Does subclass of left-c.e. supermartingales define 1-randomness

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Abstract: We consider the question whether effective randomness can be defined by a computable object with respect to supermartingale: whether there is a subclass of left-c.e. supermartingales, which is somewhat predictable, yet suffices to define 1-randomness. Kasterman considered the betting process whose preference on 0,1 cannot change mind (but as to how much to bet can); Hitchcock considered a subclass of kastergale; Muchnick considered the betting process that only bets on even or odd steps; other examples include betting processes whose mind changes are computably bounded. Only some very special cases of those classes are known not to define 1-randomness. Our analysis indicates that if a subclass defines 1-randomness, it almost means a single member of that class can do so. For example, we prove that the union of those classes considered by Kasterman and Muchnick cannot define 1-randomness.