Article:
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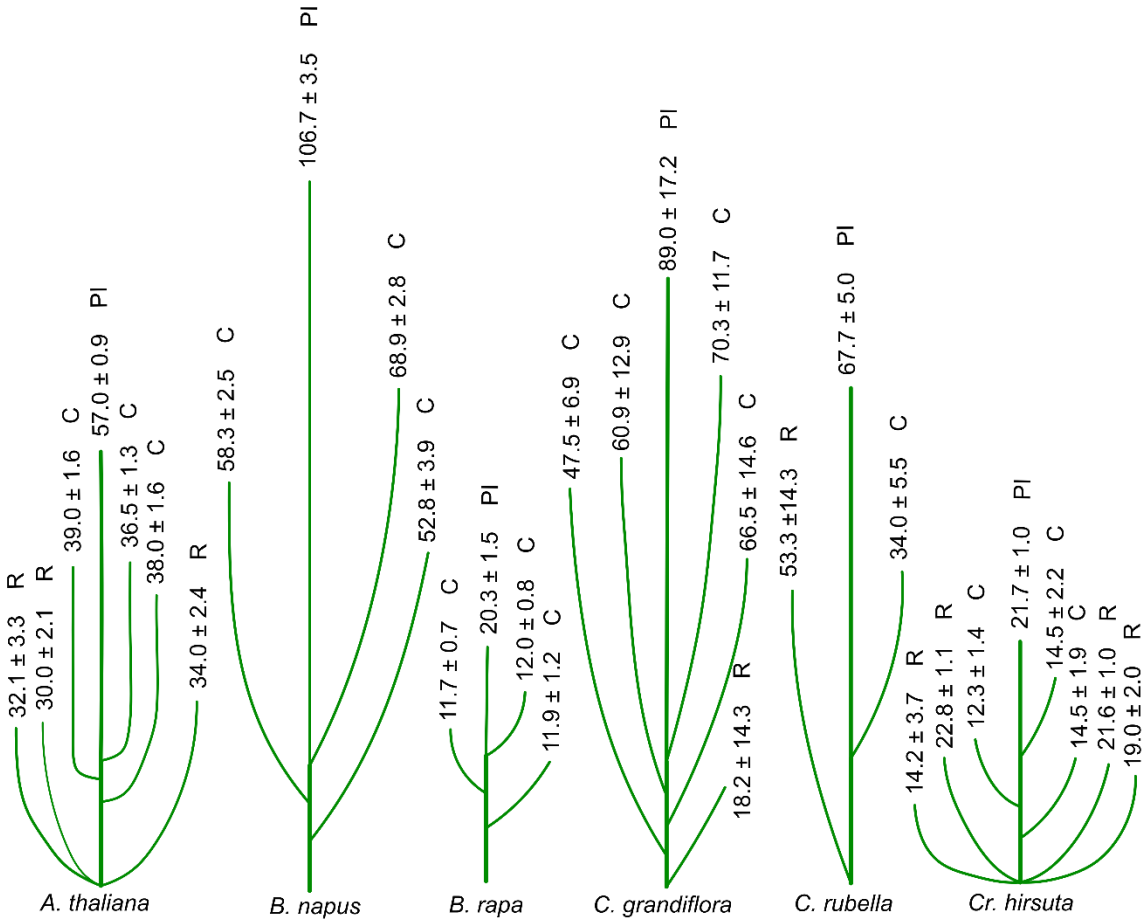

Figure S1: Reproductive architecture in Brassicaceae spp.

Diagram illustrating a) the mean number and position (cauline/rosette) of secondary inflorescences produced in 6 different Brassicaceae species, and b) the mean number of flowers produced on those secondary inflorescences and the primary inflorescence (PI). Arabidopsis typically produces an equal number of cauline and rosette secondary inflorescences. B. napus and B. rapa only produce cauline inflorescences. Cardamine produces a lower number of flowers than the other species examined, however these are supported on a large number of rosette inflorescences which often produce almost as many flowers as the primary inflorescence, indicating the plant has multiple equally dominant axes. C. rubella typically produces similar numbers of cauline and rosette inflorescences, while C. grandiflora is obligately out-breeding and as such shows a high degree of variation in reproductive architecture between individual plants. It produces very few rosette inflorescences, and being self-incompatible, does not stop flowering unless manually cross-pollinated (which was not done in our experiments). The height of each inflorescence (from its junction with the PI) indicates the mean number of flowers per inflorescence for each species. PI height above the

uppermost cauline inflorescence indicates the mean number of flowers produced on the PI. Values at branch tips show the mean flower number per inflorescence ± s.e.m. Only PI and secondary inflorescence classes are shown; higher order inflorescences have been omitted for clarity, but are described in Table S1. Letters above each inflorescence indicate the inflorescence class; PI = primary inflorescence C = cauline secondary inflorescence, R = rosette secondary inflorescence. Values for each species are based on means from one experiment; Arabidopsis thaliana (n=8 independent samples), Brassica rapa (n=31 independent samples), B. napus (n=24 independent samples), Capsella grandiflora (n=8 independent samples), C. rubella (n=9 independent samples) and Cardamine hirsuta (n=6 independent samples).

Species	Total flowers	Primary flowers	Secondary flowers	Tertiary flowers	Quaternary flowers
A. thaliana	647.6 ± 25.1	57.0 ± 0.9	314.1 ± 8.7	276.5 ± 22.2	0
B. napus	350.0 ± 21.0	106.2 ± 3.6	175.9 ± 11.2	67.9 ± 11.6	0
B. rapa	92.1 ± 7.4	20.4 ± 1.5	38.5 ± 3.0	33.3 ± 4.2	0
C. grandiflora	454.8 ± 98.4	89.0 ± 17.2	243.8 ± 45.2	119.1 ± 44.7	2.9 ± 1.8
C. rubella	225.1 ± 45.7	67.7 ± 5.0	95.9 ± 17.6	55.3 ± 25.8	6.2 ± 4.7
Cr. hirsuta	246.7 ± 38.3	21.7 ± 1.0	128.3 ± 18.9	89.7 ± 23.8	7.0 ± 1.7

Table S1: Floral distribution in Brassicaceae spp.

Table showing floral numbers from 6 examined Brassicaceae species. Values displayed show the grouped total number of flowers for each inflorescence class (primary, secondary (cauline and rosette), tertiary and quaternary). No plants examined displayed any branching orders higher than quaternary. Values for each species are means ± s.e.m. from one experiment per species; Arabidopsis thaliana (n=8 independent samples), Brassica rapa (n=31 independent samples), B. napus (n=24 independent samples), Capsella grandiflora (n=8 independent samples), C. rubella (n=9 independent samples) and Cardamine hirsuta (n=6 independent samples).

Treatment	Total flowers	Primary flowers	Secondary flowers	Tertiary flowers	% Secondary flowers
Untreated	398.4 ± 19.0	49.0 ± 2.2	205.2 ± 11.3	144.2 ± 18.3	51.5
50% upper	339.7 ± 23.2	60.9 ± 2.5	167.6 ± 10.8	111.2 ± 14.4	49.3
50% lower	357.3 ± 43.1	60.6 ± 2.2	159.6 ± 20.6	137.2 ± 24.7	44.7
75% lower	319.9 ± 34.3	63.1 ± 3.2	121.0 ± 3.2	135.8 ± 21.2	37.8*

Table S2: Effect of physical perturbation of floral distribution

Table showing mean numbers of flowers produced on each inflorescence class (primary, secondary, tertiary) under surgical treatments. Entire secondary inflorescences were removed from the plant ~13 days after flowering. Three treatments were performed alongside an untreated control (n=19 independent samples): the upper 50% of secondary inflorescences were removed (50% upper) (n=9 independent samples), or the lower 50% of secondary inflorescences (50% lower) (n=9 independent samples), or the lower 75% of secondary inflorescences (75% lower) (n=8 independent samples). Values displayed are the means of multiple plants ± s.e.m, (*) indicates treatments with a significantly lower percentage of flowers on secondary inflorescences than in the untreated control (95% confidence interval; F=4.622; d.f.=3; P=0.005), ANOVA+Tukey HSD.