The enolate anion is as an ambident nucleophile (two nucleophilic sites, carbon and oxygen). Electrophiles generally add to carbon rather than oxygen. The net result of a reaction at C-alpha is substitution (the electrophile, E+, replaces the carbonyl's alpha hydrogen).

The enol is nucleophilic too

- Under basic conditions, the nucleophilic form will be the enolate anion
- Under acidic conditions, the nucleophilic form will be the enol
Alkylation of Enolate Anions
(Enolates are Ambident Nucleophiles)

As the HOMO indicates, enolates are ambident nucleophiles, being reactive at both C\(_\alpha\) and oxygen. Consistent with the largest lobe of the HOMO being on C\(_\alpha\), most electrophiles react at carbon; some very powerful electrophiles (and oxophilic electrophiles) react mainly at oxygen (e.g., silicon is strongly oxophilic).