Simple Preference Intensity Comparisons: A Correction

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The final sentence in the discussion of Example 2 (p.8) in Gerasimou (2021) contains a false claim: *"Finally, Fig. 1 shows that the preferences $\succsim_1$ and $\succsim_2$ induced by the intensities $\dot{\succsim}_1$ and $\dot{\succsim}_2$ that are represented by s_1 and s_2 are generally distinct, which in turn implies that $\dot{\succsim}_1$ and $\dot{\succsim}_2$ are themselves distinct."* More specifically, while it is correct that $\dot{\succsim}_1$ and $\dot{\succsim}_2$ are distinct, it is false that $\succsim_1$ and $\succsim_2$ are as well. The latter counter-claim is confirmed by observing that $s_2(a,b) \equiv s_2(a_1,a_2,b_1,b_2) := \frac{a_1}{b_1} - \frac{b_1}{a_1} + \frac{a_2}{b_2} - \frac{b_2}{a_2} = 0 \Leftrightarrow a_1a_2 = b_1b_2 \Leftrightarrow a \sim_2 b$. Thus, the preferences induced by s_2 are symmetric Cobb-Douglas and coincide with those induced by $s_1(a_1,a_2,b_1,b_2) := a_1a_2 - b_1b_2$. (The solid curve in Fig. 1 erroneously depicts the set of all bundles $(x_1,x_2) \in \mathbb{R}^2_{++}$ such that $s_2(x_1,x_2,10,10) = 5$.) That the intensity relations induced by $\dot{\succsim}_1$ and $\dot{\succsim}_2$ are distinct as claimed, however, is verifiable by contrasting their values e.g. at $a := (20,19)$, $b := (18,17)$, $c := (21,20)$, $d := (19,18)$: $s_1(a,b) = 74 < 78 = s_1(c,d)$ and $s_2(a,b) \approx 0.43 > 0.41 \approx s_2(c,d)$. Thus, $(c,d)\ \dot{\succ}_1 (a,b)$ and $(a,b)\ \dot{\succ}_2 (c,d)$. A corrected last sentence on p.8 would therefore read as follows: *"Finally, while the preferences $\succsim_1$ and $\succsim_2$ induced by the intensities $\dot{\succsim}_1$ and $\dot{\succsim}_2$ that are represented by s_1 and s_2 coincide, the intensities $\dot{\succsim}_1$ and $\dot{\succsim}_2$ are generally distinct."*

References

Gerasimou, G. (2021): "Simple Preference Intensity Comparisons," *Journal of Economic Theory*, 192, 105199.