Abstract
A general issue for understanding development concerns the interplay between enablement and constraint, gains and losses. Notions of expertise provide one framework commonly used to consider such questions. For example, notions of expertise often underpin Baltes’s lifespan metatheory with its emphasis on gains and losses and on the tradeoffs between selection and optimization. Three features often come to the foreground, if one thinks of cognitive development in terms of acquiring expertise: (1) the domain-general character of initial learning processes, (2) a presumed developmental shift from an amassed set of facts and experiences to a derived set of abstract principles, and (3) the expectation that more practice and more experience lead to more knowledge and that more knowledge leads to more powerful learning. All of these expectations are challenged by features of early cognitive development. While early cognitive development does encompass the accumulation of knowledge and skill in ways that meet these expectations, it also profoundly manifests (1) domain-specific initial learning states and mechanisms, (2) abstract frameworks of understanding that precede and shape the accumulation of bodies of more specific knowledge rather than being derived from them, and (3) learning mechanisms and trajectories where less is more. In this chapter, I discuss these features of early development as a way to contribute to a lifespan metatheory that comprehensively encompasses the full scope of cognitive development. I argue, among other things, that a comprehensive understanding of cognitive development may need to be especially informed by developments at both extremes of the life course—early childhood and late life.

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Goethe (1802)

In limitations he first shows himself the master.
(Goethe, as quoted in Bartlett 1992)
—Goethe (1802)
written and acted as if development was unidirectional in this fashion. But this is simplistic, as Baltes’s lifespan proposals make clear. In particular, Baltes’s metatheoretical perspectives—especially those on gains and losses and on selective optimization with compensation—emphasize some of the intricate interrelations and balances between enablement and constraint. At the very least, to optimize some performance, capacity, or skill requires selection of a focus for resources and efforts, and since resources are inevitably limited, such selection breeds losses as well as gains. To use an economic metaphor, each developmental advance entails opportunity costs (alternatives not invested in; see Behrman, this volume); to use a poetic metaphor, each developmental path necessitates “a road not taken.”

A third perspective that underpins Baltes’s writings, including the target article, is that of expertise (see also Salthouse, this volume). Humans acquire knowledge and skill over the lifespan: most contemporary Western adults, for example, acquire considerable, albeit commonplace, expertise in reading or in driving cars. Scientists and engineers, skilled traditional wayfarers or master herbalists, acquire more individualized, specialized expertises. The achievement and maintenance of commonplace and specialized expertise is an ever-present task. Thus, Baltes’s example of Arthur Rubenstein focuses not only on selection, optimization, and compensation but on expertise, in this case maintaining expert piano playing. Notions of expertise help frame and articulate relationships between gains, losses, selection, and optimization. One relation between gains, losses, and expertise is alluded to in the epigram by Goethe that begins this chapter; another is parodied in the saying that “an expert is someone who knows more and more about less and less.”

How can we conceptualize the interplay between gains, losses, and expertise as knowledge and skill wax and wane over the life course? Baltes’s examples and analyses focus on adult cognitive development. Over the last 15 years, researchers interested in early cognitive development have wrestled with parallel issues. One of my aims in this chapter is to focus on early development by way of endorsing a comprehensively lifespan perspective on cognitive development; every person who lives to late life was once a young child. Another aim is to consider more closely the notion of expertise as a metatheoretical construct for thinking about gains and loses, about enablement and constraint. I believe that background assumptions about the acquisition of expertise often shape our theories and discussions of cognitive development, but these expectations can prove misleading for understanding certain crucial aspects of early development. They may also mislead us for understanding development more generally.

**Developmental Features of Expertise**

Research on expertise (see, e.g., Chi, Glaser, & Farr, 1988; Ericsson & Smith, 1991) classically addresses persons who, for example, have become expertly knowledgeable at chess, baseball statistics, typing, or X-ray diagnostics. In everyday parlance, as well,