

# **ELECTRONIC APPENDIX**

This is the Electronic Appendix to the article

Directionality theory: an empirical study of  
an entropic principle in life history evolution

by

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Electronic appendices are refereed with the text; however, no attempt is made  
to impose a uniform editorial style on the electronic appendices.

# Electronic Appendix

## Legends

Table 3: Demographic parameters: growth rate  $r$ , reproductive potential  $\phi$ , entropy rate  $H$ , average net reproduction rate  $E$ , entropy function  $S$ , generation time  $T$ , maximum life span  $L_{max}$  (years). o = herbs from disturbed habitats, f = forest herbs, t = trees, s = shrubs

Table 3a: Species with  $E < 0$

Table 3b: Species with  $E > 0$

Figure 5: Relation between  $E$  and  $S$ : forest herbs (f)

Figure 6: Relation between  $E$  and  $S$ : herbs from disturbed habitats (o)

Figure 7: Relation between  $E$  and  $S$ : shrubs (s)

Figure 8: Relation between  $E$  and  $S$ : trees (t)

Table 3: Demographic parameters: growth rate  $r$ , reproductive potential  $\phi$ , entropy rate  $H$ , average net reproduction rate  $E$ , entropy function  $S$ , generation time  $T$ , maximum lifespan  $L_{max}$  (years). o = herbs from disturbed habitats, f = forest herbs, t = trees, s = shrubs

Table 3a: Species with  $E < 0$

Species	Life form	$E$	$S$	$T$
Tolumnia variegata	f	-5.249	2.679	10.0
Chamaelirium luteum	f	-4.125	3.816	28.5
Narcissus pseudonarcissus	f	-3.102	2.538	7.2
Cypripedium acaule	f	-3.027	2.969	14.6
Panax quinquefolium	f	-2.541	3.033	13.0
Erythronium japonicum	f	-2.271	2.321	4.7
Cynoglossum virginianum	f	-2.025	2.293	5.9
Disporum sessile	f	-1.969	1.943	3.3
Calochortus pulchella	f	-1.958	2.716	8.5
Arisaema triphyllum	f	-1.822	2.631	5.8
Clintonia borealis	f	-1.770	2.410	5.0
Podophyllum peltatum	f	-1.742	2.368	5.3
Disporum smilacinum	f	-0.740	1.963	3.4
Calathea ovandensis	f	-0.136	1.785	3.8
Ranunculus repens	o	-7.496	1.593	5.5
Themeda triandra	o	-3.684	3.594	15.6
Calochortus obispoensis	o	-3.511	3.960	21.6
Heteropogon contortus	o	-3.282	2.935	9.3
Hieracium floribundum	o	-3.147	2.938	9.2
Setaria incrassata	o	-3.010	2.559	6.6
Pinguicula alpina	o	-2.899	3.388	16.1
Potentilla anserina	o	-2.819	2.019	4.5
Fritillaria meleagris	o	-2.809	2.861	8.8
Pedicularis furbishiae	o	-2.598	2.413	6.7
Pinguicula villosa	o	-2.286	2.222	6.1
Bothriochloa insculpta	o	-2.213	2.616	7.7
Scabiosa columbaria	o	-2.083	2.178	5.9
Pinguicula vulgaris	o	-2.067	3.156	13.4
Cleome droserifolia	o	-1.811	3.412	16.6
Aristida bipartita	o	-1.495	2.359	5.4
Calochortus tiburonensis	o	-1.424	3.212	12.3
Digitaria eriantha	o	-1.316	2.178	4.6
Danthonia sericea	o	-1.282	2.925	9.2
Ophrys sphegodes	o	-1.215	1.222	2.9
Andropogon semiberberis	o	-1.138	1.912	3.6
Gentiana pneumonanthe	o	-0.854	2.105	5.7
Plantago coronopus	o	-0.488	0.796	2.4
Anthyllis vulneraria	o	-0.145	1.099	2.7
Ranunculus acris	o	-0.122	0.987	2.5
Lindera benzoin	s	-3.704	3.979	24.6

Podococcus barteri	s	-3.309	3.430	19.0
Alnus incana	s	-3.566	2.912	12.9
Fumana procumbens	s	-2.707	2.716	9.8
Betula nana	s	-2.656	2.431	5.7
Cassia nemophila	s	-1.038	3.119	12.0
Araucaria hunsteinii	t	-7.342	5.007	120.0
Pinus palustris	t	-5.880	5.257	141.5
Psidium guajava	t	-7.087	5.061	112.0
Euterpe precatorea	t	-7.084	3.957	87.1
Rhopalostylis sapida	t	-4.551	5.239	112.2
Nothofagus fusca	t	-4.847	5.372	103.0
Pentaclethra macroloba	t	-4.703	4.607	93.5
Araucaria cunninghamii	t	-3.305	5.142	103.3
Astrocaryum mexicanum	t	-4.137	4.531	80.6
Vatica hainanensis	t	-4.084	3.909	38.5
Coccothrinax readii	t	-0.921	4.370	65.1
Cecropia obtusifolia	t	-3.205	3.142	18.0
Iriatea deltoidea	t	-1.536	3.880	30.4
Avicennia marina	t	-0.974	3.048	9.7

Table 3b: Species with  $E > 0$

Species	Life form	$E$	$S$	$T$
Calochortus albus	o	0.324	1.983	5.33
Armeria maritima	o	0.673	2.405	8.16
Petrophile pulchella	s	0.882	2.349	6.92
Banksia ericifolia	s	0.986	2.253	6.26
Calluna vulgaris	s	1.945	1.690	3.59
Euterpe edulis	t	1.132	3.144	18.7
Thrinax radiata	t	1.265	3.896	41

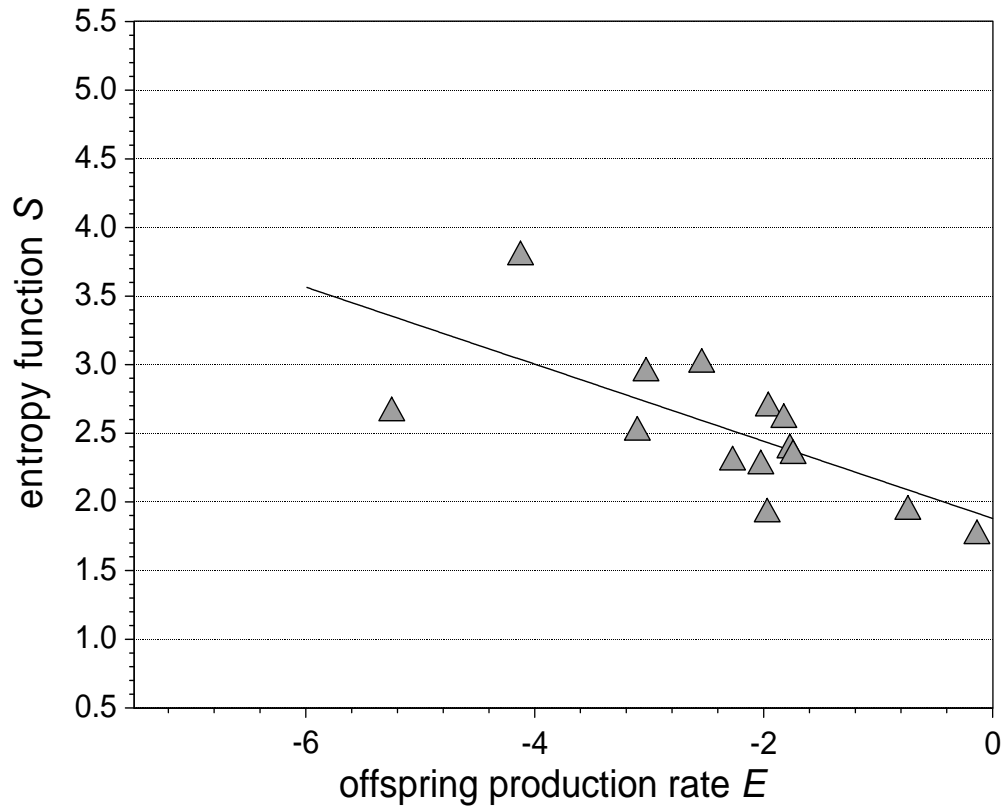


Figure 5: Relation between  $E$  and  $S$ : forest herbs (f)

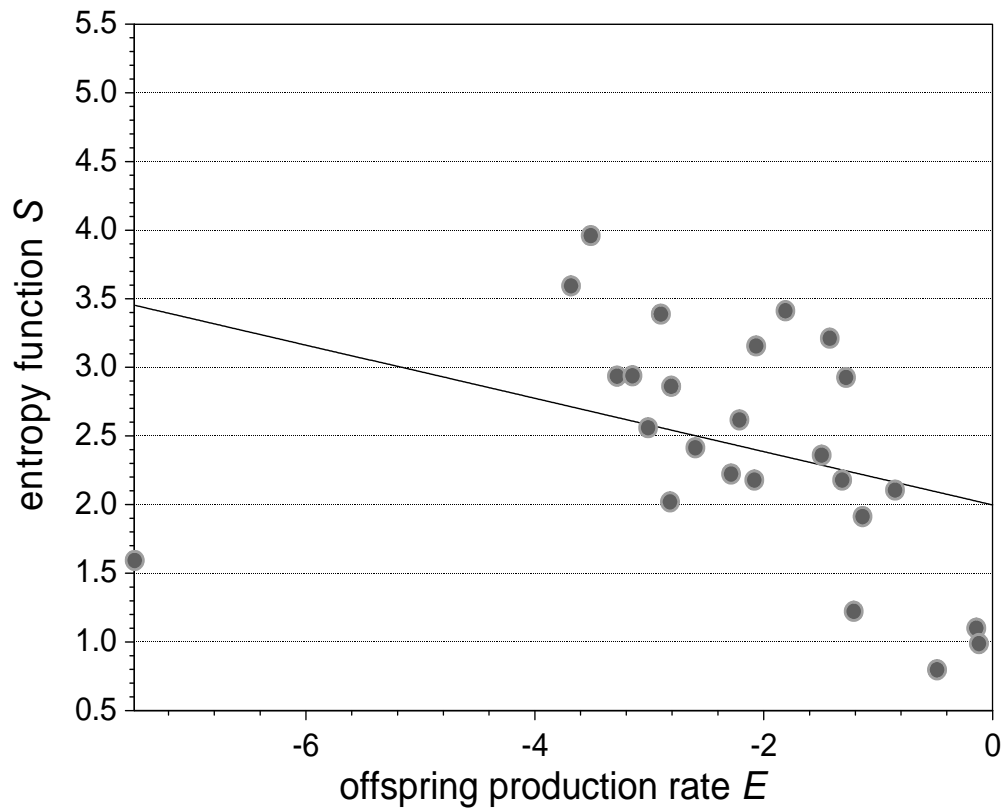


Figure 6: Relation between  $E$  and  $S$ : herbs from disturbed habitats (o)

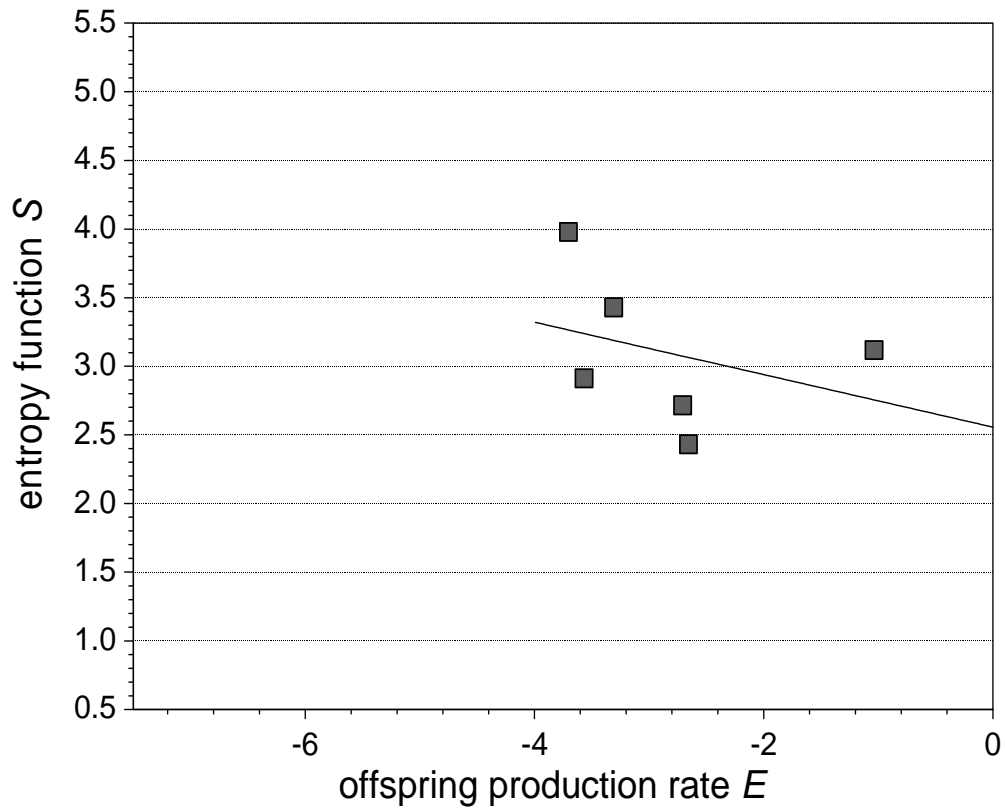


Figure 7: Relation between  $E$  and  $S$ : shrubs (s)

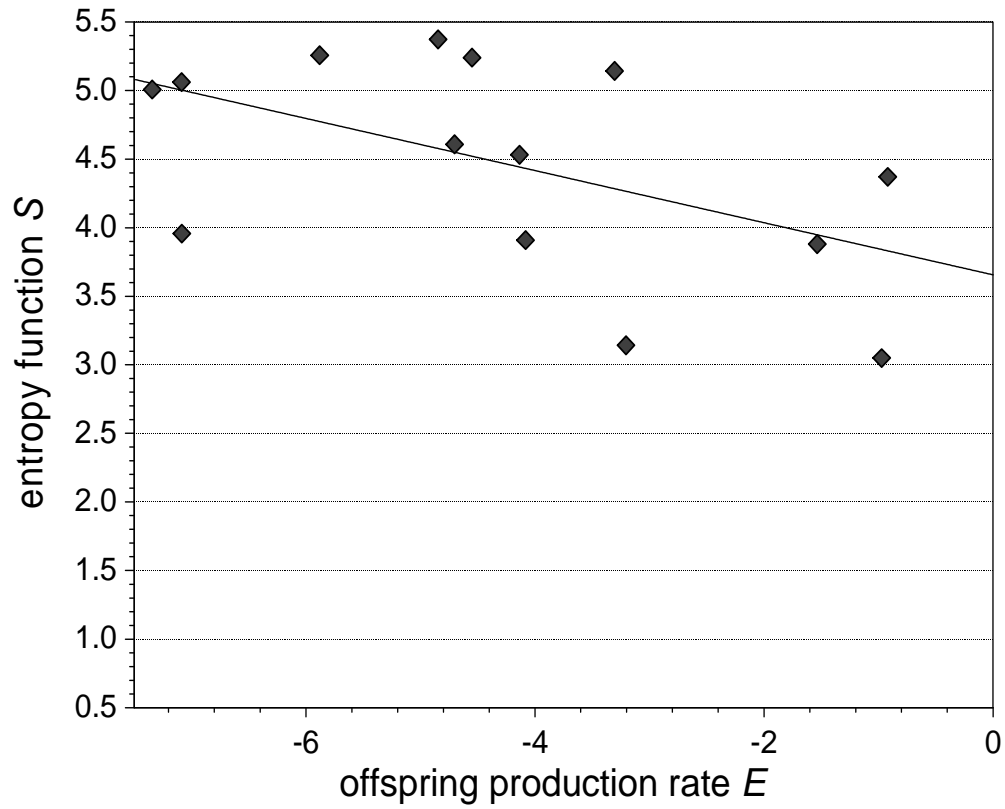


Figure 8: Relation between  $E$  and  $S$ : trees (t)