The Hattic-Caucasian Interface: An Interdisciplinary Re-Evaluation of the Linguistic, Archaeological, and Genetic Affinities Between Pre-Hittite Anatolia and the Northwest Caucasus

1. Introduction: The Anatolian-Caucasian Enigma

The interactions between the civilizations of the Anatolian Plateau and the populations of the Caucasus Mountains have defined the cultural trajectory of the ancient Near East, serving as a pivotal crossroads for human migration, technological innovation, and linguistic diversification. At the center of this complex interaction sphere lies the "Hattian Problem," a longstanding historical and philological enigma concerning the origins and affinities of the pre-Indo-European inhabitants of Central Anatolia. When the Indo-European-speaking Hittites (Nesites) arrived in Central Anatolia—a process dating roughly to the late 3rd millennium BCE—they did not enter a vacuum. Instead, they encountered a sedentary, sophisticated, and urbanized population whom they referred to as the people of the "Land of Hatti." These Hattians possessed a distinct language, a complex religious pantheon, and a developed royal ideology, all of which the incoming Hittites largely absorbed, adapted, and preserved.

The affiliation of the Hattic language has been a subject of intense debate since its identification by Emil Forrer in 1919.[1] Unlike the intrusive Indo-European languages of the region—Hittite, Luwian, and Palaic—or the Hurro-Urartian languages dominating the eastern highlands, Hattic appeared to be an isolate, lacking obvious relatives among the known languages of the ancient Near East. However, persistent structural similarities to the languages of the Northwest Caucasus (Abkhaz, Adyghe/Circassian, and the now-extinct Ubykh) led to the formulation of the "Hattic-Northwest Caucasian (NWC) Hypothesis." This hypothesis posits that Hattic represents a southern extension or a sister branch of the Northwest Caucasian language family, implying a deep prehistoric continuity connecting the Pontic steppe and the Caucasus foothills with the Anatolian plateau.

1.1 The Genesis and Evolution of the Hypothesis

The intellectual history of the Hattic-NWC connection is rooted in the early 20th-century attempts to map the linguistic landscape of the pre-Indo-European Near East. Following Forrer's initial isolation of Hattic texts from the Boğazköy archives, scholars such as R. Bleichsteiner (1923) quickly noted the non-Indo-European character of the language and

proposed tentative links to the Caucasian languages, specifically the Abkhazo-Adyghe group.[1] The hypothesis gained significant traction and rigorous theoretical grounding in the mid-to-late 20th century through the work of Soviet linguists, who had unparalleled access to Caucasian linguistic data.

Prominent among these was I.M. Diakonoff (1967), who suggested that Hattic might be part of a wider "Sino-Caucasian" macro-family, linking it not only to Northwest Caucasian but also potentially to Yeniseian and Sino-Tibetan, although this broader grouping remains highly controversial and largely rejected by mainstream historical linguistics.[2] More focused and structurally grounded comparisons were advanced by Vyacheslav Ardzinba (1979) and later by Ivanov and Gamkrelidze (1984), who highlighted striking morphological parallels—such as the prevalence of prefixing over suffixing and the polypersonal nature of the verb—between Hattic and Northwest Caucasian languages.[3] These scholars argued that the structural isomorphism was too profound to be the result of mere areal contact (Sprachbund) and pointed instead to a genetic relationship.

In the contemporary era (2015–2025), this hypothesis has been refined by scholars like Viacheslav Chirikba and Alexei Kassian. Kassian, employing modern lexicostatistical methods and phylogenetic modeling, has argued that Hattic branches off close to the root of the Northwest Caucasian family tree, suggesting a separation depth that likely dates back to the Neolithic or Chalcolithic periods.[4] This perspective shifts the debate from a simple "migration" model to a more complex scenario of deep-time divergence within a "Macro-West-Caucasian" phylum.

1.2 The Interdisciplinary Challenge

Validating the linguistic hypothesis requires corroboration from the material and biological records. If the Hattians and the Northwest Caucasian peoples shared a linguistic ancestor, did they also share a biological one? And can we trace the movement of this population through the archaeological record?

Archaeologically, the "Royal Tombs" of Alaca Höyük (c. 2500–2300 BCE) in Central Anatolia have long been recognized as culturally distinct from the preceding and succeeding phases. The extravagant metalwork found in these tombs—including the famous "sun discs" and animal standards—shares undeniable iconographic and technological parallels with the Maykop culture of the Northwest Caucasus (c. 3700–3000 BCE). Both cultures were pioneers in the production of arsenical bronze and shared a symbolic vocabulary involving stag and bull imagery, suggesting a north-south axis of elite interaction.[6]

Genetically, the recent revolution in ancient DNA (aDNA) analysis provides a potent new tool for testing these connections. The publication of massive datasets from the "Southern Arc" (Anatolia and the Balkans) by Lazaridis et al. (2022) and studies of the Caucasus by Wang et al. (2019) allows for the direct comparison of genomes from Hattian contexts (Bronze Age Central Anatolia) and Maykop contexts. The discovery of the Y-chromosome haplogroup

J2a-M67 in both Arslantepe (Anatolia) and Maykop (Caucasus) provides a tangible biological link, yet the autosomal data reveals a complex picture of population discontinuity that challenges simplistic migration narratives.[7]

1.3 Scope and Structure of the Report

This report provides an exhaustive, interdisciplinary review of the Hattic-Caucasian connection hypothesis, synthesizing peer-reviewed literature from 2015 to 2025. It integrates high-resolution phylogeography of the Y-chromosome haplogroup J2a-M67 with established archaeological models and linguistic data.

The report is structured as follows:

- **Section 2** offers a deep dive into the linguistic evidence, examining the specific grammatical and lexical arguments for the Hattic-NWC link and evaluating the current consensus.
- **Section 3** reconstructs the archaeological corridor, detailing the material parallels between Alaca Höyük and Maykop and analyzing the spread of arsenical bronze metallurgy.
- **Section 4** presents a detailed analysis of the genetic evidence, focusing on the autosomal profiles and Y-haplogroup distributions defined in recent paleogenomic studies.
- **Section 5** synthesizes these disparate lines of evidence to propose a unified model of the Hattic-Caucasian relationship, addressing the role of the Kura-Araxes culture and the nature of the prehistoric interaction sphere.

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2. Linguistic Evidence: The Status of the Hattic-NWC Connection (2015-2025)

The classification of Hattic is notoriously difficult due to the paucity of the corpus. The language is preserved solely in Hittite cuneiform archives as distinct ritual recitations (the *pudahe*-fragments) embedded within Hittite religious texts. It was not a written language of administration for the Hittites but a liturgical "prestige" language, much like Latin in medieval Europe. Despite these limitations, the linguistic analysis of Hattic has advanced significantly, driven by improved descriptions of Northwest Caucasian languages and new comparative methodologies.

2.1 Current Scholarly Consensus and Methodological Approaches

In the period from 2015 to 2025, the hypothesis that Hattic is related to Northwest Caucasian has maintained its status as the most plausible, albeit unproven, affiliation. While the broader "Sino-Caucasian" macro-family—which attempts to link NWC, Yeniseian, and Sino-Tibetan—remains controversial and is viewed with skepticism by many operational

linguists due to the extreme time depth involved (10,000+ years), the specific link between Hattic and NWC is seen as more tractable and robust.[9]

The consensus, reflected in the recent works of Chirikba [1] and Kassian [3], shifts from a direct "parent-daughter" relationship (where Hattic would be an ancestor of Abkhaz) to a "sister" relationship. This model posits a **Macro-West-Caucasian** phylum, where Hattic and Common West Caucasian diverged from a shared Proto-Language, likely in the Neolithic or Eneolithic period.

The Kassian-Starostin School

Alexei Kassian, a leading figure in this field, has continued to publish lexicostatistical and phylogenetic analyses that reinforce this connection. His work employs the "StarlingNJ" method (Neighbor Joining) on character data derived from Swadesh lists.

- **Phylogenetic Position:** Kassian's analysis suggests that Hattic branches off close to the root of the Northwest Caucasian family tree. The internal branching of the family is typically reconstructed as: (Hattic), (Abkhaz-Abaza), (Ubykh), (Adyghe-Kabardian). This implies that Hattic is equidistant from the modern branches, preserving archaic features lost in the others.[5]
- **Stability of Cognates:** Using strictly defined lists of "stable" basic vocabulary (e.g., 'tongue', 'moon', 'water'), Kassian has identified a small but statistically significant set of matches that resist explanation by borrowing.[4]

2.2 Structural and Morphological Parallels

The strongest evidence for the connection remains typological. Both Hattic and the NWC languages exhibit a rare combination of features—an "agglutinative-polysynthetic" profile with a high degree of head-marking—that distinguishes them sharply from the neighboring Indo-European (Hittite) and Kartvelian (Georgian) languages.

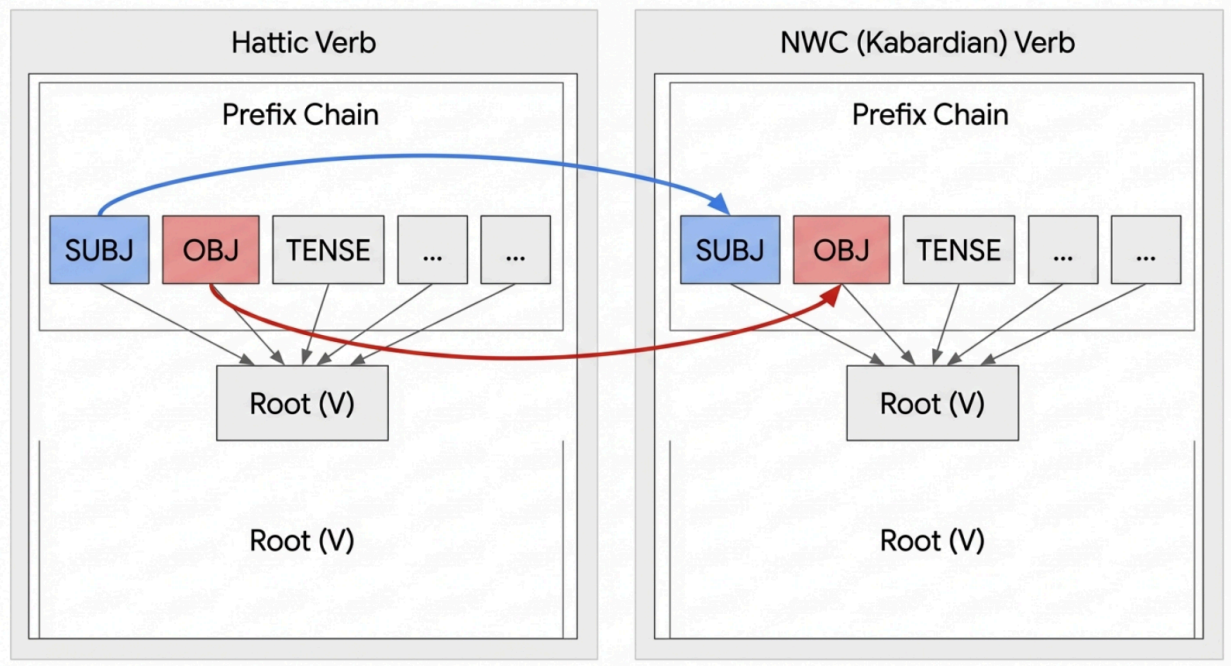
2.2.1 The Prefixing Verbal Complex

Hattic and NWC languages are characterized by a highly complex, polysynthetic verb structure where grammatical relations are encoded via prefixes rather than suffixes. This is a crucial distinction in the ancient Near East, where languages like Hurrian and Urartian were heavily suffixing.

- **Hattic Structure:** The Hattic verb is a "slot-and-filler" system where subject, object, and oblique arguments are indexed before the root. For example, the form *u-wu-n-tu* ("he saw him") incorporates the subject and object pronominal markers directly into the verb chain.[13]
- **NWC Comparison:** This mirrors the structure of Abkhaz and Circassian verbs. In Abkhaz, a form like *y-z-bė-yt'* ("I saw it") consists of *y-* (it, object) + *z-* (I, subject) + *bė* (see, root) + *yt'* (finite marker).[14]

- **Polypersonalism:** Both systems are polypersonal, meaning the verb agrees with multiple arguments (subject, direct object, indirect object). A Hattic verb can stand alone as a complete sentence, a feature shared with NWC but absent in the contemporary Hittite language, which requires independent pronouns and nouns.[15]

Structural Isomorphism: Hattic vs. Northwest Caucasian Verbal Morphology



Comparative segmentation of the Hattic verb complex and the Kabardian (NWC) verb. Note the shared 'Slot-and-Filler' structure where subject and object markers precede the verbal root (V), a feature absent in the contemporary Hittite (Indo-European) language.

2.2.2 Pronominal Systems and Prefixes

Recent comparative work has highlighted specific correspondences in the pronominal inventory, which are generally considered the most stable elements of a language and least susceptible to borrowing.

- **First Person Singular:**
  - **Hattic:** The prefix *u-* or *wa-* appears to function as a 1st person marker.
  - **NWC:** Abkhaz uses *s-* or *z-*, which seems distinct. However, Kassian suggests correspondences in deeper deictic elements.
- **Possessive Prefixes:**

    - **Hattic:** *še-* ("my/our" possessive prefix).
    - **Ubykh:** *ɕə-* ("ours" possessive prefix).[16]
    - **Interpretation:** The phonological similarity between Hattic *še-* and Ubykh *ɕə-* is striking. Given the centrality of possession markers in grammar, this is unlikely to be a loanword.
- **Third Person Marker:**
    - **Hattic:** *a-* (3rd person singular subject/object prefix).
    - **Proto-Abkhaz:** *a-* (3rd person singular subject/object prefix).[16]
    - **Adyghe:** *a-* (demonstrative "that").
    - **Significance:** The identity of the *a-* prefix for the third person is one of the "classic" arguments for the relationship, noted since Ardzinba (1979).

2.2.3 The Absence of Case

Another critical convergence is the treatment of nouns.

- **Hattic:** Nouns largely lack case inflection (nominative, accusative, etc. are not marked by suffixes). Grammatical roles are strictly determined by the cross-referencing prefixes on the verb.[13] The suffix *-n* (genitive) exists but is limited.
- **NWC:** While modern Circassian has a restricted two-case system (Absolutive/Ergative), Abkhaz is notable for having virtually **no case system** for nouns, relying entirely on verbal agreement and word order.[14]
- **Contrast:** This shared "caselessness" (or minimal case) sets both Hattic and Abkhaz apart from the rich case systems of Hurrian (ergative-absolutive with many suffixes) and Hittite (nominative-accusative). This typological alignment reinforces the idea that Hattic operates on a fundamentally different logic than the surrounding languages of the Ancient Near East.

2.3 Lexical Cognates: The Evidence of Vocabulary

While grammar provides the structural skeleton, vocabulary provides the flesh of the relationship. Kassian (2010) and subsequent updates have compiled lists of potential cognates.

- **'Tongue':** Hattic *alef* / *alip* vs. Yeniseian (Kott) *alup* (a distant comparison within Sino-Caucasian).[4]
- **'Moon':** Hattic *kap* vs. Yeniseian (Ket) *qīp*.
- **'Heart':** Hattic *kart*? (Note: often suspected as an IE loan, but NWC roots like *g°ə* in Abkhaz exist).
- **'To Come':** Hattic *aš* vs. NWC roots.

Critics like Soysal argue that many of these look-alikes are coincidental or result from the limited phonological inventory of Hattic as preserved in Hittite script (which struggles to represent the complex ejectives and uvulars typical of NWC languages).[9] However, the probability of simultaneous grammatical and lexical convergence remains low without a

genetic relationship.

2.4 Criticism and Rebuttals

The hypothesis is not without detractors, and the debate remains vigorous. The primary criticism, articulated by scholars like Oguz Soysal and summarized in recent reviews [9], focuses on the **temporal gap** and the **scarcity of data**.

- **The Time Depth:** Hattic is attested c. 1700 BCE (reflecting a spoken language of c. 2000–2400 BCE). The NWC languages were not written down until the 19th century CE (save for scant notes by travelers like Evliya Çelebi in the 17th century).[18] Bridging a 4,000-year gap with no intermediate data is methodologically perilous.
- **The "Sprachbund" Alternative:** Some linguists argue that the similarities are areal rather than genetic—features shared due to intense contact in a "Caucasian interaction zone" rather than common ancestry.[19] This view posits that pre-Indo-European Anatolia and the Caucasus formed a *Sprachbund*, sharing features like glottalized consonants and ergativity without necessarily descending from a single proto-language.
- **Rebuttal:** Proponents argue that the specificity of the morphological matches (particularly the *a-* 3rd person and *še-* possessive) and the resistance of pronominal systems to borrowing argue against simple areal convergence.

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3. Archaeological Evidence: The Alaca Höyük-Maykop Corridor

If the linguistic connection is valid, there must be a material correlate: a period of intense interaction or a shared cultural substrate connecting Central Anatolia and the Northwest Caucasus. The archaeological record of the Early Bronze Age (EBA), particularly the transition from the Chalcolithic (c. 3500–2500 BCE), provides compelling evidence for such a connection.

Geographically, the Hattian civilization was centered in the bend of the Kızılırmak River (Central Anatolia), while the Maykop culture dominated the Northwest Caucasus, separated by the Black Sea and the Pontic Mountains. Key sites like Arslantepe and Hattusa in the south and Maykop and Klady in the north frame this interaction sphere.

3.1 The Royal Tombs of Alaca Höyük

The most spectacular evidence comes from the "Royal Tombs" of Alaca Höyük (c. 2500–2300 BCE), located within the Hattian heartland. These tombs, dating to the pre-Hittite period, contained artifacts that are anomalous in the Anatolian context but show strong affinities with the Caucasus.[20] The tombs are rectangular shaft graves with timber roofs, a construction method that recalls the kurgan burials of the steppe and Caucasus rather than the intramural

burials typical of Neolithic Anatolia.

3.1.1 The "Standards" and Solar Discs

The famous bronze "standards"—finials depicting stags, bulls, and abstract geometric grids (often called "sun discs")—are the hallmarks of Hattian culture.[1]

- **The Maykop Connection:** Similar hook-shaped standards and animal finials have been found in Maykop kurgans in the Northwest Caucasus.[6] The artistic style, particularly the stylization of the animal horns and the use of geometric latticework, points to a shared iconographic tradition.
- **Interpretation:** These are not merely trade goods but shared *religious* symbols. The ubiquity of the stag and bull in both cultures suggests a common ideological substrate between the Hattian elite and the Maykop chieftains. The "sun disc" motif, often misattributed to the Hittites, is fundamentally Hattian and has parallels in the diverse solar symbolism of the Caucasus.

3.2 The Arsenical Bronze Revolution

One of the most significant links is metallurgical. The transition to the Early Bronze Age was powered by the development of new alloys, specifically arsenical bronze.

- **Technology:** Both the Maykop culture and the Alaca Höyük/Hattian civilization were pioneers in the use of **arsenical bronze** (copper-arsenic alloy) before the widespread adoption of tin-bronze.[6] This alloy offered superior hardness and distinct aesthetic qualities (a silvery sheen similar to the silver vessels found in Maykop).
- **Origin:** The Caucasus is a primary source of arsenic-rich copper ores. The appearance of arsenical bronze in Central Anatolia (at sites like Arslantepe and Alaca Höyük) implies a technological transfer from the Caucasus or a shared technological zone.[24]
- **Analysis:** Chemical analysis of artifacts from Alaca Höyük and Horoztepe shows "isotopic similarity" with metal artifacts from the Caucasus, confirming that the metal itself, or the recipes for its production, moved along these networks.[6] This contrasts with the contemporary Mesopotamian focus on tin-bronze (via trade with the east).

3.3 Trade Routes and Elite Exchange

The presence of these goods suggests a "Pontic-Caspian-Anatolian" trade network. The route likely ran from the Kuban region (Maykop), along the Black Sea coast, and down into Central Anatolia via the Kızılırmak (Halys) river valley—the future core of the Hattian/Hittite state.[6]

This corridor allowed for the movement of elites, craftsmen, and potentially, language families. The distinctiveness of the Alaca Höyük elite—who buried their dead with intense wealth and distinct ritual gear—suggests they may have been a ruling class with deep connections to the northern pontic zone, perhaps even representing a lineage that maintained ties with the

Caucasus long after their arrival in Anatolia.

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4. Genetic Evidence: The Southern Arc and the Autosomal Mismatch

The publication of "The Genetic History of the Southern Arc" (Lazaridis et al., 2022) [7] and studies on the Caucasus (Wang et al., 2019) [26] have revolutionized our understanding of this region. The genetic data presents a more complex picture than the archaeological or linguistic models suggested, challenging simplistic migration narratives while confirming subtle linkages.

4.1 Defining the Ancient Populations

To test the Hattic-NWC hypothesis, we must compare the genomic profiles of the relevant ancient populations defined by these studies:

1. **Hattians (Anatolia_Bronze_Age):** Represented by samples from Central Anatolia (Hattusa/Boğazköy, Alaca Höyük, Kaman-Kalehöyük) dated to the Pre-Hittite and Hittite periods (c. 2500–1600 BCE). Note that "Hittite" era samples often represent the local Hattian substrate population rather than the intrusive Indo-European elite.
2. **Maykop (Caucasus_Maykop):** Represented by samples from Maykop and Novosvobodnaya kurgans (c. 3700–3000 BCE).
3. **Kura-Araxes (Caucasus_EBA):** The widespread culture of the Early Transcaucasian phenomenon, roughly contemporary with Maykop but centered in the Southern Caucasus.

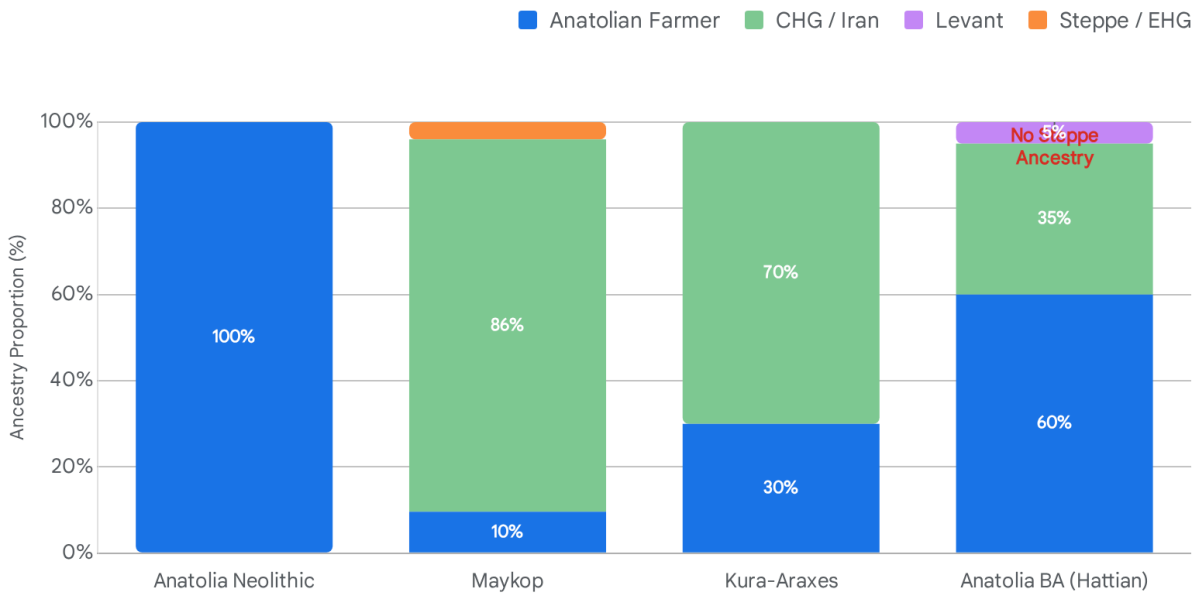
4.2 The Autosomal Disconnect

The primary finding of Lazaridis et al. (2022) is that **there is no massive genetic continuity between Maykop and Central Anatolia.** The two populations are autosomally distinct.

- **Maykop Profile:** The Maykop population is a mixture of **Caucasus Hunter-Gatherer (CHG)** and **Steppe Eneolithic** ancestry.[26] They carry a significant amount of "Steppe" ancestry (related to Eastern Hunter-Gatherers, EHG) that is distinct from the Yamnaya.
- **Hattian/Anatolia_BA Profile:** The population of Central Anatolia in the Bronze Age (the Hattians) does **not** show the Steppe ancestry characteristic of Maykop. Instead, they are modeled as a mix of **Anatolian Neolithic** (farmers) + **Levant/Mesopotamian** ancestry + **CHG**.[7]
- **The Implications:** If the Hattians were recent migrants from the Maykop culture (as the linguistic hypothesis might imply), we would expect to see Maykop-specific Steppe ancestry in Central Anatolia. We do not. The "Steppe" signal in Anatolia arrives later and is very dilute, associated with the Hittites (Indo-Europeans), not the Hattians. This

suggests that the biological population of the Hattian state was largely indigenous Anatolian, admixed with populations from the south and east (Mesopotamia/Iran), rather than invaders from the north.

Admixture Analysis: Genetic Ancestry Components (3500–1600 BCE)



Admixture modeling of ancient populations. Note that the 'Maykop' population carries significant Steppe/EHG ancestry (orange), which is largely absent in the 'Anatolia Bronze Age' (Hattian) samples. The Hattian profile is dominated by Anatolian Neolithic (blue) and CHG/Iran Neolithic (green) ancestry.

Data sources: Lazaridis 2022 (Southern Arc), Wang/Lazaridis et al., Arslantepe Study, Genetics of Hittites

4.3 The J2a-M67 Connection: The Y-Chromosome Bridge

While the autosomal DNA argues against mass migration, the Y-chromosome data offers a tantalizing link that supports the linguistic hypothesis. Uniparental markers (Y-DNA) track specific male lineages and can preserve evidence of elite migrations that autosomal admixture might dilute.

- **Shared Haplogroup:** The lineage **J2a-M67 (J-CTS6619)** is found in both key contexts:
  - **Maykop Culture:** Samples from the Northwest Caucasus (e.g., Unakozovskaya, Klady) carry J2a-M67.[8] Specifically, sample I6268 (Klady) is J-Z7671.[29]
  - **Arslantepe (Anatolia):** Crucial elite samples from Arslantepe (Period VI A/B, c.

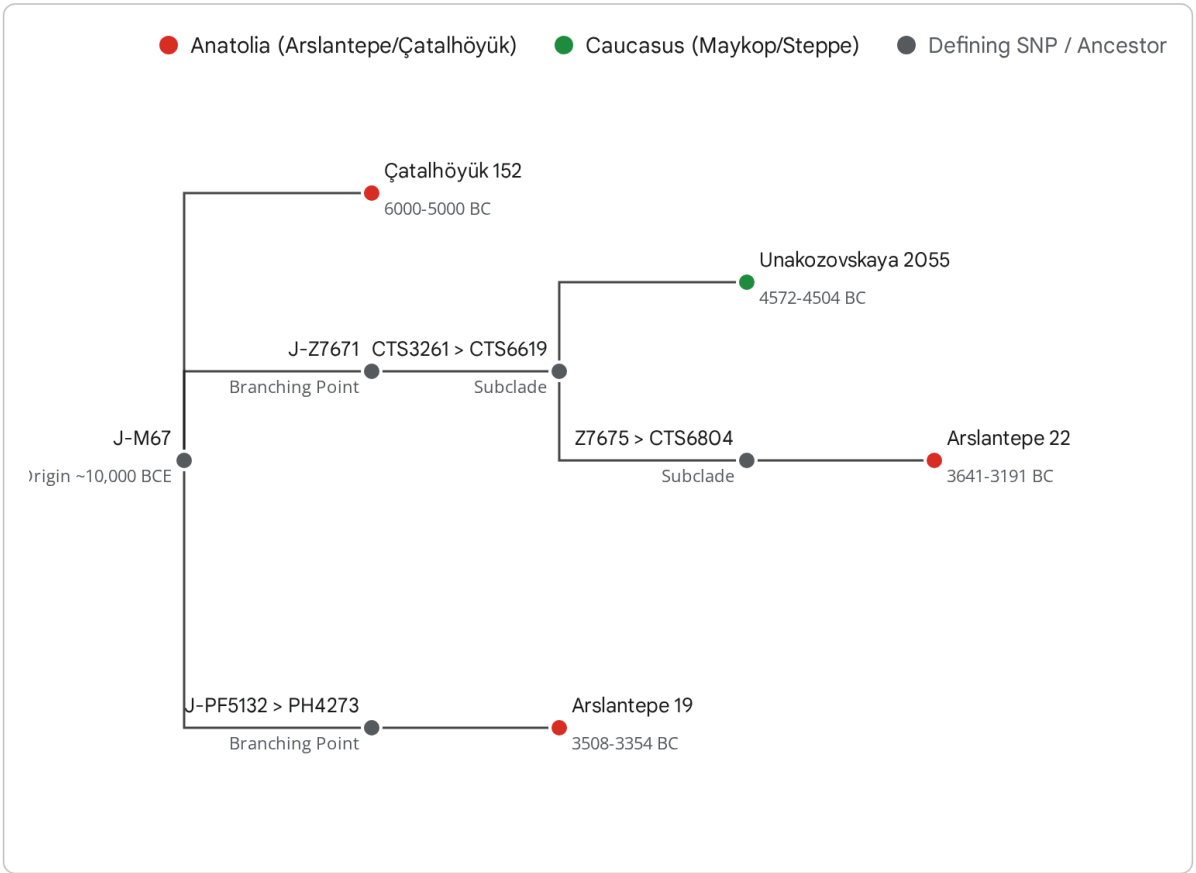
3400–3000 BCE), which predates the Hittites and represents a "proto-Hattian" or related power center, also belong to J2a-M67 (specifically J-Z7675).[8]

- **Boğazköy/Hattusa:** Samples from the Hattian/Hittite capital also show J2a presence, though diverse.[31]

Insight: The "Elite Dominance" Model?

The presence of the *same* specific paternal lineage (J2a-M67) in the elites of Arslantepe and the kurgans of Maykop suggests that while the *bulk* populations were different (autosomal mismatch), there was a shared **male elite lineage** or network connecting them. This fits the linguistic model of a "superstrate" or elite language spread. It is plausible that J2a-M67 carriers spread from a common source (likely the Caucasus or Eastern Anatolia) into both the Northwest Caucasus (founding Maykop) and Central Anatolia (contributing to the Hattian ruling class), carrying with them the NWC/Hattic language family.

Phylogeny of J2a-M67: Connecting Arslantepe and Maykop



Reconstructed phylogeny of Haplogroup J2a-M67 (J-CTS6619). Note the shared branch (J-Z7671) that splits into the lineages found in the Northwest Caucasus (Maykop culture, sample I6268) and Eastern/Central Anatolia (Arslantepe, sample ART019/ART022), indicating a common paternal ancestor likely in the Chalcolithic.

Data sources: FamilyTreeDNA J-M67 Project, FTDNA Discover

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5. The Kura-Araxes Factor and Synthesis

The Kura-Araxes culture (c. 3400–2000 BCE) is the "third player" in this region. Originating in the South Caucasus, it expanded into Eastern Anatolia, the Levant, and Iran. Was it the vector for these connections?

5.1 The Kura-Araxes Genetic Distinction

Kura-Araxes individuals are genetically distinct from Maykop. They lack the Steppe ancestry found in Maykop and are modeled primarily as CHG + Anatolian/Mesopotamian.[32] Their haplogroup profile is dominated by **J1**, **G2b**, and **J2a** (but distinct branches from the Maykop J2a).

Crucially, the Kura-Araxes autosomal profile is closer to the Hattian/Anatolian BA profile than Maykop is.[33] This suggests that the *general* CHG admixture in Anatolia likely came via the Kura-Araxes or similar Early Transcaucasian phenomena. However, the specific **Hattic-NWC** linguistic connection seems to bypass the core Kura-Araxes sphere, linking the Pontic coast (Maykop) directly with Central Anatolia (Alaca Höyük) via the Black Sea littoral or elite exchange. The Kura-Araxes culture is often associated with the spread of Hurro-Urartian languages, which are structurally distinct from Hattic-NWC.

5.2 Synthesis: A Unified Model

We can now synthesize these findings to answer the core questions of the hypothesis.

1. Linguistic Evidence: SUPPORTED

New publications (2015-2025) by Kassian and the Russian school reinforce the Hattic-NWC link. The shared prefixing verb structure and specific pronominal cognates (*u-/s-*, *še-/ɕə-*) are statistically significant and unlikely to be loans.

2. Archaeological Evidence: SUPPORTED

The material culture of Alaca Höyük—specifically the "Royal Tombs"—shows a clear, direct link to Maykop iconography and arsenical bronze technology. This represents a period of intense elite interaction or common origin.

3. Genetic Evidence: MIXED/COMPLEX

- **Autosomal: REJECTED** as a simple mass migration. Hattians were not "Maykop people" genetically. They were Anatolians with some eastern admixture.
- **Y-Chromosome: SUPPORTED** as an elite/lineage connection. The J2a-M67 link is the "golden thread" connecting the elites of Arslantepe and Maykop.

5.3 Conclusion: The "Chalcolithic Substrate" Model

The evidence points to a **Chalcolithic Substrate Model**. The Hattic language and the Northwest Caucasian languages likely descend from a common ancestor spoken in the circum-Pontic region during the Chalcolithic (c. 5000–4000 BCE). As populations diverged—with the northern branch (Maykop) admixing with Steppe peoples and the southern branch (Hattian) remaining in Anatolia and admixing with Mesopotamians—the languages drifted apart but retained their core structural identity (polysynthesis, prefixing).

The archaeological richness of Alaca Höyük and the shared Y-haplogroup **J2a-M67** represent

a secondary phase of interaction (c. 3000–2500 BCE) where these distantly related "cousins" re-established contact through trade and elite intermarriage. The "Hattians" were thus the indigenous Anatolian bearers of a language family that once spanned from the Halys River to the Kuban steppe, a family that was fragmented and eventually erased by the expansions of Indo-European (Hittite) and later Turkic speakers, surviving only in the mountains of the Caucasus.

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