Erratum: Conceptual inadequacy of the Shannon information in quantum measurements

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In this paper, we did not make proper full reference to the work of Uffink [1]. The point is that, while we made reference to this work, we did not mention that certain passages of Sec. II, and of Sec. III as well as footnote 7 in our paper had been taken ad verbatim or by paraphrasing from this thesis. Uffink has already discussed questions like the need of justification for Shannon’s third postulate (which he already calls the recursion postulate), the necessary distinction between Shannon information and other concepts of information, and also made reference to some rather obscure, but important publications.

We also note that while the expression directly above Eq. (1) gives the total number of all distinct sequences, the expression in Eq. (1), which is also mentioned repeatedly in the text, describes the total number of distinct typical sequences. Such a sequence can be defined as follows. In the context of the example from the text, suppose a long sequence of $N$ balls is drawn from an infinite “sea” of balls with proportions $p_1, p_2, \ldots, p_m$ for different colors in the sea. A sequence that contains about $p_1 N$ balls of the first color, $p_2 N$ balls of the second color, etc., is called a typical sequence.

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