1125-11-728 **Armin Straub*** (straub@southalabama.edu). *Core partitions into distinct parts and an analog of Euler's theorem.*

A special case of an elegant result due to Anderson proves that the number of $(s, s+1)$-core partitions is finite and is given by the Catalan number C_s. Amdeberhan recently conjectured that the number of $(s, s+1)$-core partitions into distinct parts equals the Fibonacci number F_{s+1}. We prove this conjecture by enumerating, more generally, $(s, ds-1)$-core partitions into distinct parts.

As a by-product of our results, we obtain a bijection between partitions into distinct parts and partitions into odd parts, which preserves the perimeter (that is, the largest part plus the number of parts minus 1). This simple but curious analog of Euler's theorem appears to be missing from the literature on partitions.

Finally, we intend to discuss some more recent developments. (Received September 10, 2016)