

Fog as a Symbol and Physical Phenomenon in Ukrainian Folk Songs and Estonian Runosongs: A Comparative Study

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Fog, as both a natural and metaphorical phenomenon, plays a significant role in various cultural traditions. It significantly reduces visibility and can pose serious hazards, sometimes causing losses comparable to those from extreme weather events such as tornadoes or hurricanes (Pruppacher et al., 1998; Gultepe et al., 2014). However, beyond its physical characteristics, fog holds deep symbolic value, often representing mystery, uncertainty, and transitional states. This study seeks to explore how fog is depicted in the oral traditions of Ukrainian folk songs and Estonian runosongs, examining both its physical and metaphorical representations.

This study is guided by the following questions: (1) How is fog represented in Ukrainian and Estonian folk songs? (2) To what extent do environmental and physical experiences of fog influence its metaphorical usage in these oral traditions? (3) How can the integration of physics and computational analysis enhance our understanding of fog as a cultural motif?

Our research is based on two corpora: a corpus of four collections of Ukrainian Folk Dumas (Hrushevskya, 1927, 1931; Skrypnyk, 2009, 2019) and a corpus of Estonian folk songs maintained by the Estonian Literary Museum (ERAB).

The study adopts a transdisciplinary approach that combines physics, folklore studies, and computational analysis. The physical phenomenon of fog is examined through the lens of meteorology, focusing on how fog forms due to condensation of water vapor, obscuring visibility and creating a sense of disorientation. Mie scattering theory (1908) describes how light is scattered by the small water droplets in fog, reducing clarity and producing a dreamlike visual effect. By examining the physics of fog alongside the lyrics of Ukrainian and Estonian folk songs, the research highlights fog-prone seasons and examines different types and forms of fog as experienced in these regions.

Drawing on cognitive metaphor theory (Lakoff & Johnson, 1980), the study argues that fog serves as a metaphorical bridge, connecting natural experiences with human psychological states such as confusion and transformation. The study investigates how fog is used to

symbolize personal, existential, or communal uncertainty, reflecting deeper cultural narratives in both traditions.

Using the RStudio, the corpora will be processed through text mining to identify recurring motifs and patterns associated with fog. This approach will allow for a quantitative comparison of the symbolic use of fog, shedding light on its structural and semantic functions.

Preliminary analysis suggests that while Ukraine and Estonia have distinct climatic conditions – Ukraine’s climate being predominantly continental and Estonia’s influenced by maritime conditions – both regions share similar fog-prone seasons. These shared environmental experiences appear to have shaped both cultures’ symbolic use of fog in their respective folk traditions. The research will demonstrate that the physical experience of fog, with its ability to obscure vision and soften sounds, is reflected in the songs, where fog often represents emotional and existential uncertainty.

By combining physics with computational analysis of folk song corpora, this study offers a deeper understanding of how physical experiences shape cultural expression. The research underscores the parallels between geographically distinct but climatically comparable regions, illustrating how natural phenomena like fog influence cultural memory and tradition.

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