Correction to

The growth of entire and harmonic functions along asymptotic paths

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It was brought to the authors' attention by J. M. Wu that the proof of Lemma 3 in our paper is incorrect, leaving a gap in the proof of Theorem 2. In this short note we will give a correct proof of Theorem 2. We will use all the notation including references and numbering that appear in the original paper.

Although Lemma 1 is correct as stated we need to restate it with (2.1) replaced with

$$\lim_{r \rightarrow \infty} (\log r)^{-1} \pi \int_1^r dt/t\theta^*(t) = \alpha \quad (2.1)$$

Note that we have dropped any reference to log density. Clearly (2.1) and (2.11) lead directly to (2.12) and the rest follows exactly as before.

Lemma 3 is in fact incorrect as stated. If we change (5.1) to

$$\overline{\lim}_{r \rightarrow \infty} (\log r)^{-1} \pi \int_1^r dt/t\theta^*(t) \leq \rho, \quad (5.1)$$

(dropping any reference to log density), then Lemma 3 is correct. To prove this version of Lemma 3, assume that (5.1) is false then there exists $\rho_1 > \rho$ and a sequence $R_n \rightarrow \infty$ such that

$$\pi \int_1^{R_n} dt/t\theta^*(t) > \rho_1 \log R_n \quad (5.2)$$

Let $z \in D$ and chose R_n such that $|z| < R_n/4$. With the notation of (2.11) and (5.2)

we have

$$w_{R_n}(z) \leq 9\sqrt{2} (|z|/R_n)^{\rho_1} \quad (5.3)$$

The rest of the proof of Lemma 3 now follows exactly as the proof of the original version with R replaced by R_n and $\rho_2(1 - \varepsilon_m)$ by ρ_1 . The proof of our new Lemma 3 is complete.

We may now give the proof of Theorem 2. First we restate (5.4) to read

$$\varliminf_{r \rightarrow \infty} (\log r)^{-1} \pi \int_1^r dt/t \theta_1^*(t) = \alpha \left(\frac{1}{2} \leq \alpha < \infty \right), \quad (5.4)$$

where θ_1^* corresponds to θ^* for D_1 . Then, since there exists another component of $\{|f| > K\}$, D_2 , it can be easily seen (c.f. [3, Lemma 4]) that (5.4) implies

$$\varlimsup_{r \rightarrow \infty} (\log r)^{-1} \pi \int_1^r dt/t \theta_2^*(t) \geq (2\alpha - 1)/\alpha \quad (5.5)$$

where θ_2^* corresponds to θ^* for D_2 . By Lemma 3 we must have $\pi/\rho \leq 2\pi - (\pi/\alpha)$ or

$$\alpha \geq \rho/(2\rho - 1) \quad (5.6)$$

This proof now continues as in the original paper.

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