On the Characterizability of the Frames
for the "Unpreventability of
the Present and the Past"

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Introduction   In several assertions involving tense and modal notions, "it is possible" is substantially understood as "it is possible, given the present and the past", that is, "it is possible under the hypothesis that exactly one present and exactly one past exist, coinciding with the actual present and past". This can be observed, for instance, when a possible evolution of a physical situation is referred to, or, more generally, when the assertion involves concepts having a history, so that different pasts generally correspond to different concepts.[1] A trivial consequence of this point of view is that the modal operators become vacuous when their scopes do not contain any reference to the future, or, which is the same, that every assertion concerning only the present and the past is necessarily true or necessarily false.

The above conception of the modal notions is usually referred to as the *unpreventability of the present and the past* and is often connected with the (Actualist) Indeterminist point of view. In [1], p. 575, a definition of satisfaction for propositional formulas with tense and modal operators is given, which agrees with this point of view: time is represented by a tree (so that every moment has exactly one past and several possible futures) and, in order to evaluate a formula at a moment x, we must specify what branch, among those starting with x, represents the 'actual' future of x. Since every branch determines its initial point, the valuation of a formula turns out to be relative to a set of branches and "it is possible α" is assumed to hold at a branch B whenever α holds at some branch having the same initial point as B.

In general, a semantics à la Kripke for a propositional tense and modal logic consists of a set of linearly ordered sets representing different evolutions of time, together with an accessibility relation between moments, which correspond to the modal operator. For suitable choices of the linearly ordered sets and of the accessibility relation we obtain a semantics equivalent to that above.