Corrigendum*
for “Comparing uncertainty aversion towards different sources”

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A general remark first: in the paper, we assume continuity of the utility functions (p.3). Our proofs implicitly assume a stronger condition, smoothness (precisely, that the utility is at least twice continuously differentiable). Smoothness ensures that, if u is not concave, then there exists a nonpoint interval on which it is strictly convex. Indeed, if u is not concave, then there exists x such that $u''(x) < 0$ and therefore, by continuity of u'', there exists a neighborhood around x where u is strictly convex.

Second, in most of the paper, we use two preference relations but in subsection 4.1, both relations are restrictions of a general relation to two sub-domains. Theorem 5 refers to $\succsim_A$ and $\succsim_B$, but it could simply refer to $\succsim$. Statement (i) of Theorem 5 should therefore read:
$\forall\, p \in [0,1]$, $F \in \Sigma$, and x, y, and z in X, ($z \succsim x_p y$ and $z \succsim y_p x$) $\Rightarrow$ ($z \succsim x_F y$ or $z \succsim y_F x$).

Appendix A.5.2., proving $(i) \Rightarrow (ii)$ for Theorem 5 is not correct. Here is a correct proof:

Proof. Not $(ii) \Rightarrow$ there exists a non-point interval $[b, c]$ in the image of u on which φ is strictly convex. Let $x, y, z \in X$ be uniquely defined by $u(x) = b$, $u(y) = c$, $u(z) = \frac{b+c}{2}$.

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Consequently, we have $z \sim x_{\frac{1}{2}}y$ and $z \sim y_{\frac{1}{2}}x$ and therefore:
$u(z) = \frac{1}{2}u(x) + \frac{1}{2}u(y)$. Now consider event E such that $\int_\Delta P(E)d\mu = \frac{1}{2}$. E exists by the richness condition). We obtain:

$u(z) = \left(\int_\Delta P(E)d\mu\right) u(x) + \left(1 - \int_\Delta P(E)d\mu\right) u(y) = \int_\Delta \left(P(E)u(x) + (1 - P(E))\, u(y)\right) d\mu.$

Strict convexity of φ on $[b, c]$ implies:

$\varphi(u(z)) < \int_\Delta \varphi\left(P(E)u(x) + (1 - P(E))\, u(y)\right) d\mu,$

and therefore: $z \prec x_E y$.

Similarly,

$u(z) = \left(1 - \int_\Delta P(E)d\mu\right) u(x) + \left(\int_\Delta P(E)d\mu\right) u(y) = \int_\Delta \left((1 - P(E))\, u(x) + P(E)u(y)\right) d\mu.$

Strict convexity of φ on $[b, c]$ implies:

$\varphi(u(z)) < \int_\Delta \varphi\left((1 - P(E))\, u(x) + P(E)u(y)\right) d\mu,$

and therefore: $z \prec y_E x$.

Hence we proved not (ii) $\Rightarrow$ not (i). □