

such as Britain or the United States.

If such reforms do not happen, Stiglitz recommends either an “amicable divorce” — dissolution of the eurozone — or a move to a more “flexible euro”. This is the most innovative and interesting part of the book. He argues for a new, and much more heavily regulated and controlled, international monetary system. States would have much more direct control of both money creation internally and their current account balances externally. He advocates market-based mechanisms for both. “Credit auctions” would demand that private banks pay for the right to expand the money supply, and “trade chits” would force importers to effectively buy tradeable licences to import. Nevertheless, this would be a radical move towards greater state control of the economy.

This is potentially very exciting. Few would defend the current organization of the international financial system, and radical ideas based in sound economics

“Radical ideas based in sound economics are exactly what we need.”

are exactly what we need. The state control that Stiglitz is advocating would be viewed with scepticism at the International Monetary Fund or the US Treasury, but would no longer be regarded as laughable or heresy. And a proposal from someone of Stiglitz’s eminence has a good claim on our attention. Unfortunately, this part of the book is underdeveloped. For example, it seems unlikely that as good an economist as Stiglitz hasn’t thought about how the spread of shadow banking — borrowing and lending outside the traditional banking system — has made it much more difficult to control credit creation. And he must be aware of the administrative problems that trade in services (particularly tourism) would pose for his chit system. But these issues are not addressed.

Will the eurozone respond to Britain’s vote to leave the EU with a rapid move towards greater integration, or will the tensions identified by Stiglitz pull it apart? Perhaps, as has mostly been the case so far, it will continue to muddle through. But it cannot avoid the questions that Stiglitz poses for ever — even if he is a long way from providing convincing answers. ■

Jonathan Portes is principal research fellow at the UK National Institute of Economic and Social Research in London. He was chief economist for the UK Cabinet Office during the 2008–09 financial crisis. e-mail: j.portes@niesr.ac.uk

CHILD DEVELOPMENT

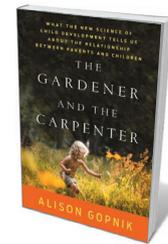
A cognitive case for un-parenting

Josie Glausiusz relishes Alison Gopnik’s study on how child-rearing demands the embrace of messy realities.

An Amazon trawl for “parenting books” last month offered up 186,262 results. Titles included Daniel Siegel and Tina Payne Bryson’s *The Whole-Brain Child: 12 Revolutionary Strategies to Nurture Your Child’s Developing Mind* (Delacorte, 2011), Elaine Glickman’s *Your Kid’s a Brat and It’s All Your Fault* (TarcherPerigee, 2016) and *Have a New Kid by Friday* by Kevin Leman (Revell, 2012). This is less genre than tsunami.

Yet, as Alison Gopnik notes in her deeply researched book *The Gardener and the Carpenter*, the word parenting became common only in the 1970s, rising in popularity as traditional sources of wisdom about child-rearing — large extended families, for example — fell away. Gopnik, a developmental psychologist (or as she describes herself, “a bubbe at Berkeley, a grandmother who runs a cognitive science laboratory”), argues that the message of this massive modern industry is misguided.

It assumes that the ‘right’ parenting techniques or expertise will sculpt your child into a successful adult. But using a scheme to shape material into a product is the modus operandi of a carpenter, whose job it is to make the chair steady or the door true. There is very little empirical evidence, Gopnik says, that “small variations” in what parents do (such as whether they sleep-train) “have reliable and predictable long-term effects on who those children become”. Raising and caring



The Gardener and the Carpenter: What the New Science of Child Development Tells Us About the Relationship Between Parents and Children
ALISON GOPNIK
Farrar, Straus & Giroux: 2016.

for children is more like tending a garden: it involves “a lot of exhausted digging and wallowing in manure” to create a safe, nurturing space in which innovation, adaptability and resilience can thrive. Her approach focuses on helping children to find their own way, even if it isn’t one you’d choose for them. The lengthy childhood of our species gives kids ample opportunity to explore, exploit and experiment before they are turned

out into an unpredictable world.

In Gopnik’s not-parenting approach, the rampant disorder of genetic variation (or, to use her technical term, “mess”) becomes a wellspring for creativity, contributing to the wide range of children’s temperaments and abilities. Some children are risk-takers; others are timid; some are highly focused (an advantage in a test-obsessed school system) or natural hunters (“constantly on the alert for even subtle changes in the environment”). Throughout history, she argues, that mix has bred resilience in societies faced with challenges, such as early nomads’ constant need to confront new environments. People with more conservative temperaments, for example, ensure some security for the risk-takers.

Gopnik reveals how the parenting model can affect how children explore. She describes a wide range of experiments showing that children learn less through “conscious and deliberate teaching” than through watching, listening and imitating. Among the K’iche’ Maya people of Guatemala, even very young children with little formal schooling can master difficult and dangerous adult skills — such as using a machete — by watching adults engaging in these tasks in slow and exaggerated fashion. In one of Gopnik’s own experiments using a “blicket detector” (a box that lights up and plays music when a certain combination of blocks is placed on it) four- and five-year-olds worked out that unusual ▶



Children learn well from undirected play.

► combinations rather than individual blocks did the trick — and younger kids were more skilled than older ones at finding unlikely options.

She also cites a number of studies on play, which is so crucial to human development that children engaged in it even in Nazi concentration camps. Research on dolphins, crows and foxes reveals how playing at hunting, digging and fighting develops the skills the animals need as adults. Through play, young rats produce chemicals called cholinergic transmitters, implicated

in plasticity in ‘social’ areas of the brain. Rats deprived of play when young can defend, attack or approach others as adults, but

“Gopnik can be scathing in her censure of the modern educational system.”

fail to know “when to do what”, she notes. Most human parents, Gopnik writes, “have a vague sense that play is a Good Thing”. But as an aim of parenting, play is paradoxical, she claims, because it is essentially goalless. Elizabeth Bonawitz, a researcher in computational cognitive development, found that when adults instructed children on how to play with a squeaking toy, the children imitated them. When left to their own devices, the children were more likely to try different actions until they had discovered everything the toy could do.

Gopnik can be scathing in her censure of the modern educational system, which increasingly stresses high-stakes testing. That trend, she notes, parallels the rise in diagnoses of attention deficit hyperactivity disorder (ADHD), which in the United States particularly is often treated with drugs that can have serious side effects, including addiction. More palpable, however, is her devotion to the subjects of her research, including her grandchildren Augie and Georgie, her “true muses”, whose antics pepper her text.

Those antics remind me of my own delightfully disorderly, creative five-year-old twins and their in-the-now mischief and affection. As Gopnik concludes: “The most important rewards of being a parent aren’t your children’s grades and trophies — or even their graduations and weddings. They come from the moment-by-moment physical and psychological joy of being with this particular child, and in that child’s moment-by-moment joy in being with you.” ■

Josie Glausiusz writes about science and the environment for magazines including *Nature*, *National Geographic* and *Hakai*.
Twitter: @josiegz



The Three Gorges Dam on the Yangtze River is one of the world’s largest power stations.

CHINA

A hydrological history

Andrea Janku enjoys a study of the nation-building role of China’s great rivers, the Yellow and the Yangtze.

Nearly 70 years ago, Chinese anthropologist Fei Xiaotong published *From the Soil* (1947). The Chinese people, he wrote, were “inseparable from the soil”, which had produced “a glorious history”, but one that was “limited by what could be taken from the soil”. If that book was the portrait of a rural and inward-looking country, literally stuck in the famous yellow earth — the loess of the North China Plain — science

writer Philip Ball’s history of China, *The Water Kingdom*, is very much the opposite.

It is the portrait of a civilization permeated by water, with patterns of thought influenced by the centrality of water to everyday life and, echoing that, practical affairs shaped by philosophical ideas based on the principle of flow. The result is, Ball writes, “an intimate connection between hydraulic engineering, governance, moral rectitude and metaphysical