

1 Humans anticipate the consequences of
2 motor control demands when making
3 perceptual decisions between actions
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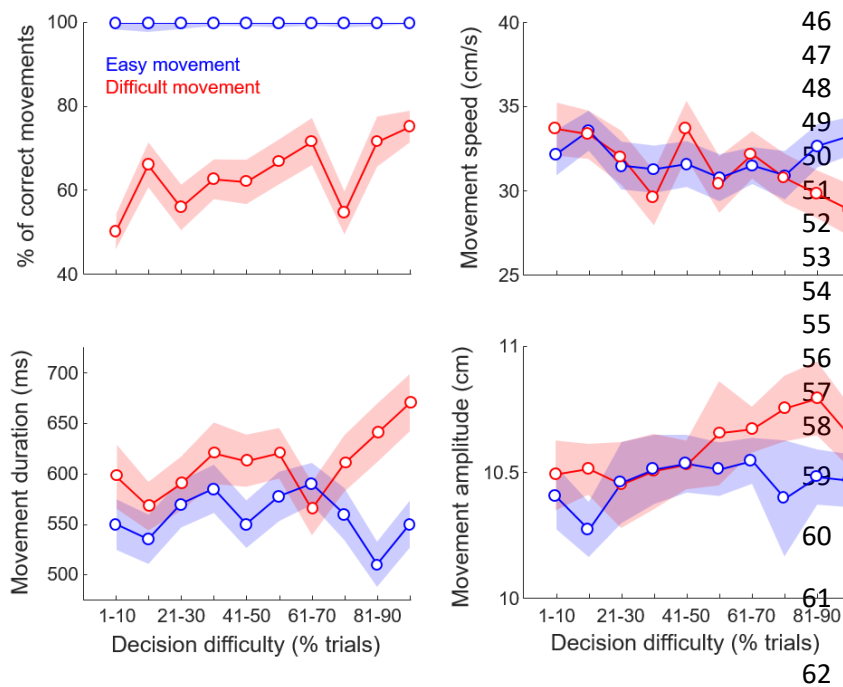
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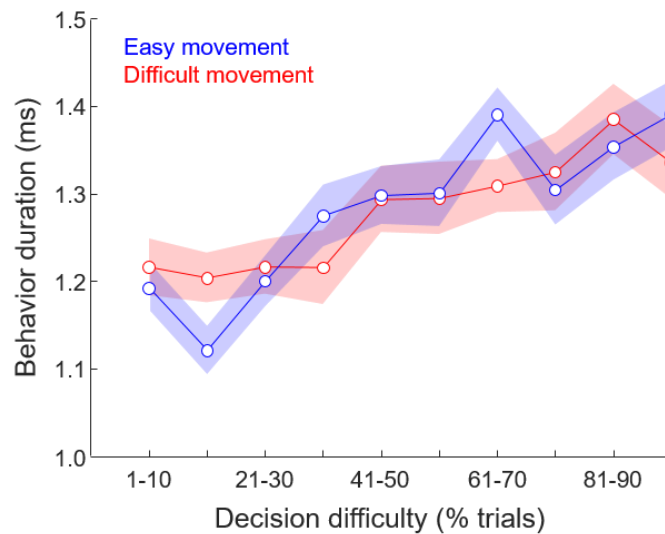
19 *Supplemental information*
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30 We analyzed the effect of the increasing decision difficulty on subjects' movement accuracy,
 31 duration, speed and amplitude, by grouping trials depending on the motor condition chosen by the
 32 subjects (small targets, difficult movement vs. large targets, easy movement). We observed a
 33 strong effect of the motor condition on the accuracy of participants' movements (ANCOVA,
 34 Movement difficulty, $F=360$, $p<0.0001$), regardless of the trials performed during the session
 35 (Movement difficulty x Trials: $F=2.45$; $p=0.12$) (Fig. S1, top-left). We also observed a significant
 36 effect of the motor condition chosen by the subject on movement duration (Movement difficulty:
 37 $F=14$, $p = 0.0002$), as well as a trend for movement durations being influenced by decision
 38 difficulty (Trials: $F=3$; $p=0.08$), without a significant interaction between the two factors
 39 (Movement difficulty x Trials: $F=0.7$; $p=0.4$) (Fig. S1, bottom-left). The speed of the movement
 40 was not influenced by the motor condition (Movement difficulty, $F=0.34$, $p=0.56$) neither with the
 41 difficulty of the perceptual decision (Trials, $F=3$, $p=0.06$) (Fig. S1, top-right). Finally, we observe
 42 that amplitude of movements was larger in the small targets condition compared to the large targets
 43 condition (Movement difficulty, $F=6.81$, $p=0.009$), and amplitude increased as a function of the
 44 evolving decision difficulty (Trials, $F=5.9$, $p=0.02$), especially in the small target condition
 45 (Movement difficulty x Trials: $F=4.3$; $p=0.04$) (Fig. S1, bottom-right).



46 **Figure S1:** Effect of decision
 47 difficulty on subjects'
 48 movement accuracy (top-left
 49 panel), duration (bottom-left),
 50 speed (top-right) and amplitude
 51 (bottom-right) with trials
 52 sorted according to the motor
 53 condition chosen by the
 54 subjects (red: small targets,
 55 difficult movement; blue: large
 56 targets, easy movement). Same
 57 conventions as in Figure 4C-D
 58 in the main manuscript.

63 Finally, we computed for each trial the duration of what we called the participants' behavior (or
64 the response time), corresponding to the addition of decision and movement durations. We
65 analyzed the effect of the increasing decision difficulty on this metric, by grouping trials depending
66 on the motor condition chosen by the subjects (small targets, difficult movement vs. large targets,
67 easy movement). We observed an effect of the increasing decision difficulty on the duration of
68 participants' behavior (ANCOVA, Trials, $F=56.4$, $p<0.0001$), but we found no significant effect
69 of the motor condition (Movement difficulty, $F=0.52$, $p=0.47$) as well as of the interaction between
70 the motor condition and the difficulty of the decisions (Trials x Movement difficulty, $F=0.43$,
71 $p=0.5$) on behavior duration (Fig. S2).



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73 **Figure S2:** Effect of decision difficulty on subjects' behavior (decision and movement) duration, with
74 trials sorted according to the motor condition chosen by the subjects (red: small targets, difficult movement;
75 blue: large targets, easy movement). Same conventions as in Figure S1.