The heat treatment of stone is one of the first physically transformative technologies in human evolution. Currently, the earliest evidence for this pyrotechnology is the heat treatment of silcrete ~164,000 years ago (ka) at the Pinnacle Point site complex in South Africa. Many researchers argue that heat treatment is among the earliest evidence for our ability to recognize and combine abstract concepts through analogical reasoning and may be evidence of advanced cognition. However, the relevance of heat treatment to modern human behavior is debated due to our limited understanding of the heat treatment process by Middle Stone Age hunter-gatherers. Here, I discuss the core aspects of this debate and outline a potential pathway to address these issues through experimental archaeology.