

Fitness values and defining features of the transitive and non-transitive models

Transitive Model

	vs. ancestor	vs. 5K clone	vs. 10K clone	vs. 15K clone	vs. 20K clone
Ancestor	1.0000	0.6757	0.6173	0.5917	0.5814
5K sample	1.4800	1.0000	0.9136	0.8757	0.8605
10K sample	1.6200	1.0946	1.0000	0.9586	0.9419
15K sample	1.6900	1.1419	1.0432	1.0000	0.9826
20K sample	1.7200	1.1622	1.0617	1.0178	1.0000

Non-Transitive Model

	vs. ancestor	vs. 5K clone	vs. 10K clone	vs. 15K clone	vs. 20K clone
Ancestor	1.0000	0.6757	0.6173	0.5917	0.5814
5K sample	1.4800	1.0000	0.6757	0.6173	0.5917
10K sample	1.6200	1.4800	1.0000	0.6757	0.6173
15K sample	1.6900	1.6200	1.4800	1.0000	0.6757
20K sample	1.7200	1.6900	1.6200	1.4800	1.0000

Features that are shared by the two models:

1. The models have identical first columns, which exhibit the decelerating fitness trajectory relative to the ancestor. [Values are the previously measured means of 12 populations.]
2. All of the diagonal elements are unity.
3. Each $W(i:i) = 1 / W(j:i)$. [However, the actual values differ owing to the distinguishing features below.]

Features that distinguish the two models:

4. In the transitive model, $W(k:j) = W(k:i) / W(j:i)$ for all i, j, k .
5. In the non-transitive model, the elements in the same off-diagonal are equal, such that $W(j:i) = W(j-1:i-1)$ for i, j both > 1 .

From: De Visser and Lenski, 2002, *BMC Evolutionary Biology*.