

The Prehistory of Language from the Perspective of the Y-Chromosome

Supplementary figures for the research guide.

The Genetic-Linguistic Interface Project.



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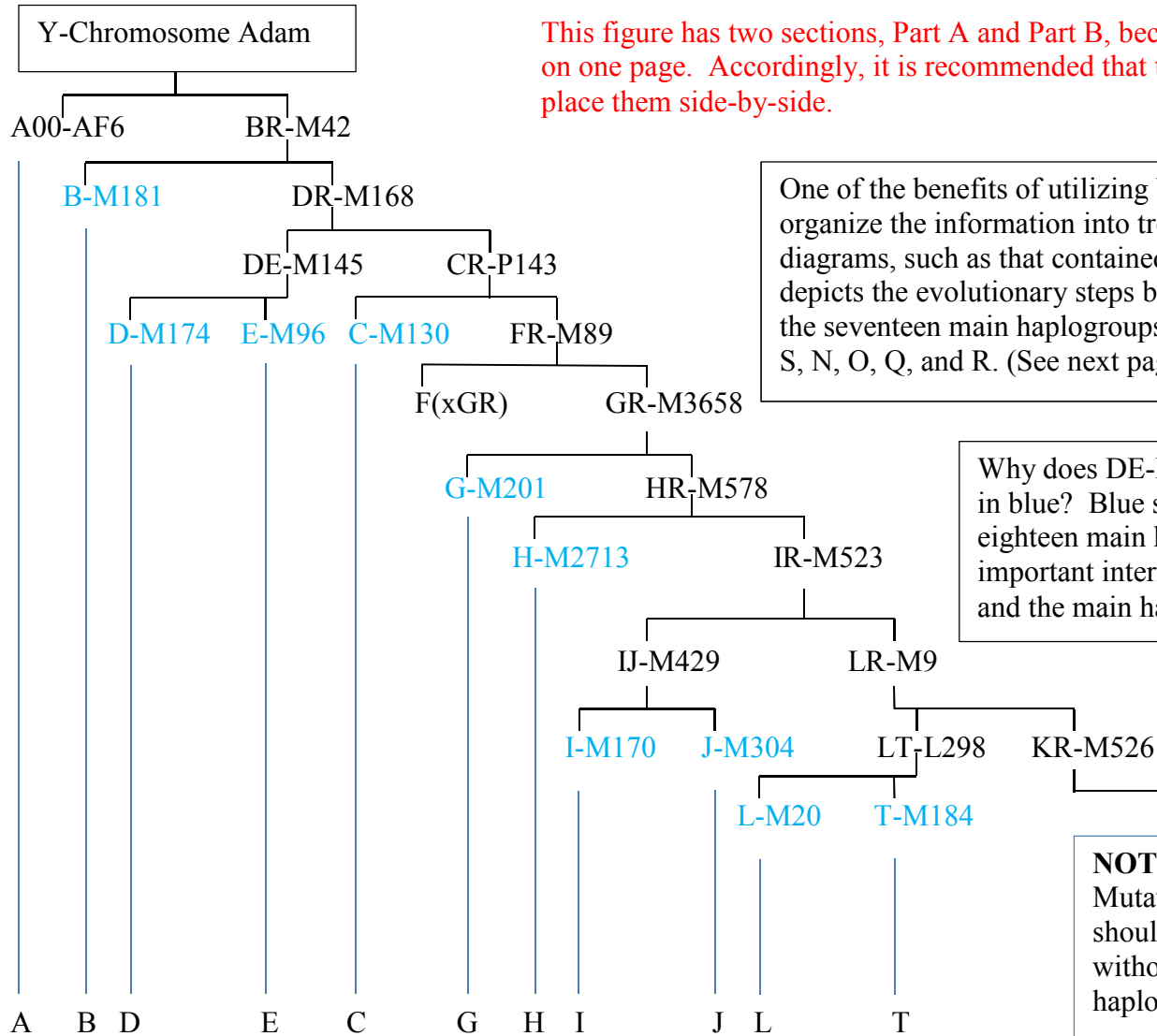
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Supplementary Figure 1.1. Mutational Steps from Y-Chromosome Adam to the Main Haplogroups. The Genetic-Linguistic Interface.



This figure has two sections, Part A and Part B, because the entire diagram cannot fit on one page. Accordingly, it is recommended that the reader print both pages and place them side-by-side.

One of the benefits of utilizing Y-chromosome data is the ability to organize the information into tree-like structures, or phylogenetic diagrams, such as that contained in this Figure (1.1). This diagram depicts the evolutionary steps between Y-Chromosome Adam and the seventeen main haplogroups: A, B, D, E, C, G, H, I, J, L, T, M, S, N, O, Q, and R. (See next page)

Why does DE-M145 appear in black and D-M174 in blue? Blue signifies the evolution of one of the eighteen main haplogroups, black represents an important intermediary mutation between Adam and the main haplogroups.

NOTE:
Mutation KR* (appearing to the right) should be read as haplogroup KR-M526 without the mutations that defined haplogroups M, S, N, O, Q, and R.



Supplementary Figure 1.1. Mutational Steps from Y-Chromosome Adam to the Main Haplogroups.
The Genetic-Linguistic Interface.

(Continued from previous page) The main haplogroups were created through a series of mutational bifurcations from Adam beginning about 250,000 years ago (Karmin et al. 2015). The set of evolutionary steps that follow between Adam and the haplogroups in this figure were adapted from Oven et al (2014), Karafet et al (2015), Poznik et al. (2016), and ISOGG 2017. The evolutionary steps from Adam begin in the upper left corners and move down and to the right. The reader’s attention is now drawn to the bottom of Figure 1.1, where the main haplogroups run left to right. Taking haplogroup D as an example, the reader should follow the blue line that runs upwards from “D” at the bottom of the figure. Moving upwards, the diagram depicts the evolution of haplogroup D from the bifurcation of haplogroup DE-M145, which is also the ancestral mutation for haplogroup E. Haplogroup DE-M145, in turn, bifurcated from earlier from haplogroup DR-M168, which is the ancestral mutation for haplogroups D through R, hence the descriptor “DR.”

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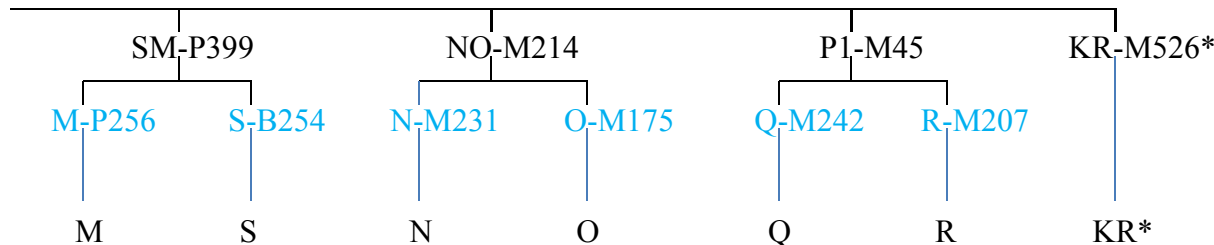


Hg. A = Sub-Saharan Africa.
Hg. B = Sub-Saharan Africa.
Hg. D = East Asia.
Hg. E = Africa, Middle East and Southeastern Europe.
Hg. C = Australia, Oceania, East Asia, Northern Eurasia, Americas, Island Southeast Asia.

Hg. G = South Asia, Caucasus Europe, Middle East.
Hg. H = South Asia.
Hg. I = Scandinavia and Southeastern Europe.
Hg. J = Middle East, North Africa, Mediterranean Europe.
Hg. L = South Asia and Middle East.

Hg. T = Middle East, South Asia, Sub-Saharan Africa.
Hg. M = Island Southeast Asia.
Hg. S = Island Southeast Asia, Australia.
Hg. N = Northern Eurasia.
Hg. O = East Asia, South Asia, Island Southeast Asia, Oceania.
Hg. Q = North Eurasia, Americas.
Hg. R = Western Eurasia and North Africa.
Hg. KR* = Australia, Island Southeast Asia, Oceania.

Hg. = haplogroup

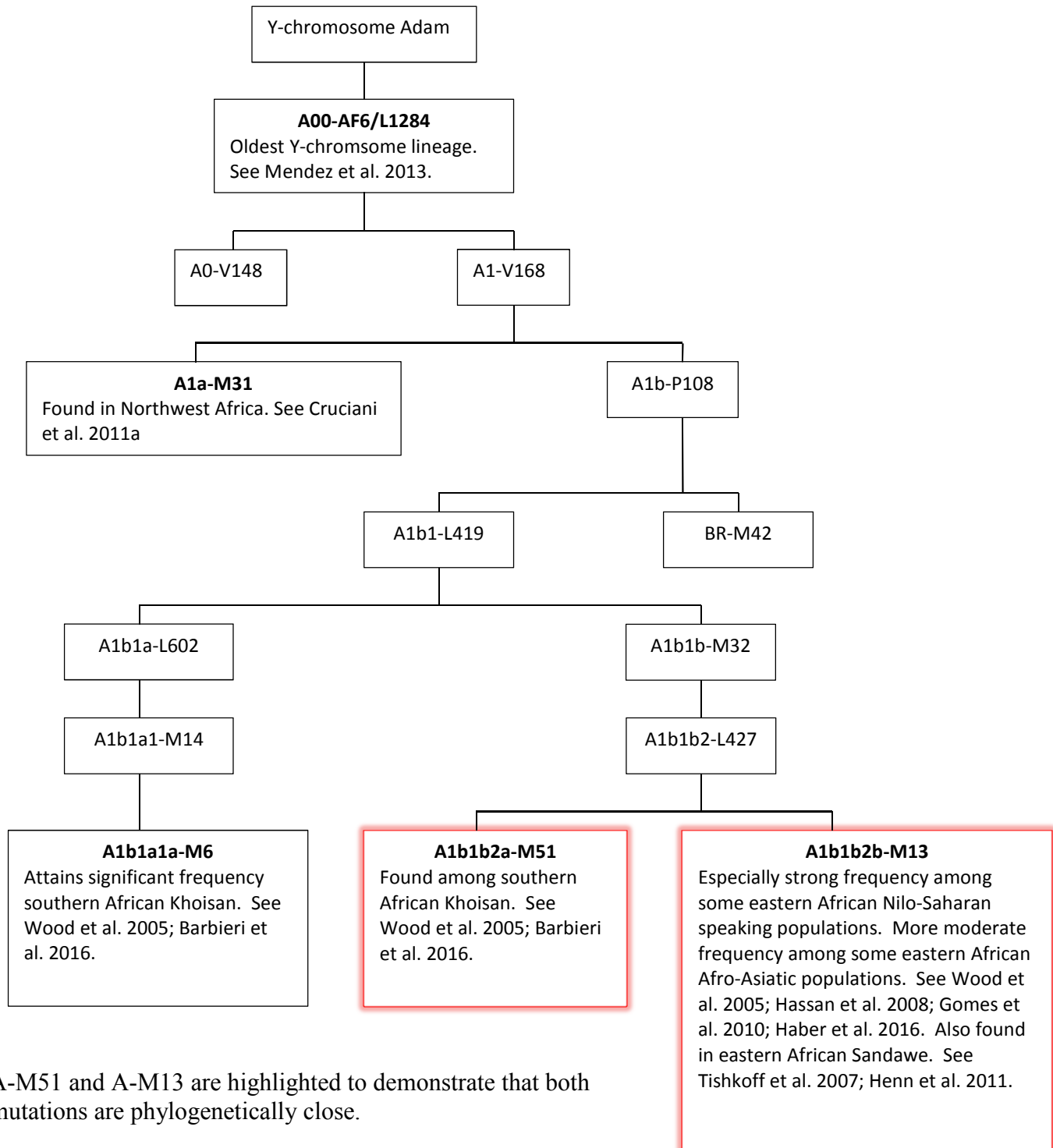




Chapter 2 and Haplogroup A.

The Genetic-Linguistic Interface.

Figure 2.1. Linguistically Significant Haplogroup A Mutations.



A-M51 and A-M13 are highlighted to demonstrate that both mutations are phylogenetically close.

Diagram follows ISOGG 2017 and Poznik et al. 2016.



Chapter 2 and Haplogroup A.

The Genetic-Linguistic Interface.

Supplementary Figure 2.2. Linguistic Map of Africa.



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Original file was modified using different colors for language areas and translating Dutch into English.



Chapter 3 and Haplogroup B-M60.

The Genetic-Linguistic Interface.

Supplementary Figure 3.1. Important Haplogroup B Mutations.

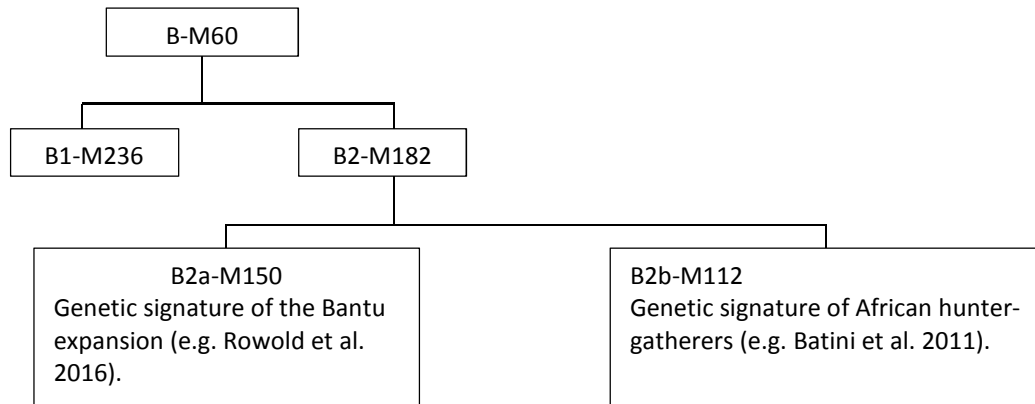


Diagram follows ISOGG 2017.



Chapter 4 and Haplogroup D-M174.

The Genetic-Linguistic Interface.

Supplementary Figure 4.1. Haplogroup D-M174 and Linguistically Informative Mutations.

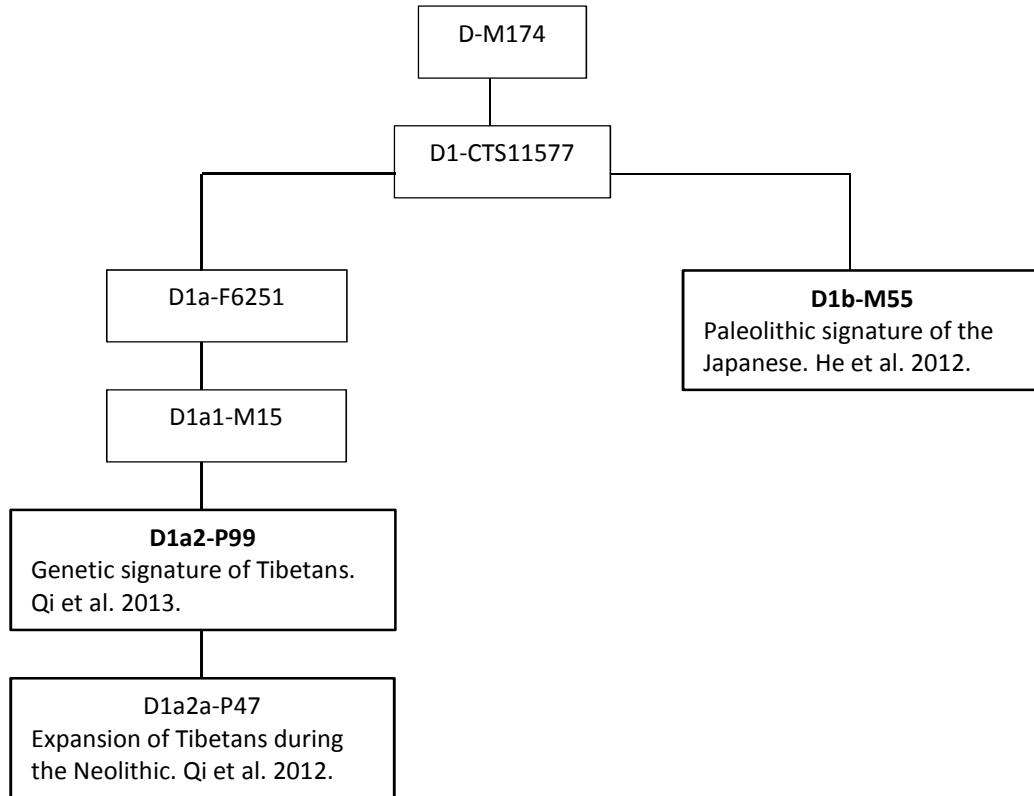


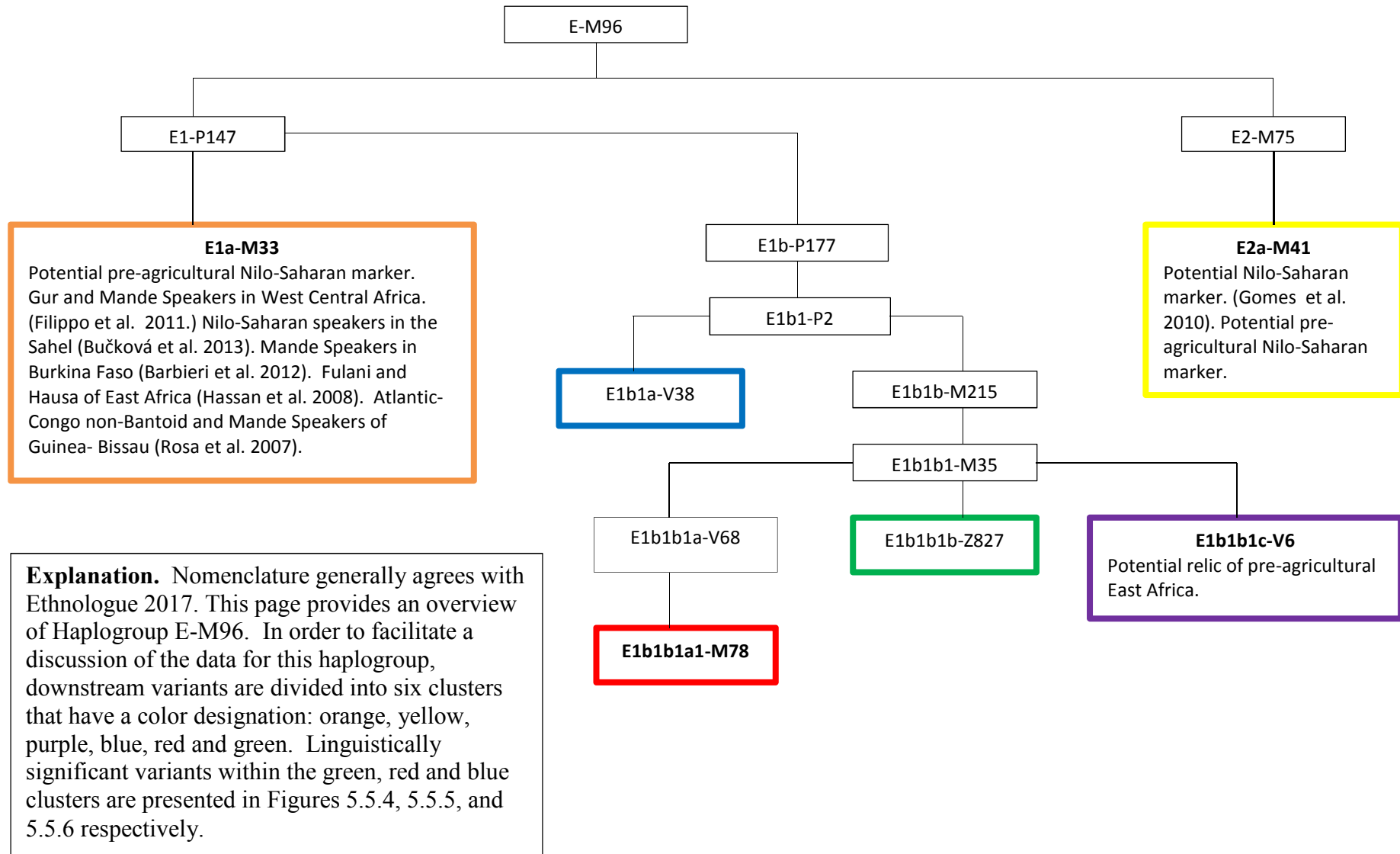
Diagram follows ISOGG 2017.



Chapter 5 and Haplogroup E-M96.

The Genetic-Linguistic Interface.

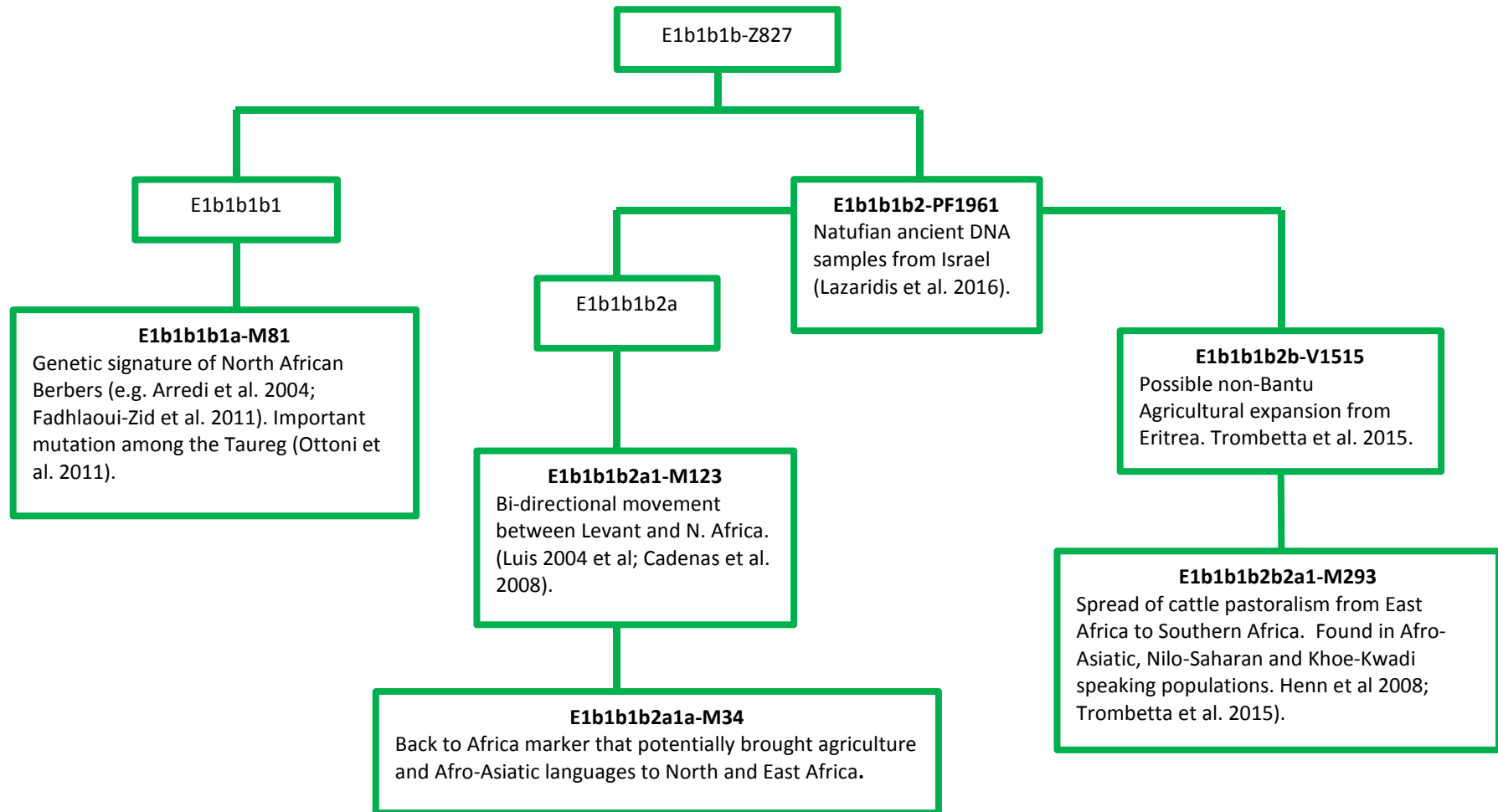
Figure 5.1. Overview of Linguistically Significant Haplogroup E Variants.





Chapter 5 and Haplogroup E-M96. The Genetic-Linguistic Interface.

Figure 5.2. E-Z827 and the Green Cluster Mutations.

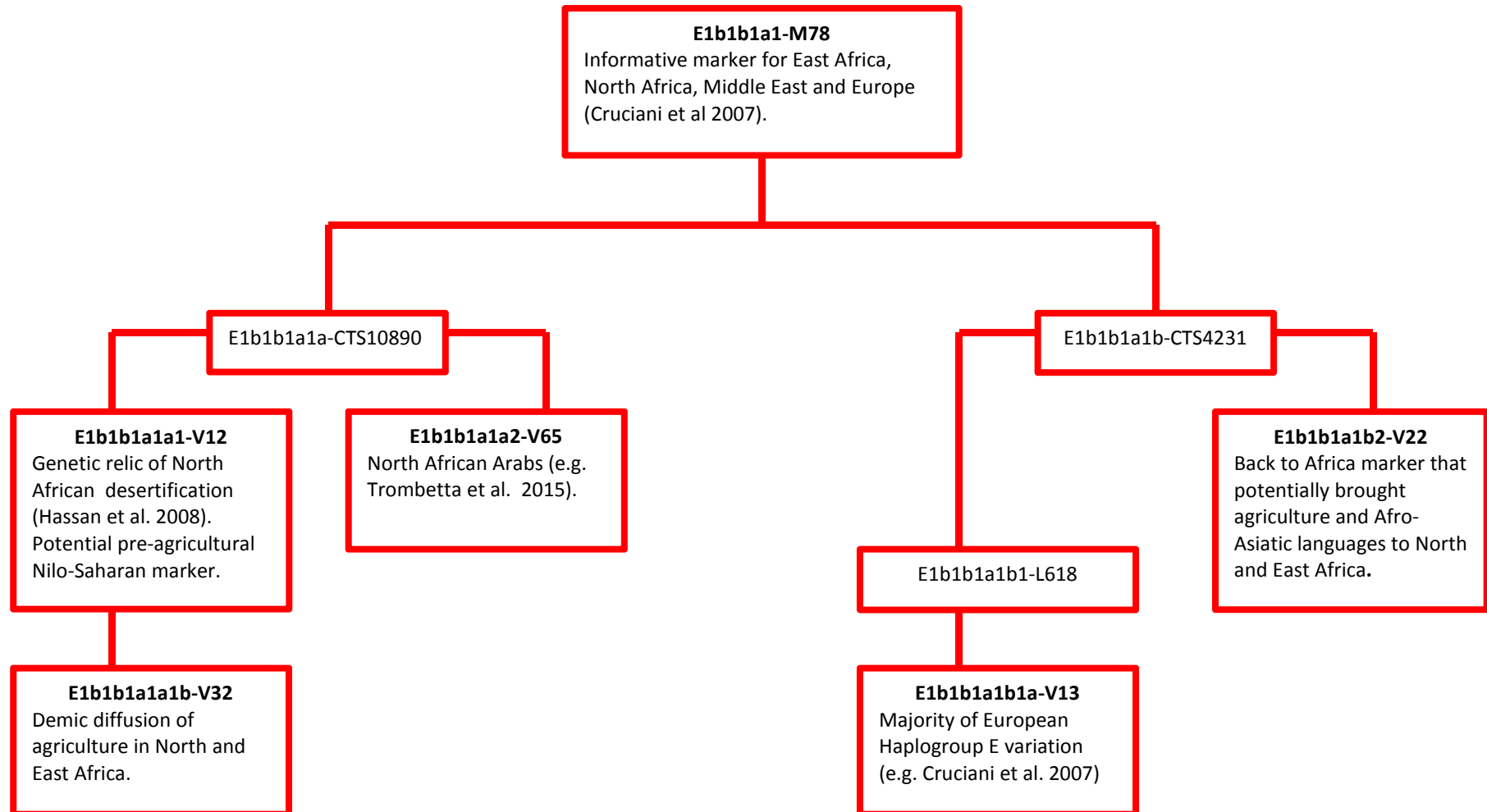




Chapter 5 and Haplogroup E-M96.

The Genetic-Linguistic Interface.

Figure 5.3. E-M78 and the Red Cluster Mutations.

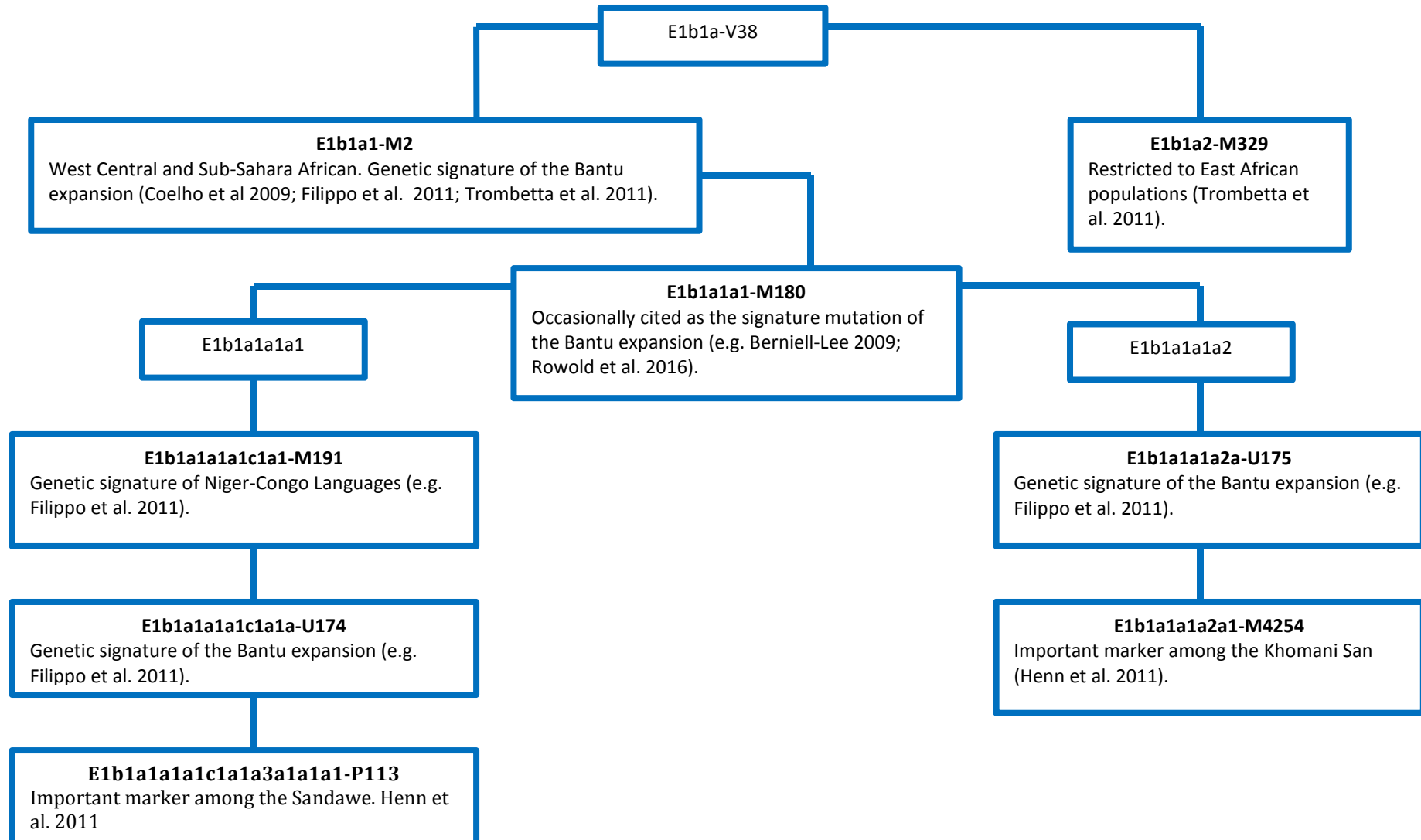




Chapter 5 and Haplogroup E-M96.

The Genetic-Linguistic Interface.

Figure 5.4. E-V38 and the Blue Cluster Mutations.



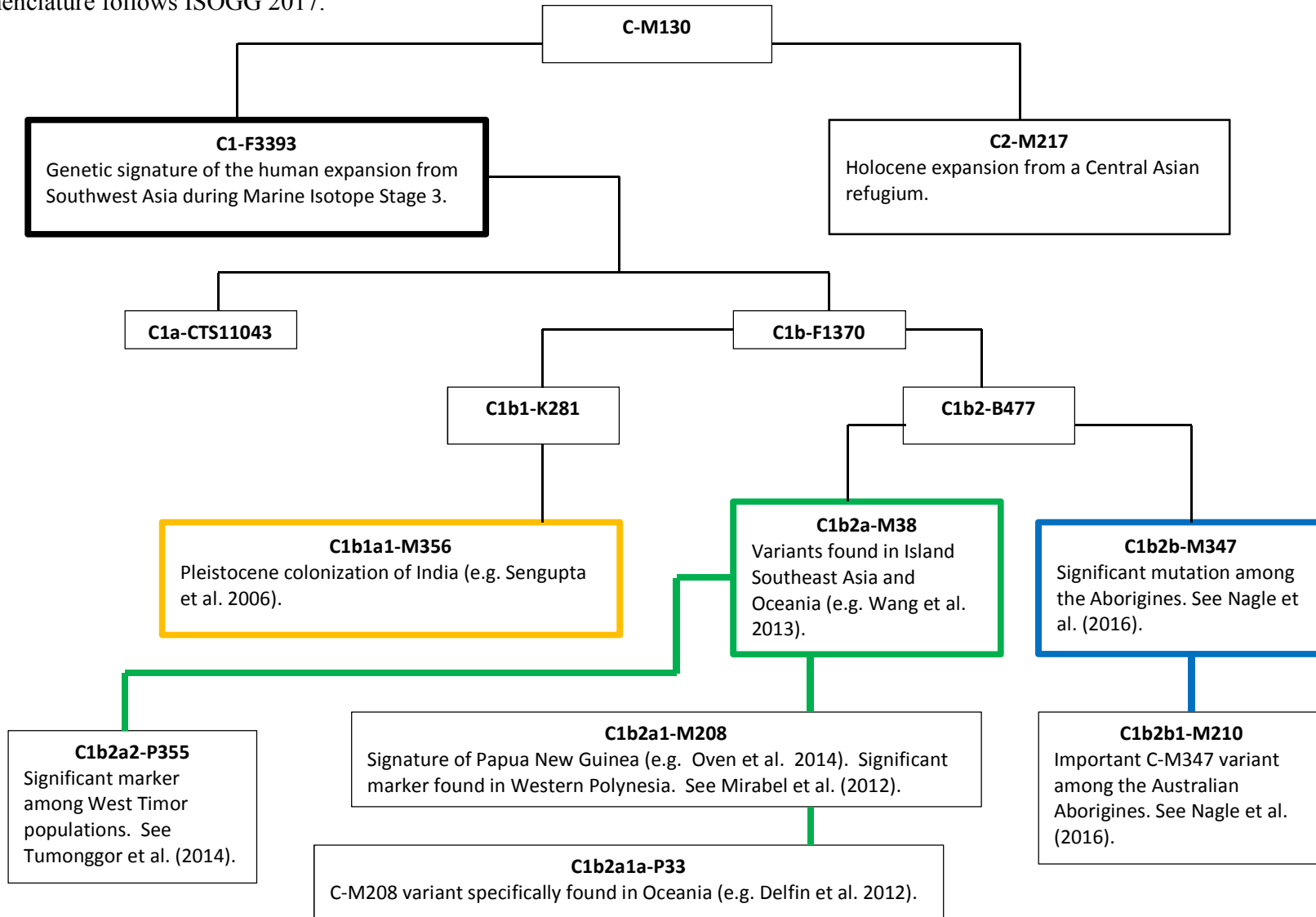


Chapter 6 and Haplogroup C-M130.

The Genetic-Linguistic Interface.

Supplemental Figure 6.1. Overview of C1-F3393 Southern Dispersal.

Nomenclature follows ISOGG 2017.



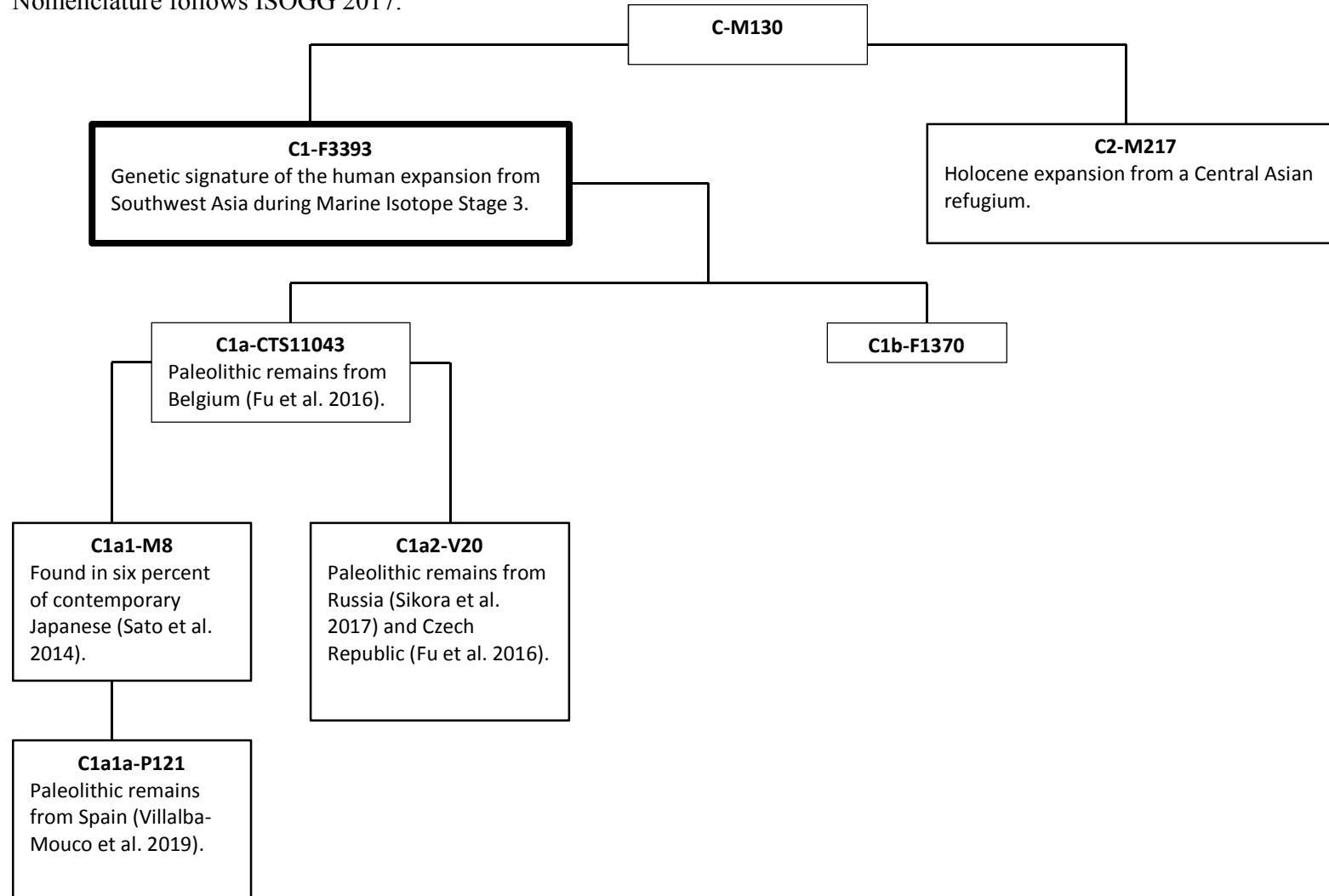


Chapter 6 and Haplogroup C-M130.

The Genetic-Linguistic Interface.

Supplementary Figure 6.2. Overview of C1-F3393 Bi-Directional Northern Dispersal.

Nomenclature follows ISOGG 2017.





Chapter 6. Haplogroup C-M130.

The Genetic-Linguistic Interface.

Supplementary Figure 6.3. Sunda and Sahul about 50,000 Years Ago.



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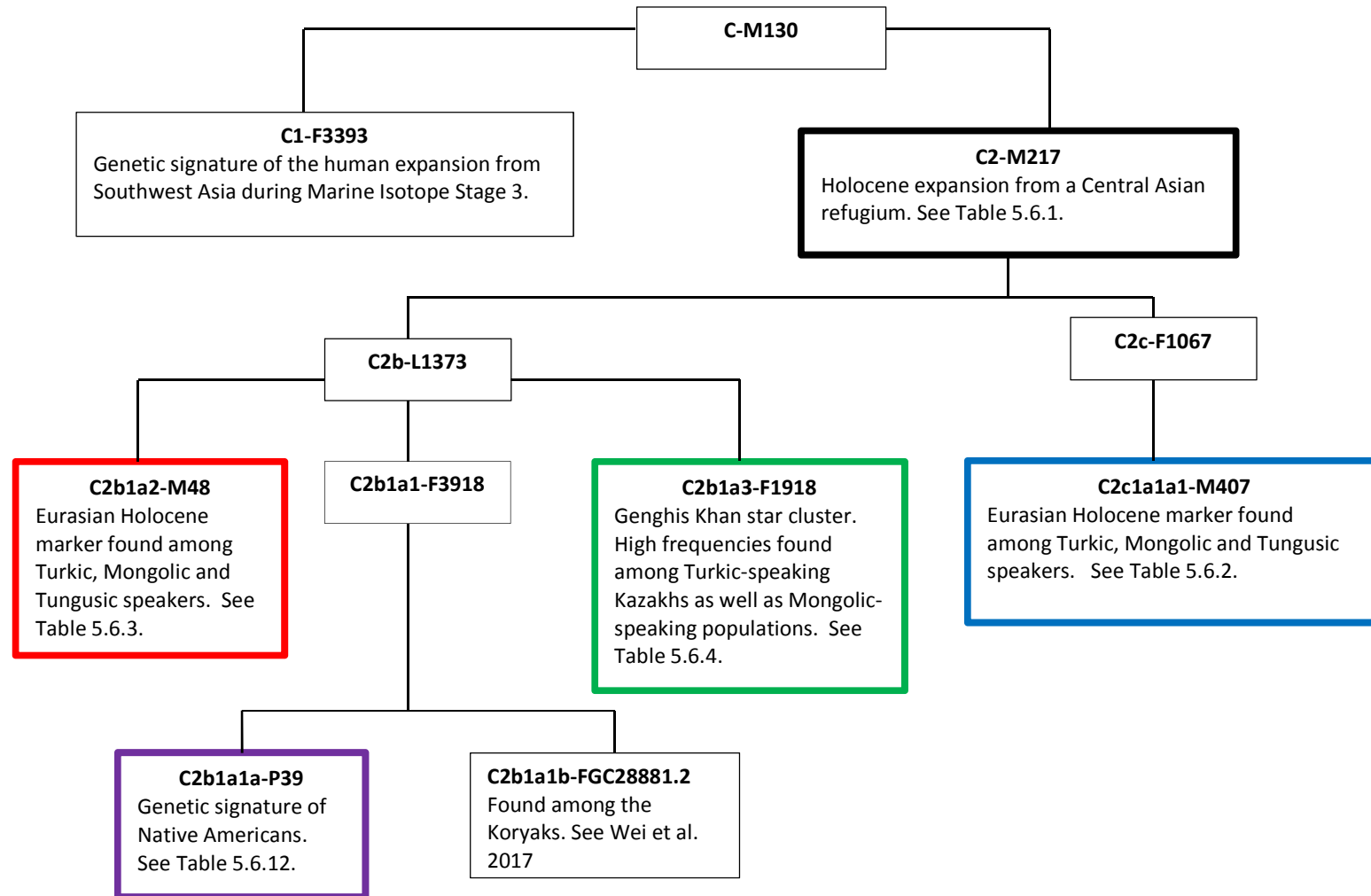


Chapter 6 and Haplogroup C-M130.

The Genetic-Linguistic Interface.

Supplementary Figure 6.4. Overview of known C2-M217 variation in Eurasia and North Americans.

Nomenclature follows ISOGG 2017.





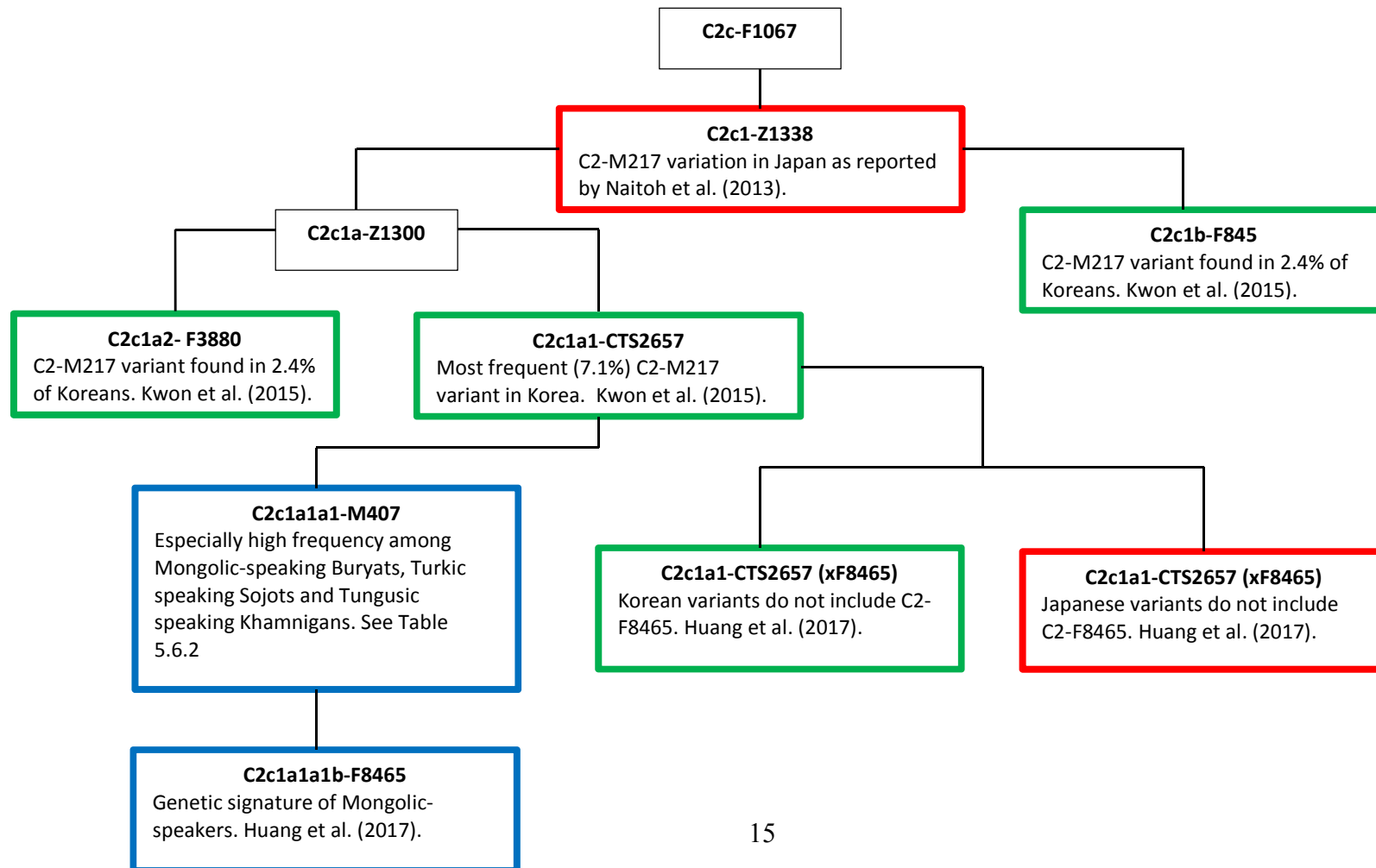
Chapter 6 and Haplogroup C-M130.

The Genetic-Linguistic Interface.

Supplementary Figure 6.5. Overview of known C2-M217 variants among Mongolians, Koreans and Japanese.

Nomenclature generally conforms to ISOGG 2017.

Red highlights informative Japanese mutations, green is for Koreans, and blue is for Mongolians.

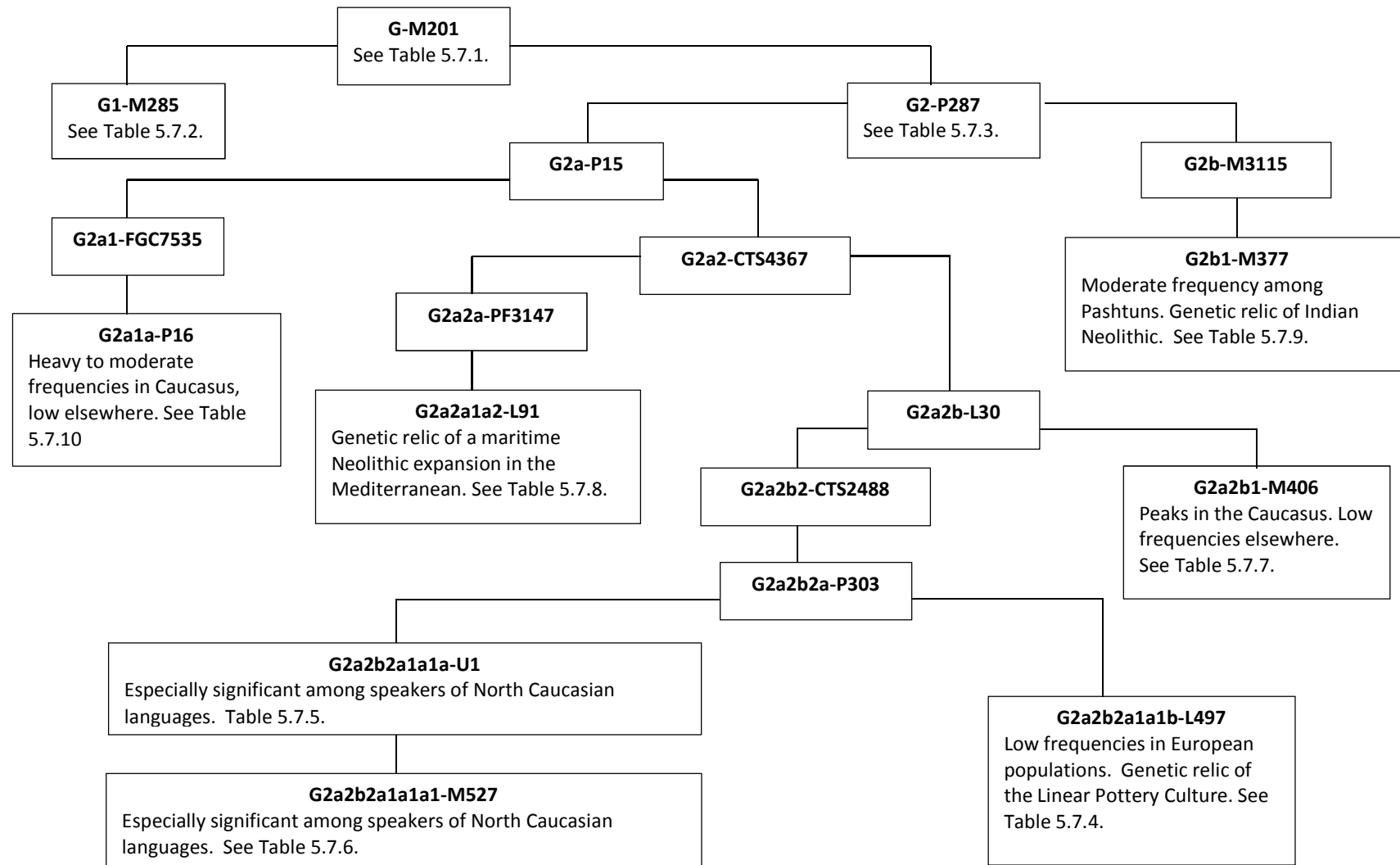




Chapter 7 and Haplogroup G-M201.

The Genetic-Linguistic Interface.

Supplementary Figure 7.1. Overview of G2-P287 and its Internal Phylogeny.



Nomenclature generally conforms to ISOGG 2017.



Chapter 7 and Haplogroup G-M201.

The Genetic-Linguistic Interface.

Supplementary Figure 7.2. Informative Variants Overview of G1-M285 as Suggested by Balanovsky et al. (2015).



Nomenclature generally conforms to ISOGG 2017.



Chapter 8 and Haplogroup H-M2713.

The Genetic-Linguistic Interface.

Supplementary Figure 8.1. H-M2713 and its Informative Variants.

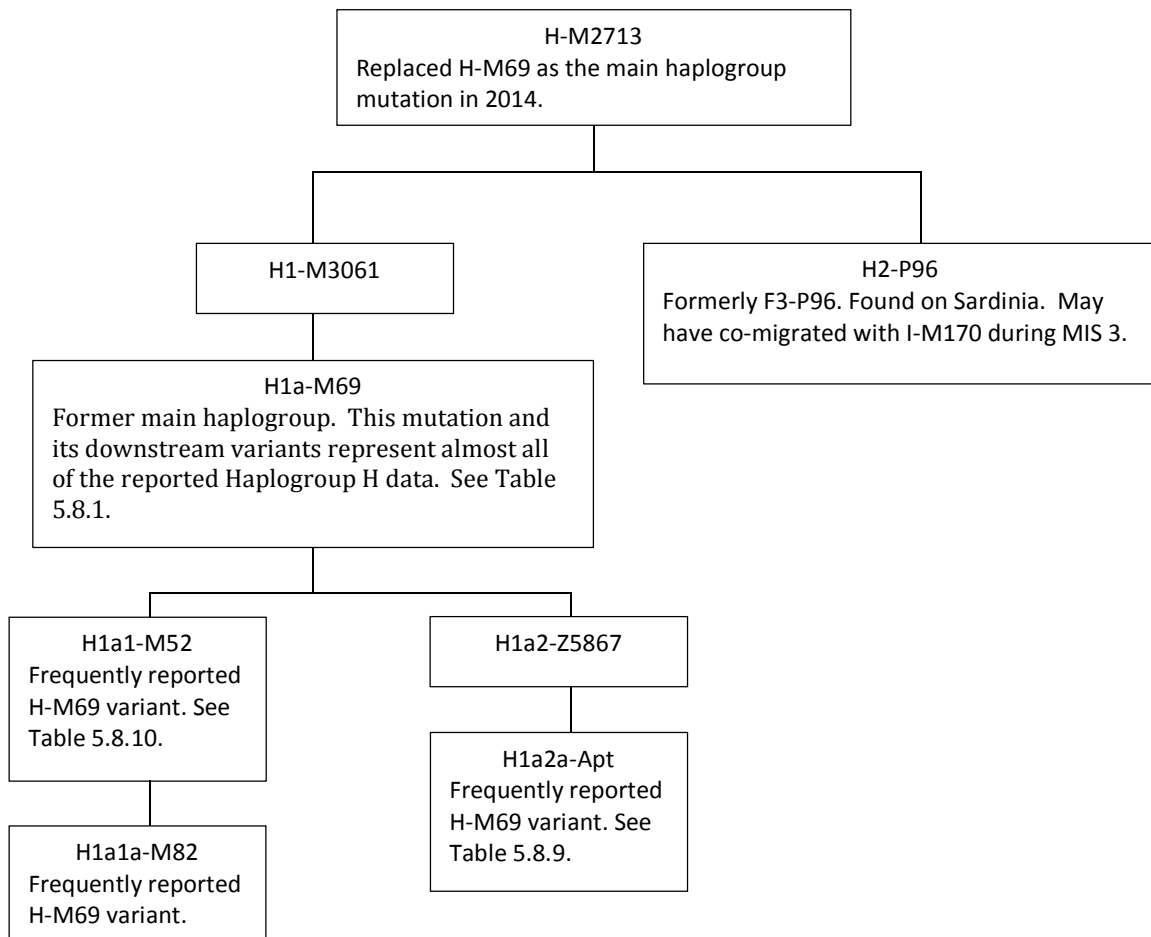


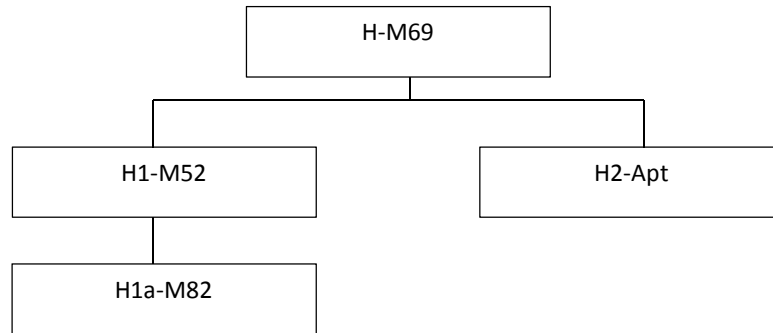
Diagram follows ISOGG 2017.



Chapter 8 and Haplogroup H-M2713.

The Genetic-Linguistic Interface.

Supplementary Figure 8.2. The 2008 Phylogeny of H-M69 and its Commonly Reported Variants.



Source: Karafet et al. (2008).



Chapter 9 and Haplogroup I-M170.

The Genetic-Linguistic Interface.

Supplementary Figure 9.1. Phylogenetic Overview of I-M170 and its Important Variants.

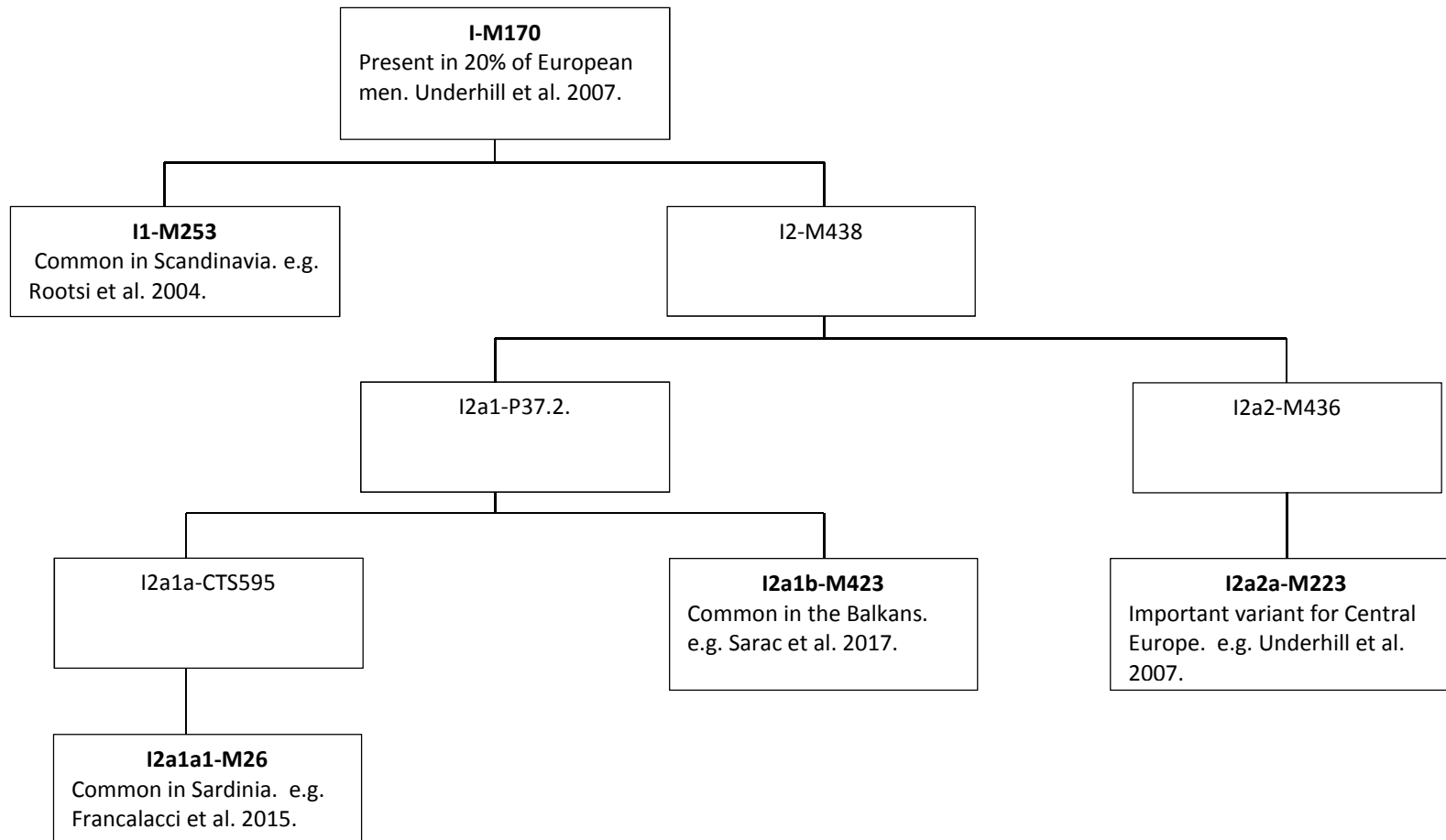


Diagram follows ISOGG 2017.



Chapter 10 and Haplogroup J-M304.

The Genetic-Linguistic Interface.

Supplementary Figure 10.1. Phylogenetic Overview of J-M304 and its Important Variants.

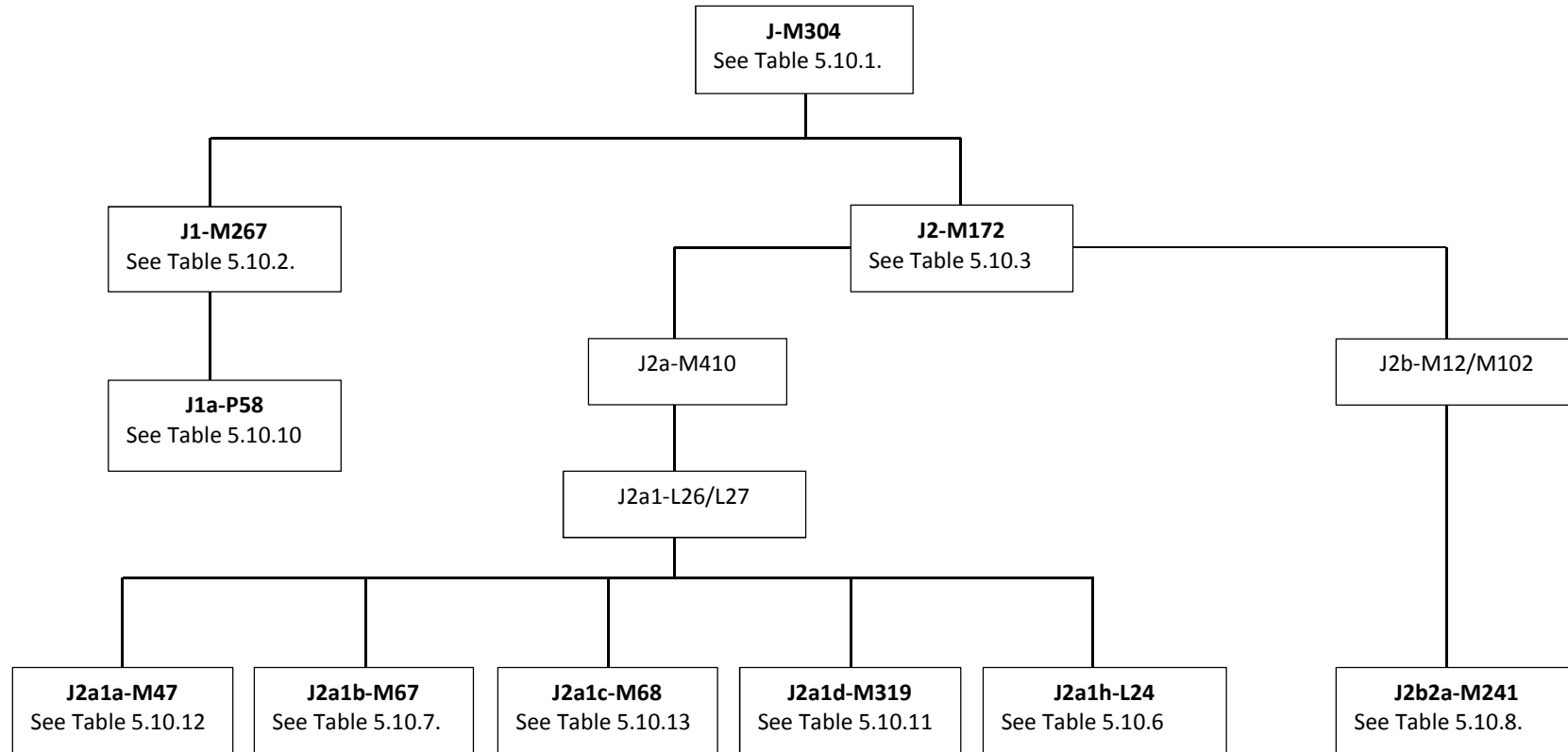


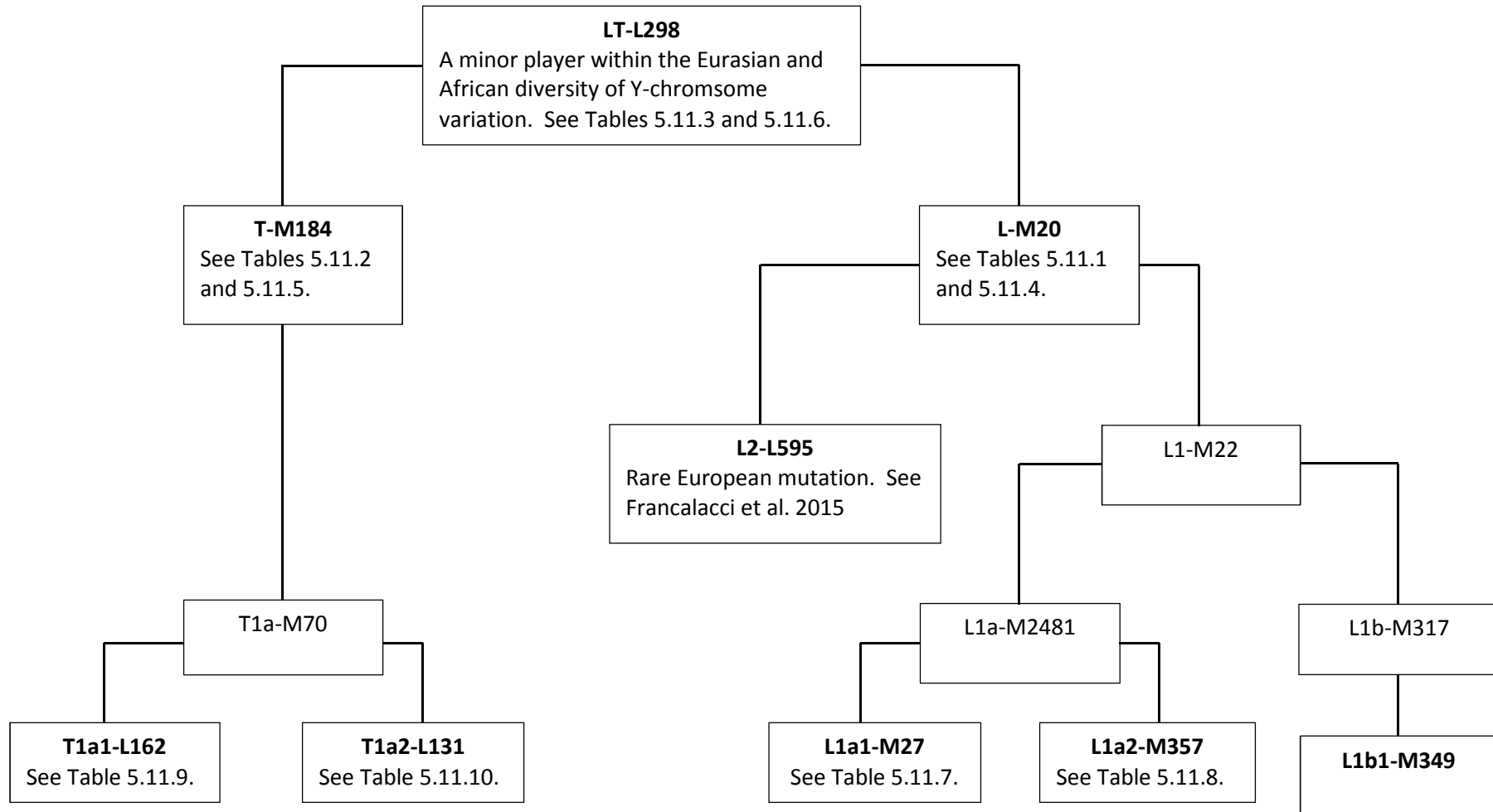
Diagram follows ISOGG 2017.



Chapter 11 and Haplogroups L-M20 and T-M184.

The Genetic-Linguistic Interface.

Supplementary 11.1. Overview of LT-L298 and its Significant Downstream Mutations.



Nomenclature generally conforms to ISOGG 2017.

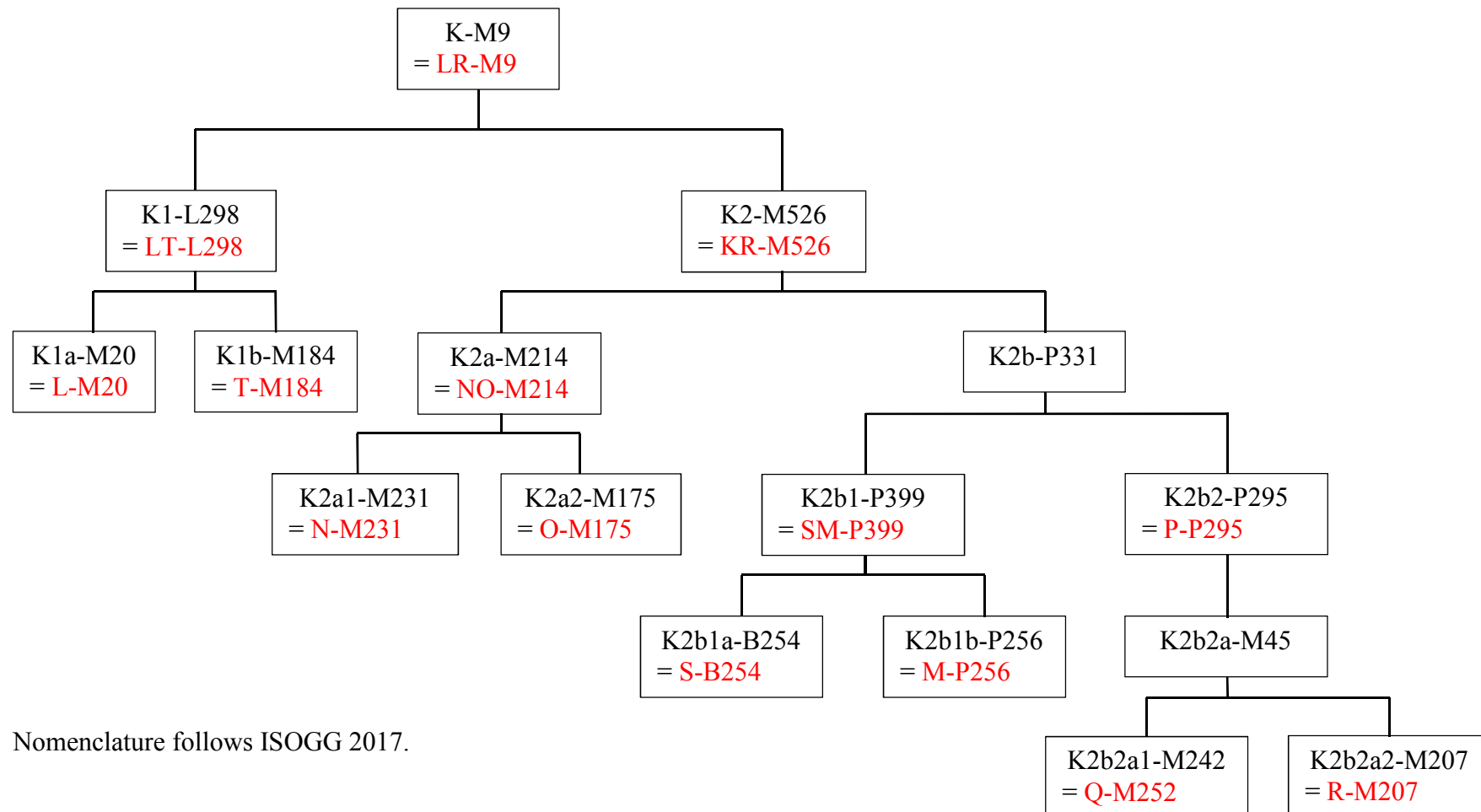


Chapter 12 and the KR-M526 Paragroup.

The Genetic-Linguistic Interface.

Supplementary Figure 12.1. The M9 Mutation: Haplogroup versus Paragroup.

Note that mutations appearing in **black** reflect the position taken by Karafet et al. (2015) that the M9 mutation is a haplogroup. Mutations appearing in **red** reflect our position that M9 is a paragroup.



Nomenclature follows ISOGG 2017.



Chapter 13 and haplogroups M-P256 and S-B254.

The Genetic-Linguistic Interface.

Supplementary Figure 13.1. Haplogroup M-P256 and Important Downstream Variants.

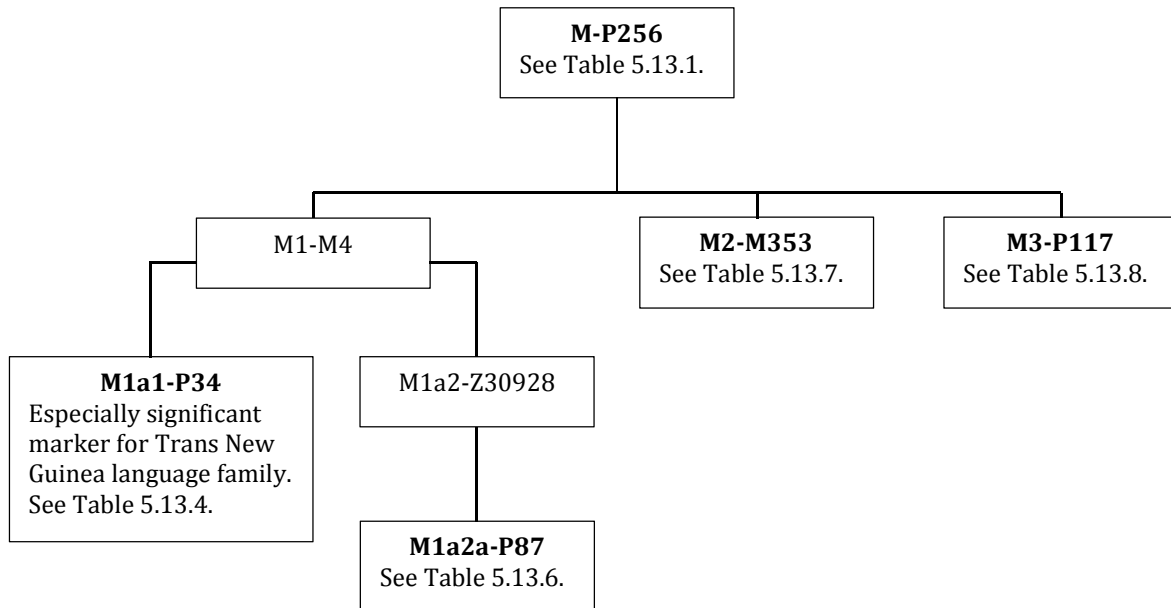


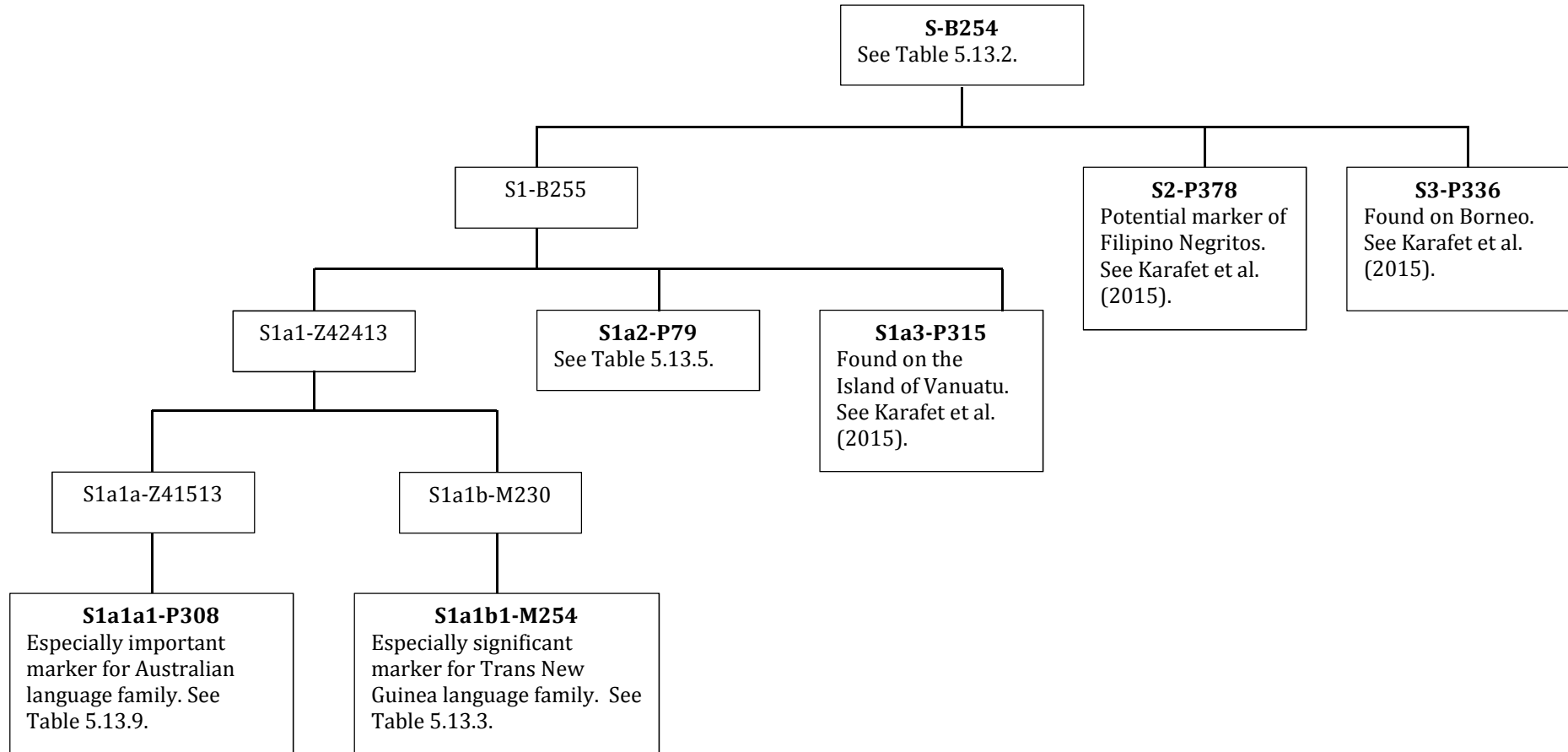
Diagram follows ISOGG 2017.



Chapter 13 and haplogroups M-P256 and S-B254.

The Genetic-Linguistic Interface.

Supplementary Figure 13.2. Haplogroup S-B254 and Important Downstream Variants.

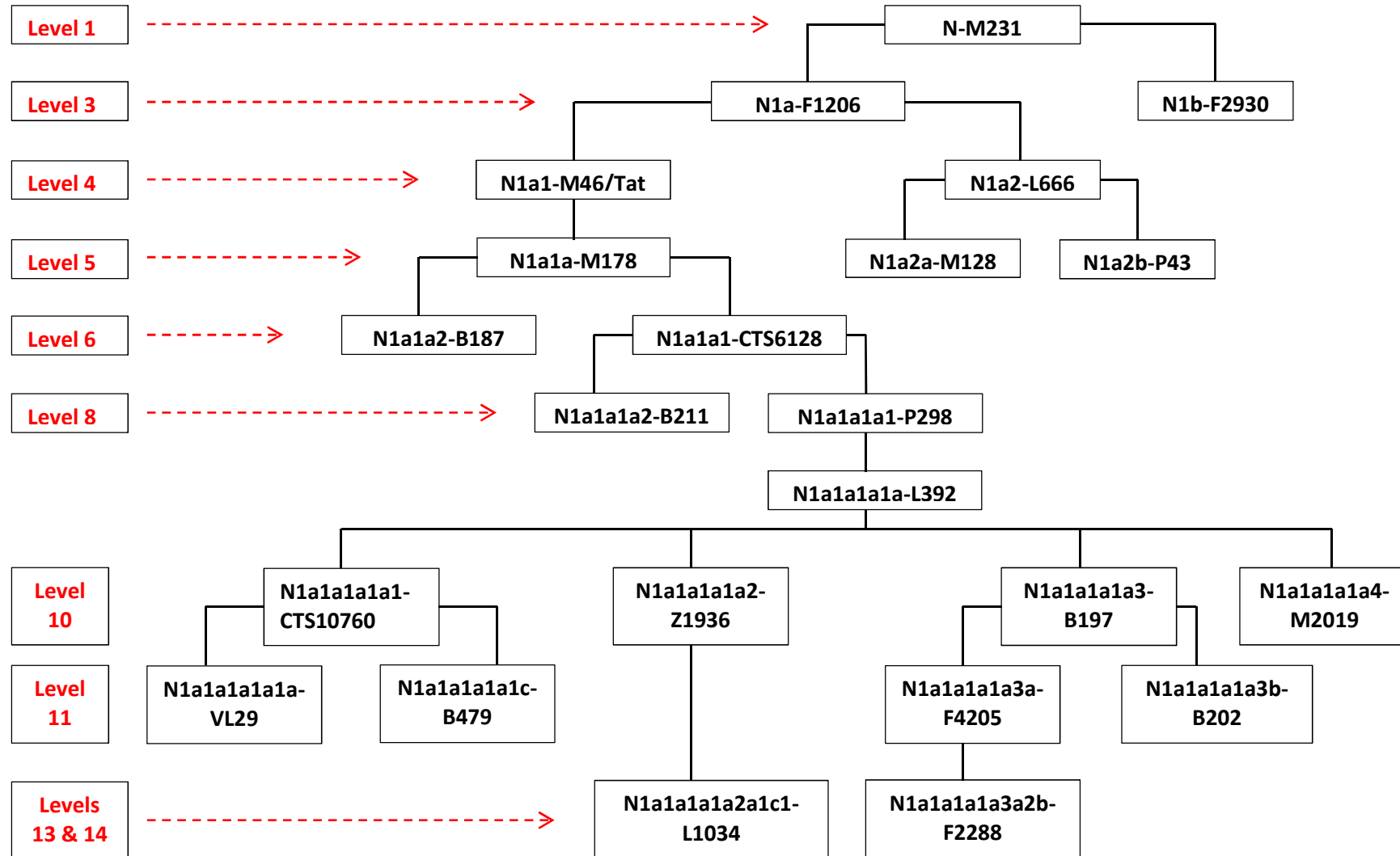




Chapter 14 and Haplogroup N-M231.

The Genetic-Linguistic Interface.

Supplementary Figure 14.1. Phylogenetic Chart of Haplogroup N-M231 and its Important Downstream Variants.





Chapter 15 and Haplogroup O-M175.

The Genetic-Linguistic Interface.

Supplementary Figure 15.1. Linguistically Significant O1-F265 Variants.

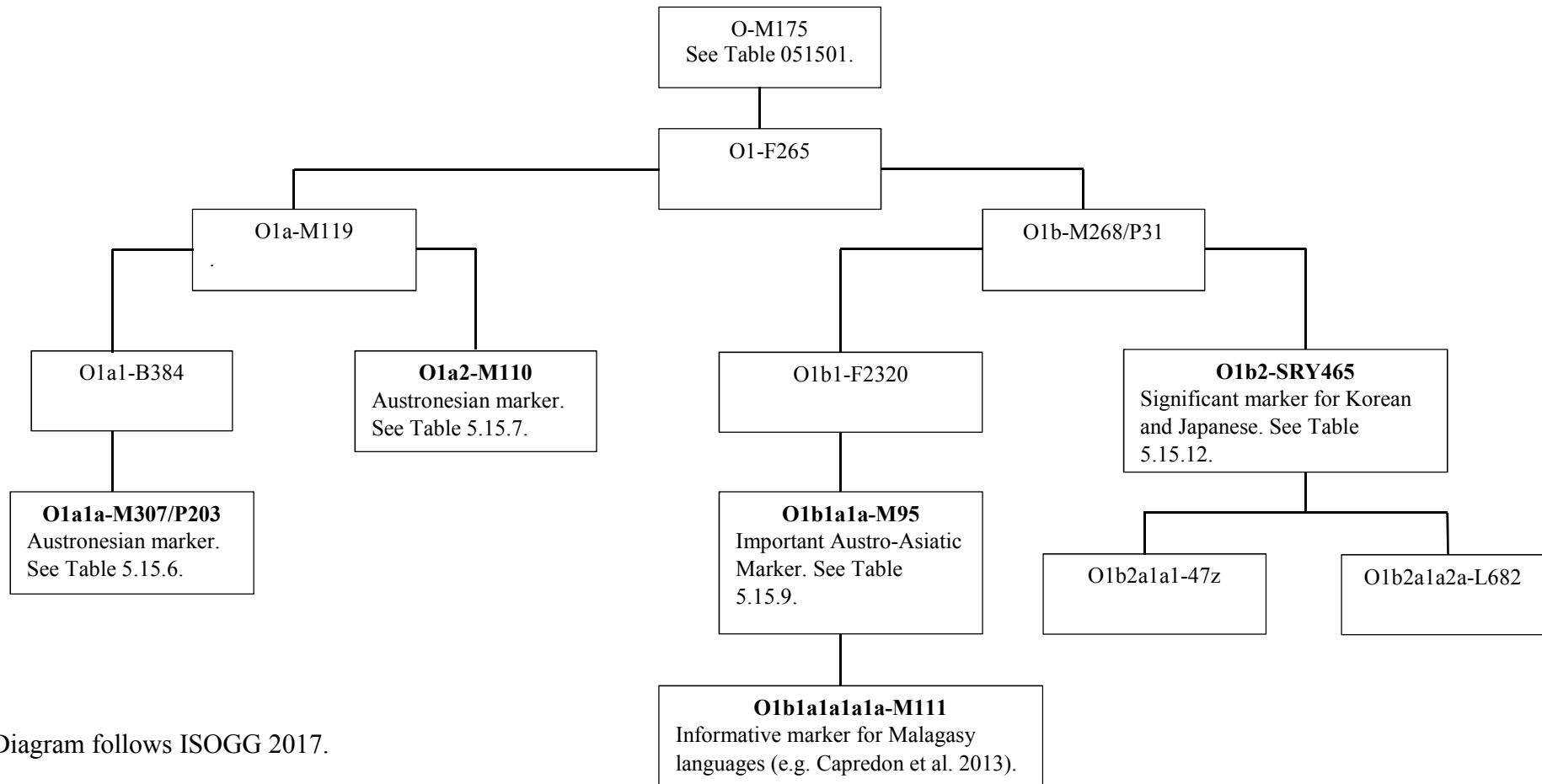


Diagram follows ISOGG 2017.



Chapter 15 and Haplogroup O-M175.

The Genetic-Linguistic Interface.

Supplementary Figure 15.2. Linguistically Significant O2-M122 Variants.

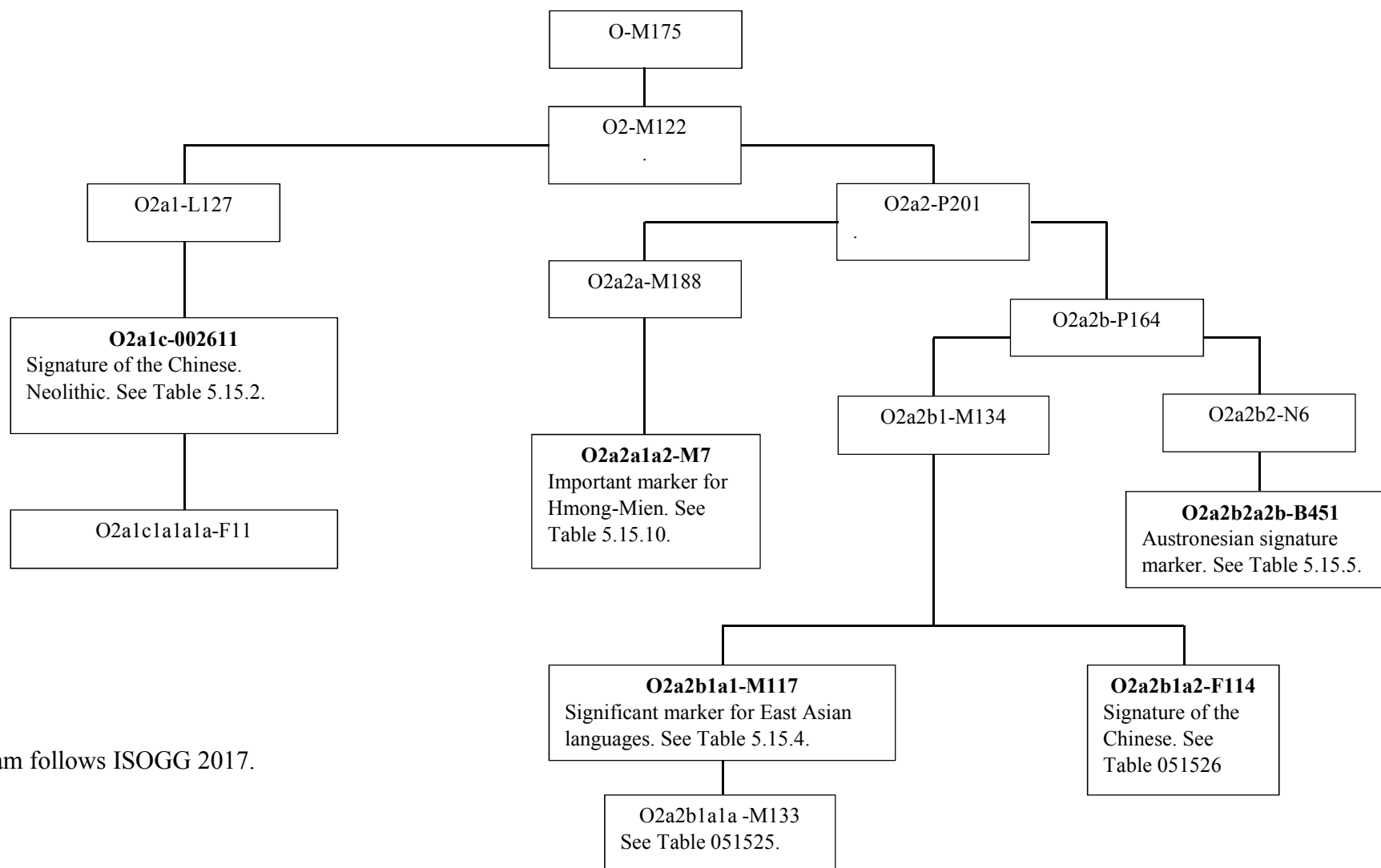


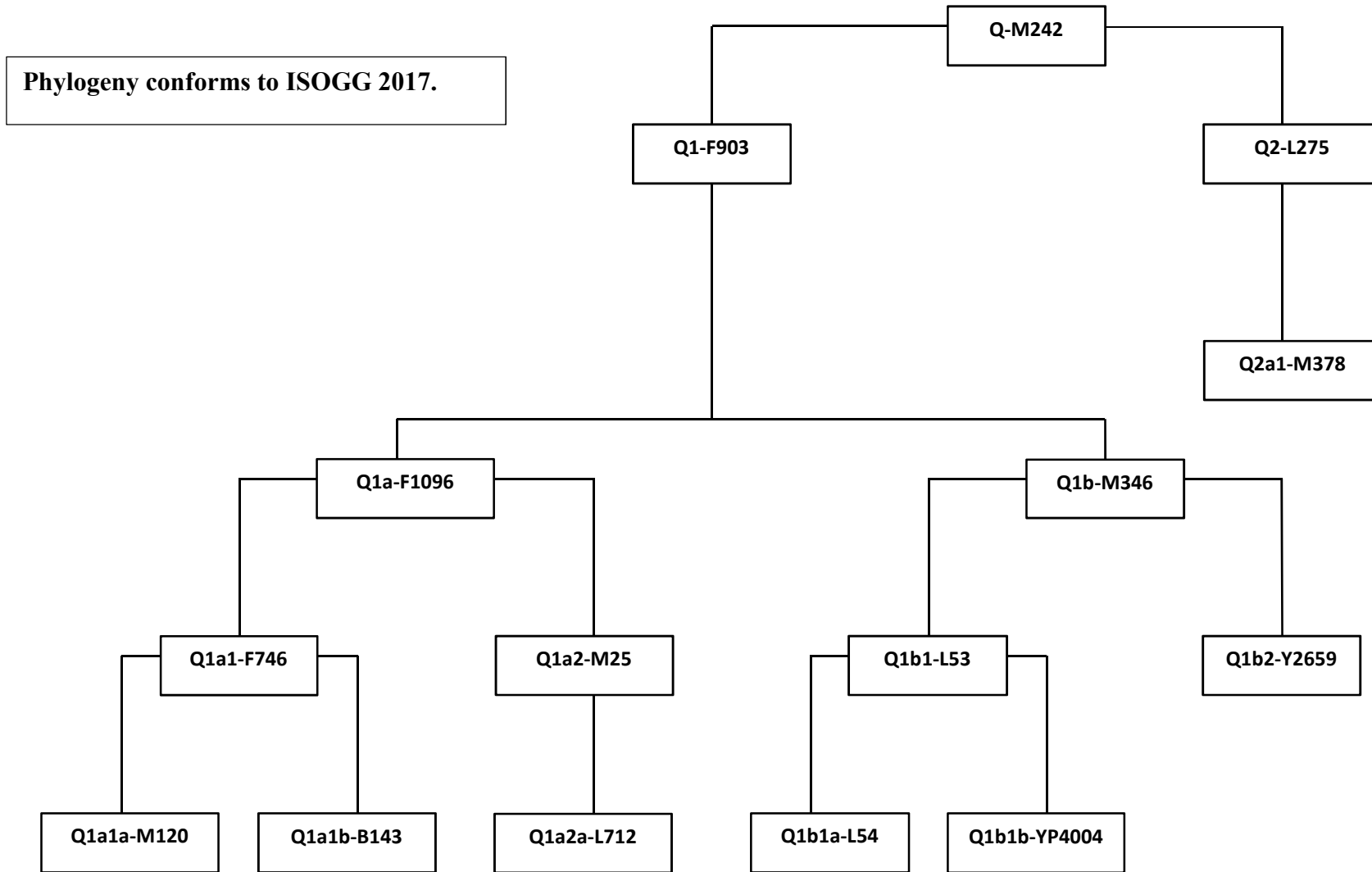
Diagram follows ISOGG 2017.



Chapter 16 and Haplogroup Q-M242.

The Genetic-Linguistic Interface.

Supplementary Figure 16.1: Part A. Haplogroup Q-M242 and its Informative Downstream Mutations.

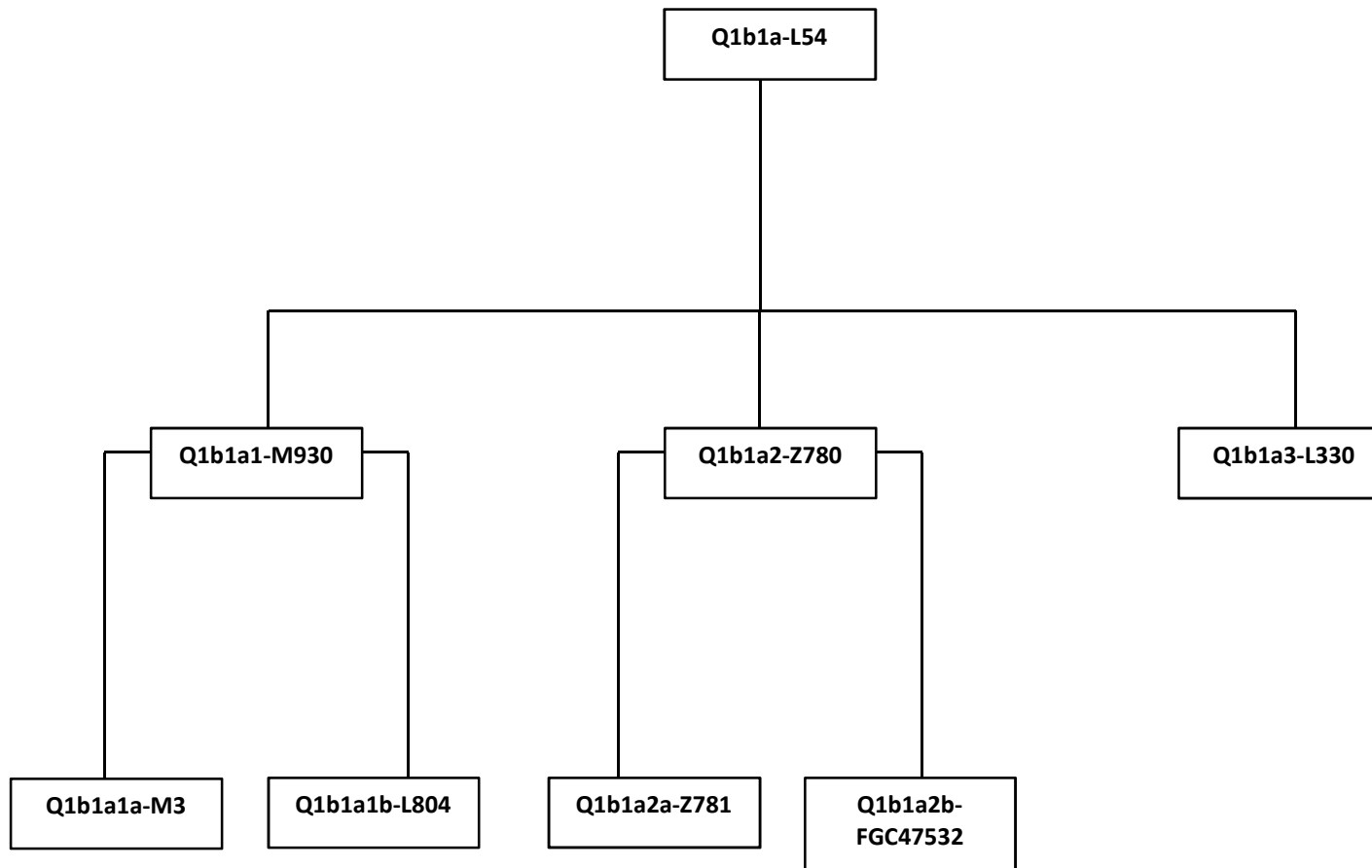




Chapter 16 and Haplogroup Q-M242.

The Genetic-Linguistic Interface.

Supplementary Figure 16.1: Part B. Haplogroup Q-M242 and its Informative Downstream Mutations.

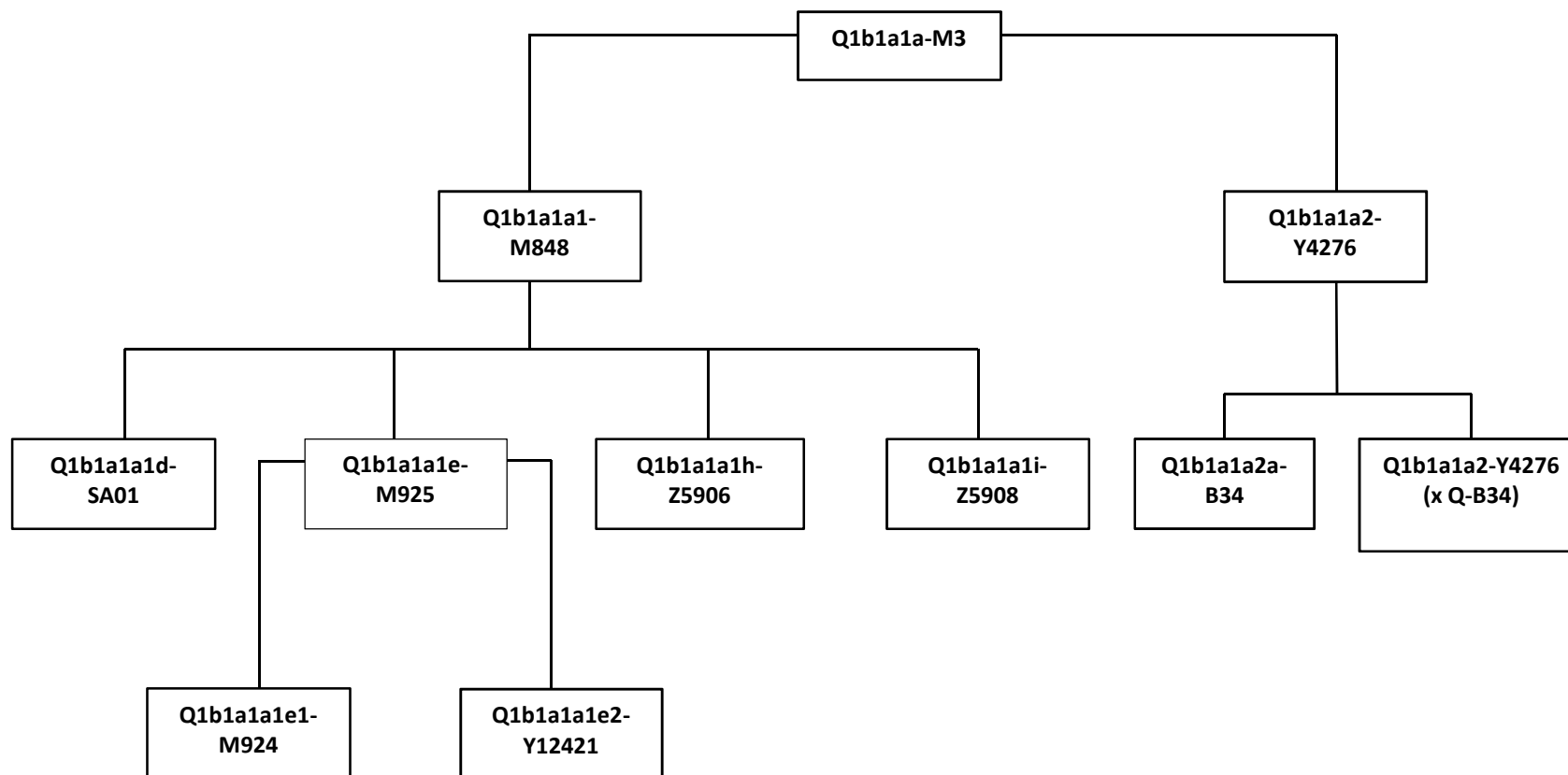




Chapter 16 and Haplogroup Q-M242.

The Genetic-Linguistic Interface.

Supplementary Figure 16.1: Part C. Haplogroup Q-M242 and its Informative Downstream Mutations.

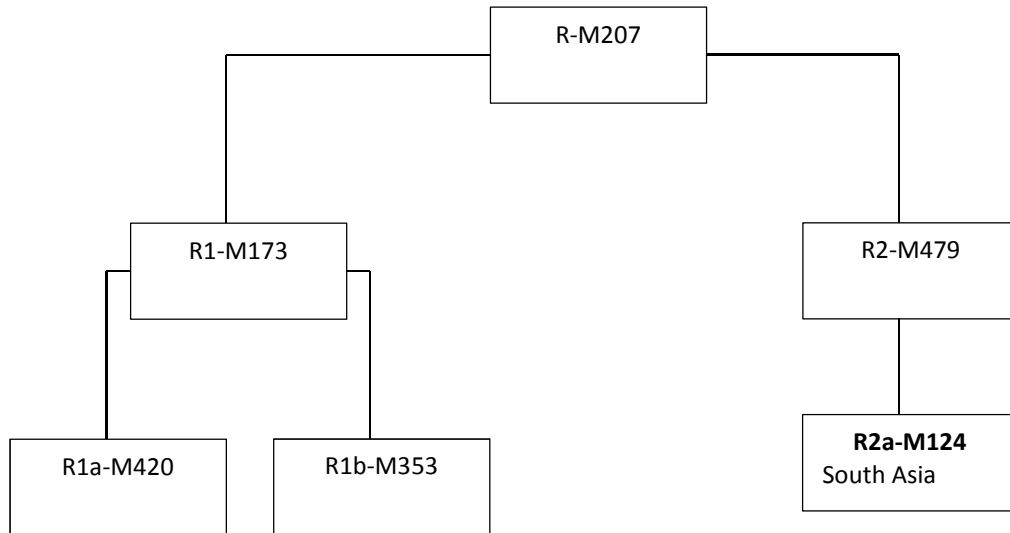




Chapter 17 and Haplogroup R-M207.

The Genetic-Linguistic Interface.

Supplementary Figure 17.1. Initial Diversification of Haplogroup R-M207.



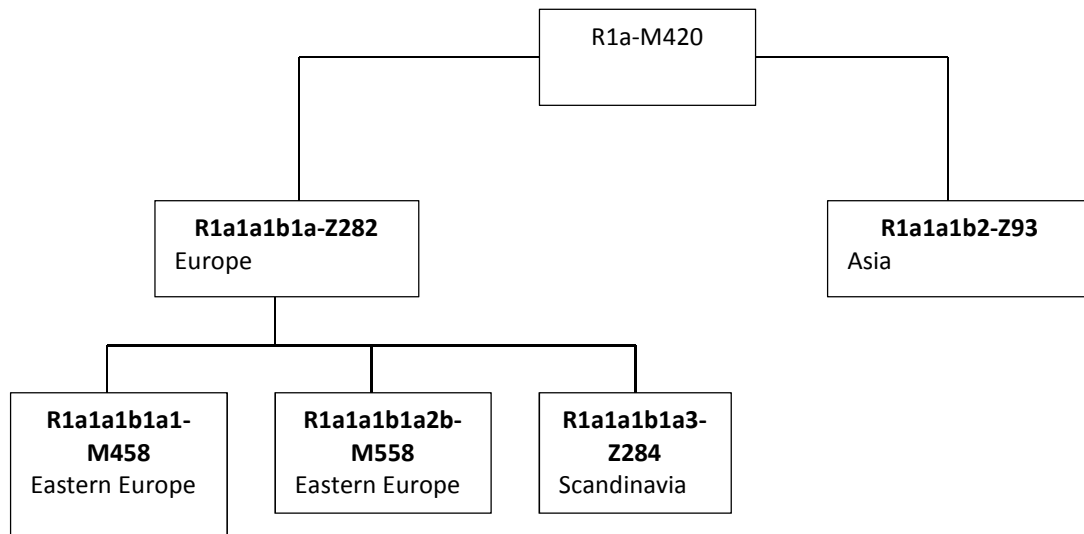
Nomenclature follows ISOGG 2017.



Chapter 17 and Haplogroup R-M207.

The Genetic-Linguistic Interface.

Supplementary Figure 17.2. Linguistically Informative R1a-M420 Mutations.



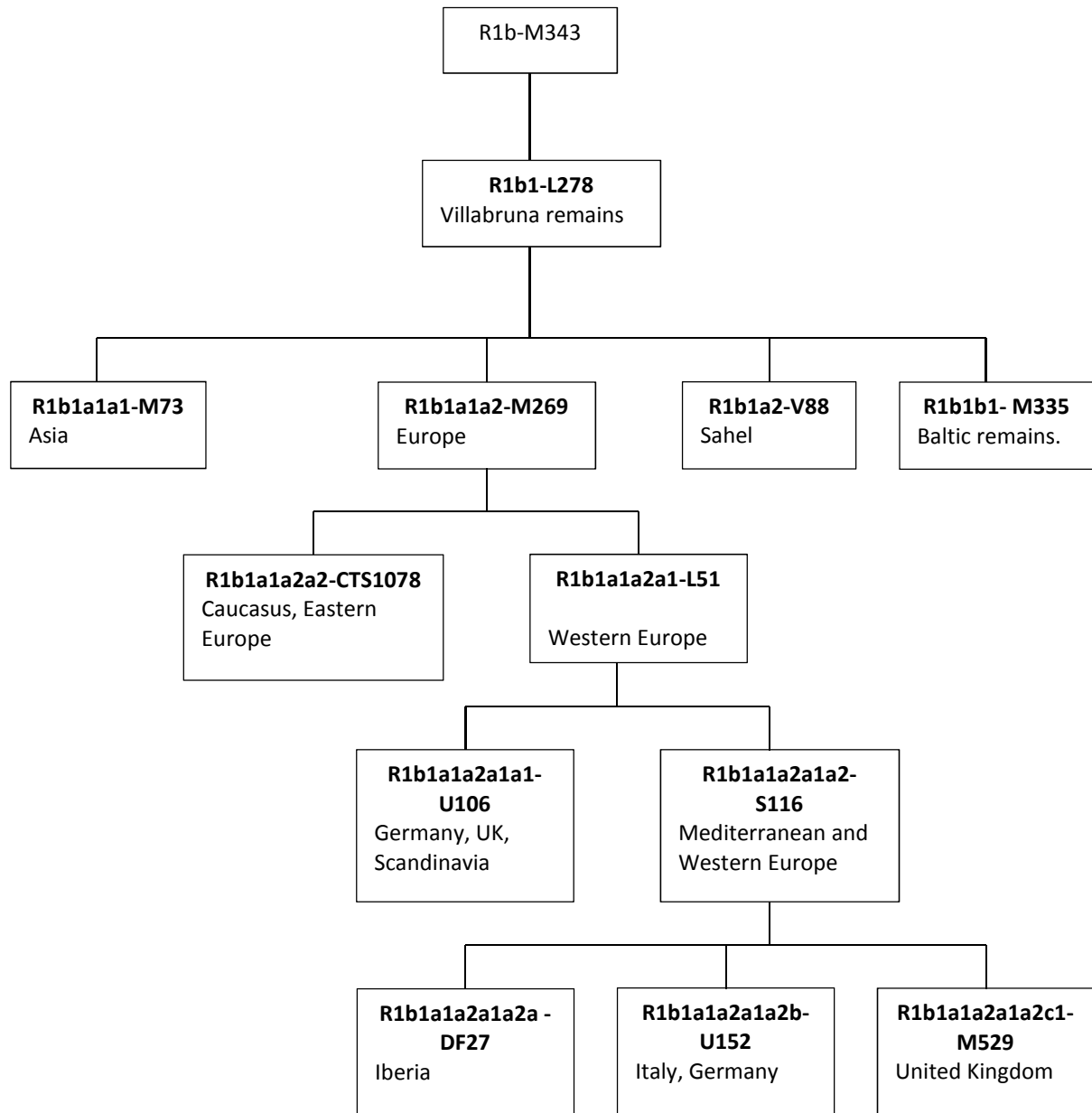
Nomenclature follows ISOGG 2017.



Chapter 17 and Haplogroup R-M207.

The Genetic-Linguistic Interface.

Supplementary Figure 17.3. Linguistically Informative R1b-M343 Mutations.



Nomenclature generally conforms to ISOGG 2017.