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Simulating Neanderthal extinction: the role of abrupt climate change, resource competition and interbreeding

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It still remains unclear what caused the disappearance of Neanderthals during the last glacial period. To determine whether their demise was mainly due to abrupt climate change, interbreeding or competition, I use a spatially resolved numerical hominin dispersal model that simulates the interaction of Anatomically Modern Humans and Neanderthals in the rapidly varying climatic environment of the last ice age. The numerical simulations, which are in good agreement with archeological and fossil data, document that rapid temperature and vegetation changes associated with Dansgaard-Oeschger events played no discernible role in Neanderthal extinction. Instead, the emerging resource competition in Eurasia between *Homo sapiens* and Neanderthals, along with low levels of interbreeding were the primary drivers for the demise of Neanderthals.