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"How Bronze Age Nomads Birthed Half of Today's Global Languages"

"A 2025 Harvard-led study analysing DNA from 450 ancient individuals confirmed the Yamnaya's pivotal role as a "steppe pulse" that reshaped the genetic heritage of at least half of Eurasia.

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A study published in Nature journal by Harvard researchers has identified the Yamnaya people - nomadic herders from around 3300 BCE - as the crucial link in understanding the Indo-European language family's expansion. "The Yamnaya are kind of at the root of all populations that speak Indo-European languages today," said lead geneticist Iosif Lazaridis, a Harvard geneticist who was one of the study's primary authors, in an interview with the Harvard Crimson. "We see individuals that belong to this population that are scattered all the way from Hungary in the west to Western China in the east," he said. "So the fact that they're so homogeneous and so widespread, it kind of makes it difficult to understand where they're coming from."

The Yamnaya culture, a Bronze Age nomadic society that thrived in the Pontic-Caspian steppe (modern-day Ukraine) around 3300–2600 BCE, pioneered innovations like horseback riding and

wheeled vehicles that enabled their rapid expansion across Eurasia.

The researchers traced the origins of the vast Indo-European language family to the Caucasus-Lower Volga region, identifying the ancestral population that gave rise to more than 400 languages! The research combined techniques from anthropology, archaeology, genetics, and linguistics to trace the Yamnaya's origins. Researchers discovered the population was largely composed of hunter-gatherers from the Dnipro River region and pastoralists from the Caucasus.

As primarily cattle herders, the Yamnaya people roamed the steppes with oxen-drawn wagons and domesticated horses. Their economy relied on animal husbandry, supplemented by fishing and foraging. They are recognized for their distinctive burial practices, interring elites in kurgans (burial mounds) with ochre-covered bodies, grave goods, and animal sacrifices. The site of Mykhailivka in southern Ukraine served as their cultural and genetic "cradle." As among the earliest adopters of horseback riding and wheeled carts, the Yamnaya held military and logistical advantages over more isolated contemporary societies. They developed advanced metallurgy and weapon-making techniques that would influence later Bronze Age cultures across Eurasia.

Language was the key

"For the last 120 or 130 years, linguists have been working to systematically compare words of similar sound and meaning in the different Indo-European branches — say Sanskrit, Latin, and Greek — to reconstruct what the parent words sounded like," Co-author David Anthony, an anthropology professor emeritus at Hartwick University said to Harvard Crimson. "They've been able to reconstruct — depending on the language — 1,000 to 1,500 words in Proto-Indo-European.

Through migrations from the steppes beginning around 3000 BCE, Yamnaya DNA spread across the continent, leaving a dominant genetic imprint on modern Indo-European speaking populations from Europe to South Asia. Their innovations and social hierarchies diffused into successor cultures like the Corded Ware and Sintashta.

The Corded Ware and Sintashta groups are associated with dispersing Indo-Iranian, Balto-Slavic, Germanic and other branches across Europe and Asia. Linguistic analysis suggests an origin around 4000-3500 BCE, consistent with the Yamnaya period.

Modern Indo-European languages like English, French, Persian, Hindi, Russian etc. retain the core vocabulary and grammar descended from Yamnaya proto-Indo-European. Nearly half of modern Europeans can trace their ancestry back to the Yamnaya people. For instance, populations in Eastern Europe, including Russians and Ukrainians, show significant Yamnaya genetic contributions, ranging from approximately 42.8% to 50.4% in some regions

The Yamnaya precursor Khvalynsk culture (4700-3800 BCE) is linked to the separation of Anatolian branch languages like Hittite. This supports the steppe homeland theory for proto-

Indo-European. Genetic evidence shows the Yamnaya carries the "Steppe ancestry" component strongly associated with modern Indo-European speakers.

Images: Wikimedia Foundation