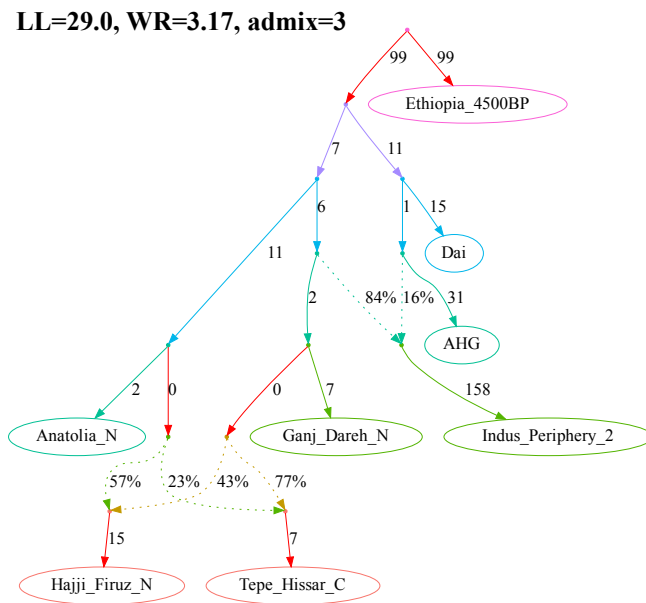


Figure S5

**Figure S5.** Published admixture graph from Shinde *et al.* (2019) and alternative graphs found with *findGraphs* (8 populations, 3 admixture events) relying on the original set of SNPs, original group composition, and original (incorrect) algorithm for calculating  $f$ -statistics. Model parameters (graph edges) that were inferred to be unidentifiable are plotted in red.

**a**, published model; the original set of SNPs and individuals, and the original algorithm for calculating  $f_3$ -statistics was used (470,389 variable site with no missing data at the group level available)



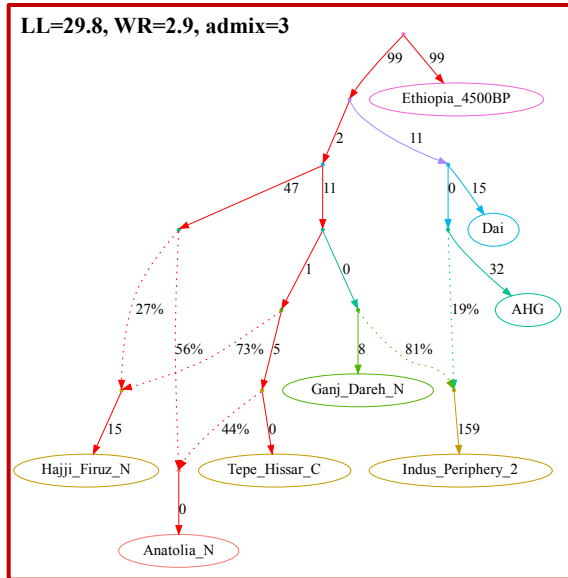
The claim by Shinde et al. 2019 relying on the admixture graph:

Primary ancestry in the Indus Periphery group forms the deepest branch in the Iranian Neolithic clade composed of the Indus Periphery, Ganj Dareh Neolithic, Hajji Firuz Chalcolithic and Tepe Hissar Chalcolithic groups.

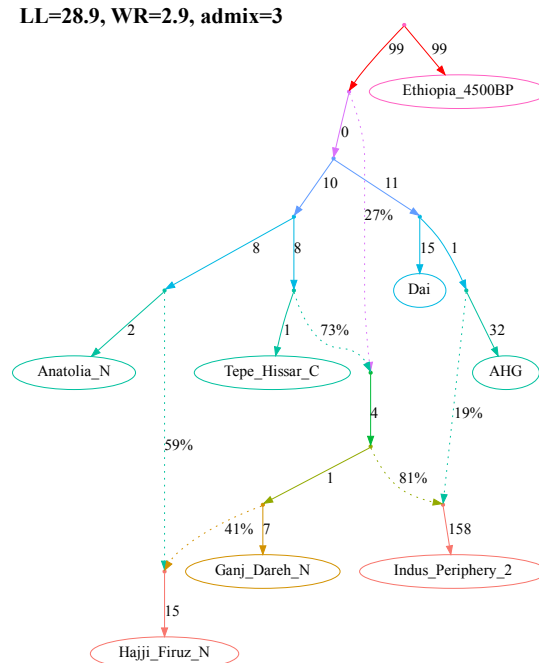
Figure S5

**b**, selected alternative models fitting significantly better (graphs framed in blue), nominally better (graphs without frames), or not significantly worse (graphs framed in red) than the published one

Indus Periphery is not the deepest branch in the Iranian Neolithic clade

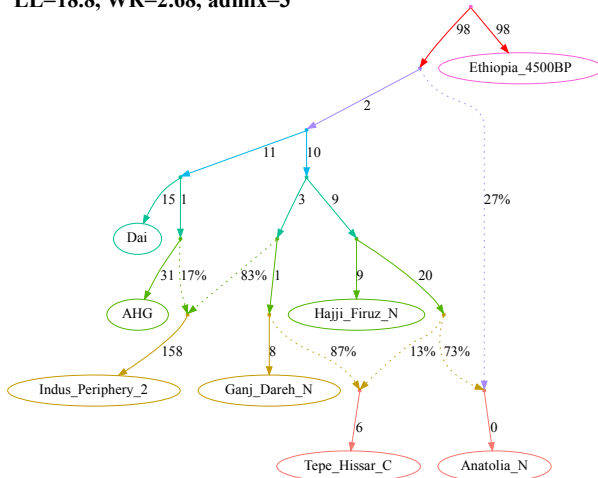


Indus Periphery is not the deepest branch in the Iranian Neolithic clade



Indus Periphery is not the deepest branch in the Iranian Neolithic clade  
Indus Periphery is not the deepest branch in the Iranian Neolithic clade

**LL=18.8, WR=2.68, admix=3**



**LL=32.2, WR=3.16, admix=3**

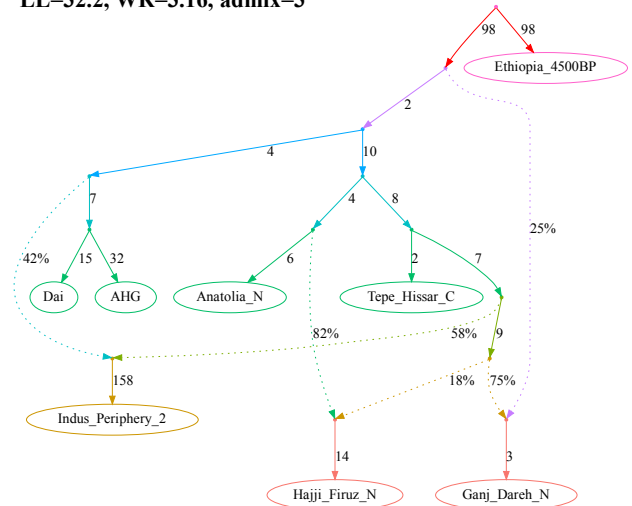
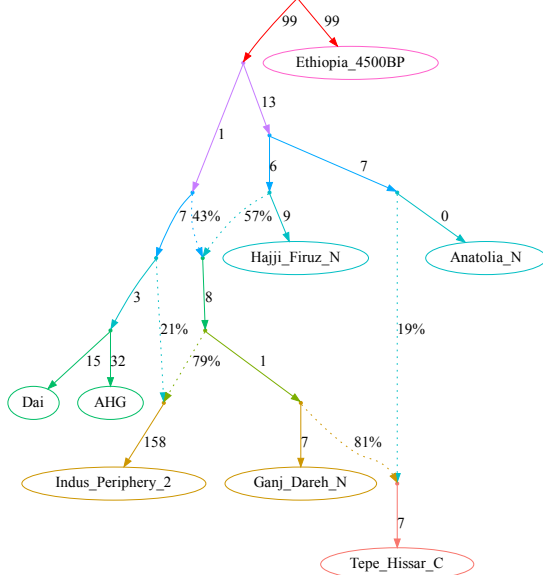


Figure S5

**c**, selected alternative models fitting significantly better (graphs framed in blue), nominally better (graphs without frames), or not significantly worse (graphs framed in red) than the published one

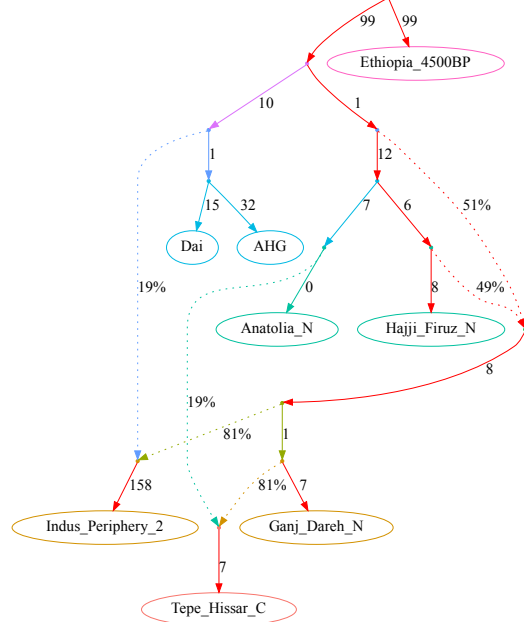
Indus Periphery is not the deepest branch in the Iranian Neolithic clade

LL=25.8, WR=3.01, admix=3



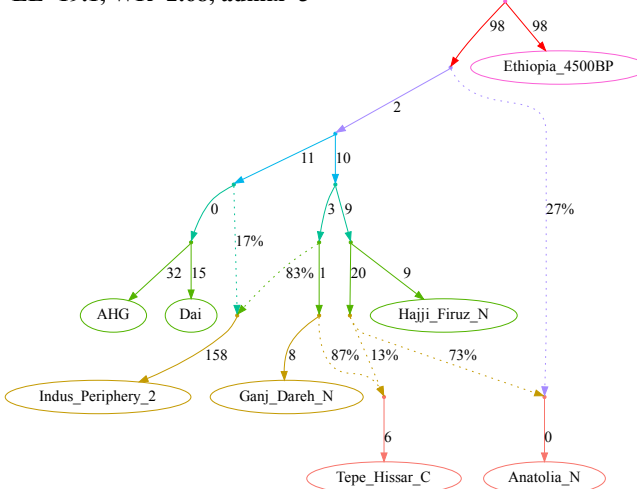
Indus Periphery is not the deepest branch in the Iranian Neolithic clade

LL=30.6, WR=2.9, admix=3



Indus Periphery is not the deepest branch in the Iranian Neolithic clade

LL=19.1, WR=2.68, admix=3



Indus Periphery is not the deepest branch in the Iranian Neolithic clade

LL=30.2, WR=3.83, admix=3

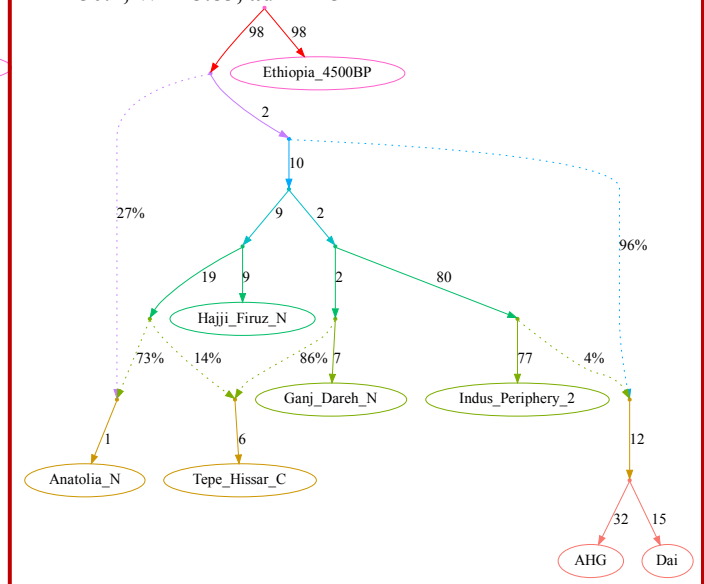
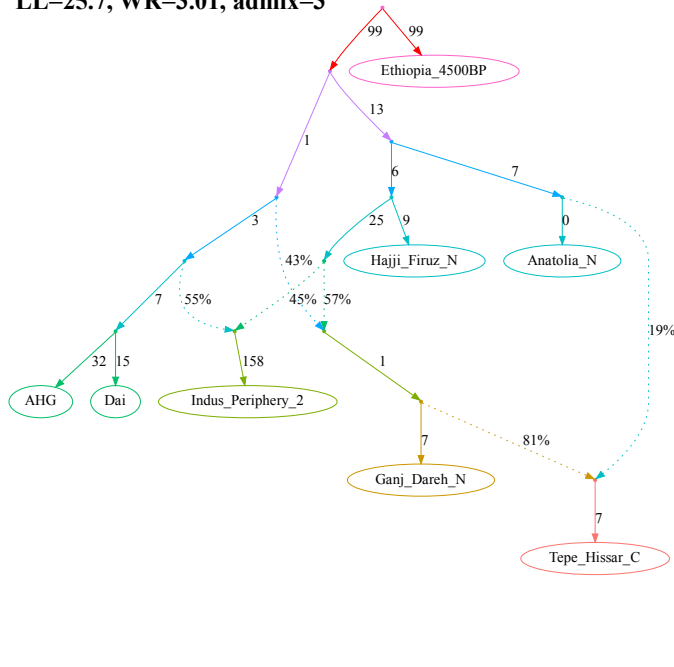


Figure S5

**d**, selected alternative models fitting significantly better (graphs framed in blue), nominally better (graphs without frames), or not significantly worse (graphs framed in red) than the published one

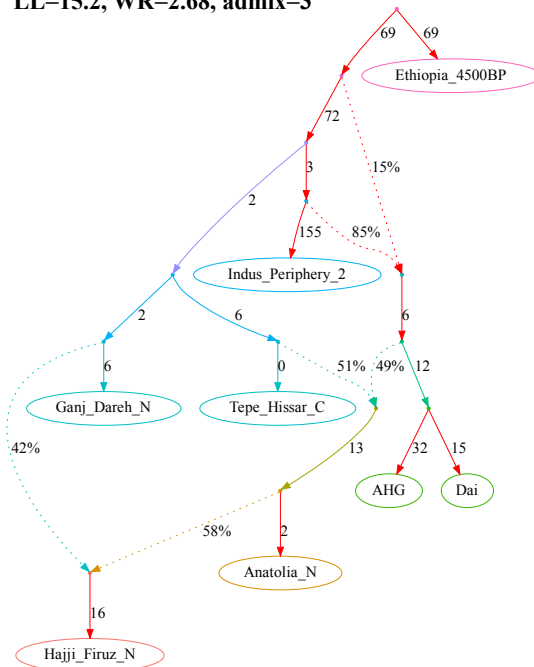
Primary ancestry in Indus Periphery is a basal Asian branch

**LL=25.7, WR=3.01, admix=3**



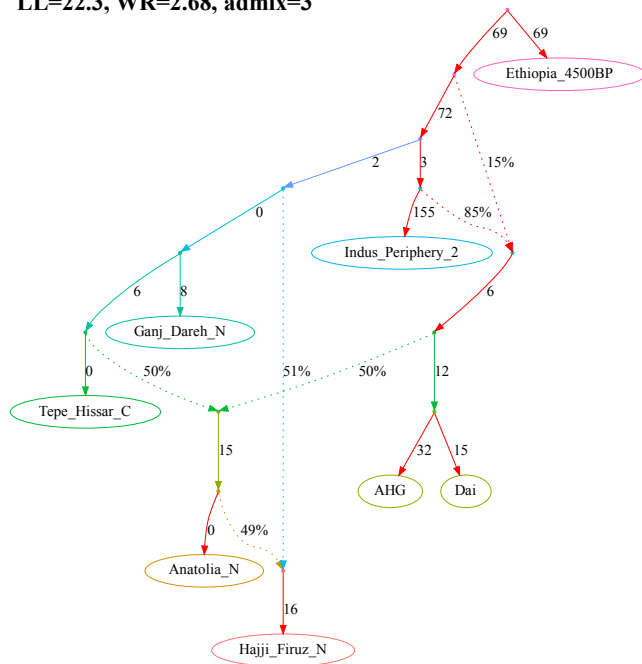
Primary ancestry in Indus Periphery is a basal Asian branch

**LL=15.2, WR=2.68, admix=3**



Primary ancestry in Indus Periphery is a basal Asian branch

**LL=22.3, WR=2.68, admix=3**



Primary ancestry in Indus Periphery is a basal West Eurasian branch

**LL=12.4, WR=2.68, admix=3**

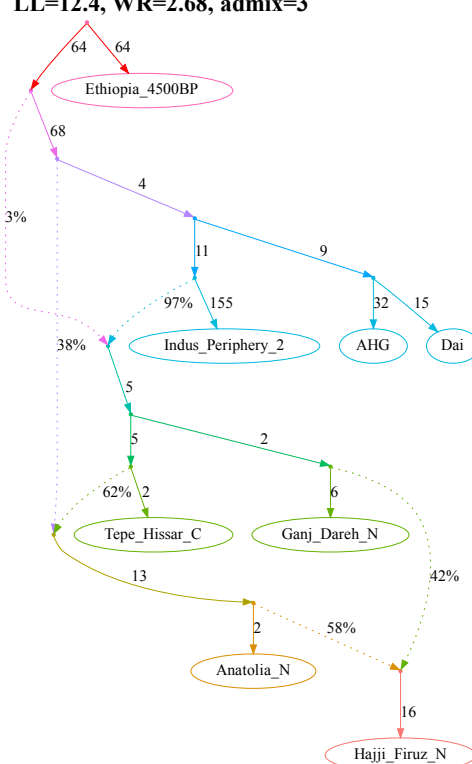
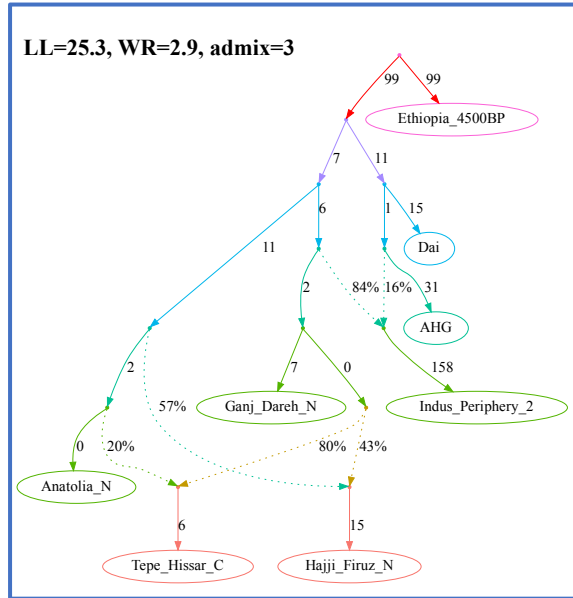


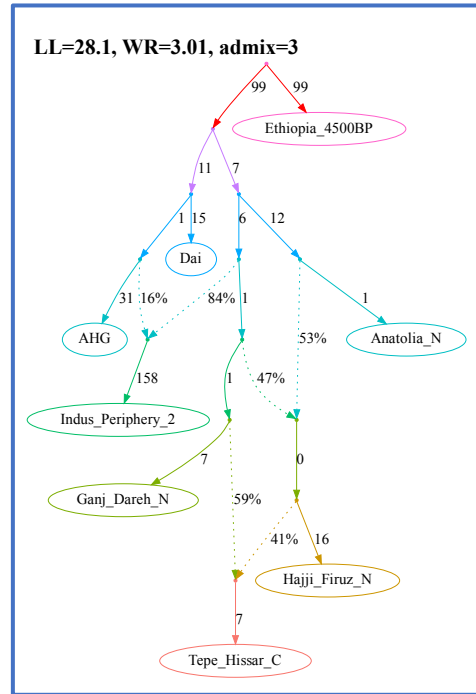
Figure S5

**e**, selected alternative models fitting significantly better (graphs framed in blue), nominally better (graphs without frames), or not significantly worse (graphs framed in red) than the published one

Indus Periphery is the deepest branch in the Iranian Neolithic clade

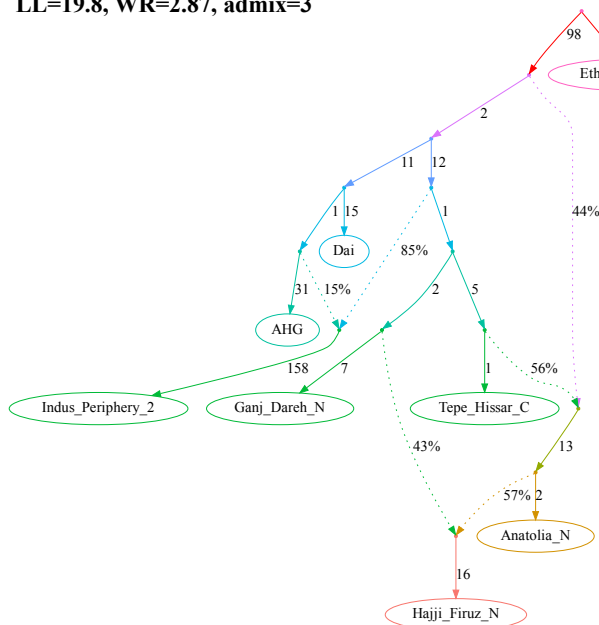


Indus Periphery is the deepest branch in the Iranian Neolithic clade



Indus Periphery is the deepest branch in the Iranian Neolithic clade

**LL=19.8, WR=2.87, admix=3**



Indus Periphery is the deepest branch in the Iranian Neolithic clade

**LL=24.8, WR=2.68, admix=3**

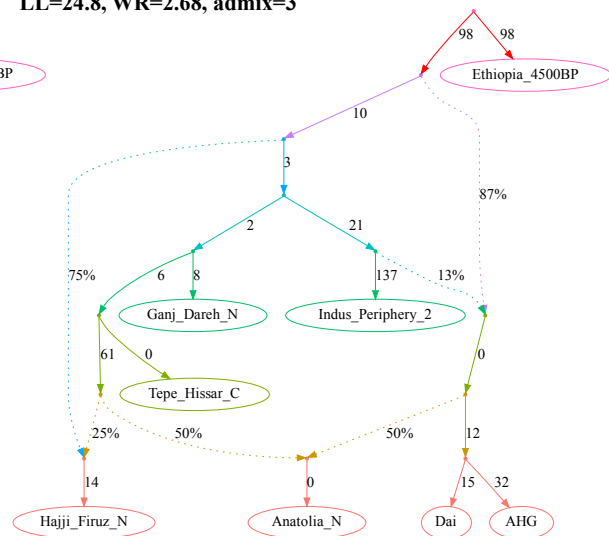


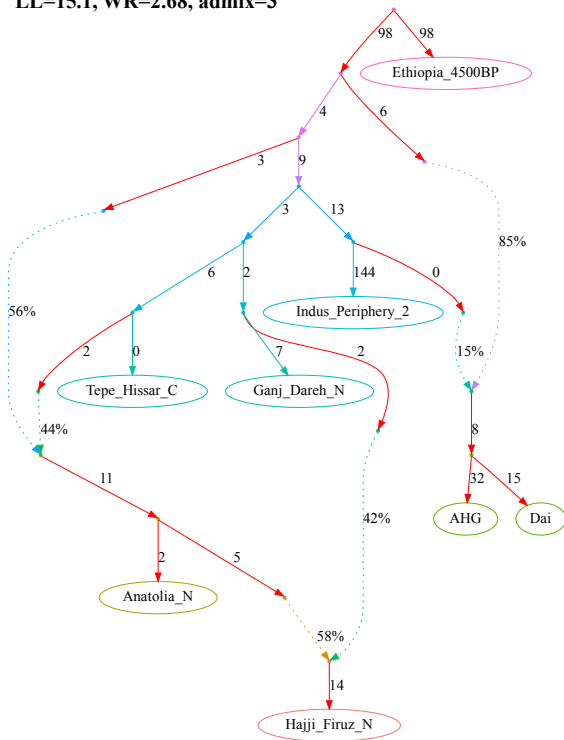
Figure S5

**f**, selected alternative models fitting significantly better (graphs framed in blue), nominally better (graphs without frames), or not significantly worse (graphs framed in red) than the published one

Indus Periphery is the deepest branch in the Iranian Neolithic clade

Indus Periphery is the deepest branch in the Iranian Neolithic clade

LL=15.1, WR=2.68, admix=3



LL=23.6, WR=3.12, admix=3

