

develop a mental state understanding of attention until around 4 years; this further supports the conclusion that children experience a general change in their understanding of the world at this age.

Chapters eight and nine concern developmental interactions with theory of mind. Chapter eight addresses the relationship between executive function and theory of mind, for which there are three main theories: theory of mind tasks require executive function; executive function is necessary for development of theory of mind; or theory of mind is necessary for development of executive function. Although recent evidence indicates that task factors do not substantially affect performance, Doherty suggests that the relationship between theory of mind and executive function is complex and perhaps bidirectional. Chapter nine turns to the links between language and theory of mind. Research on children's use of mental state terms supports experimental research: children appear to have a rudimentary understanding of desire from infancy, but only understand belief at around 4 years old. In addition, while conversations about mental states promote the development of theory of mind, the evidence does not support the importance of syntax for this development. Thus, Doherty concludes that language acquisition in general is important for theory of mind, possibly because language provides a framework for discussing mental states.

Finally, chapter ten looks at how research on theory of mind can help in

understanding autism. Doherty describes the triad of impairments in autism (impairments in social interaction, social communication and imagination) and attempts to explain them in terms of a lack of theory of mind. From the large body of evidence, it appears that theory of mind may account for impairments in interaction and communication but cannot easily explain the lack of imagination in children with autism. Doherty argues that a single cognitive theory may not be appropriate in order to explain autism; instead, he suggests that a single physical cause may result in several interacting cognitive deficits.

Doherty writes in an engaging and interesting way, occasionally with a note of humour to accompany his discussion. He meticulously details a large body of up-to-date research in order to evaluate theoretical approaches in a range of related areas. This makes the book a valuable resource for anyone interested in theory of mind research: newcomers will benefit from Doherty's ability to describe key concepts in an accessible way, while current researchers will have access to his comprehensive discussion of such a large body of work.

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WHY YOUTH IS NOT WASTED ON THE YOUNG: IMMATURITY IN HUMAN DEVELOPMENT. Edited by David F. Bjorklund. Wiley-Blackwell, USA, 2007. pp. 288. Price

£17.99, €24.30. ISBN 978-1-4051-4952-5 (Paperback).

The headline for a Microsoft advertisement aimed at selling software for chil-

dren and adolescents proclaims that 'Your kids can do great in school and still have time to be kids'. In one succinct slogan, the ad taps into several notions and concerns of American popular culture: academic success is important, children should have time for carefree activities, and such carefree time is threatened and needs to be guarded in today's hectic world. In *Why Youth is Not Wasted on the Young*, David Bjorklund provides a similar argument from an academic vantage point. He worries that 'contemporary society is rushing children', over-burdening and over-scheduling their lives, and that such rushing runs counter to the evolutionary 'purpose' of childhood (p. 3). Bjorklund's engaging summary of evolutionary theory and diverse lines of developmental psychology research is highly informative, and accessible to a broad audience. The argument, however, that American children are subject to hazardous rushing and that it is an evolutionary hazard no less, rests on slim evidence. In fact, consideration of research findings from both cultural and developmental psychology suggests a revisiting of the argument (c.f., Jensen, 2008). Nonetheless, by calling attention to important issues of interest and concern in popular culture, Bjorklund provides an impetus for additional scholarly work and perspectives on the topic.

Bjorklund's book is an excellent introduction to many key evolutionary and developmental psychology concepts. He covers the history of evolutionary theory from Lamarckianism to Darwinism to the Modern Synthesis (of Darwinian and genetic theory) to Gould's work. There is also a very useful review of the line of descent from chimpanzees to *Homo Sapiens*, and changes in brain development that accompanied this evolution. To give one example, Bjorklund describes the way that brain development in humans (unlike other primates) continues to take place with great rapidity after

birth. It is one aspect of human brain development that renders us particularly adaptable to environmental conditions. Bjorklund also provides an overview of a number of lines of developmental psychology research, especially on cognition. For example, he covers Piagetian and Vygotskian work on the connection between the development of language and cognition. He addresses recent work on children's meta-cognition. He also discusses research on childhood self-enhancement and optimism. What makes Bjorklund's review appealing is not only the many concepts and findings covered, but the friendly rapport he aims to establish with his readers through frequent sprinkles of humor, charming stories about his grandchildren, and everyday anecdotes.

While the anecdotes are interesting, one concern is that some of them might also lead us to premature conclusions. One chapter, for example, starts with the story of Joshua, a perfectly academically competent 6-year-old, whose parents employ a private math tutor to ensure that he advances to the second grade. The beginning of another chapter recounts 12-year-old Dylan's weekly leisure activities, which include cello lessons, gymnastics, soccer practice and games, and serving as a tutor to younger children at his school. There is also mention of how Dylan takes Ritalin every morning. These stories are evocative, but do not constitute evidence that most American children lead over-burdened and over-scheduled lives. Surprisingly, *Why Youth is Not Wasted on the Young* includes essentially no scientific documentation on how children in general spend their time, or on psychological consequences associated with different ways of spending time.

We might thus usefully back up and ask: Are American children rushed? By rushed, Bjorklund partly has in mind that children are burdened with too many adult expectations and respon-

sibilities too early (such as having to excel at math in first grade). Here, it is useful to turn to the extensive cross-cultural literature that has existed for some time on children's chores and responsibilities. For example, Whiting and Edwards (1988) in their analysis of ethnographic data from a sizeable number of cultures found that in some traditional communities, children as young as 4 years of age are entrusted with childcare. By age 5, children across traditional communities carry out a number of daily chores and their responsibilities continue to rise year by year. Also, where mothers' workload is particularly heavy, girls start working very early and they too have heavy workloads. In comparison, Whiting and Edwards found that American children (girls and boys) generally have very few chores. From a cultural vantage point, then, contemporary American children do not seem particularly over-burdened with adult responsibilities. Furthermore, the cultural findings do leave one wondering about the extent to which evolution has selected for a carefree childhood.

Bjorklund's concern about rushed children is not only about the extent of children's responsibilities. It is also about the extent to which their leisure time has become too structured (like Dylan's involvement in organized activities and programs), at the expense of free play and unstructured activities. Here, evidence from developmental psychology indicates that American children's lives indeed have become more structured in the course of the last several decades. A study of a nationally representative sample of children between 1981 and 1997 found that they spent increased time in organized sports, arts, and other programs, and reduced time in unstructured play, television watching, and visiting (Hofferth & Sandberg, 2001).

This increase, however, does not seem to amount to hazardous over-scheduling. Based on data from a representative

sample of American children between 5 and 18 years of age as well as other published data, Mahoney, Harris and Eccles (2006) found that American youth on average spend only 5 hours per week participating in organized activities (extracurricular activities, after-school programs, and youth organizations). Some 40% have no involvement in organized activities at any given time. Only a small subgroup of youth (3–6%) spends 20 or more hours per week in organized activities. Furthermore, the authors found that participating in organized activities consistently was associated with indicators of positive development, including psychological adjustment, academic achievement, good child–parent relations, and lowered rates of drug use.

By having his finger on the pulse of popular concerns, Bjorklund has highlighted a timely issue that merits careful empirical consideration. While the claim that children are rushed might best be read with a cautious eye, *Why Youth is Not Wasted on the Young* provides an accessible and engaging introduction to evolutionary and developmental psychology. It should make for thought-provoking conversations with undergraduate and graduate students, as well as any other reader with a general interest in these topics.

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BRAIN, BEHAVIOR AND LEARNING IN LANGUAGE AND READING DISORDERS. Edited by M. Mody and E. Silliman. The Guilford Press, New York, 2008. pp. 400. Price: £33. ISBN 978-1-59385-831-5.

Language and reading are immensely complex cognitive tasks, and many children fail to attain expected competency in either or both. Yet despite a plethora of research studies in a range of disciplines, including psychology, linguistics, cognitive neuroscience and education, there is little consensus as to the underlying causes of language and reading disorders, and only a limited evidence base on which to judge the efficacy of interventions. Even basic questions, such as how best to categorise these disorders, have not been satisfactorily answered.

Edited volumes whereby experts from multiple disciplines summarize the current state of their respective fields, and editors weave these different strands together into a new framework, are to be welcomed, as they have the potential to advance our understanding and shape future research. 'Brain, behaviour, and learning in language and reading disorders' aims to do exactly this, by bringing together cognitive neuroscientists, speech language pathologists, educational psychologists, psycholinguists and others under the editorship of two respected experts in this area: Maria Mody and Elaine Silliman.

This thought-provoking volume is divided into three parts, each of which opens with an introduction by the editors. Part 1 is entitled 'new frame-

works for understanding language impairment and reading disorders', and contains chapters on atypical neurodevelopmental variation (by Jeffrey Gilger and Michael Wilkins), emergentism (Julia Evans) and critical periods in second language learning (John Bruer). Part 2 explores 'brain-behaviour relationships', with chapters on working memory (Virginia Berninger), processing (Jennifer Windsor and Katherine Kohnert), functional neuroimaging (Deborah Weber and William Davis Gaillard), magnetoencephalography (Panagiotis Simos, Shirin Sarkari and Andrew Papanicolaou), the neural substrates in dyslexia (Sally Shaywitz, Jeffrey Gruen and Bennett Shaywitz) and reading development in children at risk for dyslexia (Brian Byrne, Donald Shankweiler and Donald Hine). Part 3 is entitled 'the role of experience' and contains chapters on evidence-based practice (Anne van Kleeck and Elizabeth Norlander), dynamic systems theory (Keith Nelson and Marnie Arkenberg) and individual differences (Silliman and Mody).

The editors argue that two factors have constrained our understanding of typical and atypical language and literacy development. First, models have failed to take into account the enormous variation that exists within and across groups of children. Second, they have not moved beyond the nature versus nurture dichotomy towards a more dynamic view of cognitive-linguistic behaviour. As a consequence, 'efforts to understand disorders of higher cognition, such as reading and language impairments, have become