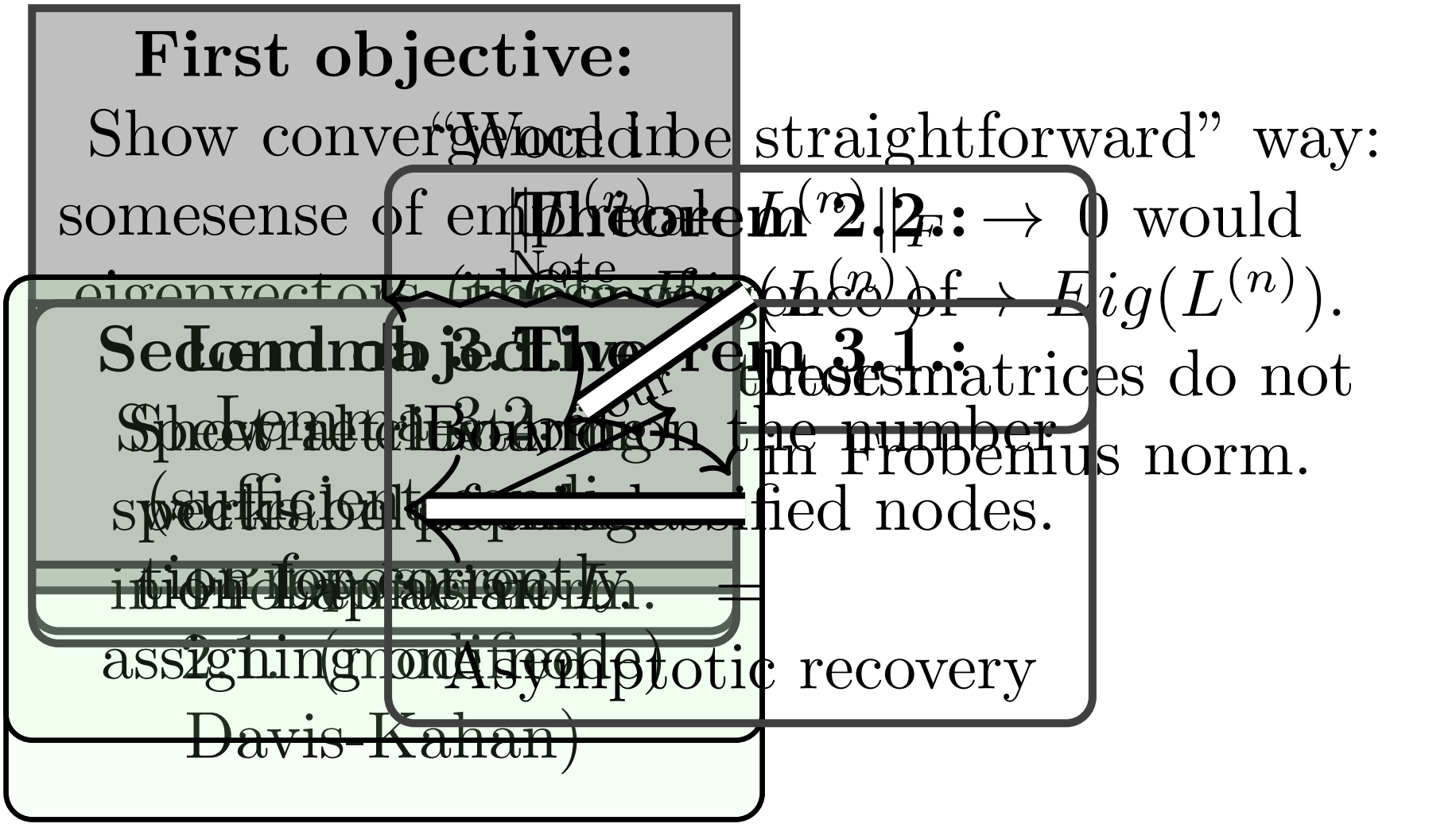
First objective:
Show convergence in some sense of empirical eigenvectors (subspaces) of $L^{(n)}$ to eigenvectors (subspaces) of L.
Second objective:
Show that spectral clustering is consistent in the sense that it tends to assign unlabeled points to the correct labels.
"Would be straightforward" way:
Theorem 2.2: $\|L^{(n)} - L\|_F \to 0$ would imply $Eig(L^{(n)}) \to Eig(L)$.
Note: these matrices do not live on the same space
Lemma 3.1: Spectral clustering is consistent (sufficient condition for consistency)
Theorem 3.1: Asymptotic recovery
Lemma B.2 (Davis-Kahan)