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For many “modern” decoding algorithms, it is possible for the decoder to return vectors that do not correspond to codewords. Such output vectors are known as nontrivial pseudocodewords. In the case of the linear programming decoder, a decoder failure is declared if a nontrivial pseudocodeword is found to be the output. Thus, the codeword and some of its information bits are lost. In this work, we aim to make the best of this bad situation. In particular, we discuss recent progress in designing systems that use linear programming pseudocodewords, in conjunction with codewords, to convey additional bits of information beyond those offered by the dimension of the original code. (Received September 20, 2011)