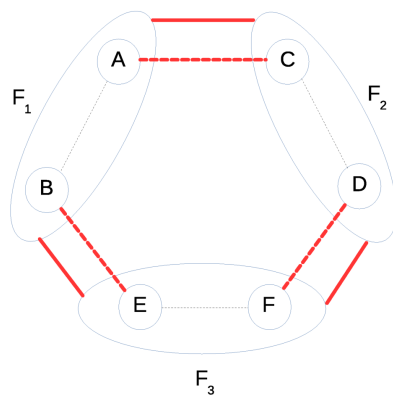
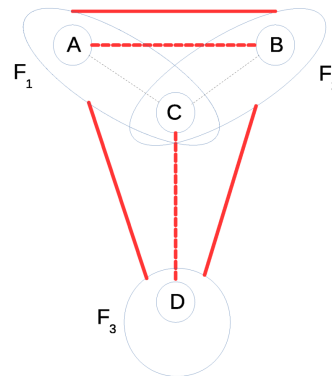


(a) Transitivity



(b) Links at multiple generations



Additional file 3: Possible types of triangles present in the network of families. In the above diagram,  $F_1$ ,  $F_2$  and  $F_3$  denote families, and A, B, C, D, E and F denote individuals. Two individuals are joined by a thin dashed line when they belong to the same family. A thick dashed line between a pair of individuals belonging to different families indicate male-female partners in parental unions. The thick solid lines indicate connections between families as a result of the parental unions. In cases of both (a) and (b),  $F_1$ ,  $F_2$  and  $F_3$  form closed triangles, although nature of the triangles are different. (a) Transitivity: A possible example is the following. The individuals A and B are brothers. A marries C, while B marries E. C and D are sisters, while E (female) and F (male) are cousins. F and D get married. The triangle formed by the families ( $F_1, F_2, F_3$ ) is transitive because each link in the network would uniquely correspond to a marital relationship (and also result in one or more offspring, for consideration in our study). (b) Links at multiple generations: This kind of triangles occurs when an offspring becomes a parent. For example, A (male) and B (female) get married and C is born. By definition, C belongs to both the  $F_1$  (paternal family) and  $F_2$  (maternal family). C gets married to D from family  $F_3$ . In this case, both links ( $F_1, F_3$ ) and ( $F_2, F_3$ ) result from the link between C and D.