

Influence of retraction speed on ‘mode of detachment’

Table 1 | Results of a repeated measures ANCOVA on arcsin-transformed data (n=16), testing the influence of retraction speed and relative contact area $A_{rel} = A/A_{max}$ on the pads’ aspect ratio, and directional peeling behaviour during detachment.

Aspect ratio (transverse width/distal-proximal length)				
Source of variance	df	Mean squares	F	p
A_{rel}	1	9.73E-005	0.215	0.65
Error	15	4.53E-004		
Retraction speed	1	4.469E-05	0.874	0.365
Error	15	5.113E-05		
Animal	15	3.62E-003		
Error (Within)	288	1.109E-05		
Lateral peel velocity / distal-proximal peel velocity				
Source of variance	df	Mean squares	F	p
A_{rel}	1	0.001775	0.323	0.578
Error	15	0.005504		
Retraction speed	1	0.0000573	0.119	0.735
Error	15	0.0004801		
Animal	15	0.01016		
Error (Within)	288	0.0002964		

Supplementary figure

Representative force-time data of a series of detachment measurements with different retraction speeds. The data were recorded with 1000Hz and filtered with a Butterworth-filter set at the resonance frequency of the 1D bending beam.

Supplementary videos

Representative video recording of a detachment of a single stick insect arolium at a retraction speed of 1 mm s^{-1} , recorded with 500 fps and played at 10fps. The first video shows the original recording, while the second video shows the result of the native particle analysis routines in imageJ after thresholding. See main manuscript for details.