CHAPTER VI

CONCLUSIONS AND CONJECTURES

We have discussed some of the properties of the spaces $\ell(p)$ and $\ell_\infty(p)$ (chapter II) and we believe that several other nice properties can be investigated. One can ask whether $\ell(p)$ is separable and whether it has a basis. Attempts may be made to find the most general linear functionals and the dual spaces of $\ell(p)$ and $\ell_\infty(p)$. Also the Köthe-Toeplitz dual may be determined. The conditions for the spaces to be reflexive and perfect may be obtained. (A space is said to be perfect if it is Köthe-Toeplitz reflexive). It will also be useful to obtain the conditions for the spaces to have Schur property (A space $X$ is said to have Schur property if every weakly convergent sequence of elements of $X$ is necessarily convergent).

We have introduced the spaces $\ell(p)'$, $\ell_\infty(p)'$ and the spaces of strongly almost summable sequences (chapter IV and V). One can ask similar questions for these spaces and can have a detailed investigation.

Some matrix transformations in $\ell$ and $\ell$ have been discussed (chapter III and IV). Attempts may be made to characterise the matrices in the classes $(\ell, l)$, $(\ell, c)$,
and \((\hat{c}, \hat{l})\). If these problems are solved the classes 
\((\hat{c}, \hat{l}), (\hat{\ell}, \hat{c})\) and \((\hat{c}, \hat{l})\) can be easily characterised. 
The answers to such questions will fill up some gaps in 
the existing literature.