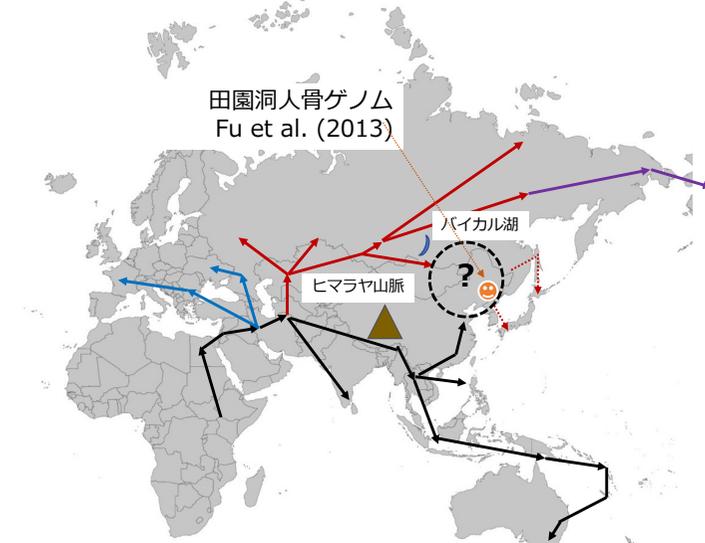


# 古代ゲノムから見た日本列島の現生人類

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## ホモ・サピエンスのユーラシア大陸東端への拡散



Kaifu, Izuho, & Goebel (2015) Modified

## 現代人ゲノムは南回りルートのみを示す

### Mapping Human Genetic Diversity in Asia

The HUGO Pan-Asian SNP Consortium\*

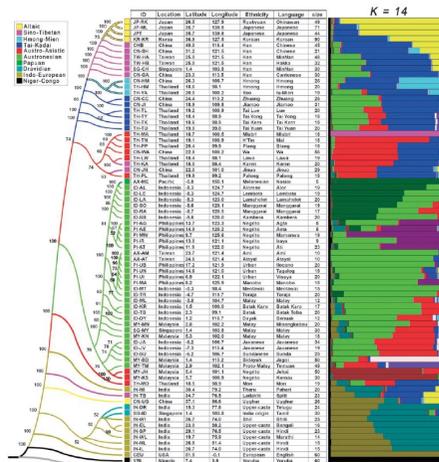
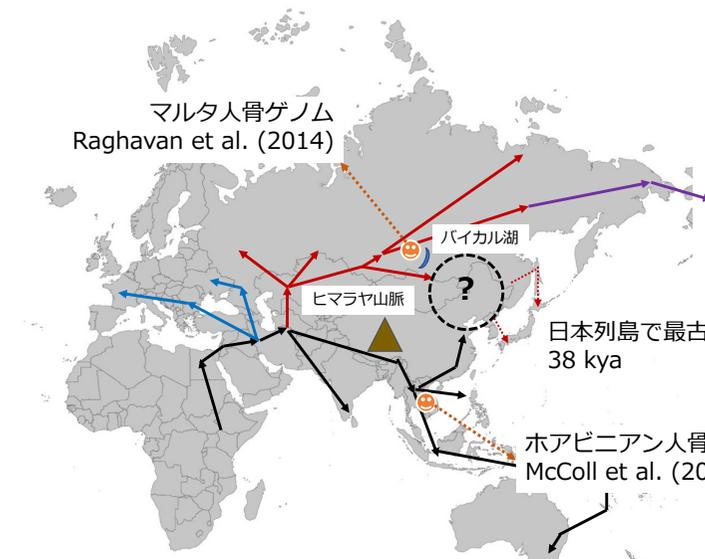


Fig. 1. Maximum likelihood tree of 75 populations. A hypothetical most recent common ancestor (MRCA) composed of ancestral alleles as inferred from the genotypes of the gorilla and 21 chimpanzees was used to root the tree. Branches with bootstrap values less than 50% were condensed. Population identification numbers (IDs), sample collection locations with latitude and longitude, ethnicity, language spoken, and size of population samples are shown in the table adjacent to each branch in the tree. Linguistic groups are indicated with colors as shown in the legend. All population IDs except the four HapMap samples are denoted by four characters. The first two letters indicate the country where the samples were collected or (in the case of admixed genotypes, according to the following convention: AX, African; CN, China; ID, Indonesian; M, India; JP, Japan; KR, Korea; MY, Malaysia; PI, the Philippines; SG, Singapore; TH, Thailand; TW, Taiwan). The last two letters are unique IDs for the population. To the right of the table, an averaged graph of results from STRUCTURE is shown for  $k = 14$ .

## 北回り & 南回りゲノム



日本列島で最古の石器は 38 kya

ホアビニアン人骨ゲノム McColl et al. (2018)

Kaifu, Izuho, & Goebel (2015) Modified

# 縄文人ゲノム解読



**IK002**  
2014年に発掘された  
幼児骨をお腹の上に載せた  
壮年期女性の骨

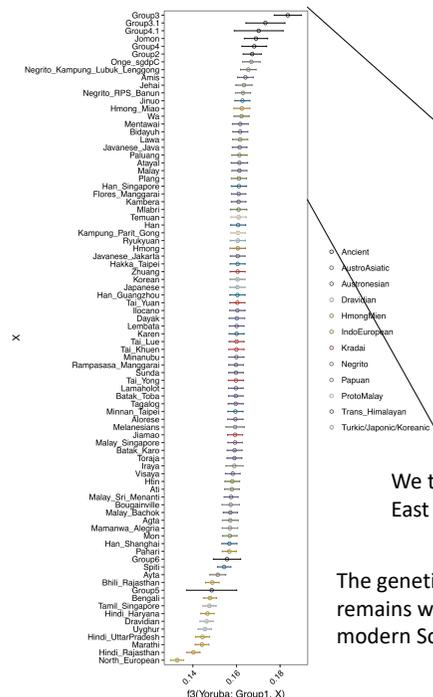


縄文人  
(1万6千年前~)

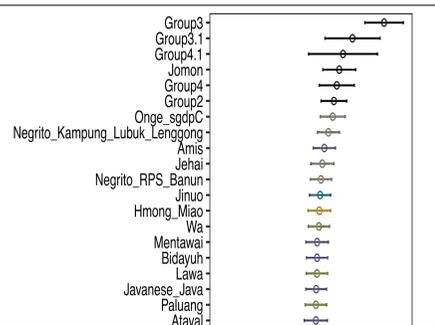


**IK002**  
2014年に発掘された  
幼児骨をお腹の上に載せた  
壮年期女性の骨

1本目の論文：  
1.85x カヴァレジのドラフト全ゲノム配列を得た  
McColl et al. **Science** (2018)



Among tons of the analyses in this paper,  
we want to show especially this figure here.



We tested genetic affinities between Southeast and East Asians and the other population "X".

The genetic affinities between IK002 and the 8,000-year-old remains was much higher than those between IK002 and modern Southeast and East Asians.

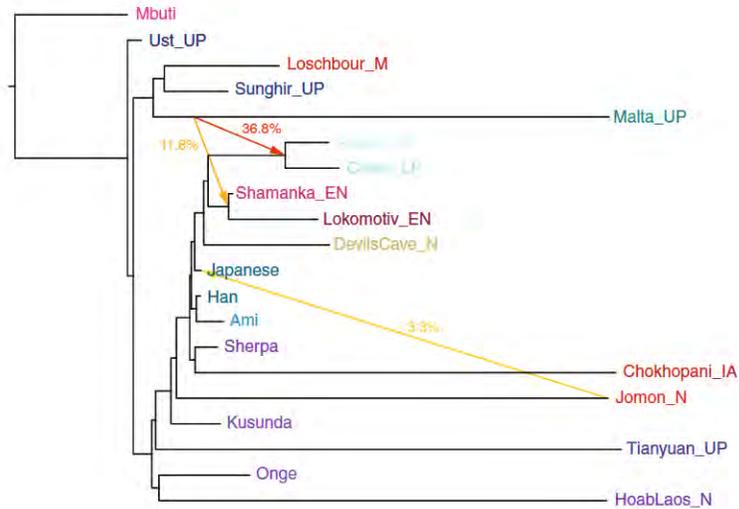
McColl et al. (2018) **Science**



**IK002**  
2014年に発掘された  
幼児骨をお腹の上に載せた  
壮年期女性の骨

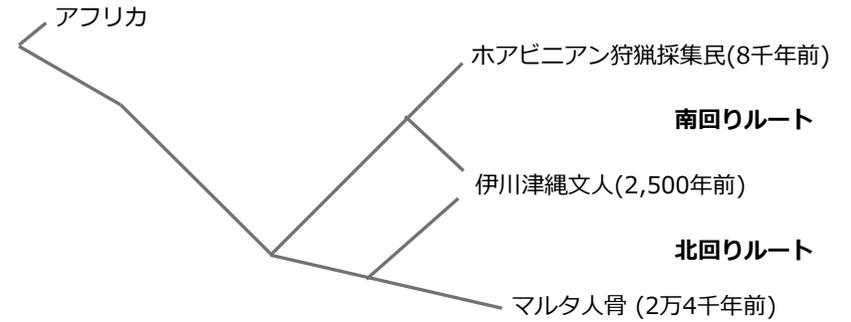
2本目の論文：  
IK002を主役とした再解析  
Gakuhari & Nakagome et al. **Comm Biol.** (2020)

ゲノム情報から描いた系統樹は南回りルートを示した

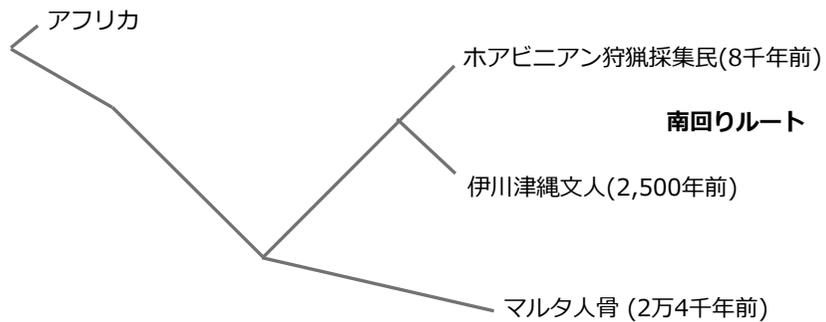


Gakuhari & Nakagome et al. (2020) *Comms. Biol.*

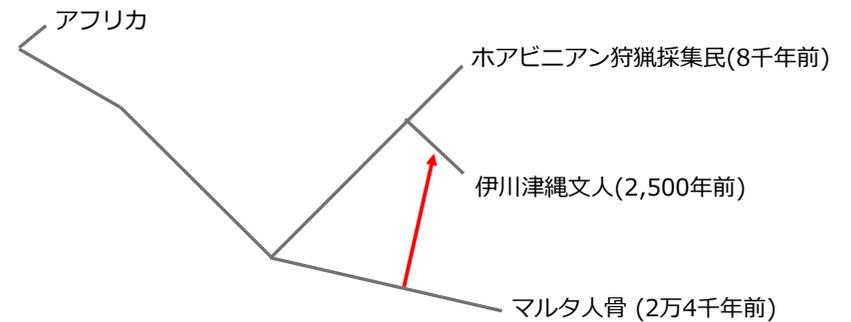
Question 1: 南回りルートか北回りルートか?



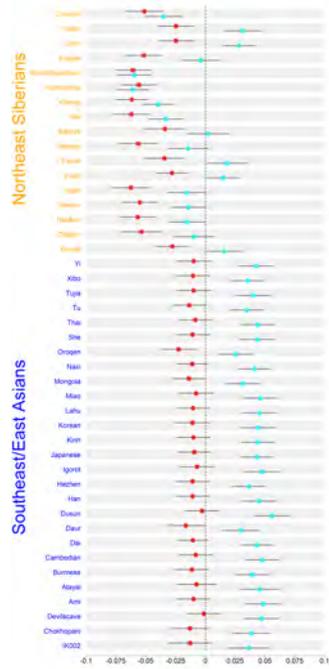
Answer : 伊川津縄文人(IK002) は南回りルートでユーラシア大陸東端に人々の子孫のようだ



Question 2: 北回りの遺伝子流動はないのか?



# D検定

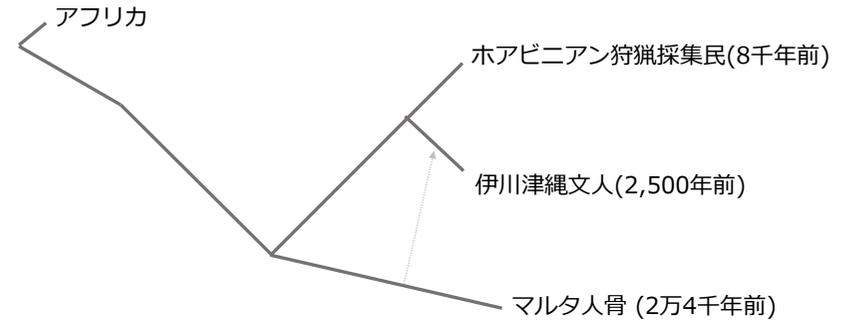


● D(Mbuti, MA1, X, Onge)  
MA1 → X

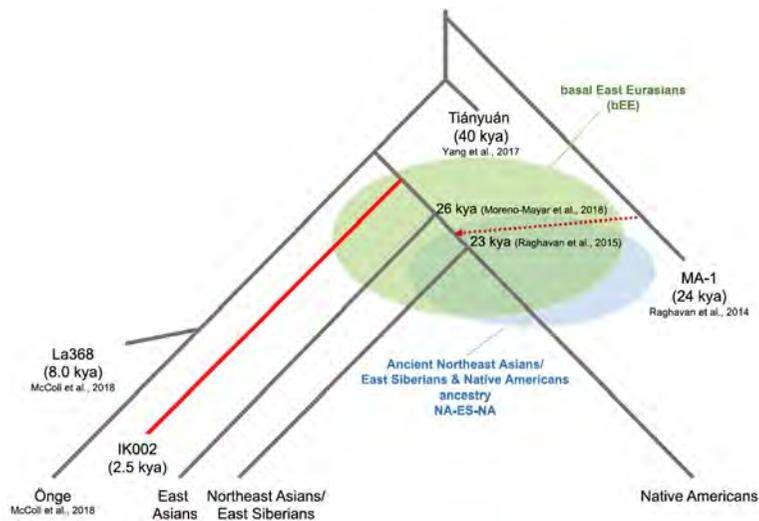
● D(Mbuti, X, MA1, Onge)  
X → MA1

Gakuhari & Nakagome et al. (2020) *Comms. Biol.*

Answer : マルタ人骨(MA-1)から伊川津縄文人(IK002)への遺伝子流動の証拠はなかった



# 東ユーラシア大陸の人類集団史の概略



Gakuhari & Nakagome et al. (2020) *Comms. Biol.*

ご静聴ありがとうございました!!

