

ERRATUM TO “GLOBALIZING LOCALLY COMPACT LOCAL GROUPS”

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We thank A. I. Shtern for pointing out in his review (MR2743102) that Lemma 3.2 in our paper “Globalizing locally compact local groups,” Volume 20 (2010), 519-524, is incorrect. In contrast to what that review suggests, it is easy to repair this (routine) lemma so that the proof of the main result goes through. We made two errors: one is that we inadvertently omitted the word “continuous” in our definition, on p. 520, of *morphism of local groups*. (The paper makes no sense without this requirement.) The other error is that we forgot to say that the map ι in Lemma 3.2 is *injective*. Here is a slightly more explicit and corrected version of that lemma and its proof:

Lemma. *Let G be a local group, H a group, and $\iota : G \rightarrow H$ an injective map from the underlying set of G into the underlying set of H such that $\iota(xy) = \iota(x)\iota(y)$ for all $(x, y) \in \Omega_G$ and $\iota(G)$ generates H . Then there is a unique hausdorff topology τ on H such that (H, τ) is a topological group and $\iota : G \rightarrow (H, \tau)$ is an open morphism of local groups.*

Proof. Let \mathcal{B} be the set of open neighborhoods of 1 in G . Let

$$\iota\mathcal{B} := \{\iota(U) \mid U \in \mathcal{B}\}.$$

It is routine to check that $\iota\mathcal{B}$ is a neighborhood base at 1 for a group topology τ on H : the assumption that $\iota(G)$ generates H is used to show that for every $V \in \iota\mathcal{B}$ and $h \in H$ there is $W \in \iota\mathcal{B}$ with $hWh^{-1} \subseteq V$. The injectivity of ι ensures that τ is hausdorff. Then $\iota : G \rightarrow (H, \tau)$ is clearly an open morphism of local groups. Uniqueness is clear. \square

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