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Is there room for revising our assumptions?

When we proved that V is nonmeasurable, what we proved is that there is no way of extending the Lebesgue Measure function λ to a function that is defined for V while satisfying all three of Non-Negativity, Countable Additivity and Uniformity.

Why is it so important that these assumptions be satisfied?

What would be so wrong about leaving Lebesgue Measure behind and instead focusing on a notion of measure that gives up on one or more of Non-Negativity, Countable Additivity and Uniformity?

When it comes to Uniformity, I think there is a simple answer: it seems to me that giving up on Uniformity means *changing the subject*.

The whole point of our enterprise is to find a way of extending the notion of Lebesgue Measure without giving up on uniformity.

What about Non-Negativity and Countable Additivity? As it turns out, abandoning these constraints won't help us avoid the phenomenon of non-measurability. When we discuss the Banach-Tarski Theorem in the next lecture we will see that there are sets that can be shown to be non-measurable without presupposing Non-Negativity or Countable Additivity.

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