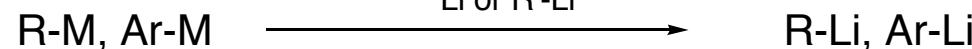


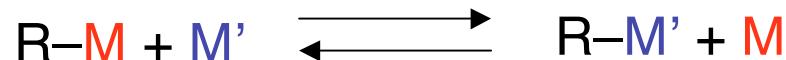
From R-Met., Ar-Met.

• Metal-Metal Exchange



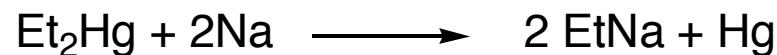
M = Sn, Hg, Se, --

1) 有機金属と金属の直接反応

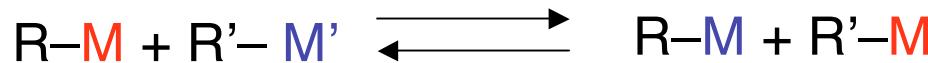


Zn, Hg, Sn Li, Na, K, Rb, Cs, Mg, Ca, Zn,--

電気陰性度 $M' < M$
M'によるRMの1電子還元



2) 有機金属と金属の直接反応

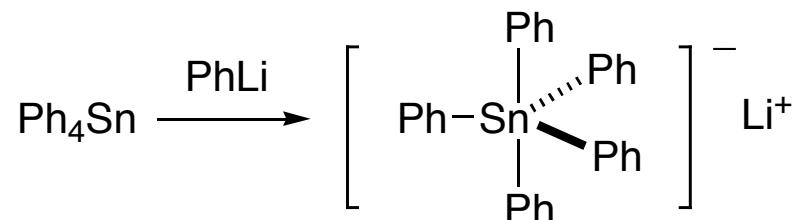


$\text{SnR}_3, \text{BR}_2, \text{etc.}$

生成系が熱力学的に安定

$\text{Li}, \text{ZnR}, \text{CuR}(\text{CN})\text{Li}_2, \text{etc.}$

$\text{RX}+\text{R}'\text{M}$ の場合と同様に hypervalent ate complex 経由



Reaction rate (in THF -70°C)

Ph-I	$>$	$\text{Ph-Te-}n\text{Bu}$	$>$	Ph-SnMe_3	$>>$	Ph-SnBu_3	$>>$	$\text{Ph-Se-}n\text{Bu}$
4		1		0.9		0.05		0.003