

Rescorla-Wagner Model

Acquisition

$$\Delta V = c (V_{\max} - V)$$

$V_{\max}=1$
 $c=0.5$ starting $V=0$

trial	V (before)	ΔV	V (after)
1	0	0.50	0.50
2	0.50	0.25	0.75
3	0.75	0.13	0.88
4	0.88	0.06	0.94
5	0.94	0.03	0.97
6	0.97	0.02	0.99
7	0.99	0.01	1.00
8	1.00	0.00	1.00
9	1.00	0.00	1.00
10	1.00	0.00	1.00

$V_{\max}=1$
 $c=0.3$

V (before)	ΔV	V (after)
0	0.30	0.30
0.30	0.21	0.51
0.51	0.15	0.66
0.66	0.10	0.76
0.76	0.07	0.83
0.83	0.05	0.88
0.88	0.04	0.92
0.92	0.02	0.94
0.94	0.02	0.96
0.96	0.01	0.97

$v_{\max}=2$
 $c=0.5$ starting $V=0$

trial	V (before)	ΔV	V (after)
1	0	1.00	1.00
2	1.00	0.50	1.50
3	1.50	0.25	1.75
4	1.75	0.13	1.88
5	1.88	0.06	1.94
6	1.94	0.03	1.97
7	1.97	0.02	1.99
8	1.99	0.01	2.00
9	2.00	0.00	2.00
10	2.00	0.00	2.00

Rescorla-Wagner Model

Extinction

$$\Delta V = c (V_{\max} - V)$$

starting $V = 1.0$

$V_{\max}=0$
 $c=0.5$

trial	V (before)	ΔV	V (after)
1	1	-0.50	0.50
2	0.50	-0.25	0.25
3	0.25	-0.13	0.12
4	0.12	-0.06	0.06
5	0.06	-0.03	0.03
6	0.03	-0.02	0.01
7	0.01	-0.01	0.00
8	0.00	0.00	0.00
9	0.00	0.00	0.00
10	0.00	0.00	0.00

$V_{\max}=0$
 $c=0.3$

V (before)	ΔV	V (after)
1	-0.30	0.70
0.70	-0.21	0.49
0.49	-0.15	0.34
0.34	-0.10	0.24
0.24	-0.07	0.17
0.17	-0.05	0.12
0.12	-0.04	0.08
0.08	-0.02	0.06
0.06	-0.02	0.04
0.04	-0.01	0.03

Rescorla-Wagner Model

Compound conditioning $\Delta V = c (V_{\max} - V_{\text{tot}})$

starting $V(a) = 0$, $V(b) = 0$

$V_{\max} = 1.0$
 $c(a) = 0.5$

$c(b) = 0.20$

trial	V (ab)	$\Delta V(a)$	V(a) (after)	$\Delta V(b)$	V(b) (after)
1	0.00	0.50	0.50	0.20	0.20
2	0.70	0.15	0.65	0.06	0.26
3	0.91	0.05	0.70	0.02	0.28
4	0.97	0.01	0.71	0.01	0.29
5	1.00	0.00	0.71	0.00	0.29
6	1.00	0.00	0.71	0.00	0.29
7	1.00	0.00	0.71	0.00	0.29
8	1.00	0.00	0.71	0.00	0.29
9	1.00	0.00	0.71	0.00	0.29

(Blocking)

starting $V(a) = 0.8$, $V(b) = 0$

$V_{\max}=1.0$
 $c(a) = 0.5$

$c(b) = 0.20$

trial	V (ab)	$\Delta V(a)$	V(a) (after)	$\Delta V(b)$	V(b) (after)
			0.8		0
1	0.80	0.10	0.90	0.04	0.04
2	0.94	0.03	0.93	0.01	0.05
3	0.98	0.01	0.94	0.01	0.06
4	1.00	0.00	0.94	0.00	0.06
5	1.00	0.00	0.94	0.00	0.06
6	1.00	0.00	0.94	0.00	0.06
7	1.00	0.00	0.94	0.00	0.06
8	1.00	0.00	0.94	0.00	0.06
9	1.00	0.00	0.94	0.00	0.06
10	1.00	0.00	0.94	0.00	0.06

Rescorla-Wagner Model

Conditioned Inhibition

$$\Delta V = c(V_{\max} - V_{\text{tot}})$$

$V_{\max} = 1$ starting $V = 0$

$c(a) = 0.5$

$c(b) = 0.60$

trial	V (tot)	$\Delta V(a)$	V(a) (after trial)	$\Delta V(b)$	V(b) (after trial)
A-US	0.00	0.50	0.50		
AB-	0.50	-0.25	0.25	-0.30	-0.30
A-US	0.25	0.38	0.63		-0.30
AB-	0.33	-0.16	0.46	-0.20	-0.50
A-US	0.46	0.27	0.73		-0.50
AB-	0.24	-0.12	0.61	-0.14	-0.64
A-US	0.61	0.19	0.81		-0.64
AB-	0.17	-0.08	0.72	-0.10	-0.74
A-US	0.72	0.14	0.86		-0.74
AB-	0.12	-0.06	0.80	-0.07	-0.81
A-US	0.80	0.10	0.90		-0.81
AB-	0.09	-0.04	0.86	-0.05	-0.86
A-US	0.86	0.07	0.93		-0.86
AB-	0.06	-0.03	0.90	-0.04	-0.90
A-US	0.90	0.05	0.95		-0.90
AB-	0.05	-0.02	0.93	-0.03	-0.93

Vmax=1 starting V = 0

c(c) = 0.5

c(b) = 0.60

c(c) = 0.20

	trial	V (tot)	$\Delta V(a)$	V(a) (after trial)	$\Delta V(b)$	V(b) (after trial)	$\Delta V(c)$	V(c) (after trial)
(AC)	A-US	0.00	0.50	0.50			0.20	0.20
(BC)	B-	0.20		0.50	-0.12	-0.12	-0.04	0.16
(AC)	A-US	0.66	0.17	0.67		-0.12	0.07	0.23
(BC)	B-	0.11		0.67	-0.06	-0.18	-0.02	0.21
(AC)	A-US	0.88	0.06	0.73		-0.18	0.02	0.23
(BC)	B-	0.05		0.73	-0.03	-0.21	-0.01	0.22
(AC)	A-US	0.95	0.02	0.75		-0.21	0.01	0.23
(BC)	B-	0.02		0.75	-0.01	-0.22	0.00	0.23
(AC)	A-US	0.98	0.01	0.76		-0.22	0.00	0.23
(BC)	B-	0.01		0.76	0.00	-0.23	0.00	0.23