Table S5 *y w nod^a* **cytological data.** All 20 possible configurations are listed, with the number (N) of each observed, and the expected number of NDJ events each configuration would produce. For each oocyte, direction of the poles was determined by the paired *2L-3L* probe signals, and the homologs associated with each pole were identified. The columns on the right are the proportion of normal, nullo or diplo progeny expected from that class, assuming the two poles are equally likely to become the pronucleus and that all chromosomes not touching the main autosomal mass will be lost. These proportions are multiplied by N for each row to predict the number of nullo and diplo *X* and *4* events (in parentheses). The numbers of events are then totaled, yielding a prediction of 3% *X* NDJ and 88% *4* NDJ. Nullo progeny accounted for 75% of *X* and 98% of *4* NDJ events. As a control, *yw / yw nod^a* heterozygous females were also assayed, with 200/200 oocytes showing proper *X4⇔X4* coorientation.

Class	N	Normal X	Nullo X	Diplo X	Normal 4	Nullo 4	Diplo 4
Ø ⇔ Ø	2	0	1 (2)	0	0	1 (2)	0
Ø ⇔ X	0	0.5	0.5	0	0	1	0
Ø ⇔ 4	0	0	1	0	0.5	0.5	0
Ø ⇔ XX	3	0	0.5 (1.5)	0.5 (1.5)	0	1 (3)	0
X ⇔ X	143	1 (143)	0	0	0	1 (143)	0
Ø ⇔ 44	0	0	1	0	0	0.5	0.5
4 ⇔ 4	0	0	1	0	1	0	0
Ø ⇔ X4	2	0.5 (1)	0.5 (1)	0	0.5 (1)	0.5 (1)	0
4 ⇔ X	0	0.5	0.5	0	0.5	0.5	0
Ø ⇔ XX4	0	0	0.5	0.5	0.5	0.5	0
4 ⇔ XX	0	0	0.5	0.5	0.5	0.5	0
X ⇔ X4	39	1 (39)	0	0	0.5 (19.5)	0.5 (19.5)	0
Ø ⇔ X44	0	0.5	0.5	0	0	0.5	0.5
X ⇔ 44	0	0.5	0.5	0	0	0.5	0.5
4 ⇔ X4	0	0.5	0.5	0	1	0	0
X ⇔ X44	7	1 (7)	0	0	0	0.5 (3.5)	0.5 (3.5)
4 ⇔ XX4	0	0	0.5	0.5	1	0	0
Ø ⇔ XX44	0	0	0.5	0.5	0	0.5	0.5
44 ⇔ XX	0	0	0.5	0.5	0	0.5	0.5
X4 ⇔ X4	4	1 (4)	0	0	1 (4)	0	0
Total	**200**	**194**	**4.5**	**1.5**	**24.5**	**172**	**3.5**

S. C. Gillies *et al.*