Supplementary Material

Exploratory re-analysis of CRT from Experiment 3 with the additional factor Sequential reward effect

Analysis of target RTs in forced-choice trials revealed significantly faster RTs in high reward trials and, more importantly, a significant switch benefit in increase trials. This indicates that an increase in reward prospect again promoted flexibility. But no corresponding effect was found in task choice behavior. Closer inspection of VSR showed that almost half of the sample (14 participants) showed the typical and expected VSR difference with a sizeable effect of $VSR_{increase}$ = 56.3 % (SE = 2.64 %) versus VSR_{remain_high} = 42.6 % (SE = 1.95 %). Therefore, we decided to re-analyze CRT data with the additional between-subjects factor VSR effect (typical, non-typical) to see, whether there were any qualitative differences in choice behavior between participants with a typical or a non-typical VSR effect.

A 2 (VSR effect: typical vs. non-typical) x 2 (Transition) x 4 (Reward sequence) mixed factors ANOVA on CRTs in forced-choice trials revealed a significant main effect of Transition, $F(1, 28) = 16.0$, $p < .001$, $\eta_p^2 = .364$, and a marginally significant main effect of Reward sequence ($F = 2.56$, $p = .06$), like in the original analysis. Descriptively, participants with a typical sequential VSR effect showed slower CRTs (*M* = 639 ms, *SE* = 55.95 ms) than participants with a non-typical effect (*M* = 555 ms, *SE* = 52.33 ms). In addition, the analysis revealed a significant interaction of VSR effect x Reward sequence, $F(3, 84) = 3.02$, $p < .05$, $\eta_p^2 = .097$. Planned contrasts on the significant interaction revealed that CRT in the typical VSR effect group was significantly higher in increase trials (*M* = 696 ms, *SE* = 72.96 ms) as compared to all other sequences (*p*s < .05), whereas CRT in the non-typical group did not differ significantly between reward sequence conditions (*p*s > .23). All other effects did not prove reliable (*F*s < 2.6, *p*s > .084).

A 2 (VSR effect) x 2 (Transition) x 2 (Reward sequence) mixed factors ANOVA on CRTs in free-choice trials revealed a significant main effect of Transition, $F(1, 28) = 4.33$, $p < .05$, $\eta_p^2 = .134$, and a significant three-way interaction, $F(1, 28) = 4.23$, $p < .05$, $\eta_p^2 = .131$. Again, participants with a typical VSR effect were descriptively generally slower to choose the task (*M* = 763 ms, *SE* = 79.11 ms) than

participants with a non-typical effect (M = 606 ms, SE = 74.00 ms). More importantly, in the typical VSR effect group participants were significantly faster to choose a repetition when reward prospect remained high (M_{remain_high} = 674 ms, SE_{remain_high} = 56.25 ms vs. $M_{increase}$ = 758 ms, $SE_{increase}$ = 77.47 ms, $p < .05$). Descriptively the reversed pattern was found for decisions to switch the task (M_{remain_high} = 861 ms, SE_{remain_high} = 118.24 ms vs. $M_{increase}$ = 759 ms, $SE_{increase}$ = 76.29 ms; p = .104). In the non-typical VSR effect group reward sequence had no significant effect on CRT, neither in repetition nor in switch trials (ps > .565).