Logic – Do the models – support the evolution of the conserved aspects of heterochiasmy identified in this study i) typical recombination landscape, ii) chromatin compaction and interferences differences and iii) difference in the variance across cells.

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| --- | --- | --- | --- | --- |
| **Model name** | **References** | **Typical Landscape** | **Chromatin compaction and interference strength** | **Within mouse variance for mlh1** |
| Gamete selection  (reduction principle / stronger selection reduces RR) | Lenormand and Duthiel 2005,  Trivers 1988 | ?  (not sure how to distinguish from SACE predictions) | Yes  (stronger interference results in fewer Cos) | Yes  (strong selection in males reduces between cell variance) |
| S.A.C.E.  (how is this model different than reduction) | Sardell Kirkpatrick 2019 | Yes  (male large blocks result with strong telomere bias) | Yes  (stronger interference results in larger blocks for males) | Maybe  (strong selection in males reduces between cell variance) |
| Two locus modifier  (protection against meiotic drive systems) | Brandvain Coop 2012 | Yes  Females generally higher RR and COs closer to centromeres. | Yes  (prediction of weaker interference in females) | Yes  More variance between oocytes to reduce effectiveness of centromere drive. |
| Spindle differences (centrosome),  SAC stronger in males:  (directional selection)  Leaky egg SAC:  (relaxed selection) | So et al 2019, Ross and Normark 2015,  Schuh Ellenburg 2007 | Yes  Telomere position maximizes sister cohesion with tension. | Yes  Weak interference makes more variance across landscape. | Yes  Relaxed selection on SAC would increases variance across cells. |