Scientific realists endeavour to secure inferences from empirical success to approximate truth by arguing that despite the demise of empirically successful theories the parts of those theories responsible for their success do in fact survive theory change. If, as some anti-realists have recently suggested, those parts of theories that are responsible for their success are only identifiable in retrospect, namely as those that have survived, then the realist approach is trivialised for now success and survival are guaranteed to coincide. The aim of this paper is to counter this argument by identifying successful theory parts independently from their survival.