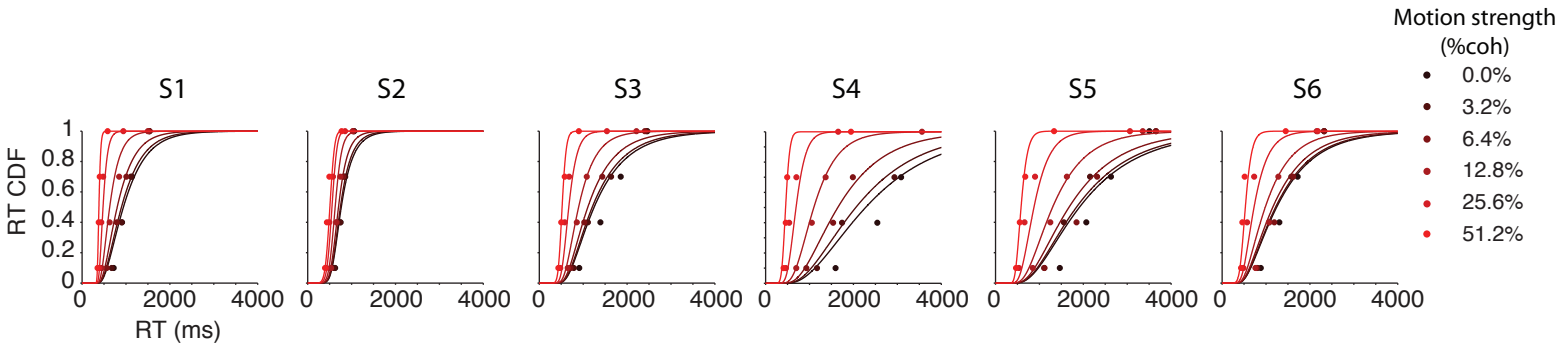

Figure S1, related to Fig. 1. The model is fit to the distribution of reaction times across trials. Each panel shows the fit for one subject (S1-S6). Solid lines illustrate the model cumulative distribution functions for different motion strengths. Data points delineate the cumulative distribution function of the observed RTs.

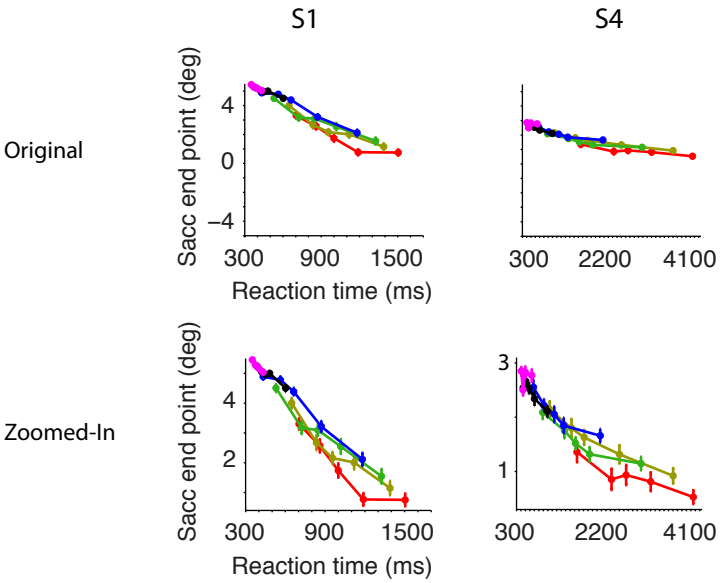

Figure S2, related to Fig. 2. The apparent reduction of the effect of motion strength on confidence for subjects 1 and 4 in Fig. 2 is due to the limited range of saccade landing points utilized by the subjects. Zooming in on the relevant range of saccade end points clarifies the effect of motion strength and reconciles the statistical results in the main text.

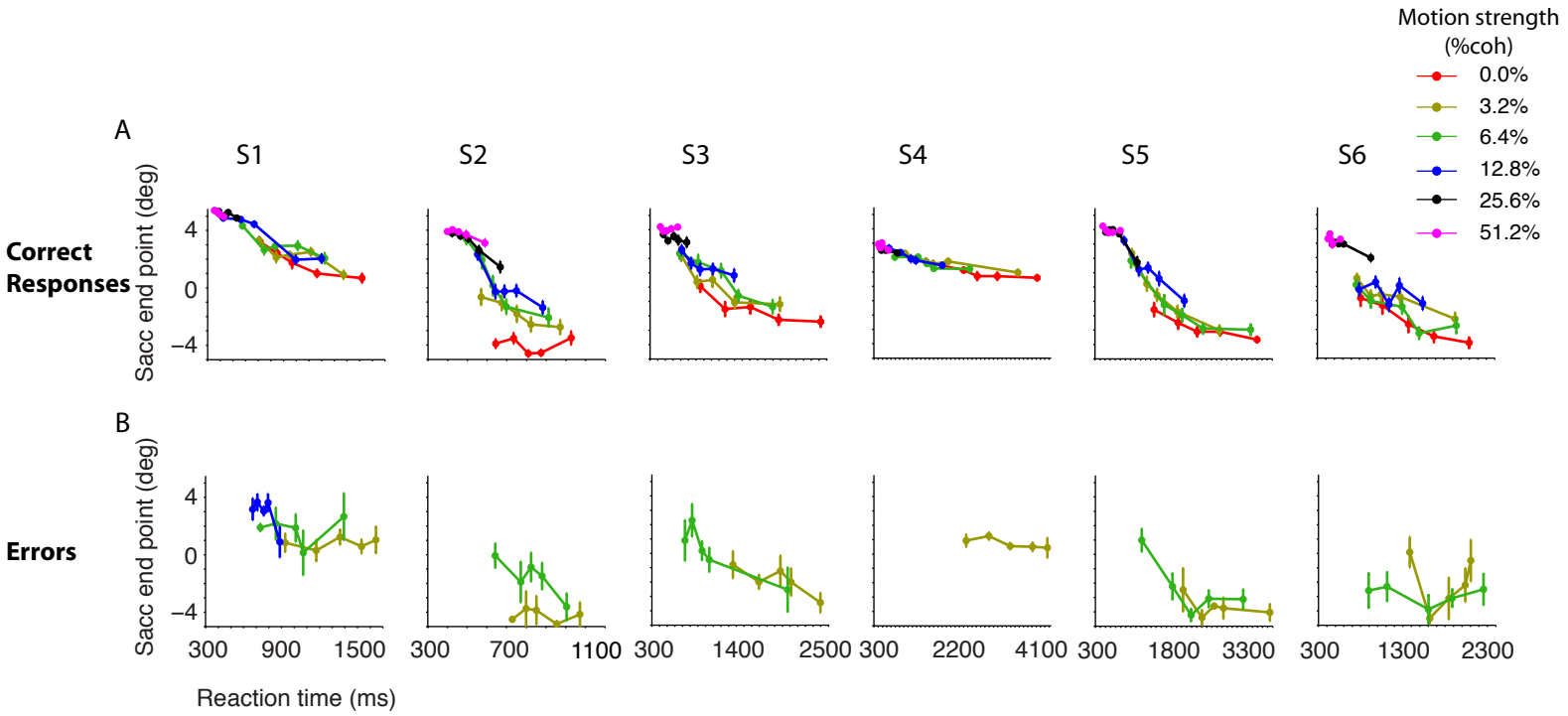

Figure S3, related to Fig. 2. The inverse relationship between RT and certainty is not explained by trial-to-trial variability of the random dot stimulus. For each motion coherence and direction in experiment 1, we used an identical motion sequence on half of the trials. Restricting the analysis to these trials reproduced the results reported in the paper. Certainty was inversely related to RT (Eq. 4, $p<10–8$) and directly related to motion strength ($p<10–4$). RTs were longer on error trials (t test, $p<10–4$), and choice certainty was lower for longer RT ($p<0.0005$). Also, certainty was greater when errors were made on the higher motion strengths, which were associated with shorter RTs (Eq. 6, $p<0.05$ in four of five subjects, S4 was excluded due to the very small number of errors for coh>3.2%). All conventions in this figure are identical to Fig. 2.

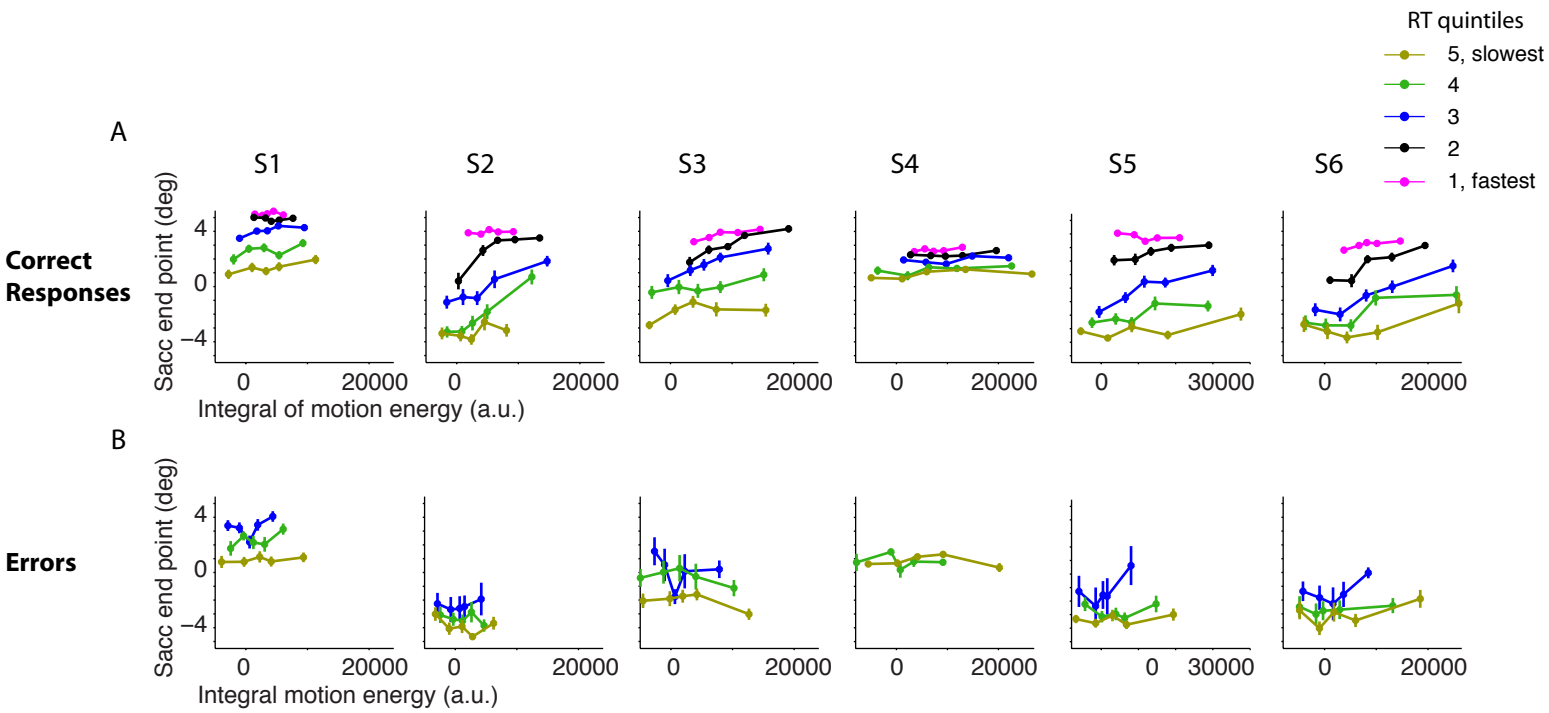

Figure S4, related to Fig. 3. The inverse relationship between RT and certainty is not explained by trial-to-trial fluctuations of the random dot stimulus. All conventions are identical to Fig. 3, except that average motion energy is replaced by the integral of motion energy within trials. To account for non-decision time, the last 200 ms of the motion stimulus was excluded from the integral.

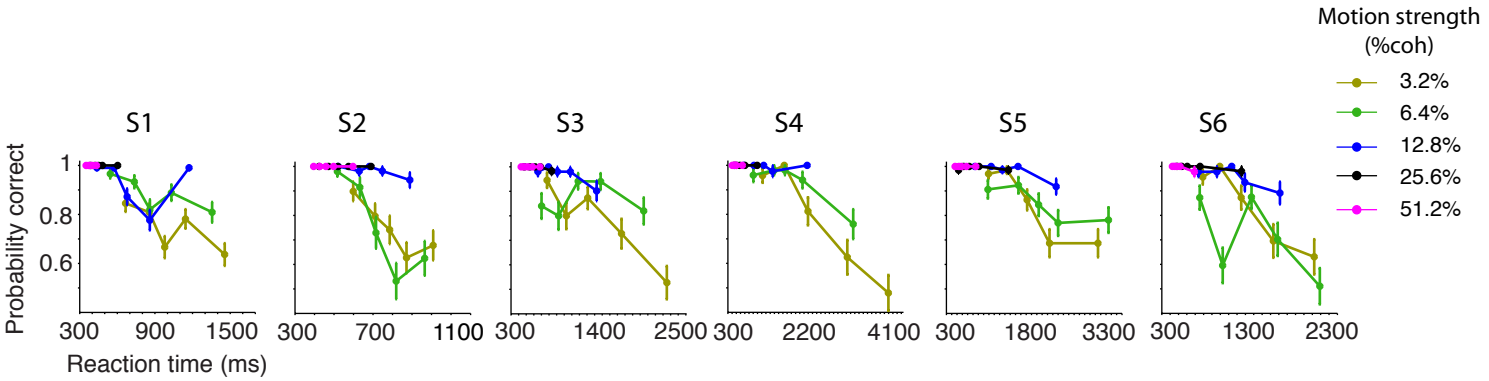

Figure S5, related to Fig. 6. An empirical relationship between RT and the probability of choosing correctly. Each panel shows the data from one subject (S1-S6). RTs are grouped in quintiles for each motion strength. Error bars are s.e.m.

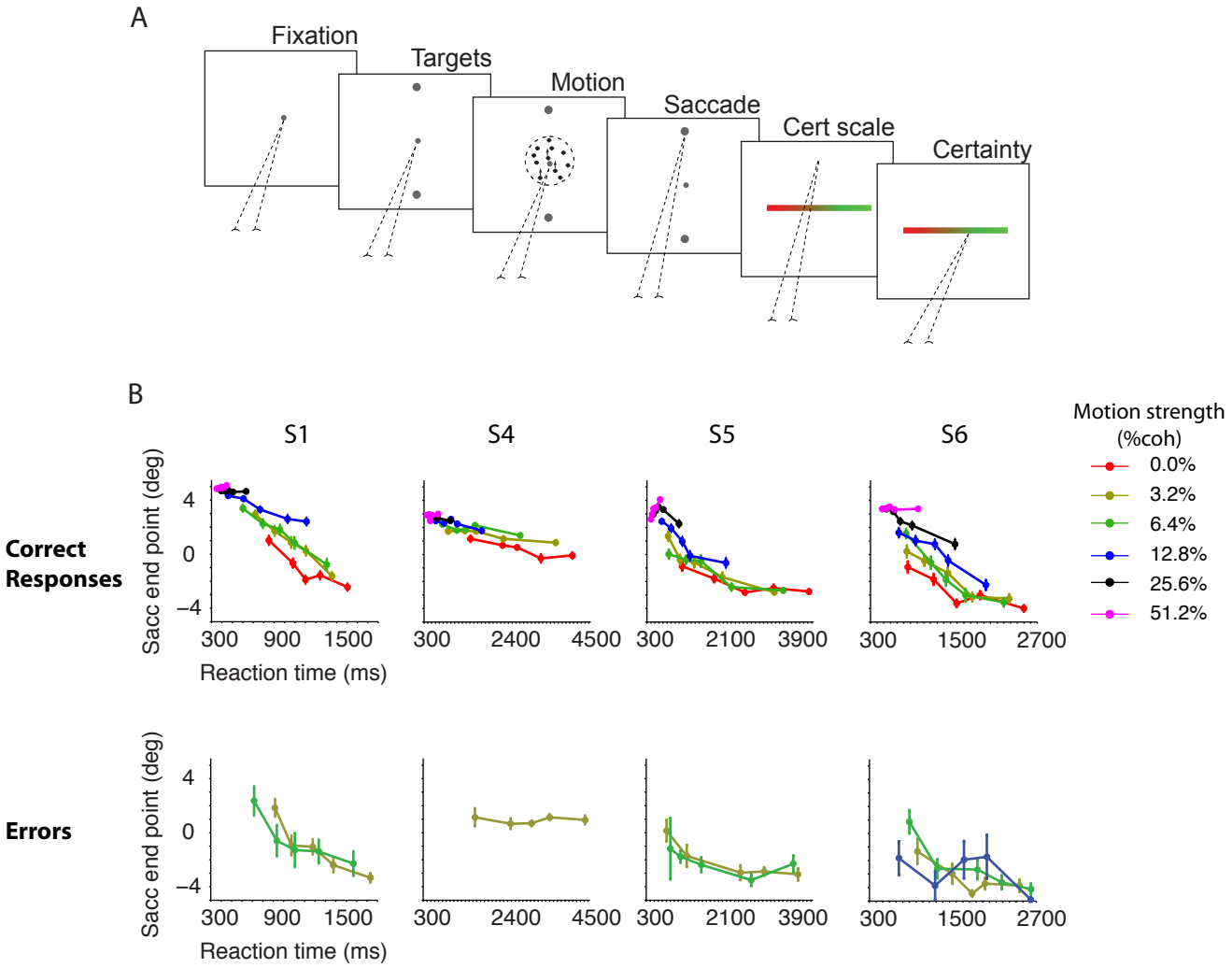

Figure S6, related to Fig. 2. Confirmation of the relationship between certainty, motion strength and RT when choice and certainty are reported sequentially. **A**. Task sequence. On each trial the subject viewed the motion stimulus and made a saccadic eye movement to report the perceived direction when ready. A bar-shaped certainty target then appeared on the screen, and the subject reported his certainty by making a second saccade. The landing point of the saccade along the horizontal target dimension indicated the degree of certainty, which ranged from guessing (red) to full confidence (green). **B**. Certainty varied with both RT and motion strength. Four subjects (S1, S4, S5, and S6) performed this modified task. All conventions are identical to Fig. 2.