Supplementary Material: Risky Hybrid Foraging - the Impact of Risk, Reward Value, and Prevalence on Foraging Behavior in Hybrid Visual Search

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Supplementary Material: Risky Hybrid Foraging - the Impact of Risk, Reward Value, and Prevalence on Foraging Behavior in Hybrid Visual Search

The supplementary materials include additional analyses and studies conducted for the main paper. The sections are arranged in the order of their presence in the main paper.

Demographic Questionnaire

After completing the main foraging task, participants were asked to fill out a demographic questionnaire to report their age (in free-box response for numerical input only), gender (in choices: female, male, other; or in free-box response), and the highest level of education (in choices: less than high school, high school graduate, some college, 2 year degree, 4 year degree, professional degree, Doctorate).

Within Patch Foraging Behavior: Estimated Coefficients from Robust Regression Analyses

Due to heteroscedasticity and skewness in differences between selection and display proportions (see Figure 1), we used robust regression models with robust standard errors to statistically test the effects of key experimental predictors on these observed proportion differences. Robust regression models were fitted using the rlm function in the 'MASS' R package (Venables and Ripley, 2002). Coefficient tests were conducted with robust standard errors computed based on heteroscedasticity-consistent covariance matrix (HC3; Long and Ervin, 2000) using the package 'sandwich' in R (Zeileis et al., 2020). We estimated confidence intervals for the coefficients using bootstrap methods (Davison and Hinkley, 1997).

Equal-EV Conditions

Table 1 summarizes the estimated coefficients from robust regression models performed on data collected in Experiment 1. The robust regression modeled the difference between selection and display proportions as a linear function of Target Type, Patch Click and their interaction terms, after accounting for heteroscedasticity in the observed data.

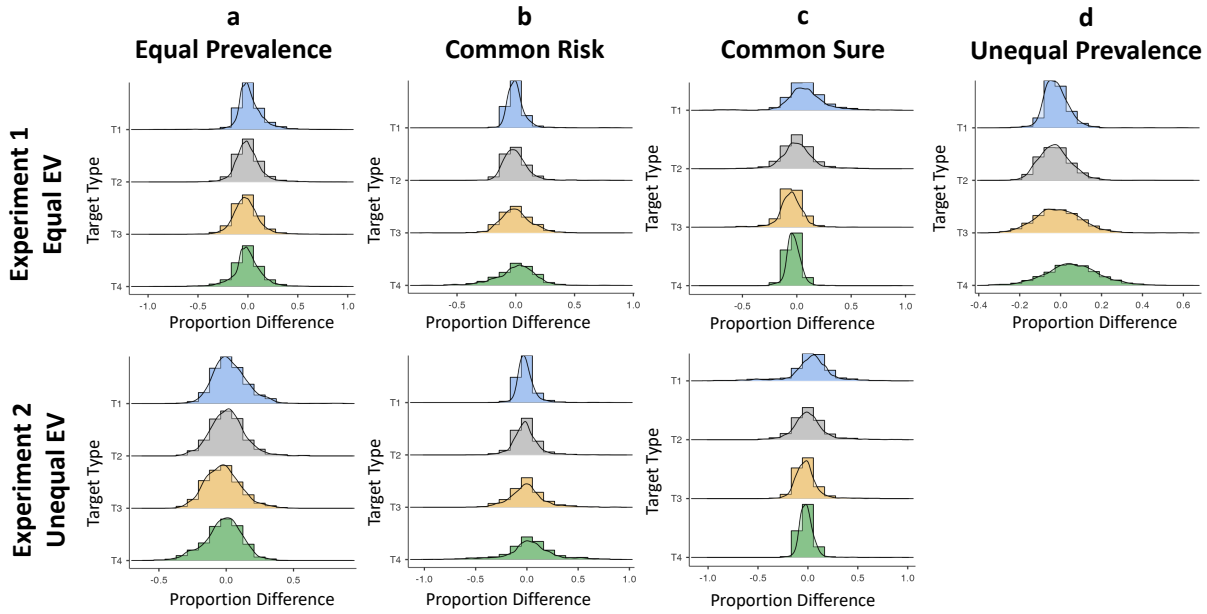

Figure 1

Densities of observed proportion differences of each target type in Experiment 1 (top panel) and Experiment 2 (bottom panel).

Unequal-EV Conditions

Table 2 summarizes the estimated coefficients from robust regressions performed on data collected from Experiment 2 and their respective prevalence-CV conditions in Experiment 1. The robust regression modeled the difference between selection and display proportions as a linear function of Target Type, Patch Click, EV Condition (i.e., equal EV vs. unequal EV), and their interaction terms, after accounting for heteroscedasticity in the observed data.

Comparisons of the Marginal and Average Click Rates

The rate of clicks (in units of clicks/second) describes how fast participants collect items (including clicks on both target and non-target letters). The instantaneous rate of clicks was estimated by dividing an acquisition by the amount of time spent acquiring an item. For instance, if a participant took 2 seconds to select a target and the selection yielded 4 points, then the instantaneous click rate is $\frac{1}{2}$ clicks/sec. The average click rate was calculated by dividing the total number of clicks by the total duration of the foraging session, including both the time spent on

foraging within patches and the time spent on traveling between patches.

Equal-EV Conditions

As shown in Figure 2, the instantaneous click rates decreased as patch foraging progressed (top row of Figure 2). This is not surprising because targets became increasingly harder to locate with the depletion of instances. In the equal-prevalence condition (Condition 1a) and the common-sure condition (Condition 1c), the instantaneous click rates dropped to the average click rate when participants left a patch (Condition 1a: $t(37) = 1.61,\ p = 0.115,$ Cohen's d $= 0.262$; Condition 1c: ($t(41) = 1.43,\ p = 0.161,$ Cohen's d $= 0.220$), following the predictions of MVT. In the common-risk condition (Condition 1b) and the unequal-prevalence condition (Condition 1d), the instantaneous click rates at the last click were slightly above the average click rates (Condition 1b: $t(33) = 3.4,\ p = 0.002,$ Cohen's d $= 0.583$; Condition 1d: $t(41) = 2.65,\ p = 0.011,$ Cohen's d $= 0.262$).

Unequal-EV Conditions

Similar to what we observed in Experiment 1, the instantaneous click rates decreased as patch foraging progressed (the bottom row in Figure 2), suggesting that participants took longer to find targets as their instances depleted. In the equal-prevalence condition (Condition 2a) and the common-sure condition (Condition 2b), participants' instantaneous click rates also dropped to their average click rates when they left a patch (Condition 2a: ($t(43) = 0.529,\ p = 0.6,$ Cohen's d $= 0.080$; Condition 2c $t(43) = 0.919,\ p = 0.363,$ Cohen's d $= 0.139$), which follows the predictions of MVT. However, when risky targets were highly prevalent (Condition 2b), participants left patches early, as the instantaneous click rate at the final click was above the average click rate, $t(44) = 3.23,\ p = 0.002,$ Cohen's d $= 0.482$.

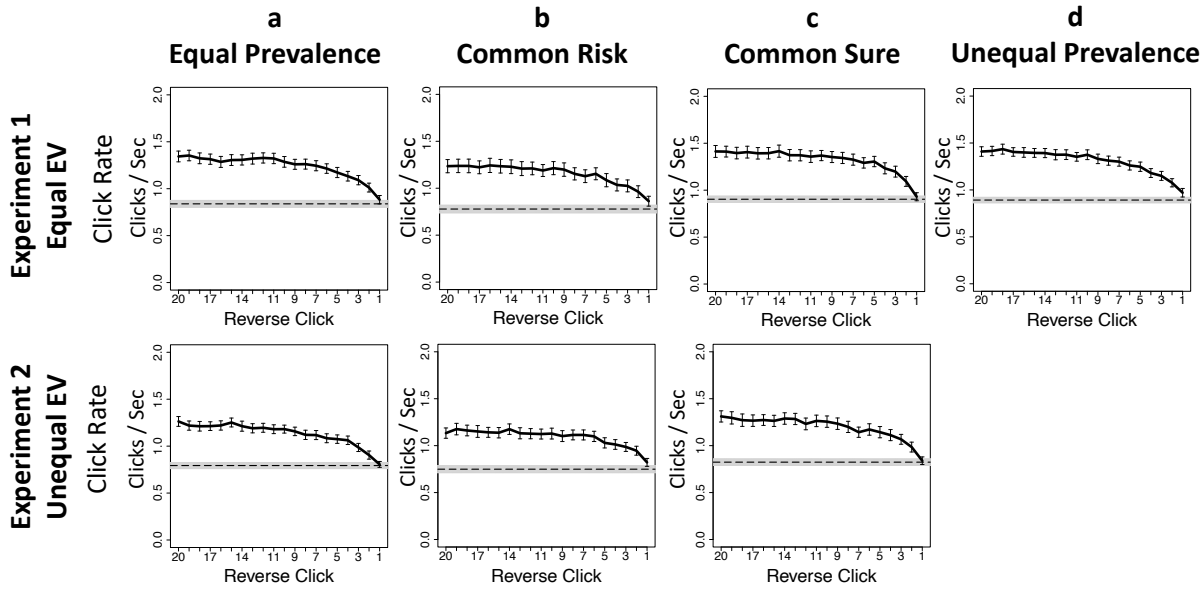

Figure 2

Click rates estimated in Experiment 1 (top panel) and Experiment 2 (bottom panel). The solid lines show the instantaneous rate of clicks as a function of reverse click. Reverse click 1 is the final click before participants decided to move to the next patch. Reverse click 2 is the penultimate selection and so on, backwards in time. The error bars denote standard errors of instantaneous rates estimated at each reverse click. The dashed lines show the corresponding average rate of clicks with the gray shaded bans denoting the ± standard errors.

Experiment 3: Baseline Foraging Behavior

We estimated the functional relationship between baseline foraging time and prevalence of targets in Experiment 3 (the pre-registration and the data are available at https://osf.io/bf9st/). In Experiment 3, participants were asked to forage for a single target type for five minutes and automatically moved to a new patch after exhausting all instances of the target in the current patch. A selection of the target would always yield 4 reward points. Moving to a new patch did not incur any travel time cost. The number of instances were manipulated into four between-subject conditions.

Method

Participants

A total of 200 participants (117 women, 82 men, 1 did not report; age: M = 42.49, SD = 13.48) recruited from MTurk using CloudResearch completed the study. Participants were paid a $0.50 base rate and were incentivized with a bonus scheme determined by the average points they earned per second: $0.10 for 1-2 points per second, $0.25 for 2-4 points per second, $0.50 for above 4 points per second and $0 for below 1 point per second. The average bonus participants received was $0.211.

14% of participants (N = 28) were excluded from the data analyses due to poor performance (i.e., their rate of earning points per second was less than 1 or they committed more than 20% false positive errors). The exclusion criteria were pre-registered. After the exclusions, we had 35 participants in Condition a, 45 in Condition b, and 44 in Condition c and 48 in d. The sample size was determined prior to starting the experiment, and the data was analyzed only after all data had been collected.

Materials

We programmed the baseline foraging task following the similar structure of the hybrid foraging task, except that (1) only one letter was assigned to represent a target; (2) the program automatically proceeded to a new patch after all instances of the target were collected from the current patch; (3) moving to a new patch did not incur transition time cost.

The initial number of target instances at the onset of patches (i.e., 2, 4, 9, 17, respectively for condition a, b, c and d) determined four between-subject conditions. The total number of items in display at the onset of patches, including both target and distractors, were fixed at 64 on average. These values parallel manipulations in Experiments 1 and 2.

Procedures

The procedures of Experiment 3 followed the schemes of Experiments 1 and 2 in general. Consented participants were randomly assigned to one of four prevalence conditions. At the start of the experiment, participants were informed that their task was to collect as many points as possible by selecting moving target letters for 5 minutes. After they read the payment schedules, they were informed about the identity of the target letter, its reward points, and its prevalence (i.e., "approximately xx percentage of the items in the patch will be targets"). When participants were ready, they proceeded to a short practice session to collect 60 points before they started the main foraging session.

The total number of targets in a patch was pseudo-randomized at the start of a patch, following the same procedures used in Experiments 1 and 2. Within a foraging patch, the target letter was displayed at the top of the screen and the points earning rate was displayed at the top left of the screen (see Figure 3). The feedback on selections were identical to that in Experiments 1 and 2. After participants collected all instances of the target letter in a patch, they automatically moved to a new patch. Between patches, there was a 250-millisecond lag. After completing the foraging session, participants were informed about the amount of bonus they earned and were asked to fill out a demographic questionnaire.

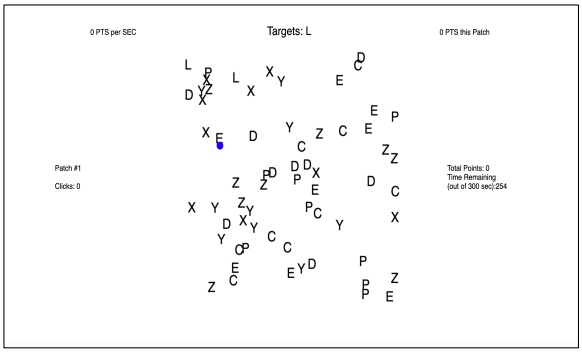

Figure 3

An example screenshot during the baseline foraging task from Experiment 3. Participants were asked to forage for a single target type for five minutes and automatically moved to a new patch after exhausting all instances of the target in the current patch. A selection of the target would always yield 4 reward points. Moving to a new patch did not incur any travel time cost.

Results

In all conditions, fewer than 3% of clicks were made on none-target items. Table 3 summarizes overall performance measures across conditions. The number of clicks participants made within patches were consistent with the experimental manipulation. When targets had fewer instances, participants were slower in collecting targets ($F(3, 88.6) = 29.1,\ p < 0.001,\ \omega^2 = 0.333$), while viewed more number of patches ($F(3, 80.4) = 96.3,\ p < 0.001,\ \omega^2 = 0.628$) throughout the baseline foraging session. In total, participants earned more points when targets were highly prevalent, $F(3, 92.3) = 39.047,\ p < 0.001,\ \omega^2 = 0.403$.

Figure 4 plots inter-click times between target selections against patch clicks in reversed order. Reverse click 1 denotes the last click in a patch. In all conditions, we observed that the inter-click times increased as patch foraging progressed, suggesting that participants took longer time to make a selection with the depletion of targets over time.

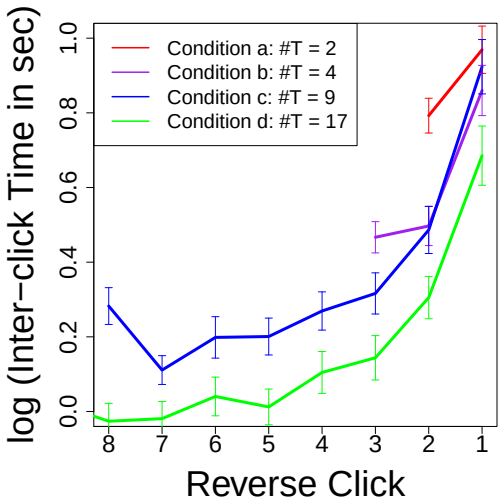

Figure 4
Logarithm of Inter-click times plotted as a function of reverse click for each condition in Experiment 3. Reverse click 1 is the final click before participants decided to move to the next patch. Reverse click 2 is the penultimate selection and so on, backwards in time. The error bar denotes the standard errors of the mean.

In addition, we observed that the inter-click time at a reverse click differed across

conditions, despite that the number of target instances should be identical at each reverse click. This suggests that participants' foraging speed was affected by the number of targets in relation to the total number of items in display, rather than merely by the number of targets in display. For instance, when there was one target left for participants to collect (i.e., at reverse click 1), participants would have to search the last target among 63 items in Condition a (each patch had 2 target instances, and 1 instance had been collected at the penultimate patch click), while among 48 items in Condition d (17 target instances per patch and 16 were collected before the last click).

The results of a mixed linear regression model (Table 4) confirmed above observations. We modeled the logarithm of inter-click times (in units of seconds) as a linear function of the number of target instances in presence and the total number of items in display, after accounting for the random effect of individual differences in base times. The results show that the inter-click times decreased significantly with numbers of target instances ($F(1,1209) = 269.7,\ p < 0.001$), and increased significantly with total numbers of present items ($F(1,1213) = 157,\ p < 0.001$). Moreover, the interaction between these two variables had a significant effect on inter-click times, $F(1,108) = 58.1,\ p < 0.001$).

Conclusions

Our findings from the baseline foraging experiment (Experiment 3) show that both the number of target instances and the total number of items present on the screen affected participants foraging speed. We used the data collected in this experiment to describe the mean baseline foraging times for our optimal model simulations.

The Effect of Target Movement on Hybrid Foraging Behavior

We assessed the effect of searching difficulty on foraging behavior with a replication study of the equal-prevalence, unequal-EV condition (Condition a in Experiment 2). In this replication study (denoted as Condition 2a'), items (i.e., letters) were fixed at their initial locations throughout a patch foraging.

Method

Participants

Fifty participants (25 women, 25 men; age: M = 41.66, SD = 11.50) were recruited from MTurk using CloudResearch and completed a 15-minute hybrid foraging session. The payment schedule was identical to Experiment 2. We excluded participants who had low performance using the same exclusion criteria in Experiment 2. After the exclusions, we had 35 participants for data analyses.

Materials

The materials used in Condition 2a' are identical to those used in Condition 2a.

Procedure

The procedures of Condition 2a' are identical to those in Condition 2a, except that the locations of letters were fixed at their initial locations throughout a patch foraging. The initial locations of letters were randomized at the onset of a new patch.

Results

As illustrated in Figure 5, the within-patch foraging behavior observed in the static condition (Condition 2a') was very similar to those observed in the dynamic version (Condition 2a). Participants over-picked the sure target while under-picking the risky targets at the start of patch foraging, and then selected targets randomly in the later stage of patch foraging. The results of a robust regression model confirmed that the movement of targets did not significantly alter the effects of riskiness and reward value on foraging behavior (see omnibus test results in Table 5; see coefficient test results in Table 6).

Conclusions

The results from the replication study suggest that participants still preferred safe targets over the risky targets, despite the movements of items in display.

Stay-Switch Behavior in Target Selection

Response Priming Effect

To examine how the subsequent selection was affected by a previous selection, we assessed the transition probabilities between targets. As depicted in Figure 6, when all targets were equally prevalent (Conditions 1a and 2a), participants tended to select the same target as their previous selection. When targets were unequally prevalent, participants tended to select the most prevalent targets, regardless the type of target they selected before. These findings were consistent with previous findings (Wolfe et al., 2019) of the response-priming effect in hybrid foraging behavior.

Stay-Switch Behavior Conditioned on Previous Gain/No-Gain

Figure 7 depicts the transition probabilities between sequentially collected targets in equal prevalence conditions of Experiments 1 (Equal-EV) and 2 (Unequal-EV), conditioned on either receiving a reward (i.e., Gain at t-1) or a zero return (i.e., No-Gain at t-1) from a previous click. In both gain and no-gain cases, we observed that foragers were more likely to stay with the same type of target, suggesting that a recent gain/no-gain might not play a dominant role in participants' stay-switch behavior during foraging. The overall proportion of switching did not significantly differ between the previous-gain and previous-no-gain cases in the equal prevalence conditions of both Experiments 1 and 2 (Equal-EV Exp1: $z = -1.65, p = 0.098$; Unequal-EV Exp2: $z = 0.486, p = 0.627$).

Table 1

Estimated coefficients from the robust regression models:
Proportion Difference $= 1 +$ *Target Type* $*$ *Patch Click for each condition in Experiment 1.*

Condition	Term	β	SE	z	p	95% CI
1a Equal Prevalence	Intercept	0.103	0.010	10.144	< 0.001	[0.088, 0.119]
	T2	-0.093	0.013	-6.959	< 0.001	[-0.113, -0.072]
	T3	-0.176	0.013	-13.590	< 0.001	[-0.199, -0.153]
	T4	-0.195	0.014	-14.341	< 0.001	[-0.216, -0.174]
	Patch Click	-0.004	0.0005	-8.024	< 0.001	[-0.005, -0.003]
	T2 : Patch Click	0.004	0.001	6.634	< 0.001	[0.003, 0.006]
	T3 : Patch Click	0.008	0.001	11.593	< 0.001	[0.006, 0.009]
	T4 : Patch Click	0.006	0.001	9.334	< 0.001	[0.005, 0.007]
1b Common Risk	Intercept	0.027	0.005	5.542	< 0.001	[0.014, 0.040]
	T2	-0.020	0.008	-2.422	0.015	[-0.038, -0.0003]
	T3	-0.046	0.010	-4.829	0.000	[-0.065, -0.026]
	T4	-0.062	0.013	-4.657	< 0.001	[-0.080, -0.042]
	Patch Click	-0.002	0.0003	-7.316	< 0.001	[-0.003, -0.001]
	T2 : Patch Click	0.001	0.0004	1.837	0.066	[-0.0002, 0.002]
	T3 : Patch Click	0.003	0.001	5.557	< 0.001	[0.002, 0.004]
	T4 : Patch Click	0.005	0.001	7.167	< 0.001	[0.004, 0.006]
1c Common Sure	Intercept	0.097	0.009	10.485	< 0.001	[0.085, 0.108]
	T2	-0.133	0.012	-10.978	< 0.001	[-0.149, -0.116]
	T3	-0.152	0.010	-14.799	< 0.001	[-0.169, -0.135]
	T4	-0.120	0.010	-12.266	< 0.001	[-0.135, -0.102]
	Patch Click	-0.002	0.0005	-3.198	0.001	[-0.002, -0.001]
	T2 : Patch Click	0.004	0.001	5.847	< 0.001	[0.003, 0.005]
	T3 : Patch Click	0.002	0.001	3.104	0.002	[0.001, 0.003]
	T4 : Patch Click	0.001	0.001	2.033	0.042	[0.0001, 0.002]
1d Unequal Prevalence	Intercept	-0.013	0.003	-4.313	< 0.001	[-0.023 , -0.003]
	T2	-0.020	0.005	-4.131	< 0.001	[-0.035 , -0.006]
	T3	-0.024	0.008	-3.154	0.002	[-0.038 , -0.009]
	T4	0.077	0.009	8.593	< 0.001	[0.063, 0.091]
	Patch Click	-0.001	0.0002	-3.286	0.001	[-0.001 , -0.0001]
	T2 : Patch Click	0.001	0.0003	2.890	0.004	[0.0001, 0.002]
	T3 : Patch Click	0.002	0.0004	5.013	< 0.001	[0.001, 0.003]
	T4 : Patch Click	0.0001	0.0005	0.268	0.789	[-0.001, 0.001]

Table 2

Estimated coefficients from the robust regression model:
Proportion Difference $= 1 +$ *Target Type* $*$ *Patch Click* $*$ *EV Condtion comparing Experiments 1 (equal EV) and 2 (unequal EV).*

Condition	Term	β	SE	z	p	95% CI
2a Equal Prevalence	Intercept (T1, Equal-EV)	0.104	0.010	10.119	< 0.001	[0.089 , 0.119]
	T2	-0.093	0.013	-6.955	< 0.001	[-0.113, -0.073]
	T3	-0.176	0.013	-13.567	< 0.001	[-0.198, -0.154]
	T4	-0.195	0.014	-14.299	< 0.001	[-0.216, -0.174]
	Patch Click	-0.004	0.0005	-8.008	< 0.001	[-0.005, -0.003]
	Unequal EV	-0.043	0.013	-3.264	0.001	[-0.063, -0.022]
	T2 : Patch Click	0.004	0.001	6.632	< 0.001	[0.003 , 0.006]
	T3 : Patch Click	0.008	0.001	11.575	< 0.001	[0.006, 0.009]
	T4 : Patch Click	0.006	0.001	9.311	< 0.001	[0.005, 0.007]
	T2 : Unequal EV	0.022	0.017	1.283	0.200	[-0.007, 0.051]
	T3 : Unequal EV	0.061	0.017	3.625	< 0.001	[0.031, 0.091]
	T4 : Unequal EV	0.104	0.018	5.757	< 0.001	[0.074, 0.132]
	Patch Click : Unequal EV	0.002	0.001	2.897	0.004	[0.001, 0.003]
	T2 : Patch Click : Unequal EV	-0.001	0.001	-1.384	0.166	[-0.003, 0.001]
	T3 : Patch Click : Unequal EV	-0.004	0.001	-4.286	< 0.001	[-0.005, -0.002]
	T4: Patch Click : Unequal EV	-0.003	0.001	-3.657	< 0.001	[-0.005, -0.002]
2b Common Risk	Intercept (T1, Equal-EV)	0.027	0.005	5.637	< 0.001	[0.012, 0.041]
	T2	-0.020	0.008	-2.454	0.014	[-0.042, 0.002]
	T3	-0.047	0.010	-4.870	< 0.001	[-0.068, -0.025]
	T4	-0.063	0.013	-4.707	< 0.001	[-0.086, -0.039]
	Patch Click	-0.002	0.0003	-7.367	< 0.001	[0.003, -0.001]
	Unequal EV	-0.016	0.006	-2.560	0.010	[-0.035, 0.004]
	T2 : Patch Click	0.001	0.0004	1.859	0.063	[-0.0004, 0.002]
	T3 : Patch Click	0.003	0.001	5.584	< 0.001	[0.002, 0.004]
	T4 : Patch Click	0.005	0.001	7.230	< 0.001	[0.003, 0.006]
	T2 : Unequal EV	-0.001	0.011	-0.082	0.935	[-0.028, 0.033]
	T3 : Unequal EV	0.017	0.014	1.235	0.217	[-0.011, 0.046]
	T4 : Unequal EV	0.034	0.019	1.815	0.069	[0.002, 0.064]
	Patch Click : Unequal EV	0.0002	0.0004	0.601	0.548	[-0.001, 0.001]
	T2 : Patch Click : Unequal EV	0.0003	0.001	0.482	0.630	[-0.002, 0.002]
	T3 : Patch Click : Unequal EV	-0.001	0.001	-0.863	0.388	[-0.002, 0.001]
	T4: Patch Click : Unequal EV	-0.0002	0.001	-0.249	0.803	[-0.002, 0.002]
2c Common Sure	Intercept (T1, Equal-EV)	0.097	0.009	10.521	< 0.001	[0.086, 0.109]
	T2	-0.133	0.012	-10.987	< 0.001	[-0.149, -0.118]
	T3	-0.152	0.010	-14.794	< 0.001	[-0.168, -0.135]
	T4	-0.119	0.010	-12.277	< 0.001	[-0.137, -0.103]
	Patch Click	-0.002	0.000	-3.202	0.001	[-0.002, -0.001]
	Unequal EV	-0.062	0.014	-4.531	< 0.001	[-0.079, -0.045]
	T2 : Patch Click	0.004	0.001	5.861	< 0.001	[0.003, 0.005]
	T3 : Patch Click	0.002	0.001	3.070	0.002	[0.001, 0.003]
	T4 : Patch Click	0.001	0.001	2.009	0.045	[0.0001, 0.002]
	T2 : Unequal EV	0.071	0.018	4.009	< 0.001	[0.047, 0.094]
	T3 : Unequal EV	0.098	0.015	6.429	< 0.001	[0.075, 0.122]
	T4 : Unequal EV	0.075	0.014	5.239	< 0.001	[0.052, 0.098]
	Patch Click : Unequal EV	0.002	0.001	2.726	0.006	[0.001, 0.003]
	T2 : Patch Click : Unequal EV	-0.003	0.001	-2.804	0.005	[-0.004, -0.001]
	T3 : Patch Click : Unequal EV	-0.003	0.001	-3.399	0.001	[-0.004, -0.002]
	T4: Patch Click : Unequal EV	-0.002	0.001	-2.528	0.011	[-0.003, -0.001]

Table 3
Overall foraging performance in Experiment 3 throughout the baseline foraging session.

	Number of Patch Clicks		Number of Viewed Patches		Inter-click Time (second)		Total Points	
Condition	Mean	SD	Mean	SD	Mean	SD	Mean	SD
a: #T = 2	2.033	0.107	63.400	20.677	2.460	0.705	484.343	163.031
b: #T = 4	4.070	0.113	41.600	12.718	1.935	0.648	643.822	200.675
c: #T = 9	9.067	0.254	24.068	8.492	1.551	0.488	828.000	299.875
d: #T = 17	17.053	0.588	16.688	5.493	1.219	0.527	1083.333	366.121

Table 4
Estimated coefficients from the linear mixed regression model: $log(Interclick\ Time) = (intercept|sub) + Number\ of\ Target * Total\ Number\ Items$. *The random effect of individual differences is captured by the term: (intercept | sub)*

Term	β	SE	t	df	p	95% CI
Intercept	0.185	0.024	7.640	160	< 0.001	[0.138, 0.233]
Number of Target Instance	-0.049	0.003	-16.420	1209	< 0.001	[-0.054, -0.043]
Total Number of Items	0.036	0.003	12.530	1213	< 0.001	[0.030, 0.042]
Number of Target Instance	0.011	0.001	7.630	108	< 0.001	[0.008, 0.014]

Table 5
Results of ANOVA omnibus tests for effects in the robust linear regression models with robust standard errors: $Proportion\ Difference = 1 + Target\ Type * Patch\ Click * Movement\ Condition$ *comparing Condition 2a (moving items) and Condition 2a' (static items).*

Term	Df	F	P-value
Target Type	3	39.663	< 0.001
Patch Click	1	25.797	< 0.001
Movement Condition	1	4.814	0.028
Target Type × Patch Click	3	17.115	< 0.001
Target Type × Movement Condition	3	2.305	0.075
Patch Click × Movement Condition	1	0.393	0.531
Target Type × Patch Click × Movement Condition	3	1.781	0.148

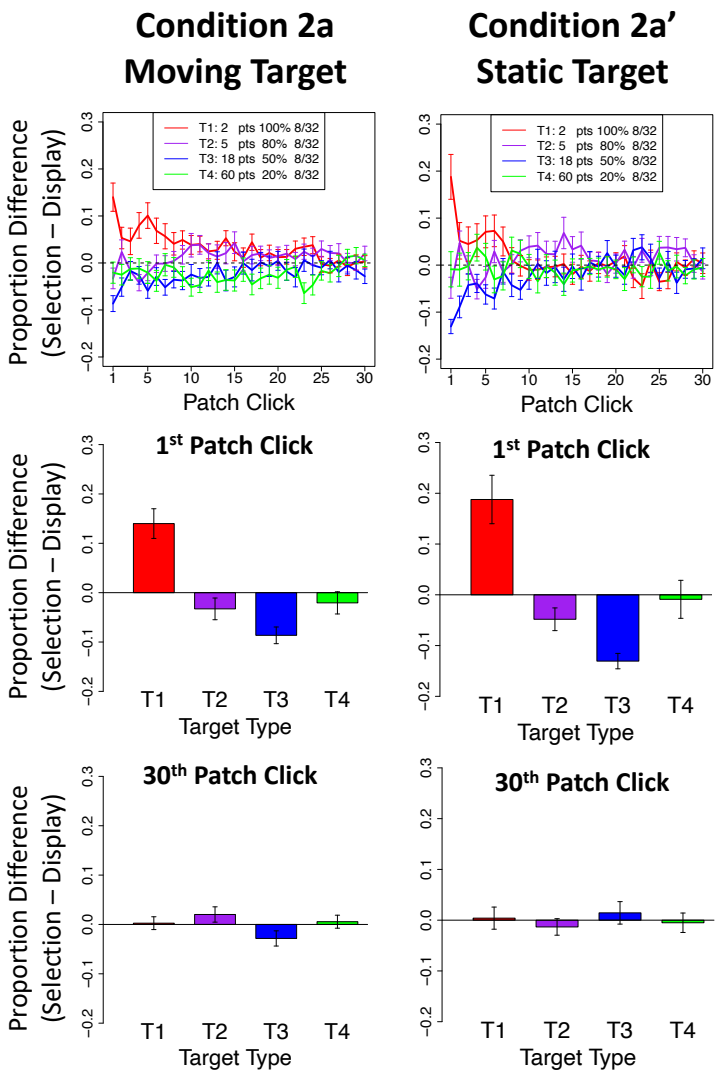

Figure 5

Within-patch foraging behavior estimated from the equal prevalence, unequal-EV conditions using moving letters (Condition 2a, left panel) and static letters (Condition 2a', right panel). Top Row: differences between selection and display proportions estimated at each patch click. Middle Row: proportion differences at the 1st patch click. Bottom Row: proportion differences at the 30th patch click. Error bars denote the standard error of the mean.

Table 6

Estimated coefficients from the robust regression model with robust standard errors: Proportion Difference $= 1 +$ *Target Type* $*$ *Patch Click* $*$ *Movement Condition. Condition 2a had moving letters, whereas Condition 2a' had static letters.*

Term	β	SE	z	p	95% CI
Intercept (T1, Dynamic)	0.061	0.008	7.422	< 0.001	[0.046 , 0.077]
T2	-0.071	0.011	-6.346	< 0.001	[-0.091, -0.050]
T3	-0.115	0.011	-10.594	< 0.001	[-0.135, -0.095]
T4	-0.092	0.012	-7.803	< 0.001	[-0.113, -0.073]
Patch Click	-0.002	0.000	-5.079	< 0.001	[-0.003, -0.001]
Condition 2a'	-0.030	0.014	-2.194	0.028	[-0.053, -0.009]
T2 : Patch Click	0.003	0.001	5.501	< 0.001	[0.002, 0.004]
T3 : Patch Click	0.004	0.001	6.650	< 0.001	[0.003, 0.005]
T4 : Patch Click	0.003	0.001	4.999	< 0.001	[0.002, 0.004]
T2 : Condition 2a'	0.032	0.018	1.767	0.077	[0.004, 0.065]
T3 : Condition 2a'	0.011	0.018	0.593	0.553	[-0.020, 0.041]
T4 : Condition 2a'	0.045	0.020	2.285	0.022	[0.015, 0.077]
Patch Click : Condition 2a'	0.0004	0.001	0.627	0.531	[-0.001, 0.002]
T2 : Patch Click : Condition 2a'	-0.0005	0.001	-0.507	0.612	[-0.002, 0.001]
T3 : Patch Click : Condition 2a'	0.001	0.001	1.129	0.259	[-0.001, 0.003]
T4: Patch Click : Condition 2a'	-0.001	0.001	-1.031	0.302	[-0.003, 0.001]

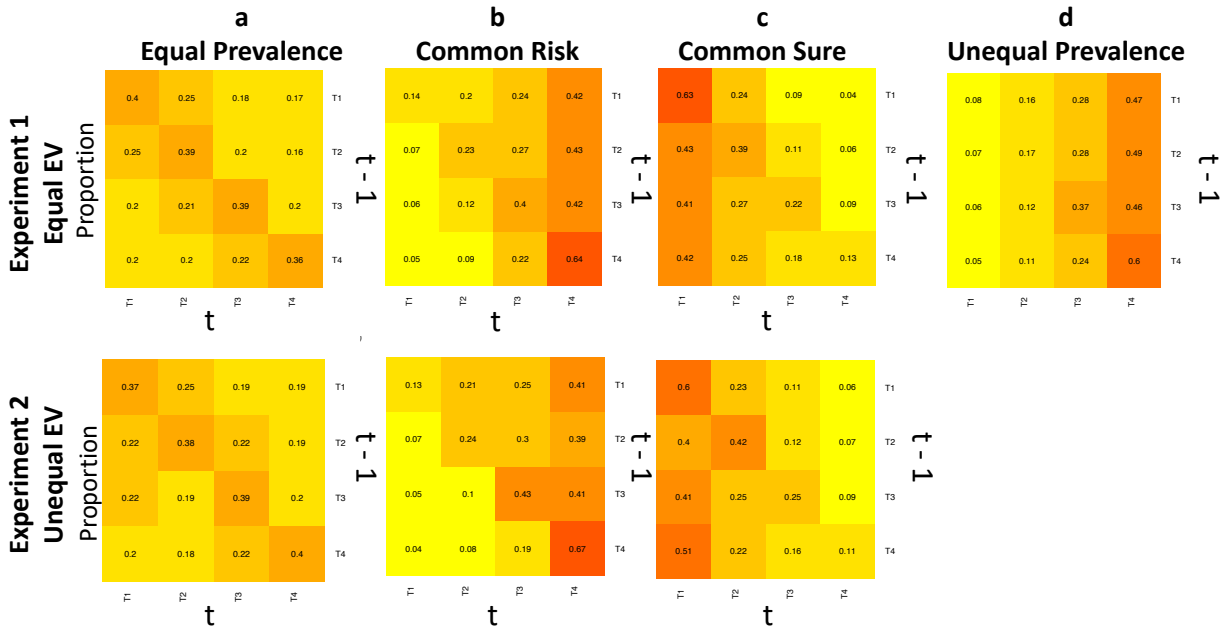

Figure 6

Transition probabilities between sequentially collected targets in Experiment 1 (Equal-EV, top row) and Experiment 2 (Unequal-EV, bottom row). Each row of the matrix denotes the type of target being selected before. Each column of the matrix demotes the type of target being selected at the current selection. The sum of each row is 1.

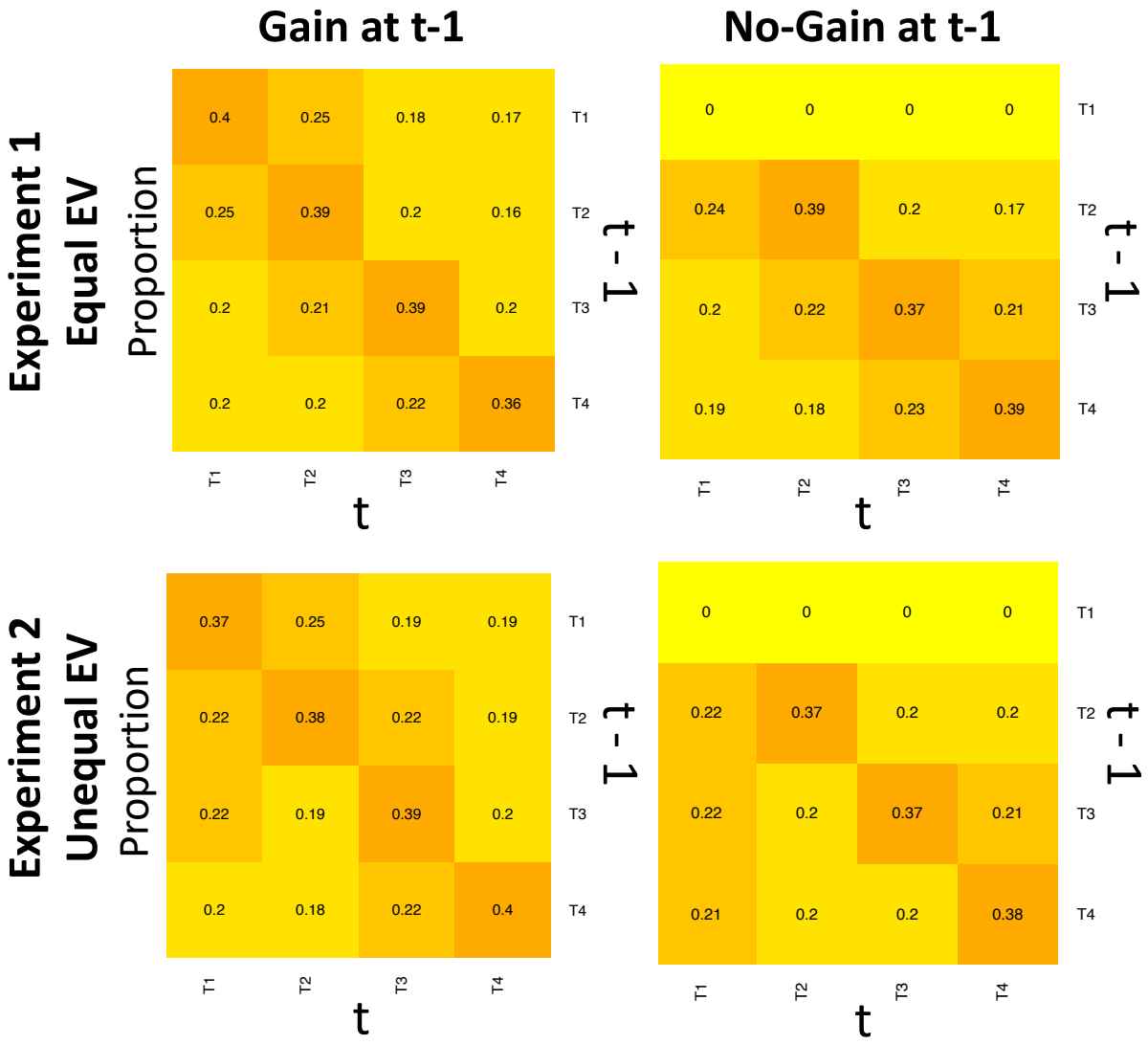

Figure 7

Transition probabilities between sequentially collected targets in equal prevalence conditions of Experiments 1 (Equal-EV, top row) and 2 (Unequal-EV, bottom row), conditioned on either receiving a reward (i.e., Gain at t-1, left column) or a zero return (i.e., No-Gain at t-1, right column) from a previous click. Each row of the matrix denotes the type of target being selected before. Each column of the matrix demotes the type of target selected at the current selection. The sum of each row is 1.

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