

Table S1. The list of all types of social and genetic relationships between offspring and parents.

Offspring			Social and genetic mother		Sire		Social father	
Type #	Abbreviation	Description	Abbreviation	Description	Abbreviation	Description	Abbreviation	Description
1	WPO	within-pair offspring	$F_{EPY\ 0}$	not obtained EPP, EPY-neutral, mostly monogamous	$M_{EPY\ 0}$	did not gain EPP, and did not lose paternity in their own nest, EPY-neutral, mostly monogamous	$M_{EPY\ 0}$	did not gain EPP, and did not lose paternity in their own nest, EPY-neutral, mostly monogamous
2	Mat HSib of EPO	maternal (within-pair) half-siblings of extra-pair offspring	F_{EPY+}	obtained EPP, EPY-positive	M_{EPY-}	lost paternity in their own nest, but did not gain EPP elsewhere, EPY-negative	M_{EPY-}	lost paternity in their own nest, but did not gain EPP elsewhere, EPY-negative
3	EPO	extra-pair offspring	F_{EPY+}	obtained EPP, EPY-positive	M_{EPY+}	gained EPP, but could have also lost paternity in their own nest, EPY-positive	M_{EPY-}	lost paternity in their own nest, but did not gain EPP elsewhere, EPY-negative
4	Pat HSib of EPO	paternal (within-pair) half-siblings of extra-pair offspring	F_{EPY-}	breeding with EPY-positive males	M_{EPY+}	gained EPP, but could have also lost paternity in their own nest, EPY-positive	M_{EPY+}	gained EPP, but could have also lost paternity in their own nest, EPY-positive