It is known that the time until a birth and death process reaches certain level is distributed as a sum of independent exponential random variables. Diaconis, Miclo and Swart gave a probabilistic proof of this fact by coupling the birth and death process with a pure birth process such that the two processes reach the given level at the same time. We apply their techniques to find a one-dimensional diffusion and a pure birth process whose transition probabilities are related by an intertwining relation. From this we prove that the time to absorption of the diffusion has the same distribution as the time to explosion of the pure birth process, although we do not manage to couple them such that the two times are a. s. equal. This gives us a probabilistic proof of the known fact that the time to absorption of the diffusion is distributed as a sum of independent exponential random variables. We also find a coupling of a similar diffusion with the same pure birth process, which is now stopped at an arbitrary level. This allows us to interpret the diffusion as being initially reluctant to get absorbed, but later getting more and more compelled to get absorbed.