

Experiment 1 Phase 5

		Hen 12.1		Hen 12.2		Hen 12.3		Hen 12.4		Hen 12.5		Hen 12.6	
Chain		train	test	train	test	train	test	train	test	train	test	train	test
No-delay	RCL	0.517241	0.384615	0.555556	0.3125	0.6	0.277778	0.75	0.394737	0.882353	0.348837	0.789474	0.454545
	RLR	0.535714	0.333333	0.576923	0.326087	0.789474	0.340909	0.555556	0.283019	0.714286	0.326087	0.714286	0.394737
	CLC	1	0.517241	0.789474	0.441176	0.652174	0.241935	0.833333	0.277778	1	0.428571	0.625	0.576923
5-s delay	RCL	0.416667	0.384615	0.454545	0.245902	0.441176	0.288462	0.416667	0.283019	0.428571	0.576923	0.416667	0.833333
	RLR	0.277778	0.319149	0.5	0.340909	0.306122	0.288462	0.384615	0.326087	0.208333	0.625	0.535714	0.46875
	CLC	0.46875	0.333333	0.416667	0.258621	0.428571	0.6	0.384615	0.3125	0.454545	0.1875	0.483871	0.681818
No-delay	RCL	1	0.405405	0.789474	0.2	1	0.517241	0.714286	0.483871	0.9375	0.375	0.9375	0.9375
	RLR	0.75	0.258621	0.714286	0.517241	0.789474	0.205479	0.576923	0.202703	0.6	0.517241	0.789474	0.714286
	CLC	0.555556	0.483871	0.714286	0.166667	0.681818	0.535714	1	0.681818	0.833333	0.319149	0.517241	0.5
5-s delay	RCL	0.454545	0.483871	0.46875	0.319149	0.681818	0.375	0.1875	0.375	0.517241	0.555556	0.483871	0.652174
	RLR	0.555556	0.416667	0.833333	0.555556	0.6	0.652174	0.12931	0.441176	0.789474	0.454545	0.714286	0.6
	CLC	0.428571	0.5	0.681818	0.3125	0.277778	0.283019	0.652174	0.483871	0.6	0.394737	0.46875	0.714286
no delay		0.726419	0.397181	0.69	0.327279	0.752157	0.353176	0.73835	0.387321	0.827912	0.385814	0.728829	0.596332
5-s delay		0.433644	0.406273	0.559186	0.338773	0.455911	0.414519	0.359147	0.370276	0.499694	0.46571	0.517193	0.658394

proportion correct during each session across periods and conditions
 proportions are for last 5 completed chains of training and first five chain completions of test period

Experiment 2 Phase I

		12.1		12.2		12.3		12.4		12.5		12.6	
chain		train	test	train	test	train	test	train	test	train	test	train	test
No-delay	RCL	0.9375	0.348837	0.714286	0.46875	0.6	0.375	0.535714	0.405405	0.789474	0.652174	0.681818	0.517241
	RLR	0.517241	0.441176	0.517241	0.576923	0.555556	0.428571	0.535714	0.333333	0.714286	0.5	0.833333	0.535714
	CLC	0.652174	0.652174	1	0.576923	0.789474	0.555556	0.714286	0.227273	0.75	0.375	0.882353	0.46875
5-s delay	RCL	0.625	0.267857	0.6	0.227273	0.441176	0.394737	0.576923	0.576923	0.789474	0.357143	0.625	0.652174
	RLR	0.441176	0.535714	0.75	0.75	0.9375	0.555556	0.681818	0.441176	0.681818	0.555556	0.394737	0.681818
	CLC	0.517241	0.714286	0.576923	0.555556	0.517241	0.46875	0.714286	0.227273	0.555556	0.340909	0.416667	0.652174
No-delay	RCL	0.625	0.416667	0.714286	0.428571	0.75	0.6	0.576923	0.576923	0.681818	0.652174	0.833333	0.652174
	RLR	0.714286	0.625	0.535714	0.75	0.75	0.384615	0.681818	0.441176	0.681818	0.625	0.833333	0.652174
	CLC	0.75	0.365854	0.882353	0.789474	0.9375	0.365854	0.714286	0.652174	0.882353	0.365854	0.625	0.9375
5-s delay	RCL	0.833333	1	0.75	0.234375	0.517241	0.535714	0.555556	0.46875	0.789474	0.652174	0.625	0.714286
	RLR	0.652174	0.428571	0.652174	0.652174	0.833333	0.5	0.625	0.441176	0.789474	0.714286	0.681818	0.625
	CLC	0.625	0.576923	0.652174	0.454545	0.46875	0.405405	0.714286	0.75	0.517241	0.6	0.5	0.681818
no delay		0.699367	0.474951	0.727313	0.59844	0.730422	0.451599	0.626457	0.439381	0.749958	0.528367	0.781529	0.627259
5-s delay		0.615654	0.587225	0.663545	0.478987	0.619207	0.476694	0.644645	0.484216	0.687173	0.536678	0.540537	0.667878

proportion correct during each session across periods and conditions
 proportions are for last 5 completed chains of training and first five chain completions of test period

Experiment 2 Phase II

		12.1		12.2		12.3		12.4		12.5		12.6	
chain		train	test	train	test	train	test	train	test	train	test	train	test
no delay	RCL	1	1	1	0.555556	0.882353	0.681818	0.833333	0.416667	0.789474	0.75	0.789474	0.833333
	RLR	0.681818	0.555556	0.75	0.75	0.833333	0.483871	0.681818	0.348837	0.652174	0.714286	0.5	0.394737
	CLC	0.75	0.6	0.833333	0.555556	1	0.441176	0.9375	0.6	0.9375	0.6	0.576923	0.6
5 sec delay	RCL	0.333333	0.46875	0.714286	0.277778	0.882353	0.652174	0.625	0.681818	0.9375	0.789474	0.714286	0.5
	RLR	0.46875	0.365854	0.714286	0.625	1	0.714286	0.517241	0.555556	0.714286	0.714286	0.652174	0.394737
	CLC	0.652174	0.294118	0.555556	0.517241	0.394737	0.454545	0.535714	0.5	0.652174	0.833333	0.46875	0.576923
no delay	RCL	0.75	1	1	0.75	0.681818	0.789474	0.882353	0.652174	0.833333	0.75	0.882353	1
	RLR	0.789474	0.652174	0.576923	0.681818	0.714286	0.625	0.652174	0.714286	0.625	0.75	0.833333	0.833333
	CLC	0.9375	1	0.9375	0.416667	0.714286	0.75	1	0.5	0.833333	0.576923	0.789474	0.9375
5 sec delay	RCL	0.789474	0.681818	0.789474	0.555556	0.517241	0.535714	0.652174	0.652174	0.789474	0.652174	0.441176	0.75
	RLR	0.681818	0.576923	0.714286	0.652174	0.714286	0.6	0.714286	0.483871	0.652174	0.652174	0.714286	0.714286
	CLC	0.535714	0.288462	0.6	0.75	0.483871	0.789474	0.681818	0.789474	0.625	0.681818	0.6	0.517241
no delay		0.823864	0.831111	0.904167	0.605556	0.822358	0.629268	0.867001	0.503536	0.809163	0.678242	0.707645	0.753114
5-s delay		0.576877	0.445987	0.681314	0.562958	0.665415	0.624366	0.621039	0.610482	0.728435	0.720543	0.598445	0.575531

proportion correct during each session across periods and conditions
 proportions are for last 5 completed chains of training and first five chain completions of test period
 The stroboscope was not ran during this session so data was not included for final analysis

Experiment 2 Phase III

		12.1		12.2		12.3		12.4		12.5		12.6	
chain		train	test	train	test	train	test	train	test	train	test	train	test
no delay	RCL	1	0.681818	0.833333	0.882353	1	0.535714	0.714286	0.625	0.882353	0.833333	0.833333	0.9375
	RLR	0.75	0.625	0.652174	0.652174	0.652174	0.714286	0.789474	0.517241	0.789474	0.75	0.6	0.714286
	CLC	0.882353	0.882353	0.882353	0.365854	1	0.833333	0.882353	0.5	0.789474	0.882353	0.555556	0.652174
5 sec delay	RCL	0.789474	0.625	0.9375	0.555556	0.833333	0.882353	0.681818	0.416667	0.789474	0.75	0.714286	0.241935
	RLR	0.555556	0.75	0.555556	0.625	0.625	0.681818	0.652174	0.625	0.6	0.714286	0.681818	0.625
	CLC	0.75	0.714286	0.625	0.5	0.555556	0.340909	0.789474	0.288462	0.652174	0.416667	0.454545	0.75
no delay	RCL	0.833333	0.9375	1	0.681818	0.789474	0.833333	0.833333	0.625	0.833333	0.555556	0.681818	0.833333
	RLR	0.75	0.75	0.789474	0.681818	0.681818	0.714286	0.789474	0.428571	0.882353	0.789474	0.652174	0.714286
	CLC	1	0.9375	0.882353	0.576923	1	0.394737	0.789474	0.535714	0.789474	0.535714	0.652174	0.652174
5 sec delay	RCL	0.833333	1	0.714286	0.652174	0.652174	0.9375	1	0.681818	0.789474	0.681818	0.394737	0.714286
	RLR	0.75	0.714286	0.576923	0.75	0.6	0.652174	0.6	0.6	0.576923	0.714286	0.517241	0.714286
	CLC	0.75	0.75	0.681818	0.576923	0.428571	0.517241	0.681818	0.5	0.714286	0.652174	0.46875	0.483871
no delay		0.869281	0.802362	0.839948	0.640157	0.853911	0.670948	0.799732	0.538588	0.827743	0.724405	0.662509	0.750625
5-s delay		0.73806	0.758929	0.681847	0.609942	0.615772	0.668666	0.734214	0.518658	0.687055	0.654872	0.538563	0.58823

proportion correct during each session across periods and conditions
 proportions are for last 5 completed chains of training and first five chain completions of test period

```
\
\ *****
\
\          DEFINED ARRAYS
\ *****
\          L: List used to determine 3.5s access to wheat or magazine light
\          LIST L = 1,1,1,2
\          1 = hopper light
\          2 = hopper access
\
```

```
\
\ VI lists
\ list k is the sequence of VRs ...a VI 15 (before I change it to another one)
\ list o are the numbers 0-14 that med picks to start from
\ to change VIs go to s.s.1 (s5 & s10) and also s.s.2
list k = 1, 5, 17, 21, 3, 7, 19, 23, 9, 13, 25, 29, 11, 15, 27
list o = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
\ to get VI 50 multiply each number selected by 3.3
```

```
\
\ A: USED FOR fil FILE
\ a(0): todays session (sequence)
\ a(1): blue correct
\ a(2): red correct
\ a(3): yellow correct
\ a(4): todays number of training sequences - 0 for no delay condition
\ a(5): number of training chains for sequence 1
\ a(6): for sequence 2
\ a(7): and sequence 3
```

```
\
\          a(0)          a(1) a(2) a(3)
\          1 - R L C      3 1 2
\          2 - R C L      3 2 1
\          3 - C L R      2 1 3
```

```
\
\          DIM A = 7
```

```
\
\ *****
```

```
\
\ ===== Array For Interresponse Time =====
```

```
\
\ P: reserved as list for a random time ITI
\ S: reserved as a placeholder for the random ITI
\ J: reserved for which lights will be on (if necessary)
\ Q: BINS CHAIN TIMER
\ DIM Q = 100
```

```
\
\ =====VI variables
```

```
\
\ O:list for chosing start spot in K
\ G: current spot in VI list
\ K: VI list
\ N: this VI
```

```
\
\ ===== Arrays for Background Procedure & TimeStamp =====
```

```
\
\ D: check
\           Used with Background 3
\ Z: check for completion of operations before start
\           Used with Background 4
```

```
\
\ ++++++TimeStamp & Working Variables
```

```
\
\ T: Timestamp Array
\           DIM T = 25
\ T(0): Session Timer
\ T(1): PLACEHOLDER FOR 1'S AND 0'S
\ T(2): # of RFTS
\ T(3): # Response
\ T(4): # Error
\ T(5): # Correct
```

```

\      T(6):          CONDITION #
\      T(7):          #error for data analysis
\      T(10):         USED FOR MAGAZINE LIST
\      T(11):         PLACEHOLDER for the # error per bin

```

```

\ speed test criterion variables:

```

```

\      T(12) - time for current bin
\      T(13) - number of successive "successful" bins (5 chains in criterion time)
\      T(14) - number of chains in current bin
\      t(15) - flag for 10 strobe chains completed

\      T(16) - delay time
\      t(17) - counting number of chains to reach criterion and so for training in delay phase
\      t(18) - flag for strobing

```

```

^bintime=100 \ set the time allowed for 5 chains here (s)

```

```

\*****

```

```

\      B:          Array for BINS
\      DIM B = 100
\      B(0):      Timer for BINS
\      B(1):      CURRENT Bin Number
\      B(2):      BIN MINUTE
\      B(3):      BIN 1 CORRECT
\      B(4):      BIN 1 INCORRECT
\      B(5):      BIN 2 CORRECT
\      B(6):      BIN 2 INCORRECT
\      B(7):      BIN 3 CORRECT
\      B(8):      BIN 3 INCORRECT
\      B(9):      BIN 4 CORRECT
\      B(10):     BIN 4 INCORRECT
\      B(11):     BIN 5 CORRECT
\      B(12):     BIN 5 INCORRECT
\      B(13):     BIN 6 CORRECT
\      B(14):     BIN 6 INCORRECT
\      B(15):     BIN 7 CORRECT
\      B(16):     BIN 7 INCORRECT
\      B(17):     BIN 8 CORRECT
\      B(18):     BIN 8 INCORRECT
\      B(19):     BIN 9 CORRECT
\      B(20):     BIN 9 INCORRECT
\      B(21):     BIN 10 CORRECT
\      B(22):     BIN 10 INCORRECT
\      B(23):     BIN 11 CORRECT
\      B(24):     BIN 11 INCORRECT
\      B(25):     BIN 12 CORRECT
\      B(26):     BIN 12 INCORRECT
\      B(27):     BIN 13 CORRECT
\      B(28):     BIN 13 INCORRECT
\      B(29):     BIN 14 CORRECT
\      B(30):     BIN 14 INCORRECT
\      B(31):     BIN 15 CORRECT
\      B(32):     BIN 15 INCORRECT
\      B(33):     BIN 16 CORRECT
\      B(34):     BIN 16 INCORRECT
\      B(35):     BIN 17 CORRECT
\      B(36):     BIN 17 INCORRECT
\      B(37):     BIN 18 CORRECT
\      B(38):     BIN 18 INCORRECT
\      B(39):     BIN 19 CORRECT
\      B(40):     BIN 19 INCORRECT
\      B(41):     BIN 20 CORRECT
\      B(42):     BIN 20 INCORRECT
\      B(43):     BIN 21 CORRECT
\      B(44):     BIN 21 INCORRECT
\      B(45):     BIN 22 CORRECT
\      B(46):     BIN 22 INCORRECT
\      B(47):     BIN 23 CORRECT
\      B(48):     BIN 23 INCORRECT

```

```

\      B(49):          BIN 24 CORRECT
\      B(50):          BIN 24 INCORRECT
\      B(51):          BIN 25 CORRECT
\      B(52):          BIN 25 INCORRECT
\      B(53):          BIN 26 CORRECT
\      B(54):          BIN 26 INCORRECT
\      B(55):          BIN 27 CORRECT
\      B(56):          BIN 27 INCORRECT
\      B(57):          BIN 28 CORRECT
\      B(58):          BIN 28 INCORRECT
\      B(59):          BIN 29 CORRECT
\      B(60):          BIN 29 INCORRECT
\      B(61):          BIN 30 CORRECT
\      B(62):          BIN 30 INCORRECT
\      B(63):          BIN 31 CORRECT
\      B(64):          BIN 31 INCORRECT
\      B(65):          BIN 32 CORRECT
\      B(66):          BIN 32 INCORRECT
\      B(67):          BIN 33 CORRECT
\      B(68):          BIN 33 INCORRECT
\      B(69):          BIN 34 CORRECT
\      B(70):          BIN 34 INCORRECT
\      B(71):          BIN 35 CORRECT
\      B(72):          BIN 35 INCORRECT
\      B(73):          BIN 36 CORRECT
\      B(74):          BIN 36 INCORRECT
\      B(75):          BIN 37 CORRECT
\      B(76):          BIN 37 INCORRECT
\      B(77):          BIN 38 CORRECT
\      B(78):          BIN 38 INCORRECT
\      B(77):          BIN 39 CORRECT
\      B(80):          BIN 39 INCORRECT
\      B(81):          BIN 40 CORRECT
\      B(82):          BIN 40 INCORRECT
\      B(83):          BIN 41 CORRECT
\      B(84):          BIN 41 INCORRECT
\      B(85):          BIN 42 CORRECT
\      B(86):          BIN 42 INCORRECT
\      B(87):          BIN 43 CORRECT
\      B(88):          BIN 43 INCORRECT
\      B(89):          BIN 44 CORRECT
\      B(90):          BIN 44 INCORRECT
\      B(91):          BIN 45 CORRECT
\      B(92):          BIN 45 INCORRECT
\      B(93):          Dump Bin

```

===== Arrays for Operant Chamber Conditions=====

```

\      F: TimeStamp
\          DIM F = 9000
\      V: BlackOut condition
\          DIM V = 9000
\      C: ITI condition
\          DIM C = 9000
\      H: Key 1
\          DIM H = 9000
\      U: Key 2
\          DIM U = 9000
\      X: Key 3
\          DIM X = 9000
\      E: Magazine
\          DIM E = 9000

```

===== Arrays for Bird Behaviour=====

```

\      Y: Response Key 1
\          DIM Y = 9000
\      M: Response Key 2
\          DIM M = 9000
\      W: Response Key 3
\          DIM W = 9000

```

=====Data Analysis Arrays=====

```

\      DIM R = 9000
\      analyze within chain errors

```

```
*****
\
\ Z-PULSE INDEX
\
*****
```

```
\
\ Z1: Trial Start
\
\ Z2: BINS - CORRECT
\
\ Z3: ITI Begin
\
\ Z4: BINS - INCORRECT
```

```
*****
\
\ SHOWS INDEX
\
*****
```

```
\
\ LEFT COLUMN
\
\ SHOW 1: hen and animal #
\
\ SHOW 6:
\
\ SHOW 11:
\
\ SHOW 16:
\
\ SHOW 21:
\
\ SHOW 26:
\
\ SHOW 31:
\
\ SHOW 36:
\
\ SHOW 41:
\
\ SHOW 46:
\
\ SHOW 51:
\
\ SHOW 56:
\
\ SHOW 61:Elapsed Time
```

```
\
\ CENTER COLUMN
\
\ SHOW 2: # Response
\
\ SHOW 7:
\
\ SHOW 12:
\
\ SHOW 17:
\
\ SHOW 22: # Errors (Distractor KeyPecks)
\
\ SHOW 27:
\
\ SHOW 32: # Rfts
\
\ SHOW 37:
\
\ SHOW 42: # correct
\
\ SHOW 47:
\
\ SHOW 52:
\
\ SHOW 57:
\
\ SHOW 62:
```

```
\
\ RIGHT COLUMN
\
\ SHOW 3:
\
\ SHOW 8:
\
\ SHOW 13:
\
\ SHOW 18:
\
\ SHOW 23:
\
\ SHOW 28:
\
\ SHOW 33: BIN NUMBER
\
\ SHOW 38: BIN Timer
\
\ SHOW 43: Resp Latency
\
\ SHOW 48:
\
\ SHOW 53:
\
\ SHOW 58:
\
\ SHOW 63: Interresponse Time
```