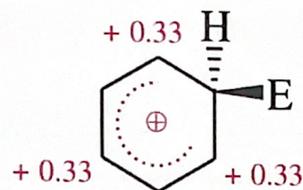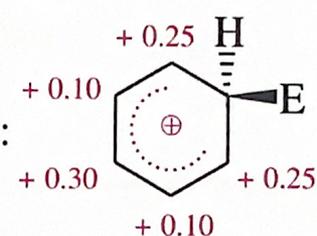most simple model:

refined model:

Donor/acceptor substituents R will more or less **stabilize the σ complex** (compensate charge deficiency) depending on the relative substitution R/E pattern.

Partial rate factors with respect to benzene

Susbt.	f_o^R	f_m^R	f_p^R	Reaction
CH_3	38.9	1.3	45.8	Nitration
t-Bu	5.5	3.7	71.6	Nitration
Cl	0.028	0.00084	0.13	Nitration
Br	0.030	0.00098	0.103	Nitration
CH_3	617	5	829	Chloration
CH_3	600	5.5	2420	Bromination
CH_3	32.6	5	831	Acylation (Ph)
CH_3	4.5	4.8	749	Acylation (Me)
CH_3	4.2	0.4	10	Alkylation (Bn)

Stock, L. M. *Prog. Phys. Org. Chem.*, **12**, 21 (1976); Stock, L. M. & Brown H. C. *Adv. Phys. Org. Chem.* 1, 35 (1963)