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**Timothy Rainone\*** ([trainone@asu.edu](mailto:trainone@asu.edu)). *Finite/infinite dichotomies in operator algebras.*

Notions of paradoxical decompositions appear in the work of Hausdorff, Banach, and Tarski who showed that a group satisfies the amenable/paradoxical divide. In this talk we study paradoxical phenomena in the field of operator algebras; directing our focus on  $C^*$ -algebras that arise from dynamical systems. Like Tarski, we use the type semigroup construction to move from non-paradoxicality to the existence of traces. When the underlying algebra has a well-behaved  $K$ -theory, this semigroup witnesses the stably finite/purely infinite nature of the corresponding reduced crossed product  $C^*$ -algebra. Moreover, we show that for a large class of these crossed products stable finiteness is equivalent to being MF; i.e. embeddable into a corona of matrix algebras. (Received August 28, 2018)