

Supplemental Material

CBE—Life Sciences Education

Prevost *et al.*

Supplemental Materials

Table S1. Odds-ratios and confidence intervals for multinomial logistic regression for the transcription question^a.

Text Analysis Category	Incomplete/Irrelevant (Bin 2)				Incorrect (Bin 3)			
	β^b	OR ^c	CI ^d	Sig	β	OR	CI	Sig
<i>mutation</i>	0.44	1.55	(0.71 – 3.37)	NS	-1.54	0.22	(0.08 – 0.58)	NS
<i>gene</i>	1.88	6.56	(1.79 – 24.06)	↑	1.71	5.54	(1.38 – 22.25)	↑
<i>normal</i>	-2.09	0.12	(0.03 – 0.46)	↓	-2.26	0.10	(0.03 – 0.37)	↓
<i>protein</i>	1.43	4.18	(1.32 – 13.18)	↑	0.87	2.38	(0.67 – 8.44)	NS
<i>short</i>	0.36	1.43	(0.21 – 9.73)	NS	4.03	56.36	(14.78 – 214.9)	↑
<i>stop</i>	0.32	1.38	(0.35 – 5.36)	NS	3.72	41.40	(15.60 – 109.9)	↑
<i>stop codon</i>	0.15	1.16	(0.52 – 2.56)	NS	1.33	3.76	(1.95 – 7.27)	↑
<i>strand</i>	-0.75	0.47	(0.18 – 1.26)	NS	0.61	1.83	(0.84 – 4.02)	NS
<i>translation</i>	-1.76	0.17	(0.03 – 0.87)	↓	-2.09	0.12	(0.03 – 0.50)	↓
<i>triplet</i>	-1.53	0.22	(0.08 – 0.58)	↓	-2.09	0.12	(0.04 – 0.36)	↓
<i>wrong</i>	0.75	2.13	(0.90 – 5.02)	NS	-3.08	0.05	(0.01 – 0.27)	↓
<i>DNA</i>	0.11	1.12	(0.61 – 2.06)	NS	0.94	2.57	(1.44 – 4.57)	↑
<i>different</i>	0.225	1.25	(0.60 – 2.61)	NS	-1.84	0.16	(0.05 – 0.47)	↓
<i>no effect on transcription</i>	-2.53	0.08	(0.03 – 0.21)	↓	-2.64	0.07	(0.03 – 0.17)	↓
<i>incomplete</i>	3.06	21.32	(1.43 – 316.98)	↑	4.17	64.76	(5.52 – 759.82)	↑
<i>transcription</i>	-0.59	0.55	(0.33 – 0.94)	↓	-0.58	0.56	(0.33 – 0.96)	↓

^a reference value of the dependent variable score =correct; ^b regression coefficient; ^cOR odds ratio; ^d CI

– 95% confidence interval; ^e ↑significant increase compared to reference value p<0.05; ↓significant

decrease compared to reference value p<0.05; NS – no significant change in odds ratio compared to

reference value p>0.05

Table S2. Odds-ratios and confidence intervals for multinomial logistic regression for the translation question^a.

Text Analysis Category	Incomplete/Irrelevant (Bin 2)				Incorrect (Bin 3)			
	β^b	OR ^c	CI ^d	Sig	β	OR	CI	Sig
<i>DNA</i>	0.20	1.22	(0.64 – 2.32)	NS	0,69	1.99	(1.13 – 3.51)	↑
<i>mRNA</i>	1.28	3.59	(1.70 – 7.58)	↑	1.49	4.43	(2.31 – 8.50)	↑
<i>protein</i>	0.14	1.15	(0.68 – 1.93)	NS	-1.06	0.35	(0.21 – 0.58)	↓
<i>replicate</i>	2.77	16.00	(2.96 – 86.54)	↑	3.05	21.19	(4.95 – 90.64)	↑
<i>short</i>	-5.53	0.01	(0.00 – 0.30)	↓	-1.55	0.21	(0.12 – 0.39)	↓
<i>stop</i>	-3.02	0.05	(0.03 – 0.09)	↓	-2.67	0.07	(0.04 – 0.13)	↓
<i>stop codon</i>	-1.72	0.18	(0.10 – 0.32)	↓	-1.89	0.16	(0.09 – 0.27)	↓
<i>transcribe</i>	-0.53	0.59	(0.15 – 2.35)	NS	1.39	4.00	(1.49 – 10.75)	↑
<i>different</i>	1.42	4.14	(1.92 – 8.94)	↑	0.70	2.02	(0.91 – 4.47)	NS
<i>transcription</i>	0.93	2.53	(0.74 – 8.60)	NS	2.11	8.23	(3.09 – 21.92)	↓

^a reference value of the dependent variable score =correct; ^b regression coefficient; ^cOR odds ratio; ^d CI

– 95% confidence interval; ^e↑significant increase compared to reference value $p < 0.05$; ↓significant

decrease compared to reference value $p < 0.05$; NS – no significant change in odds ratio compared to

reference value $p > 0.05$