

# **The Ancestral Antagonist Theorem:** A Genealogical and Historical Inquiry into Descent, Fiction, and the Marcomannic Wars in the Context of Carinthian Heritage

Crassifolius Project, Gemini 3 Pro, ChatGPT 5.2

January 3, 2026

## **1 Introduction: The Musical and Historical Paradox**

The genesis of this inquiry lies in a modern act of creation facilitated by artificial intelligence: the generation of two distinct musical compositions via Suno AI. One version manifests in the “actual” dialect of Carinthia, a linguistic artifact of the Bavarian, Slavic synthesis that defines the southern Austrian borderlands. The second version, articulated in a “made-up fantasy language” that arguably sounds “Roman,” serves as a phantom *limba* linguistic hallucination of an empire that once governed the very soil upon which the user stands.

This creative duality inadvertently reconstructs the profound historical tension of the region: the collision between the Latin South and the Germanic North. The users query, whether the cinematic figure of *Maximus Decimus Meridius* (assuming his historical reality) is more likely to be an ancestor or the executioner of the user’s ancestors, transcends simple trivia.

It invites a rigorous, multi-layered examination of historical demography, the mathematics of pedigree collapse, the military history of the Danube frontier (specifically the Marcomannic Wars of 166–180 AD), and the genetic stratigraphy of the modern Austrian population.

To answer this, we must navigate a timeline that stretches from the 2<sup>nd</sup>-century crisis of the Roman Empire to the algorithmic probabilities of the 21<sup>st</sup> century. The conclusion, as this report will demonstrate, is not a binary choice between “ancestor”

or “killer.” Rather, the historical and statistical evidence suggests a complex superposition: the user is the biological resolution of a conflict where the “Roman” protagonist likely hunted the user’s Germanic forebears while simultaneously contributing the genetic material that ensured the user’s existence.

## 2 The Ghost in the Machine: Suno AI and the “Fantasy Roman” Tongue

Before dissecting the historical Maximus, it is necessary to analyze the “fantasy language” generated by Suno AI. This linguistic artifact is not merely random noise; it is a probabilistic reconstruction of the “Roman” acoustic aesthetic, reflecting how deep learning models process cultural memory.

### 2.1 The Mechanism of Hallucinated Latinity

Suno AI operates on large language models (LLMs) and audio synthesis architectures that predict sequences of phonemes based on training data. When prompted to create a “fantasy” language that sounds “Roman,” the model does not access a dictionary of Classical Latin. Instead, it accesses a vast corpus of associations: choral music, epic soundtracks, and phonetic patterns associated with the Romance language family.

The “Roman” sound is characterized by several phonological traits:

- **Vowel Purity:** A dominance of open vowels (*a, e, i, o, u*), avoiding diphthongs and schwas.
- **Consonantal Hardness:** Preference for dental and velar stops.
- **Prosody:** Rhythms resembling dactylic hexameter or liturgical chant.

The user’s creation of a “fantasy Roman” song is a digital parallel to the linguistic history of Carinthia itself. The region of Noricum was Romanized for nearly five centuries, and remnants of provincial Latin persisted long after the fall of Rome, influencing later Bavarian dialects.

## **2.2 The Carinthian Counterpart**

The second song, rendered in an actual Carinthian dialect, represents the Germanic superstrate introduced by Bavarian settlers in the 6<sup>th</sup> century. Juxtaposed, the two songs recreate the linguistic and cultural opposition of the Marcomannic Wars: Latin-speaking defenders and Germanic-speaking invaders.

## **3 The Historical Anatomy of Maximus**

The character portrayed in *Gladiator* is fictional, but his historical coordinates are precise enough for genealogical analysis. Three historical figures form the composite archetype of “Maximus.”

### **3.1 Marcus Nonius Macrinus**

Born in Brixia around 115 AD, Macrinus was a senator, consul, and close associate of Marcus Aurelius. He served in Pannonia and Noricum during the Marcomannic Wars and died wealthy in Rome, leaving documented descendants.

### **3.2 Tiberius Claudius Pompeianus**

A Syrian-born general and son-in-law of Marcus Aurelius, Pompeianus served as supreme commander during the wars. He was repeatedly offered the imperial throne and declined.

### **3.3 Marcus Valerius Maximianus**

A career soldier from Pannonia, Maximianus rose through the ranks and is famed for killing a Germanic chieftain in single combat, closely mirroring cinematic depictions.

### 3.4 Comparative Matrix

Feature	Macrinus	Pompeianus	Maximianus	Film Maximus
Origin	Italy	Syria	Pannonia	Spain
Rank	Senator	Senator	General	General
Relation to Aurelius	Friend	Son-in-law	Commander	Favorite
War Role	Pannonia/Noricum	Supreme Command	Cavalry	Northern Front
Lineage	Documented	Documented	Documented	Fictional

## 4 The Battlefield: The Marcomannic Wars in Noricum

The Marcomannic Wars (166–180 AD) were fought on the very soil of modern Austria. In 170 AD, Germanic coalitions breached the Danube frontier and devastated Noricum, razing cities such as Flavia Solva and threatening Aquileia in Italy.

Roman counter-offensives under Marcus Aurelius and his generals involved punitive campaigns: village destruction, enslavement, and forced resettlement.

## 5 The Legion of the Limes: Legio II Italica

Founded specifically for the Marcomannic Wars, *Legio II Italica* was stationed permanently in Noricum at Lauriacum (modern Enns). Veterans settled locally, marrying into provincial populations and embedding Roman genetic material directly into the region.

## 6 The Mathematics of Descent: The Ancestor Paradox

Each generation doubles the number of ancestors:

$$2^{30} \approx 10^9, \quad 2^{60} \approx 1.15 \times 10^{18}$$

This vastly exceeds historical population sizes, leading to *pedigree collapse*. Research on the Identical Ancestors Point (IAP) suggests that by approximately 1000 AD, all Europeans shared the same surviving ancestors. Therefore, any Roman aristocrat with

surviving descendants in 180 AD is almost certainly an ancestor of every modern European.

## **7 The “Killer” Hypothesis: Marcomannic Ancestry**

Modern Austrians descend linguistically and genetically from Bavarians, themselves derived from Marcomanni and Quadi remnants. Since Roman generals led exterminatory campaigns against these tribes, it is statistically inevitable that Roman commanders killed relatives of those who later became ancestors of modern Austrians.

Enslavement and resettlement further entwined Roman and Germanic lineages.

## **8 Genetic Stratigraphy: The Carinthian Mix**

Ancient DNA confirms Carinthia as a genetic palimpsest comprising Celtic, Roman, Germanic, Slavic, and later medieval layers. A modern Carinthian genome contains the DNA of Roman legionaries, Germanic warriors, and provincial civilians alike.

## **9 Synthesis: Resolution of the Query**

### **Is Maximus an Ancestor?**

Yes, with near certainty, due to pedigree collapse and elite lineage survival.

### **Did Maximus Kill Your Ancestors?**

Yes, with near certainty, due to the demographic targeting of Marcomannic populations.

### **The Paradox**

The user embodies the reconciliation of Rome and Germania: the conqueror and the conquered united through descent.

## 10 Conclusion: The Suno Prophecy

The “fantasy Roman” song and the Carinthian dialect song are not contradictions but complementary expressions of the user’s dual heritage. Maximus is both ancestor and antagonist. The user exists precisely because Roman and Germanic lines eventually ceased fighting and merged.

The harmony between these dissonant pasts is the modern individual.

## 11 ChatGPT Notes on the Paper: Formalization of the Ancestral Antagonist Theorem

### 11.1 Motivation

The preceding analysis arrives, implicitly but unavoidably, at a conclusion that exceeds narrative history and enters the domain of formal reasoning. While the paper frames its inquiry playfully asking, whether a Roman general was more likely an ancestor or an executioner, the answer exposes a deeper structural property of human populations over extended time horizons.

This section formalizes that property. The aim is not rhetorical escalation, but clarification: to make explicit what the combined results of genealogy, historical demography, and conflict studies already imply.

### 11.2 Definitions

For the purposes of this section, the following definitions apply:

- **Population:** A reproductively connected group with non-zero gene flow over time.
- **Conflict:** Sustained organized violence between distinguishable populations.
- **Surviving lineage:** A genealogical line with at least one living descendant at the present time.
- **Temporal horizon:** The number of generations elapsed since a historical event.

- **Identical Ancestors Point (IAP):** The time beyond which all individuals in a population share the same set of ancestors, excluding those whose lineages went extinct.

### 11.3 The Ancestral Antagonist Theorem

**Theorem (Ancestral Antagonist Theorem).**

In any human population that persists long enough to pass the Identical Ancestors Point, every historically successful antagonist of that population who left surviving descendants is necessarily an ancestor of that population's modern members.

### 11.4 Proof Sketch (Informal but Rigorous)

1. **Pedigree Expansion.** Each individual has two parents, four grandparents, and so forth. After sufficient generations, the number of ancestral slots grows exponentially.
2. **Pedigree Collapse.** Because historical populations are finite, ancestral lines must converge. The same individuals appear repeatedly in genealogical trees.
3. **Universal Ancestry Beyond the IAP.** Empirical and theoretical research places the Identical Ancestors Point for European populations well within the last two millennia. Beyond this point, every individual with surviving descendants becomes an ancestor of all living members of that population.
4. **Conflict Does Not Halt Reproduction.** Historical antagonists—particularly military and political elites—are disproportionately likely to leave surviving descendants due to status, protection, and reproductive advantage.
5. **Conclusion.** Any antagonist who participated in conflict against a population and left surviving descendants becomes genealogically embedded within the descendant population of their former enemies.

□

### 11.5 Corollaries

#### 11.5.1 Corollary 1: The Futility of Permanent Ancestral Separation

No population that survives long-term can maintain genealogical separation from its historical enemies. Claims of enduring biological “outsider” status fail beyond short

temporal horizons.

### **11.5.2 Corollary 2: Conflict as an Accelerator of Integration**

Rather than preventing admixture, conflict accelerates genealogical integration through forced migration, enslavement, elite dominance, and post-conflict intermarriage. Antagonism is therefore not merely compatible with shared ancestry; it is one of its principal mechanisms.

### **11.5.3 Corollary 3: Symmetry of Victim and Perpetrator Lineages**

Over sufficient time, the distinction between “descendants of victims” and “descendants of perpetrators” collapses genealogically, even if it remains morally, culturally, or politically salient.

## **11.6 Implications for Historical Identity**

The theorem implies a fundamental scale dependence in group identity:

- On short timescales, “us versus them” is operationally meaningful and often adaptive.
- On long timescales, it becomes mathematically incoherent.

Group identities are therefore temporally local constructs rather than enduring biological facts.

## **11.7 Reinterpretation of the Central Question**

The original question, whether Maximus was more likely an ancestor or a killer, can be reclassified. It is not a binary question, but a category error produced by applying short-term moral framing to long-term genealogical systems.

Under the Ancestral Antagonist Theorem:

- Maximus as killer is a historical role.
- Maximus as ancestor is a statistical inevitability.
- The coexistence of both is expected rather than paradoxical.

## 11.8 Meta-Observation

Human cognition evolved to track kinship across limited generations, assign moral categories to agents, and preserve narrative coherence. The theorem violates all three intuitions simultaneously. The resulting dissonance often manifests as humor or discomfort, signaling not error but a mismatch of scale.

## 11.9 Final Note

This theorem does not negate moral responsibility nor erase historical suffering. It establishes a constraint:

No enduring human population can define itself purely in opposition to another without eventually inheriting that opposition as ancestry.

History does not preserve enemies indefinitely; over time, it metabolizes them.

# 12 Appendix

## 12.1 Musical conceptualization

This section documents the computational workflow used to generate the musical structure underlying the composition discussed in this paper. While the exact script version employed during composition cannot be identified with absolute certainty, the workflow described here reflects either the precise implementation used or a functionally equivalent variant. The guiding principle of the workflow is the translation of mathematical structure, specifically Fibonacci growth and Euclidean algorithms, into temporal and harmonic musical form via algorithmic MIDI generation.

## 12.2 Design Principles

The workflow rests on four core design principles:

1. **Deterministic Structure:** Musical form is determined by explicit mathematical rules rather than stochastic processes.
2. **Hierarchical Time Scaling:** Section length, chord duration, and rhythmic subdivision operate at distinct but related temporal scales.
3. **Modal Harmonic Constraint:** Pitch material is restricted to a Lydian-centered harmonic vocabulary to preserve tonal coherence.

4. **Minimal Performative Assumptions:** The output is a MIDI representation intended for interpretation by synthesis or performance systems rather than direct audio rendering.

## 12.3 Technical Environment

The implementation is written in Python and relies on the `mido` library for MIDI file construction. Core parameters include:

- Ticks per beat (TPB): 480
- Tempo: 72 BPM (quarter-note based)
- Fundamental rhythmic unit: eighth notes
- Time signature: 15/8

These values establish a slow, asymmetrical temporal field suitable for extended harmonic motion.

## 12.4 Formal Structure Encoding

Musical form is encoded explicitly as a sequence of named sections:

Intro, Verse, Bridge, Chorus, Verse, Bridge, Chorus, Solo, Outro

Each section is defined by:

- A chord set (pitch-class collections),
- A Fibonacci index controlling temporal scale,
- A repetition count controlling local development.

This approach mirrors traditional song form while allowing mathematically driven variation in duration and density.

## 12.5 Fibonacci-Based Temporal Scaling

Two consecutive Fibonacci numbers are used per chord event. Rather than mapping Fibonacci values directly to time, the workflow computes their relationship via the Euclidean algorithm. Let:

$$F_n = \text{Fibonacci}(n), \quad F_{n+1} = \text{Fibonacci}(n + 1)$$

The number of Euclidean division steps required to reduce  $(F_{n+1}, F_n)$  to zero is used as a discrete duration value. This produces:

- Small integers suitable for rhythmic subdivision,
- Quasi-irrational temporal variation,
- A non-linear sense of expansion without randomness.

This choice replaces naive Fibonacci-to-duration mappings with a musically tractable abstraction.

## 12.6 Pitch and Harmonic Mapping

Pitch material is specified symbolically (e.g., C, E, G, B, F#) and mapped to MIDI note numbers via octave-relative encoding.

Three instrumental roles are defined:

- **Chord Track:** Sustained harmonic fields rendered via a string pad timbre.
- **Bass Track:** Root-note reinforcement one octave below the chord center.
- **Click/Drum Track:** A steady eighth-note pulse serving as temporal scaffolding.

The bass and click tracks derive their durations directly from chord-level temporal decisions, ensuring vertical coherence.

## 12.7 Modal Considerations

The harmonic vocabulary centers on a Lydian framework, characterized by:

- Major tonality with raised fourth degree,
- Emphasis on suspended brightness rather than resolution,
- Occasional Lydian dominant coloration in solo sections.

Modal restriction serves as a counterbalance to algorithmic complexity, anchoring the output perceptually.

## 12.8 Output and Interpretation

The final output is a multi-track MIDI file of approximately three minutes duration. The file is intended to be:

- Rendered using virtual instruments (or an Artificial Intelligence, “used as VSTi and arpeggiator”),
- Interpreted by human performers,
- Used as a compositional scaffold rather than a finished artifact.

The workflow deliberately separates structural generation from expressive realization. The process is analogous to supervised learning in the limited sense that an Artificial Intelligence system generates multiple candidate outputs, while a human operator performs the selection and evaluation step, determining which outputs are retained. This division of roles mirrors conventional ensemble practice, in which one musician proposes a musical idea, others reject or modify it, and the final form emerges through iterative human judgment.

## 12.9 Methodological Status

This workflow should be understood as *procedurally exact but conceptually general*. Minor parameter variations (tempo, Fibonacci index offsets, chord voicings) do not alter the fundamental logic. As such, the described process represents a reproducible class of generative composition rather than a single immutable script.

## 12.10 Relation to the Broader Work

The computational method aligns with the papers broader themes:

- Growth through accumulation rather than opposition,
- Emergent order from simple recursive rules,
- Structural reconciliation of difference over time.

In this sense, the algorithmic workflow is not merely technical, but conceptually homologous to the genealogical and historical arguments developed elsewhere in the paper.

## References

- [1] Suno | AI Music. Zugriff am 3. Januar 2026. <https://suno.com/>
- [2] Suno - AI Songs & Music Maker - App Store - Apple. Zugriff am 3. Januar 2026. <https://apps.apple.com/cm/app/suno-ai-songs-music-maker/id6480136315?l=en-GB>
- [3] Suno is great with some languages, absolutely terrible with others. Zugriff am 3. Januar 2026. [https://www.reddit.com/r/SunoAI/comments/1i18y6o/suno\\_is\\_great\\_with\\_some\\_languages\\_absolutely/](https://www.reddit.com/r/SunoAI/comments/1i18y6o/suno_is_great_with_some_languages_absolutely/)
- [4] Fake Latin | Supernova by Wonder Entertainment - Suno. Zugriff am 3. Januar 2026. <https://suno.com/song/8dd66ceb-d043-4abb-b26a-301c74dd9d0c>
- [5] Pig Latin & Other Made-Up Languages - Ellii (formerly ESL Library). Zugriff am 3. Januar 2026. <https://ellii.com/blog/pig-latin-and-other-made-up-languages>
- [6] Latin language in the pop culture - Open Forum in English. Zugriff am 3. Januar 2026. <https://forum.lingq.com/t/latin-language-in-the-pop-culture/11284>
- [7] Noricum | Celtic culture, Roman province, Alps - Britannica. Zugriff am 3. Januar 2026. <https://www.britannica.com/place/Noricum>
- [8] Noricum - Wikipedia. Zugriff am 3. Januar 2026. <https://en.wikipedia.org/wiki/Noricum>
- [9] Austrians - Wikipedia. Zugriff am 3. Januar 2026. <https://en.wikipedia.org/wiki/Austrians>
- [10] Indo-European Kinship - Genetic Memory and the Russian link with... Zugriff am 3. Januar 2026. <https://earthwormexpress.com/about-eben/k-b/the-austria-articles-die-osterreich-artikel/genetic-memory-and-the-austrian-spirit-of-neutrality/>
- [11] History of Austria - Wikipedia. Zugriff am 3. Januar 2026. [https://en.wikipedia.org/wiki/History\\_of\\_Austria](https://en.wikipedia.org/wiki/History_of_Austria)
- [12] How accurate was the battle scene in the beginning of the movie Gladiator... Zugriff am 3. Januar 2026. <https://historymysteryohmy.quora.com/How-accurate-was-the-battle-scene-in-the-beginning-of-the-movie-Gladiator-How-di>

- [13] Was Maximus Decimus Meridius A Real Gladiator? - HistoryExtra. Zugriff am 3. Januar 2026. <https://www.historyextra.com/period/roman/was-maximus-decimus-meridius-real/>
- [14] Grave of the Gladiator - Rome and Art. Zugriff am 3. Januar 2026. <https://www.romeandart.eu/en/art-grave-gladiator.html>
- [15] Marcus Nonius Macrinus - Wikipedia. Zugriff am 3. Januar 2026. [https://en.wikipedia.org/wiki/Marcus\\_Nonius\\_Macrinus](https://en.wikipedia.org/wiki/Marcus_Nonius_Macrinus)
- [16] Marcus Nonius Macrinus Facts for Kids. Zugriff am 3. Januar 2026. [https://kids.kiddle.co/Marcus\\_Nonius\\_Macrinus](https://kids.kiddle.co/Marcus_Nonius_Macrinus)
- [17] Does anyone know what happened to the tomb of Marcus Nonius... Zugriff am 3. Januar 2026. [https://www.reddit.com/r/ancientrome/comments/15efumz/does\\_anyone\\_know\\_what\\_happened\\_to\\_the\\_tomb\\_of/](https://www.reddit.com/r/ancientrome/comments/15efumz/does_anyone_know_what_happened_to_the_tomb_of/)
- [18] Marcus Nonius Macrinus Consul of Rome - Ancestors Family Search. Zugriff am 3. Januar 2026. <https://ancestors.familysearch.org/en/GZ65-9QN/marcus-nonius-macrinus-consul-of-rome-0115-0154>
- [19] Marcus Nonius ARRIUS Mucianus Manlius Carbo - Fabpedigree. Zugriff am 3. Januar 2026. <http://www.fabpedigree.com/s002/f619675.htm>
- [20] Gladiator (2000 film) - Wikipedia. Zugriff am 3. Januar 2026. [https://en.wikipedia.org/wiki/Gladiator\\_\(2000\\_film\)](https://en.wikipedia.org/wiki/Gladiator_(2000_film))
- [21] 8 Historical Inaccuracies From the Film Gladiator | History Hit. Zugriff am 3. Januar 2026. <https://www.historyhit.com/culture/historical-inaccuracies-from-the-film-gladiator/>
- [22] Marcomannic Wars - Wikipedia. Zugriff am 3. Januar 2026. [https://en.wikipedia.org/wiki/Marcomannic\\_Wars](https://en.wikipedia.org/wiki/Marcomannic_Wars)
- [23] Slovakia in the Roman era - Wikipedia. Zugriff am 3. Januar 2026. [https://en.wikipedia.org/wiki/Slovakia\\_in\\_the\\_Roman\\_era](https://en.wikipedia.org/wiki/Slovakia_in_the_Roman_era)
- [24] Markomannen (english) | AEIOU Österreich-Lexikon im Austria-Forum. Zugriff am 3. Januar 2026. [https://austria-forum.org/af/AEIOU/Markomannen/Markomannen\\_english](https://austria-forum.org/af/AEIOU/Markomannen/Markomannen_english)
- [25] Archaeological evidences on Marcomannic-Sarmatian wars (AD 166). Zugriff am 3. Januar 2026. [https://www.researchgate.net/publication/325332915\\_Archaeological\\_evidences\\_on\\_Marcomannic-Sarmatian\\_wars\\_AD\\_166\\_-\\_180\\_in\\_the\\_Danubian\\_Provinces](https://www.researchgate.net/publication/325332915_Archaeological_evidences_on_Marcomannic-Sarmatian_wars_AD_166_-_180_in_the_Danubian_Provinces)

- [26] How Accurate Were the Fight Scenes in Gladiator? - TheCollector. Zugriff am 3. Januar 2026. <https://www.thecollector.com/how-accurate-gladiator-fight-scenes/>
- [27] The reign of Marcus Aurelius and the near-conclusion of a... - Reddit. Zugriff am 3. Januar 2026. [https://www.reddit.com/r/AskHistorians/comments/a0yw93/the\\_reign\\_of\\_marcus\\_aurelius\\_and\\_the/](https://www.reddit.com/r/AskHistorians/comments/a0yw93/the_reign_of_marcus_aurelius_and_the/)
- [28] Battle of the Teutoburg Forest - Wikipedia. Zugriff am 3. Januar 2026. [https://en.wikipedia.org/wiki/Battle\\_of\\_the\\_Teutoburg\\_Forest](https://en.wikipedia.org/wiki/Battle_of_the_Teutoburg_Forest)
- [29] Marcomanni (Snippet) - Britannica. Zugriff am 3. Januar 2026. <https://www.britannica.com/topic/Marcomanni#:~:text=But%20about%20167%20the%20Marcomanni,abandoned%20by%20his%20son%20Commodus.>
- [30] Marcomanni | Germanic tribe, Bohemia, Roman Empire | Britannica. Zugriff am 3. Januar 2026. <https://www.britannica.com/topic/Marcomanni>
- [31] Legio II Italica - Wikipedia. Zugriff am 3. Januar 2026. [https://en.wikipedia.org/wiki/Legio\\_II\\_Italica](https://en.wikipedia.org/wiki/Legio_II_Italica)
- [32] Legio II Pia Italica - The Roman Recruit - Weebly. Zugriff am 3. Januar 2026. <https://romanrecruit.weebly.com/legio-ii-pia-italica.html>
- [33] Amber Road Limes: Legio II Italica. Zugriff am 3. Januar 2026. <https://www.oeaw.ac.at/en/oeai/research/historical-archaeology/individual-research/amber-road-limes-legio-ii-italica>
- [34] Carinthia - Wikipedia. Zugriff am 3. Januar 2026. <https://en.wikipedia.org/wiki/Carinthia>
- [35] You're Descended from Royalty and So Is Everybody Else - Nautilus. Zugriff am 3. Januar 2026. <https://nautil.us/youre-descended-from-royalty-and-so-is-everybody-else-236939/>
- [36] Pedigree collapse - Wikipedia. Zugriff am 3. Januar 2026. [https://en.wikipedia.org/wiki/Pedigree\\_collapse](https://en.wikipedia.org/wiki/Pedigree_collapse)
- [37] Identical ancestors point - Wikipedia. Zugriff am 3. Januar 2026. [https://en.wikipedia.org/wiki/Identical\\_ancestors\\_point](https://en.wikipedia.org/wiki/Identical_ancestors_point)
- [38] The Geography of Recent Genetic Ancestry across Europe - PMC. Zugriff am 3. Januar 2026. <https://pmc.ncbi.nlm.nih.gov/articles/PMC3646727/>

- [39] European genealogy FAQ - gcbias. Zugriff am 3. Januar 2026. <https://gcbias.org/european-genealogy-faq/>
- [40] Confused About This Article About Most Recent Common Ancestor. Zugriff am 3. Januar 2026. [https://www.reddit.com/r/AskAnthropology/comments/18y4ykg/confused\\_about\\_this\\_article\\_about\\_most\\_recent/](https://www.reddit.com/r/AskAnthropology/comments/18y4ykg/confused_about_this_article_about_most_recent/)
- [41] Bavaria - Wikipedia. Zugriff am 3. Januar 2026. <https://en.wikipedia.org/wiki/Bavaria>
- [42] Ancient DNA from the Avar period tells of successful cultural... Zugriff am 3. Januar 2026. <https://www.oeaw.ac.at/en/news/ancient-dna-from-the-avar-period-tells-of-successful-cultural-integration-despit>
- [43] East Asia meets Europe in Lower Austria - Max-Planck-Gesellschaft. Zugriff am 3. Januar 2026. <https://www.mpg.de/23995061/0115-evan-east-asia-meets-europe-in-lower-austria-150495-x>