The formulation and study of this axiomatic system was suggested by the discovery [1] that Khintchine's factorization theorems for the convolution semigroup of probability distributions on R can be extended to the semigroup of renewal sequences, among others.

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AN ALGEBRAIC CONJUGACY INVARIANT FOR MEASURE PRESERVING TRANSFORMATIONS[1]

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Let T be an invertible, ergodic, measure-preserving transformation of a separable, nonatomic probability space $(X, \mathcal{B}, m)$, and let U be the induced unitary operator acting in $L^2(X, \mathcal{B}, m)$. Let $\mathcal{A}(T)$ be the Banach algebra generated by the multiplication algebra and the nonnegative powers of U. It is shown that, if S is another such transformation, then S and T are conjugate if, and only if, $\mathcal{A}(S)$ and $\mathcal{A}(T)$ are unitarily equivalent. Thus, the conjugacy problem for ergodic transformations is equivalent to multiplicity theory for the algebras $\mathcal{A}(T)$. While much remains to be learned about these operator algebras, similar ones have been studied in [5] and [1]. Finally, $\mathcal{A}(T)$ can be realized concretely as an algebra of operator-valued analytic functions in the unit disc.

In §2 we describe generalizations of the C^*-algebra constructed in §1; it turns out that pathology appears as soon as the group involved fails to be amenable, and only in that case.

Full details and further developments will appear elsewhere.

1. The algebras $\mathcal{A}$ and $\mathcal{B}$. For definiteness, we assume all transformations act on the unit interval, are Borel measurable, and pre-

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