

Mystery at the Termond Estate

Count Ralph and his wife Marie, owners of the Termond Estate, were an elderly couple of some wealth. Ralph died suddenly, when he was struck by lightning in his metal rowboat while fishing in Termond Lake. His body was never recovered. All Count Ralph's children and grandchildren (who happen to be at the estate at the time for a Father's Day celebration), eagerly awaited the reading of Count Ralph's will, since they all knew that the will would provide each blood relative with an equal share of his estate wealth.

When the lawyer arrived, he noticed that a sum of money had been stolen from Count Ralph's safe. The sum missing was equal to one person's portion of the estate value. In addition, a small amount of fresh blood was found on the inside of the safe door, presumably belonging to the thief. As this news was being announced by the lawyer, the maid rushed into the room and revealed that she had walked into Count Ralph's study and observed the thief quickly slipping out of the patio doors. She had not seen the face or been able to identify the thief, since he or she wore a mask and a bulky overcoat. She did see, however, that the thief had an attached ear lobe.

Police Detective Morse was called to the Termond Estate. Upon his arrival, he immediately ordered blood typing tests on all in the house, and on the blood smear on the safe (found to be type A-). He also noted the ear lobe type of everyone. After studying the data, Morse called all of the relatives together and announced that he had discovered the identity of the thief. One of the children or grandchildren was not really a blood relative, and the theft of the money was to ensure a share in the inheritance.

Morse's Data Table:

Name	Blood Type	Ear lobes	Parents/ Relationship
Ralph	?	Free	N/A
Marie	AB-	Free	N/A
Marcia	O-	Free	Married to Peter
Peter	AB-	Attached	Ralph & Marie
Margaret	A+	Free	Ralph & Marie
David	B+	Free	Married to Margaret
Richard	AB-	Free	Ralph & Marie
Olivia	A-	Attached	Married to Richard
Stephen	B+	Free	Ralph & Marie
Janette	A-	Free	Marcia & Peter
Brian	B-	Attached	Marcia & Peter
Ted	B-	Free	Marcia & Peter
Mark	AB-	Free	Margaret & David
Ellen	A-	Attached	Margaret & David
Mike	AB-	Free	Richard & Olivia
Alan	A+	Attached	Richard & Olivia
Lorne	A-	Free	Richard & Olivia
Maid	AB+	Free	N/A

Questions:

1. Draw this family's pedigree to help you discover the guilty party.
2. Who was the thief? Explain how Morse was able to identify the thief.
3. For whom was the money intended (*i.e.*, who was not the blood relative)?
4. How are pedigrees used by genetic counselors?