Northward spread of Samoyedic: environmental evidence

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The studied period is determined by the earliest possible time of the northward spread of Samoyedic languages from their Proto-Samoyedic homeland ca. 2.3-1.1 ka BP (see abstract by O. Khanina). We consider the main area of migration of speakers of future Northern Samoyedic languages in the Ob-Yenisei interfluve, assuming that the population could move along Ob or along Yenisei. Archaeological research indicates that five different waves of northward population migrations have been recorded in the Ob-Yenisei interfluve during the period under study (see abstract by A. Idimeshev). The reasons for these migrations have not been established by archaeological research, but we can assume that socio-economic processes, climatic changes, or both may have caused them.

The short period between 2.8 and 2.5 ka is characterized by a pronounced cooling and an increase in humidity in northern Europe and the entire Northern Hemisphere. Che & Lan (2021) analysed the data obtained from various palaeoarchives in Central Asia (including southern western Siberia) for the Scythian period (850-200 BC) and concluded that this period was characterised by increased humidity, which provided opportunities for movements of the Scythian population in this arid area.

This wet cooling is replaced by warming under the more arid climate (Wanner et al., 2011). The first two waves of the northward spread (Nizhneporozhinsk and Kamensko-Makovsk), dated to 2.3-2 ka BP, and the onset of the other three, Shilka, Thin-Cordon and Kulai-Ryolka-Vozhpai waves, may coincide with the climatic warming and aridisation observed at the turn of the millennium. This is recorded both for the Northern Hemisphere as a whole and more locally for Taymyr (Klemm et al., 2015) and the southern taiga of Western Siberia (Kurina et al., 2022; Willis et al., 2015). This warming may be related to the Roman Warm Period described for Europe and the North Atlantic, which lasted from about 250 BC to 400 AD (Cambell et al., 1998).

Climate becomes colder and wetter by around 1.8-1.6 ka BP. The subsequent cold period AD (300)400 - 765, the Dark Age Cold Period, marks the transition between Late Antiquity and the Early Middle Ages and is characterised by global population migrations in Europe. At the time, arid Central Asia was experiencing a severe drought (Helama et al, 2017). This may have caused the population to migrate northwards.

We can therefore tentatively conclude that the active northward migration of populations began not with climate cooling, but with climate warming, and was probably not linked to reindeer ecology, as hypothesized earlier (e.g. Khanina 2022). South of the possible Proto-Samoyedic homeland, the steppe cultures, e.g. in the Minusink Basin and even as far south as Central Asia, did indeed experience more dramatic climate changes. This means that their climate-driven northward movement may have ousted Samoyedic speakers from the possible Proto-Samoyedic homeland (Yenisei-bound cultural groups) and caused their northward movement.

The second, more local, wave of the spread of Samoyedic languages occurred at the end of the 17th century, when the various northern Samoyedic languages moved further north. This period coincides with the Little Ice Age phase in the Northern Hemisphere (AD1350 - 1800, Mayewski et al., 2004). The driving forces behind this wave of people moving to the tundra can be either natural, such as increased forest fires and a cooling climate that is more favourable for reindeer, or socio-economic, such as more southern groups moving north, fur tribute, etc.

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