

PEMARF – aula 07

- Likelihood e modelos
- Discussão
- Intervalo
- Seminários
- Correção
- Escrita

Maximum Likelihood

- Estimativa estatística (MLE)
- Função de probabilidade, estimada a partir dos dados e um modelo

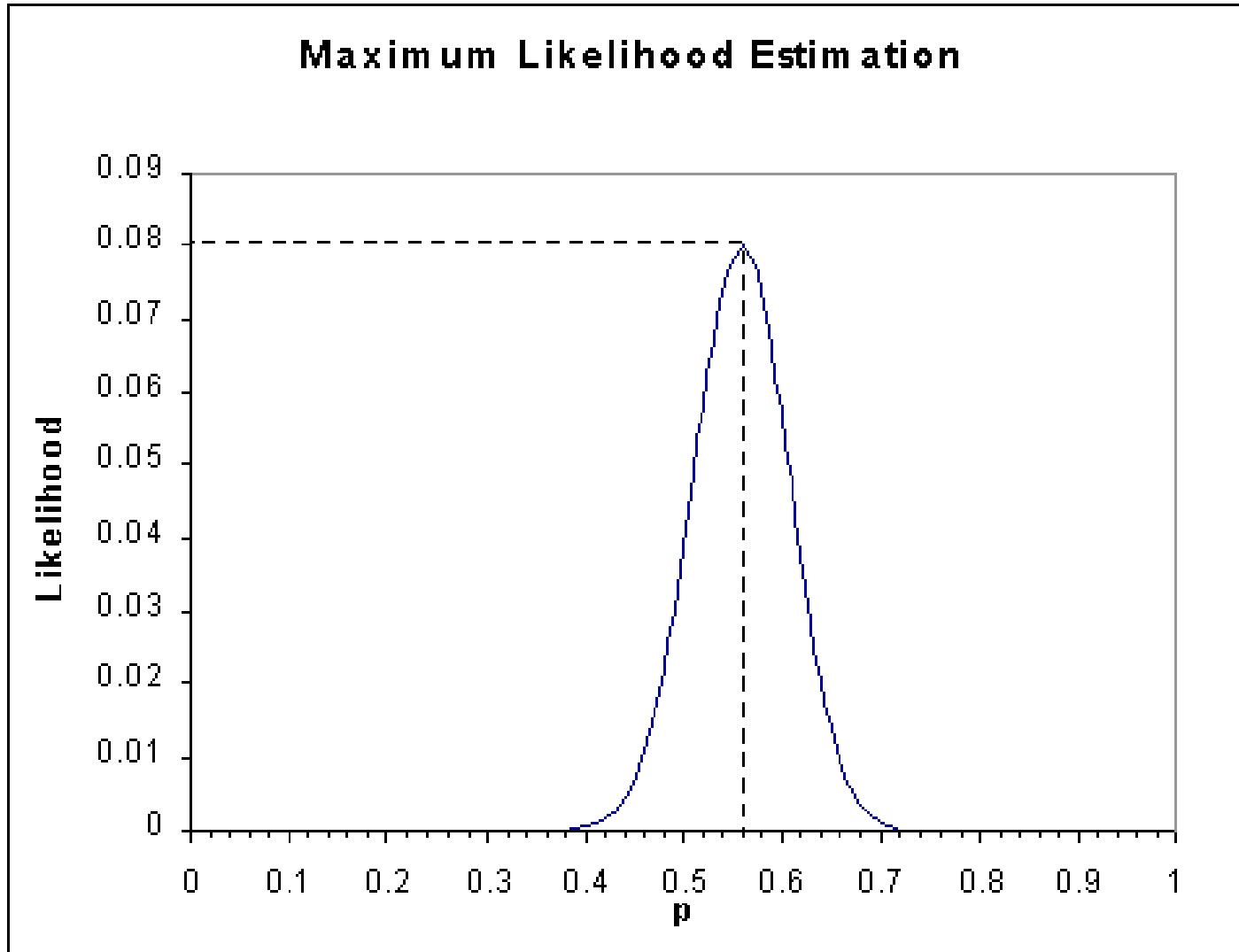
Maximum Likelihood

	Enviasamento "Cara"				
Cara			50%		
0			.03		
1			.16		
2			.31		
3			.31		
4			.16		
5			.03		

Maximum Likelihood

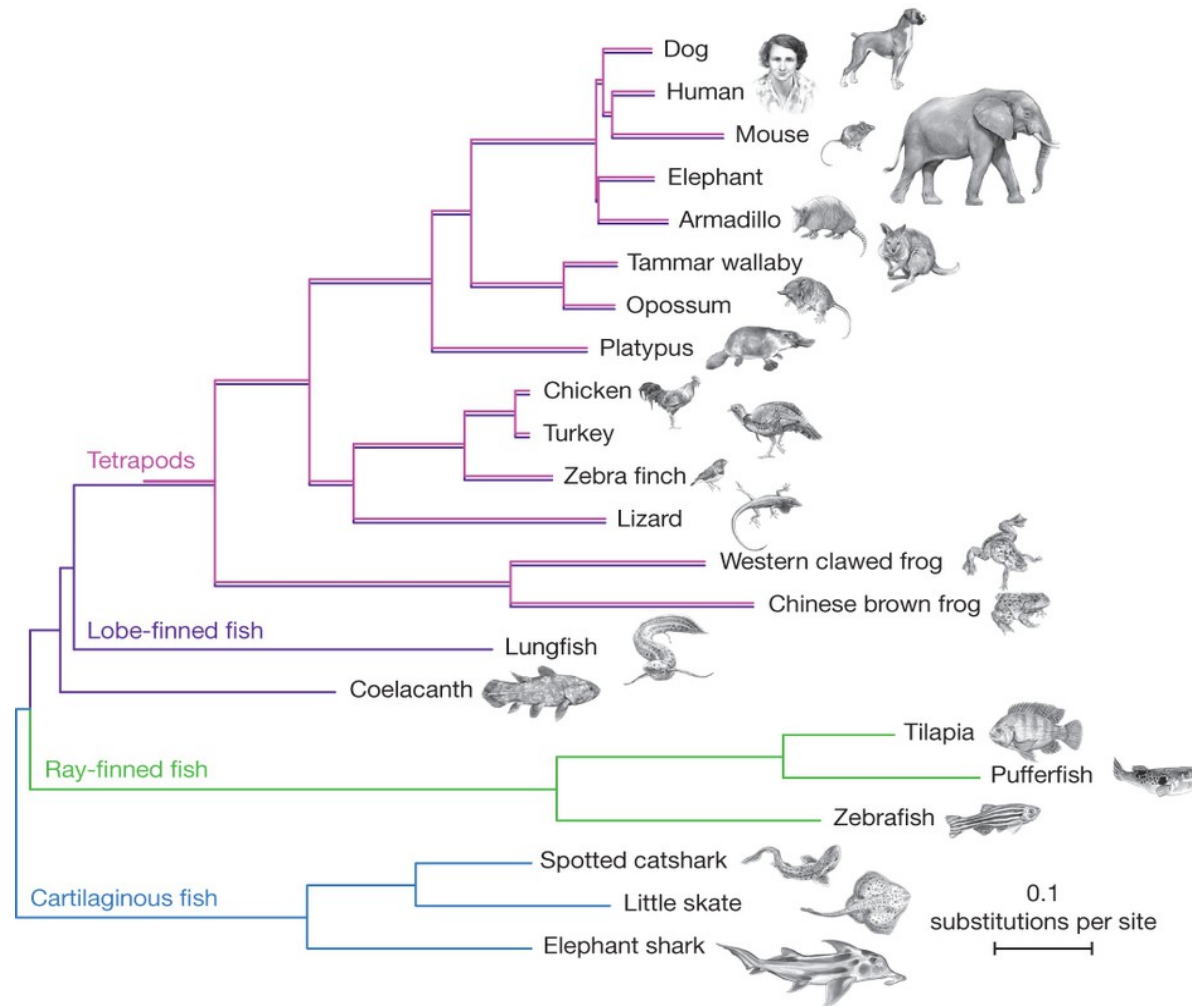
	Enviasamento "Cara"				
Cara	10%	30%	50%	70%	90%
0	.59	.17	.03	.00	.00
1	.33	.36	.16	.03	.00
2	.07	.31	.31	.13	.01
3	.01	.13	.31	.31	.07
4	.00	.03	.16	.36	.33
5	.00	.00	.03	.17	.59

$$ML = P(D;M)$$



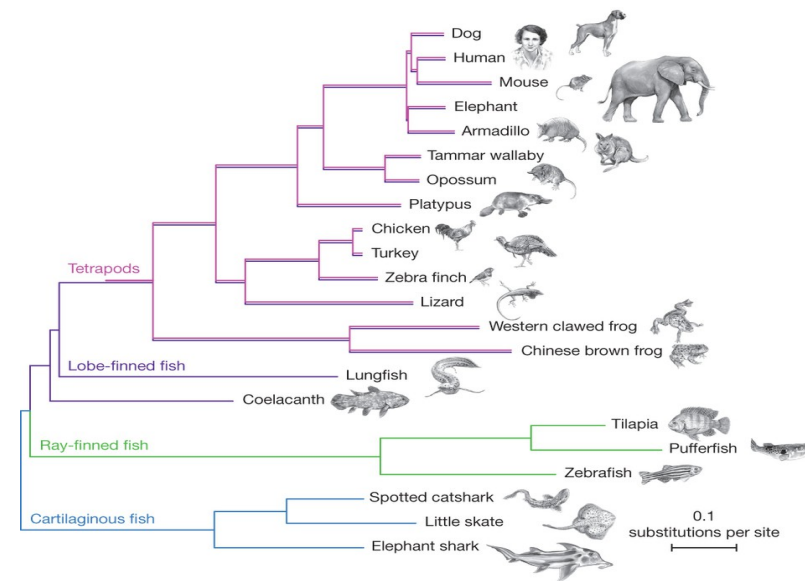
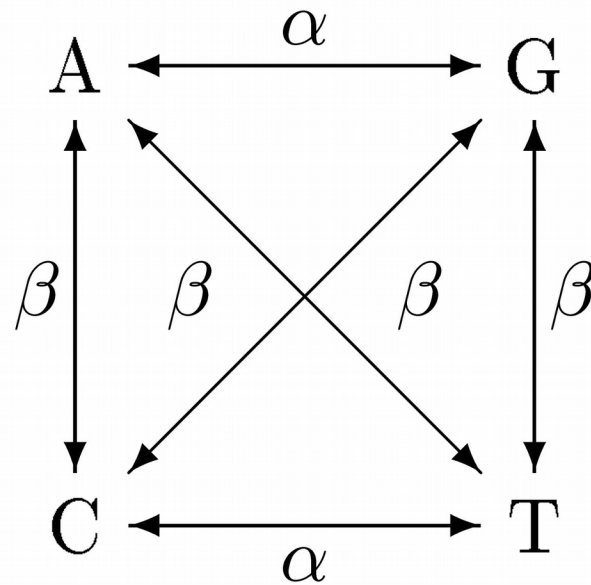
ML em filogenias

- $ML = P(D;M)$



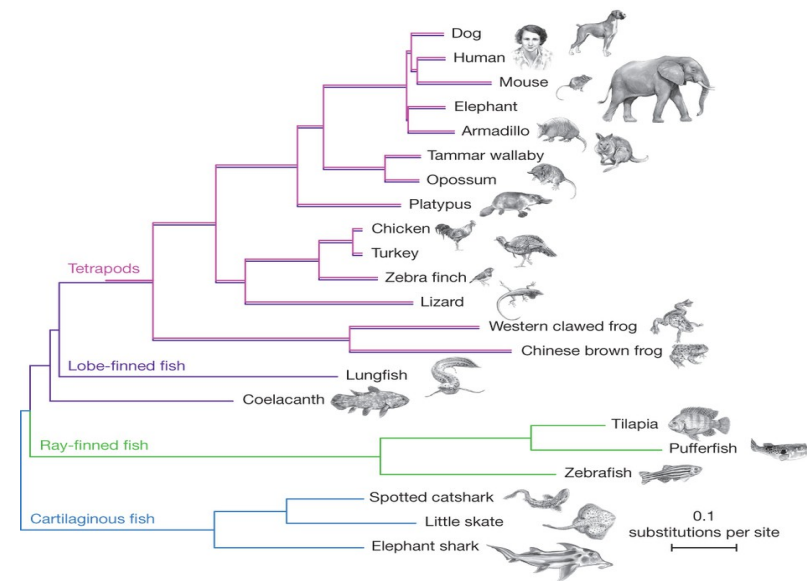
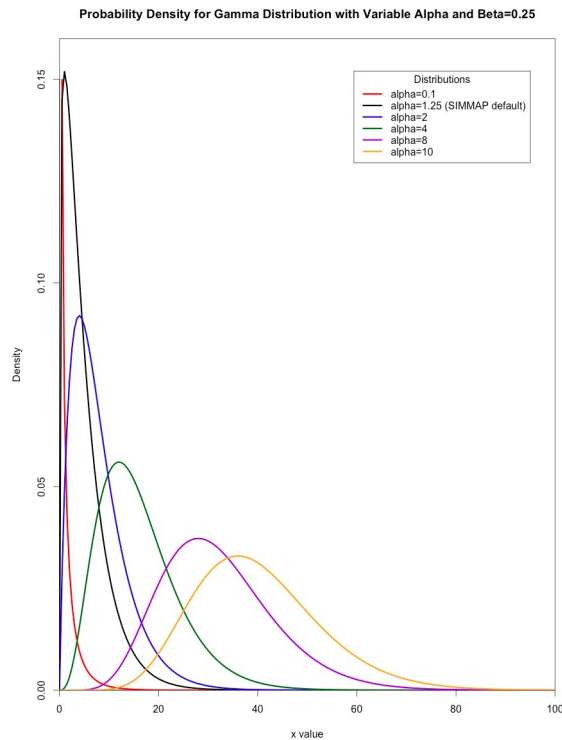
ML em filogenias

- $ML = P(D;M)$
- Substituições, a partir de modelo



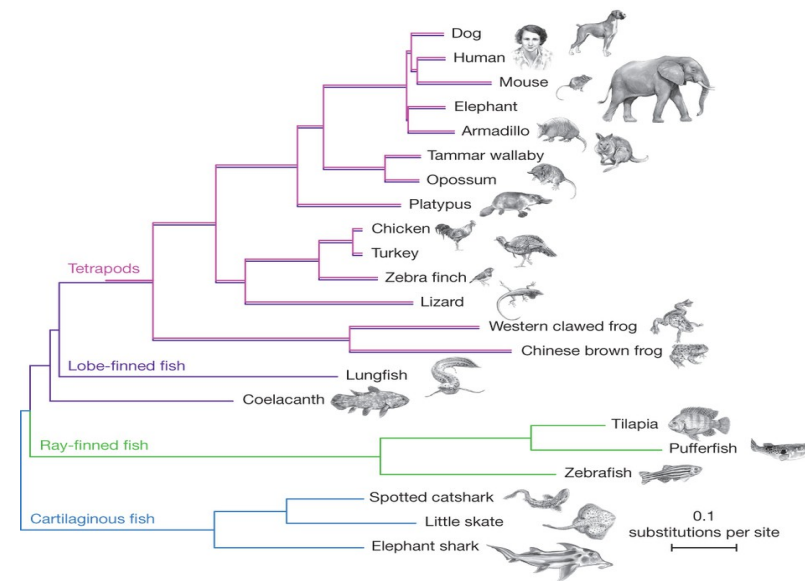
ML em filogenias

- $ML = P(D;M)$
- Substituições, a partir de modelo
- Variação entre sítios (gamma)



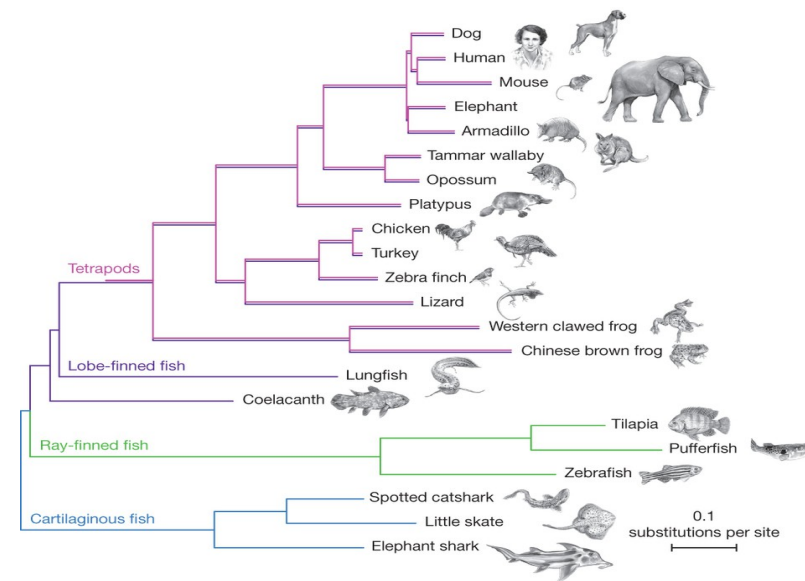
ML em filogenias

- $ML = P(D;M)$
- Substituições, a partir de modelo
- Variação entre sítios (gamma)
- Topologia (modelo fixo)



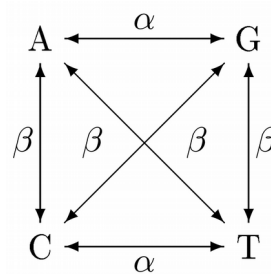
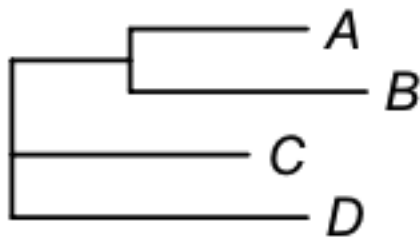
ML em filogenias

- $ML = P(D;M)$
- Substituições, a partir de modelo
- Variação entre sítios (gamma)
- Topologia (modelo fixo)
- Tamanho dos ramos



ML em filogenias

- Calcular a árvore, que dado o modelo, maximiza a verossimilhança de seus dados terem acontecido



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20          *          40          *          60
--RIFSGDLRSR-----LRPVASAS-RSFNTN-AMRCYIE
--RFLSGILSSSF-----LRPVASAS-RSFNTN-AMRCYIQ
--RFLSGILSRSL-----LRPAASASH-RSFDTN-AMRCYIN
--RLLSGIAPRSRS-----LRPAVGS---RIFNTN-AVESYID
--RATTSILFNRL-----VNFVRSASVRSFNTNTQNTYED
--RATAELFNRL-----VNFVRSASAFRSFNTNTQNTYEQ
LVRAMENIDAAS----SGSARLPAAVAGGVRCYNAGALLRBYER
LVRALERIQAASSAPGTGSAIRPVAVAGGIRCYNEGALLRMEG
..          .          ...          .          ...
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