

Heritage: Finding The Lost Luggage

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As an earth science PhD student, my research has taken me around the globe and this summer; I have had the privilege to study the coast of Brittany in the quaint town of Vannes, France. Exhausted from a semester of travel and enduring candidacy exams, I initially could not process the excitement of traveling to Europe to study what I love: the Earth, the ocean, the sand, and the mud. To make matters worse, during my pilgrimage my luggage was lost between New York City and Paris. Once I arrived in Paris, I left for Vannes on a train with a new friend, the clothes on my back, and my beach bag full of snacks.

Despite my treacherous journey and lost luggage, I showed up to class Monday morning with clothes from the local grocery store ready to learn. During the first lecture, Dr. David Menier educated us on the coastal dynamics of the region. Throughout the class, he asked many grains of sand the same curious question: “Where do you come from?” This question refers to the origin of sediment which he calls “heritage”. The Gulf of Morbihan, where Vannes is located, is sediment starved, meaning there is not a lot of sediment deposited on the coast. Due to this fact, the beaches here are mostly thin and a lot of times muddy with exposed granite bedrock jutting out from beneath the ocean. Therefore, every grain of sediment here is important and knowing where this sediment comes from is the key to understanding this dynamic system.

Determining the heritage of a grain of sand is not easy. Just from looking at a grain of sand you can determine a few things such as composition, shape, and size, however you cannot determine the heritage by just looking at a single grain. To understand the heritage of the sand you must understand its luggage. If you are just looking at a sand grain in a classroom, the sand grain has no luggage and therefore you cannot determine where the sand grain is from. You must find the lost luggage and unpack it. A sand grains’ luggage can be maps of the sea floor, images of the ocean from above, an exposed cliff on the beach, or even a core from the ocean floor. Using these methods, you can piece together the heritage of the sand to better understand the entire coast system.

In an effort to understand the importance of sediment heritage, I realized that humans and sediment are sometimes very similar. Both humans and sand grains have luggage that is sometimes lost and to find this luggage you must do some research. That research can be either calling four different Air France numbers or looking at satellite imagery of the coastline—you can pick which research you like more, but I personally prefer the satellite imagery. Once the luggage is found, the heritage is uncovered by looking at the contents of the luggage. While the contents of the sand grains’ luggage are maps and outcrops, my luggage contains an old Denison University t-shirt and an inherited pair of Old Navy denim overall shorts showing that heritage can be found for both sand and scientist.

