

Reference	Species (n)	Task	Stimuli	Pre-training and/or training	N° training trials	Transfer test	N° transfer trials	Success/fail
Finch, 1942 (by Oden et al., 1988)	Chimpanzee (4)	MTS	?	two training stimuli	600 – 1,000	new stimuli	similar to Oden et al, 1988: 24 trials	success
Nissen et al., 1948 (by Oden et al., 1988)	Chimpanzee (4)	MTS	?	two training stimuli	600 – 1,000	new stimuli	similar to Oden et al, 1988: 24 trials	success
Blough, 1959	Pigeons (4)	MTS	light	two training stimuli steady light / flicker light	500 – 1,000	new stimuli (for 20 presentations)	8000 90% correct	2/4 succeeded
Goldman and Shapiro, 1979	Goldfish (5+5)	simultaneous MTS (n = 1)	light	Pre-training: white light in the middle, white light both side, touch and receive food Training: 3 stimuli: red, green and blue light	300 – 500 8,400 60%	same stimuli	8400 60%	success
Zerbolio et Royalty, 1983	Goldfish (24+24)	MTS (n = 4)	light	12 with red/green 12 with blue/yellow 30 days 40trials/day 5days/week	840 on 1,200 trials total	2x 8 (n = 2) new stimuli 2x 8 (n = 2) same stimuli 30 days 40trials/day 5days/week	600 on average	success

D'Amato et al, 1985	Capuchin monkeys (8)	MTS	symbol	pre-training: sample - 1 stimulus showed	3 visual stimuli: coloured disk red, yellow and blue	240 - 624	success
				MTS training: simultaneous MTS procedure, only 2 stimuli used (shape) criterion: 2x 90% on 2 successive blocks of 48 trials			
Wright et al, 1988	Pigeons (4)	MTS	symbol	pre-training: 2 stimuli (arrow + apple)			
				training: 35 trials (1st session), grain placed on the correct comparison stimulus before the choice			
				Trial unique 152 different stimuli presented once daily 27,360 76 trials per day --> 75% over 360 training sessions (18 months; 360 presentations)			
2 stimuli	train with 2 stimuli	1,216	Same as above	7000	fail		

				75% 16 sessions (1216 presentations)				(n = 2)
				76 trials				
				criteria: reach 75% or more - -> tested to transfer				
Oden et al., 1988	Infant chimpanzees (4)	MTS	objects	Pre-trained to handle 2 objects (cup and lock) when putting an object into a baking tin rewarded via hugs and congratulations training: give one object have to put it in a baking tin, then two alternative objects were placed 20cm apart and equidistant from the pan session of 12-24 trials / ITI = mean of 30s / 1-3 times daily 5 times a week criteria level: at least 10/12	642 – 1,000 816 (mean)	2 new stimuli session of 12 trials reward with food and congratulations even when incorrect choice to keep them motivated 6 transfer tests so 12 novel objects in total	24 mean % correct 67.7 - 85.4 %	success
Herman et al., 1989	Bottlenose dolphin (1)	MTS	objects	4-5 stimuli 16-20 trials per session 2 sessions per day simultaneous MTS as training: 72 trials over 6 days	432 81%	Same stimuli 2-4 sessions for a total of 36-63 trials overall 83.3% correct NO transfer trials	564 83.3%	success

Pack et al, 1991	Sealion (1)	generalized MTS	symbol	MTS training with 2 stimuli	269	Same stimuli	72	success
				24 trials per session criterion 2x 90% in a row				
				with 3 stimuli	503			criterion 2x 90% in a row
Iversen, 1993	Rats (3)	MTS	light	pre-training: steady / blinking	200	Same stimuli	1000 – 1500	success
				sample in the middle, rat press it, stimulus (same) on one of the side, press, food				
				2x 100 trials				
				MTS training: simultaneous MTS / same stimuli as in pre-training	5,000	NO transfer trials		
				1 session = 100 trials + number of repeated trial				
Giurfa et al, 2001	Honeybees (360)	MTS	Colour	2 stimuli (colour)	60	2 new stimuli (grating)	60	success
			grating	Y-maze, entrance encountered sample stimulus				
				then stimuli A and B have to choose in decision chamber				
Bodily et al., 2008	Pigeons (5)	simultaneous MTS	cartoon images	3 pre-training stimuli	2,352	transfer trial with novel stimuli each time	384	success
			computer	84 trials/session			4 consecutive transfer sessions conducted	

				3 same stimuli as pre-training	672	48 novel pairs		
				training: 96 trials/day				
				12 combinations configuration				
				>85% correct on 2 consecutive sessions with CP --> without CP: >85% correct in 1 session				
Truppa et al., 2010	Capuchin monkeys (6)	Simultaneous MTS	symbol	2 stimuli used	10,852	10 transfer tests composed of 4 sessions	1812 - 48 (decreasing over test)	success
				12 consecutive correct trials no more than 3 corrections		final transfer test	59%	
						single 100 trials session with new stimuli		
Gierszewski et al., 2013	Cichlids (9)	Simultaneous MTS	symbol	2 stimuli presented	350 - 400	using cross and circle	within 400 trials	fail
				10 trials per session, 2 per day				
				criterion 3x 70% in a row				
				35-40 sessions				
Newport et al., 2014	Archerfish (7)	Simultaneous MTS	symbol	As Goldman and Shapiro, 1979		3 stimuli	800	fail
				Pre-training: white light in the middle, white light both side, touch and receive food				
				Training: 3 stimuli: red, green and blue light				

Bloch et al, 2019	Zebrafish (10-12 per experiment)	Simultaneous MTS	Colour	Colour discrimination as training 10 trials per session, 1 per day ITI = 10s criterion: 3x 70% or above in a row	70 – 80	Simultaneous MTS as training Same colour stimuli criterion: 3x 70% or above in a row	120 – 150	success
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