

## Chapter 8 Case Study (8.2.5): Vampires and Mobility

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Strontium isotopes are an excellent source of biochemical data for elucidating patterns of residential mobility and migration. The application of strontium isotopes to distinguish between local and migrant individuals has been used in a variety of settings, none more unique than the case of vampires in Eastern Europe. Bioarchaeologists Lesley Gregoricka, Tracy Betsinger, and Amy Scott, and archaeologist Marek Polcyn, in their paper “Apotropaic practices and the undead: A biogeochemical assessment of deviant burials in post-medieval Poland,” attempted to determine why certain people were buried with anti-vampiristic treatments while others were buried in the typical fashion. They tested the hypothesis that “vampire” burials reflected migrants to the region who may have been viewed as outsiders in life as well as in death.

During the Medieval and into the post-Medieval period in Poland, there was a common, long-standing folk belief in vampires; indeed, the belief in vampires has a long history on a global scale. In Poland, vampires were synonymous with “reanimated corpses” who would return from the dead to cause problems for the living, including illness and death in humans and animals. In Slavic folklore, the soul separates from the body upon death, remaining on earth for a period of 40 days. “Unclean” souls from individuals who were marginalized during their lives were at greatest risk for being reanimated; these included individuals who were sinners, witches, unbaptized, physically disabled, or outsiders to the community. The Slavic belief system also prescribed methods (i.e., apotropaics) to prevent such individuals from becoming reanimated after death (i.e., becoming vampires), including barricading them in the grave.

Drawsko, a rural settlement site in northwestern Poland, has been occupied from the Medieval period to the present. This site has a post-Medieval cemetery on the town’s eastern edge that dates to the seventeenth and eighteenth centuries. The Drawsko 1 cemetery site has been systematically excavated since 2008. Between 2008 and 2012, 285 skeletons were recovered, including 6 individuals with deviant, or non-normative, mortuary treatments. The cemetery includes males and females of all ages, and the skeletal remains are well preserved. Typical burial in this cemetery consists of primary inhumations often in wooden coffins. Many of the burials include grave goods, such as coins, which may have provided the deceased with some protection. Atypical, or deviant, burial practices are characterized by the inclusion of sickles and stones. The deviant burials at Drawsko 1 include 3 adult females, 1 adult male, 1 late adolescent female, and 1 subadult of undetermined sex. Of these, 5 had a sickle placed on the body, most often across the throat. Two of the burials had stones placed beneath their chins. The sickle may have been placed across the throat to decapitate the individual if he/she were reanimated and tried to leave the grave. The use of stones may have reflected a method to prevent the deceased from biting or feeding on others.

During the seventeenth and eighteenth centuries in Poland, the population was very diverse due to immigrants arriving from throughout Europe, including Scotland, the Balkans, Germany, and the Netherlands. The region in which Drawsko is located included populations of settlers from the Netherlands and Brandenburg as well as the local populace. Following cholera epidemics in the early eighteenth century, immigration to the region increased. The population residing in Drawsko would have been exposed to the waves of immigrants moving into the region and would have observed the increasing ethnic diversity. Were outsiders accepted into the community of Drawsko? This remains unclear. However, since Slavic folklore suggested that outsiders were considered at increased risk for becoming vampires, examining the isotopic signatures of deviant and normative burials may provide some insight into this question.

Various bioarchaeological studies of both the deviant and normative burials have been conducted by the authors, including a pilot study of cranial morphometrics (see Blackburn et al., 2012). This pilot study found that one of the deviant burials was classified outside the normal range of variation, which may suggest the individual was an outsider to the community (see Blackburn et al., 2012).

Based on the historical record and the results of the pilot study of craniomorphometrics, Gregoricka and colleagues hypothesized that those buried in a deviant fashion were outsiders (i.e., immigrants) to the community. Strontium isotopic analysis provides a method by which residential mobility and migration can be assessed. Faunal  $^{87}\text{Sr}/^{86}\text{Sr}$  values are used to determine the local bioavailable strontium in a region. Human values that fall within two standard deviations of the mean are considered local, while those that fall outside this range are considered non-local. Soil samples from throughout Poland have provided a mean  $^{87}\text{Sr}/^{86}\text{Sr}$  range of 0.7069–0.7123.

To test the hypothesis, strontium isotopic signatures of deviant and normative burials were compared. Tooth enamel from the permanent molars of 60 human interments (29 adult females, 29 adult males, 2 subadults) was sampled. Five vampire burials were sampled, including the two subadult vampires. However, the other deviant burial was an edentulous older female who therefore could not be included. Sex and age estimates for all individuals were conducted following standard anthropological protocol. Sex determination of adults was based on observed features of the os coxa and crania. Subadult age estimates were based on dental development and eruption as well as epiphyseal union, while adult age was estimated from pubic symphyseal changes and auricular surface changes. To determine the local  $^{87}\text{Sr}/^{86}\text{Sr}$  bioavailability at Drawsko, bone from six modern local fauna, including hare, fox, and mouse, was sampled as well.

The results of the faunal analysis indicate that the local  $^{87}\text{Sr}/^{86}\text{Sr}$  value was  $0.7101 \pm 0.0012$  ( $2\sigma$ ), providing a range of 0.7082 to 0.7121 for the region. For the human samples, an average of  $0.7112 \pm 0.0006$  ( $1\sigma$ ) was determined. Adult males and females did not differ statistically. The average  $^{87}\text{Sr}/^{86}\text{Sr}$  ratio for the deviant burials was  $0.7112 \pm 0.0004$  ( $1\sigma$ ), which was not significantly different from the rest of the sample. Despite the lack of statistical significance, there were three adult males, all normative burials, who do fall outside the local  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios for the area.

Based on these results, the hypothesis that deviant burials represented non-locals was rejected. The deviant burials represent individuals local to the region; therefore, other possible explanations were considered. Birth defects, illness, violent death, and the first to die in an epidemic are alternative reasons why someone may have been given an atypical burial. Previous research examining various health indicators had yielded no significant patterns between deviant and non-deviant burials (see Betsinger and Scott, 2014). Cholera epidemics are known to have occurred in the region during the seventeenth and early eighteenth centuries, and the first to die in an outbreak may be viewed as at risk for becoming reanimated. This, then, may be one plausible alternative. However, cholera leaves no pathognomonic (i.e., diagnosable) changes on the skeleton, so bioarchaeologists cannot determine whether cholera played a role in the deaths of the deviant individuals. Based on Slavic folklore, other alternative explanations for deviant burials include various cultural factors that cannot, unfortunately, be observed on human remains, such as those born out of wedlock or those who were unbaptized.

Despite the local origins of the deviant burials, the three individuals who had non-local strontium isotopic signatures provide some insight into residential mobility in this region during the seventeenth and eighteenth centuries. Based on these results, migration was indeed taking place, and since all three individuals with non-local signatures were male, this may indicate that males were predominantly the ones who moved. Additionally, the lack of unusual mortuary treatment of these three males suggests that migration was not a significant factor to influence burial rites.

This study illustrates the usefulness of stable isotopes in addressing questions that are fundamentally cultural. Were the vampire burials outsiders to the community and therefore distrusted even upon their deaths? Based on strontium isotopes, no. Without the application of strontium isotopic analysis, researchers would still not have an answer to that question. This study allowed bioarchaeologists to answer the question and develop an alternative hypothesis for the vampire burials: namely, that other societal factors must account for their atypical mortuary treatment.

### References

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