Relativity, the Open Future, and the Passage of Time

Is the passage of time compatible with relativistic physics? According to one view, the answer is yes, because (i) time's passage is simply the successive occurrence of events and (ii) relativistic spacetimes contain events occurring in succession. This view (perhaps rightly) does not take objective passage seriously. What if time's passage is taken to consist in future events becoming momentarily present before moving ever further into the past? On a second view, this notion of passage is compatible with relativity because relativity is compatible with a global Now and a metaphysically preferred foliation of spacetime. This view does not take relativity seriously.

I will explore the prospects for views that seek to take both passage and relativity seriously. In particular, I will consider whether Belnap's machinery of Branching Spacetimes allows for a relativistic generalisation of views that understand temporal passage in terms of an objectively open future. On the way, I will review recent work by Brad Skow (on a relativistic version of the Moving Spotlight theory) and John Earman (on relativistic versions of Growing Block views of time).