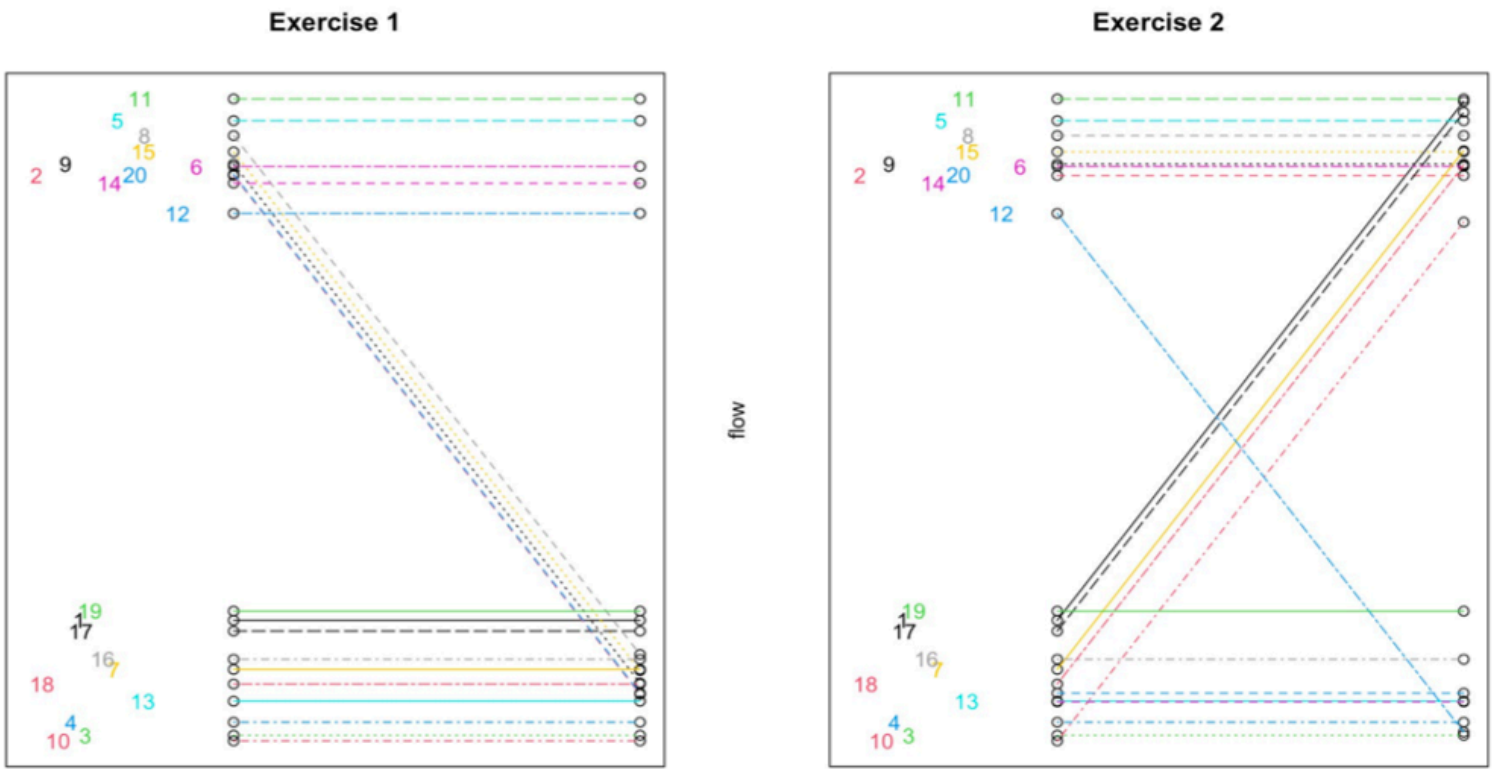
Suppose that you collect a new sample of 210 women with the same symptoms of those enrolled in `roma`. Obviously, only by chance you will observe exactly '39' malignancies. Can you compute the probability to observe a number of malignancy between 30 and 50?

la distribuzione binomiale /2

esempio 'difficile', Antonio Cutruzzolà

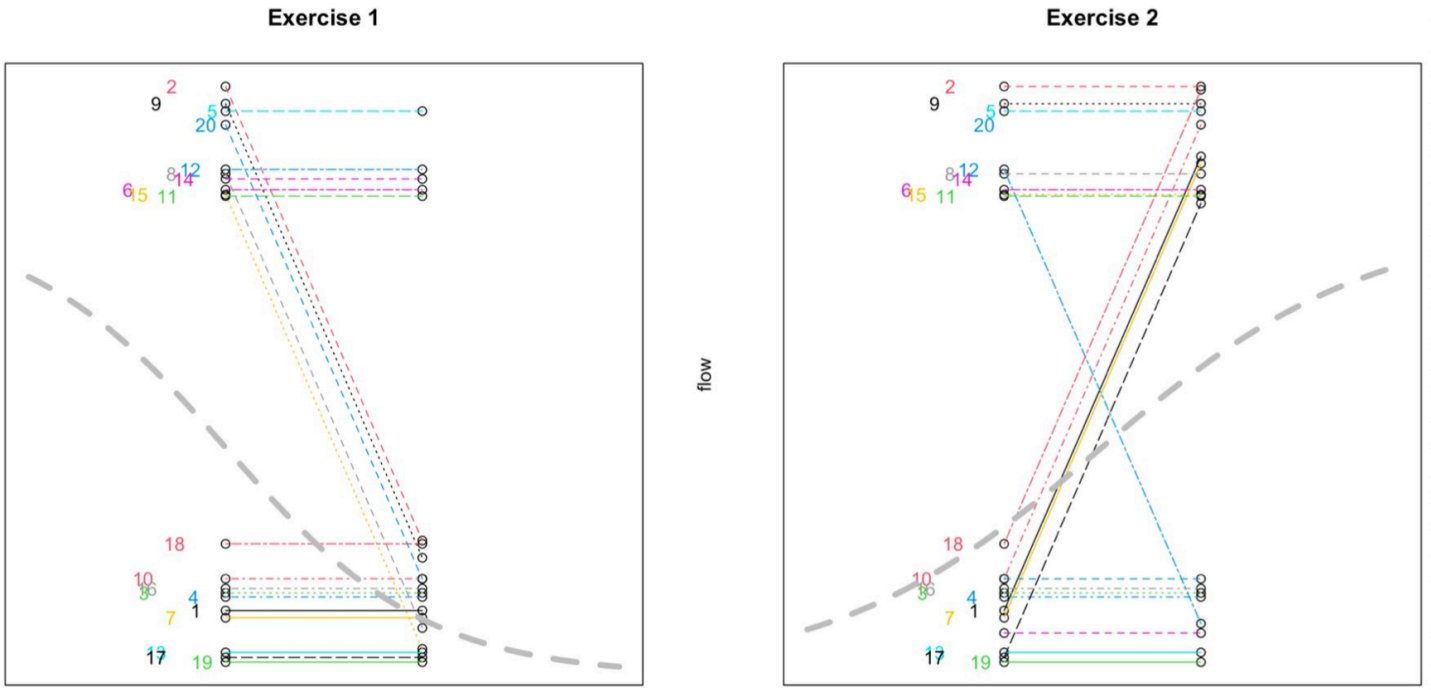
la distribuzione binomiale /2

esempio 'difficile', Antonio Cutruzzolà

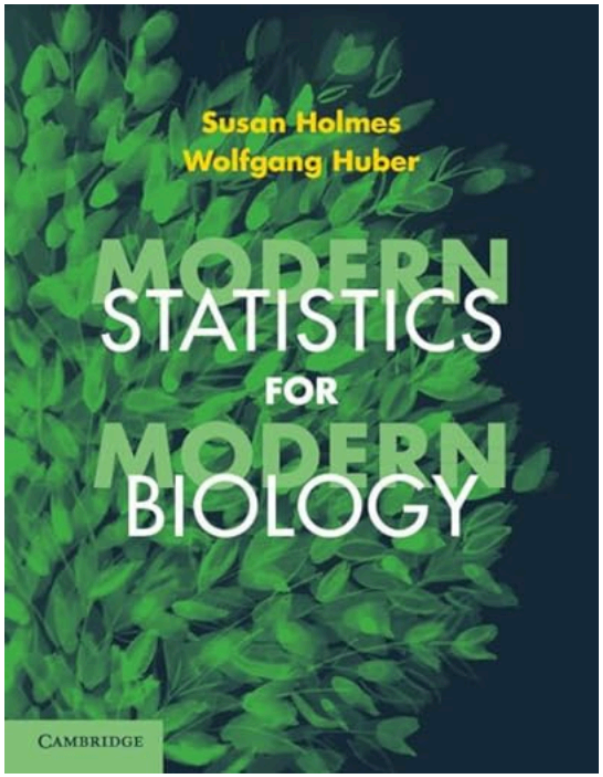


la distribuzione binomiale /2

esempio 'difficile', Antonio Cutruzzolà

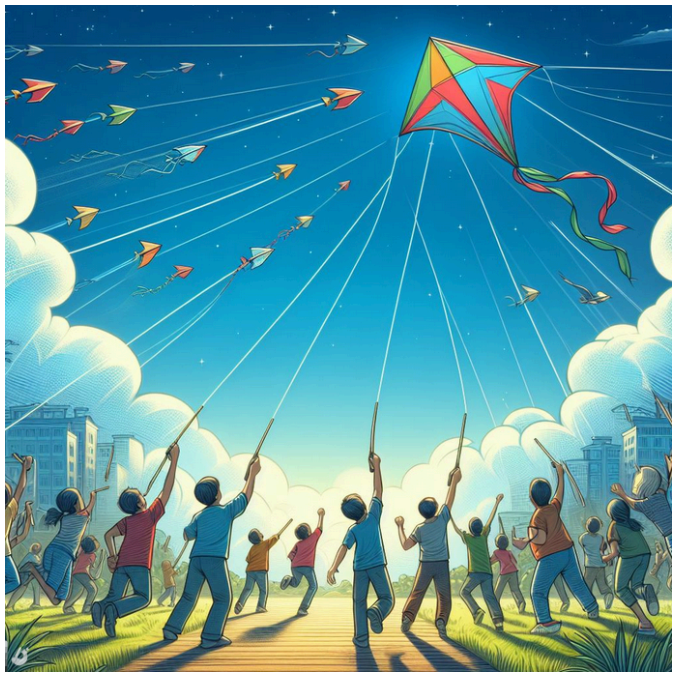


la distribuzione di Poisson



https://www.huber.embl.de/msmb/

la distribuzione di Poisson

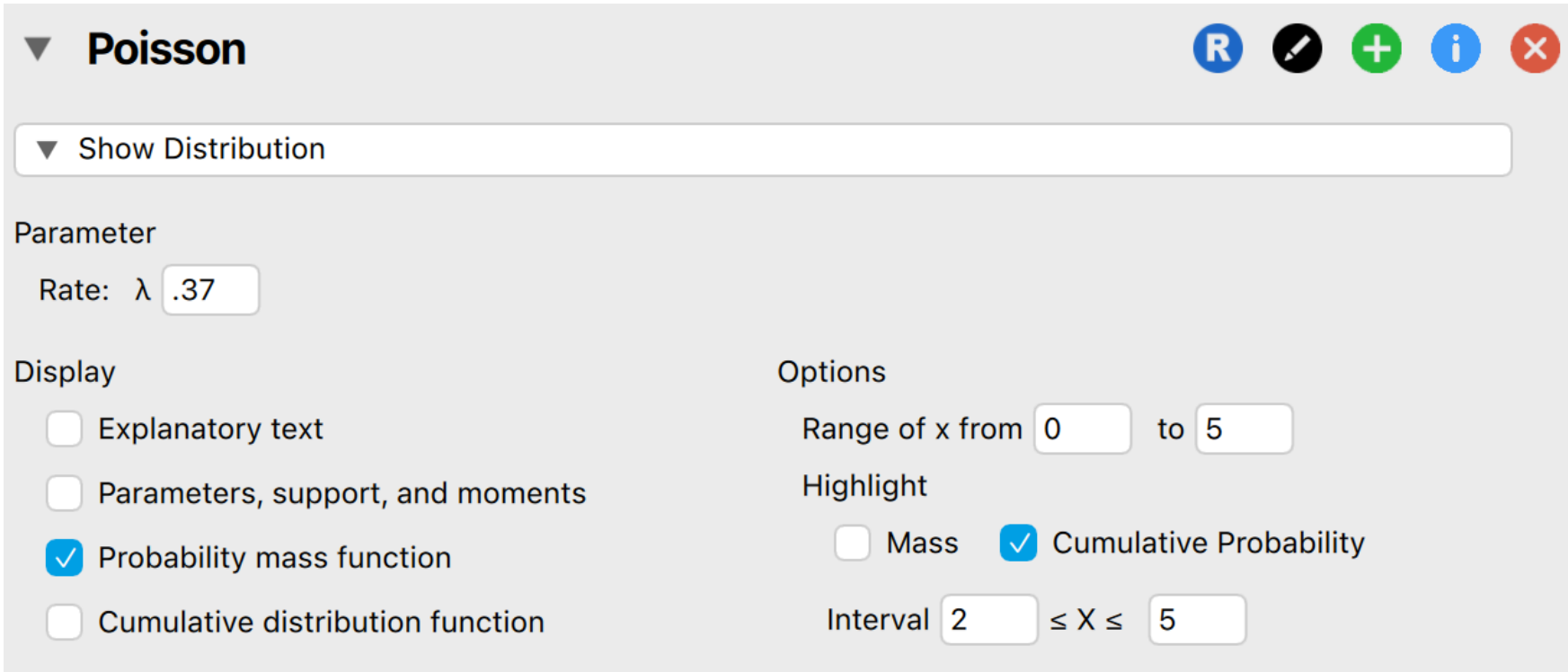


1				1	2
2	3	1	2	1	
	1		2		1
1	1	2		4	1
1		1		3	1
	2	1	1		

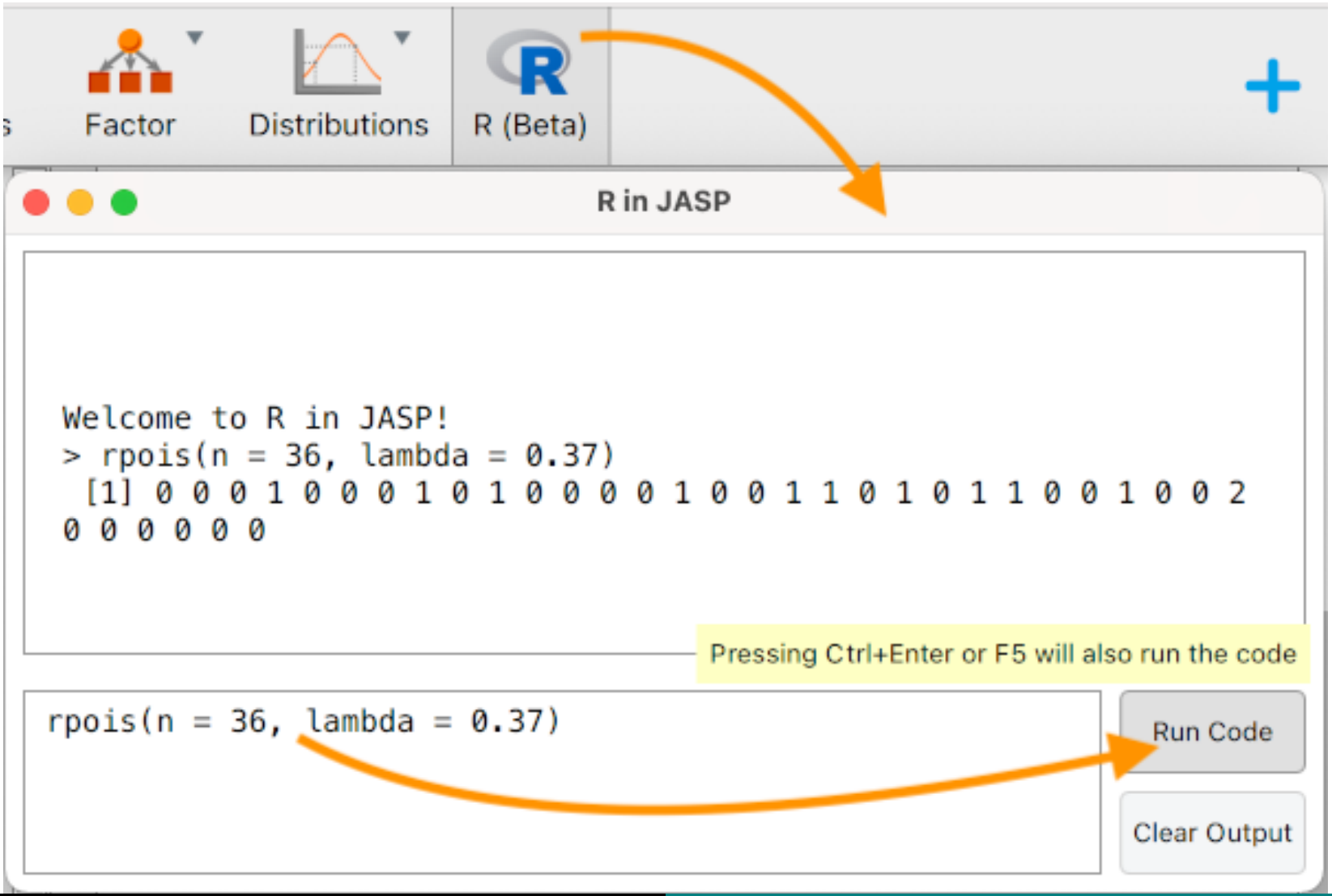
Example (probabilità)

Usiamo JASP per scoprire in una distribuzione di Poisson con $\lambda = 0.37$ quante celle, in probabilità, avranno un valore maggiore o uguale a 2.

la distribuzione di Poisson /1



la distribuzione di Poisson /2

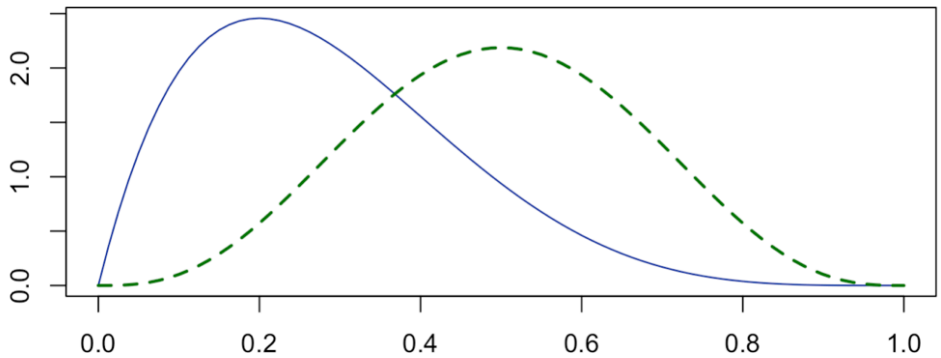


la distribuzione beta

- a 'difficult' sample size problem, solved by Monte Carlo

0.025 perc.	0.05 perc.	0.50 perc.	0.95 perc.	0.975 perc.
0.18	**0.23**	0.5	**0.77**	0.82

0.04	**0.06**	0.26	**0.58**	0.64



- B(2,5); B(4,4)