The link between the fiber-matrix interface/interphase (F-MI/I) and composite design was recently reviewed (Jones 2010) and has been investigated by many others (e.g., Drzal 2001 and Palmese 1995) in an attempt to provide design guidelines for composite manufacture. Although the 2010 publication focused primarily on carbon fiber composites, it was noted that the formation of an I/I between a glass fiber and a resin poses an interesting conundrum, since there are several reports in the literature noting that an un-sized glass fiber has a strong interfacial bond to an epoxy resin. This finding contrasts the traditional glass fiber industry approach to coat the fibers with a complex sizing using an aqueous emulsion technique. The most important component of the sizing is considered to be the silane coupling agent (SCA), which has been extensively investigated (Ishida and Koenig 1996). However, the unanswered question is whether the SCA dominates the glass fiber interface or whether an interphase is formed in which the SCA is an integral component. In this presentation, the author continues this discussion by critically looking at F-M I/I formation in glass fiber/epoxy/amine composites through the lens of epoxy/amine reaction kinetics. From this perspective, three critical perturbations are identified that can control I/I formation. These perturbations are then linked to fracture morphologies observed during fiber failure at the micromechanics level. This link is considered important since data (Drzal 1991) suggests that controlling composite failure at the micromechanics level may enhance the intrinsic toughness of the composite.