

PERSPECTIVES

GENETICS:

Getting Closer to the Whole Picture

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A major challenge of biology is to unravel the organization and interactions of cellular networks that enable complex processes such as the biochemistry of growth or cell division. The underlying complexity arises from intertwined nonlinear and dynamic interactions among large numbers of cellular constituents, such as genes, proteins, and metabolites. As well, interactions among these components vary in nature (regulatory, structural, and catalytic), effect, and strength. The reductionist approach has successfully identified most of the components and many interactions but, unfortunately, offers no convincing concepts and methods to comprehend how system properties emerge. To understand how and why cells function the way they do, comprehensive and quantitative data on component concentrations are required to quantify component interactions. On page [593](#) of this issue, Ishii *et al.* ([1](#)) provide unsurpassed complete and quantitative data of components at the various constituent levels in a bacterial cell.

<http://www.sciencemag.org/cgi/content/short/316/5824/550>