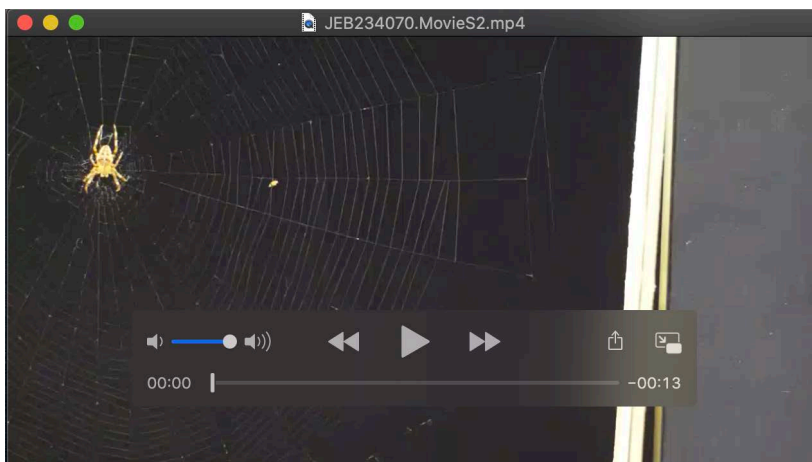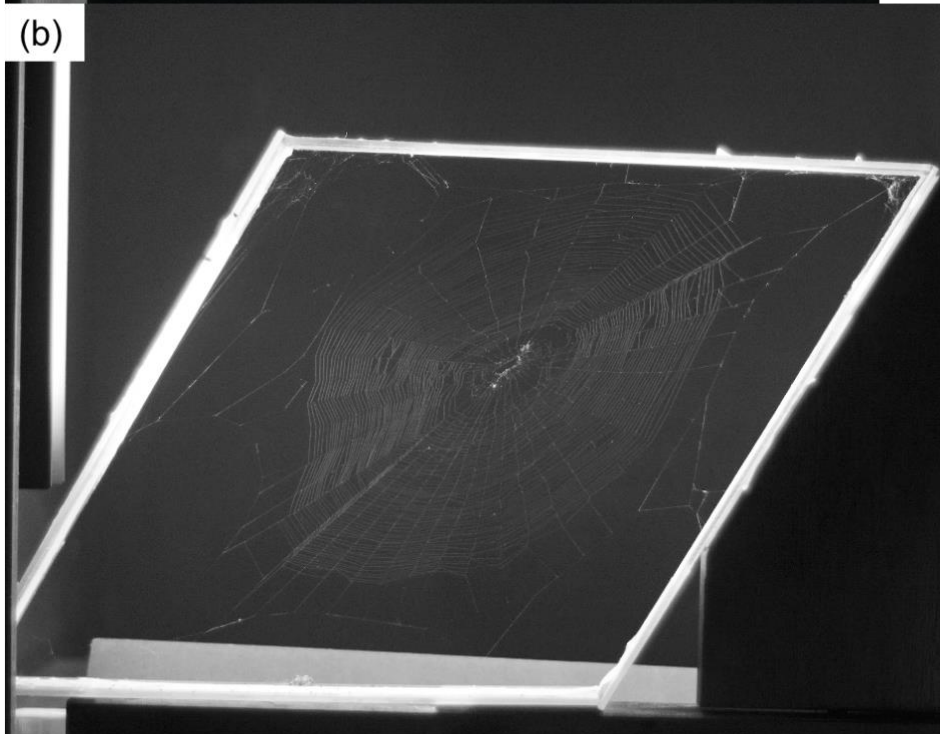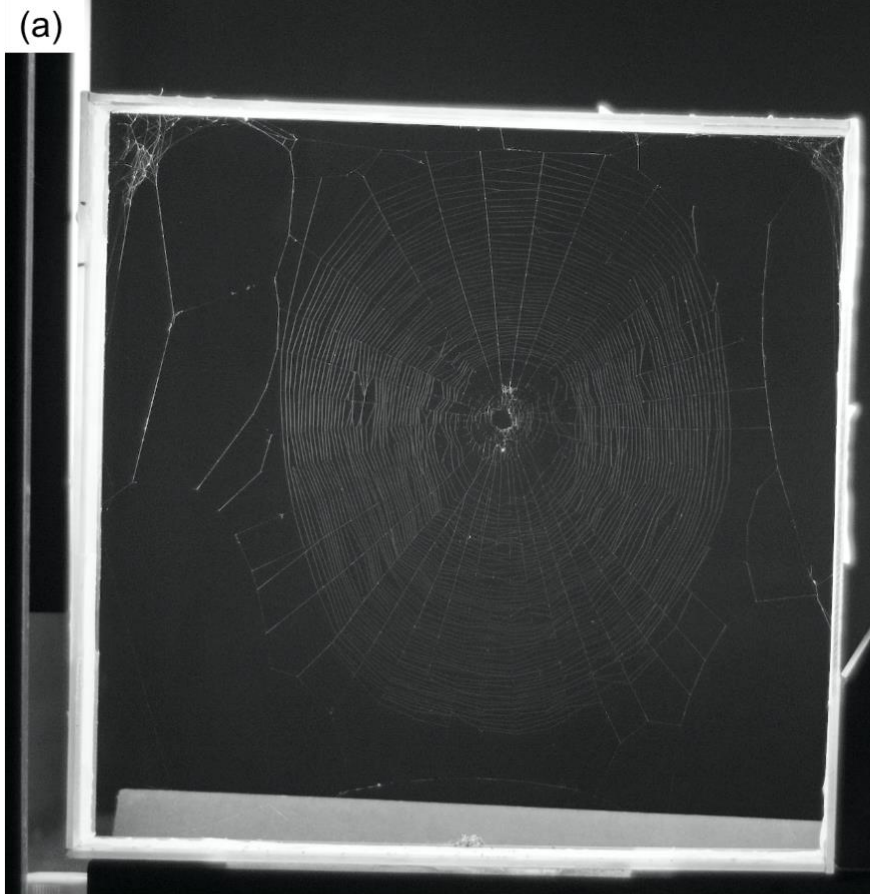**Movie 1. Wind-induced deformation of an *A. diadematus* web in nature.** Video captured at 180fps.
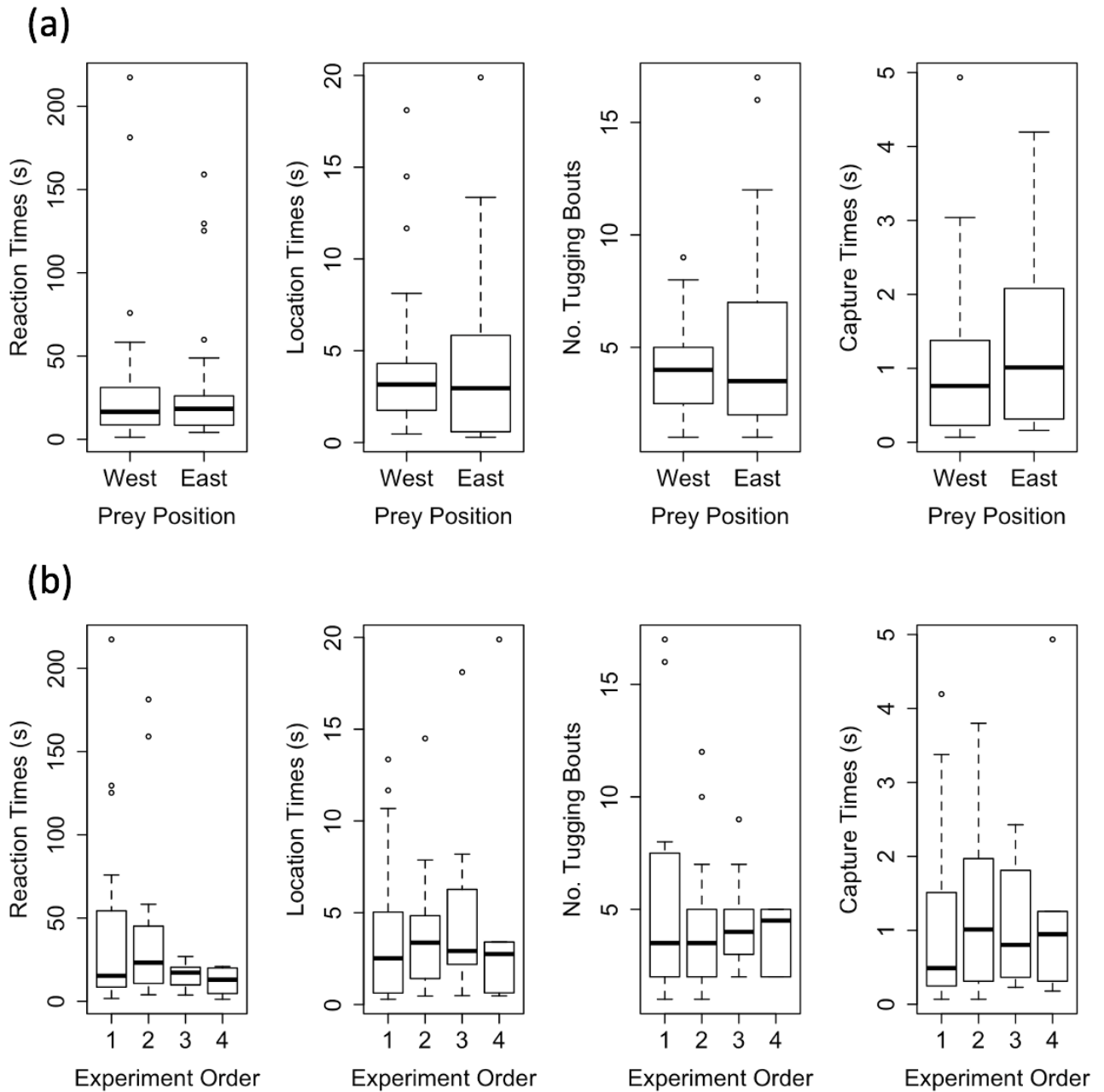

Movie 2. Example prey capture in a control web. Video captured at 180fps.

Fig. S1. An *A. diadematus* web in a flexible frame positioned in the control (a) and treatment (b) position.

Fig. S2. Box plots demonstrating the lack of an apparent effect of prey position relative to the hub (a), and lack of an apparent effect of experiment order (b), on each of the 4 measures.

(a)

(b)

Table S1. Effect of web shearing on log-transformed Location Times (LLT) and Capture Times (LCT) obtained from the models without and with random effect variables.

Fixed effect variable	Effect ±1SE (*P*-value), models 1*	Effect ±1SE (*P*-value), models 2**
LLT		
Control	ref	ref
Treatment	0.66 ± 0.30 (*P* = 0.04)	0.68 ± 0.30 (*P* = 0.30)
LCT		
Control	ref	ref
Treatment	0.92 ± 0.31 (*P* = 0.005)	0.97 ± 0.30 (*P* = 0.002)

SE = Standard Error, ref = reference group. *Models 1: Models including the frame state fixed factor**Models 2: Models including frame state as a fixed effect factor in addition to spider ID and run order fitted as random effects. Effect sizes were not back transformed as this was redundant for the required qualitative model comparisons.

Table S2. Samples contributed by each of the 11 spiders to measures a-d.

Spider ID	n	
	RT, LT, TB	CT
174	3	3
177	6	5
178	7	7
181	7	7
189	4	3
193	7	6
194	4	4
196	2	2
199	5	5
201	4	4
202	2	2

RT = Reaction Time (a), LT = Location Time (b), TB = Tugging Bouts (c), CT = Capture Time (d). Spider ID numbers refer to specific spiders in the Oxford Silk Group Lab.