**Highlights**

* Technological advances render the distinction between artificial and real stimuli increasingly difficult, and factors driving our beliefs regarding their “reality” remain largely unknown.
* Despite all images being pictures of real faces from the same database, most participants did indeed rate a large portion of them as "fake" (often with high confidence).
* Regarding beliefs about face images, perceived attractiveness seems to play a role - albeit of small magnitude – with faces rated as more attractive being classified as more real.
* The large proportion of unexplained variance remaining warrants future studies to uncover the determinants of reality beliefs.