Abstract. We investigate the mathematics of a model of the human mind which has been proposed by the psychologist Jens Mammen. Mathematical realizations of this model consist of so-called *Mammen spaces*, where a Mammen space is a triple $(U, \mathcal{S}, \mathcal{C})$, where U is a non-empty set ("the universe"), $\mathcal{S}$ is a perfect Hausdorff topology on U, and $\mathcal{C} \subseteq \mathcal{P}(U)$ together with $\mathcal{S}$ satisfy certain axioms.

We refute a conjecture put forward by J. Hoffmann-Jørgensen, who conjectured that the existence of a "complete" Mammen space implies the Axiom of Choice, by showing that in the first Cohen model, in which ZF holds but AC fails, there is a complete Mammen space. We obtain this by proving that in the first Cohen model, every perfect topology can be extended to a maximal perfect topology.

On the other hand, we also show that if all sets are Lebesgue measurable, or all sets are Baire measurable, then there are no complete Mammen spaces with a countable universe.

Finally, we investigate two new cardinal invariants $\mathfrak{u}_M$ and $\mathfrak{u}_T$ associated with complete Mammen spaces and maximal perfect topologies, and establish some basic inequalities that are provable in ZFC. Further, we show $\mathfrak{u}_M = \mathfrak{u}_T = 2^{\aleph_0}$ follows from Martin's Axiom, and, contrastingly, we show that $\aleph_1 = \mathfrak{u}_M = \mathfrak{u}_T < 2^{\aleph_0} = \aleph_2$ in the Baumgartner-Laver model.