2. We cannot determine the order of the independent components.

The reason is that, again both $\mathbf{s}$ and $\mathbf{A}$ being unknown, we can freely change the order of the terms in the sum in (5), and call any of the independent components the first one. Formally, a permutation matrix $\mathbf{P}$ and its inverse can be substituted in the model to give $\mathbf{x} = \mathbf{A}\mathbf{P}^{-1}\mathbf{P}\mathbf{s}$. The elements of $\mathbf{P}\mathbf{s}$ are the original independent variables s_j, but in another order. The matrix $\mathbf{A}\mathbf{P}^{-1}$ is just a new unknown mixing matrix, to be solved by the ICA algorithms.