

In This Issue

All Things Considered

Although often presented as contradictory, the common assumption that natural and supernatural explanations are incompatible is psychologically inaccurate. In a secondary analysis, **Legare, Evans, Rosengren, and Harris** (p. 779) propose instead that people use both natural and supernatural explanations to interpret the same events and that there are multiple ways in which both kinds of explanations coexist in individual minds. To support this claim, they review data from more than 30 studies from diverse cultural contexts such as the United States, South Africa, Madagascar, and Spain in three areas of biological thought: the origin of species, illness, and death. Contrary to traditional accounts of cognitive development, they argue that supernatural explanations often increase rather than decrease with age, and propose that thinking about supernatural phenomena is an integral and enduring aspect of human thinking.

Are children more likely to believe people who have previously offered good reasons to support their claims? **Koenig** (p. 1051) examined whether preschool children are sensitive to the quality of reasons people offer for their claims, and whether this sensitivity guides their trust in the more reasonable of two informants. In two experiments, ninety 3- to 5-year-olds listened to two speakers state different kinds of evidence for what they believed, then were asked whom they trusted. Findings: Three- and four-year-old children selectively preferred to seek and accept new information from the speaker who previously provided good reasons for her claims. This shows that children distinguish certain good from bad reasons, and prefer to learn from those who showcased good reasoning in the past.

What Works for Preschoolers in Poverty?

Children become readers by being read to. In a longitudinal study of 550 mostly low-income 4-year-olds, **Piasta, Justice, McGinty, and Kaderavek** (p. 810) find that children become better readers and spellers and even develop better reading comprehension one or two years later if the people reading to them talk about the print in those books. The children took part in a 30-week print-focused

shared-book reading program. In some of the classrooms, teachers verbally and nonverbally referenced print—they asked if children knew certain letters, traced the shapes of letters, and discussed the words formed by the letters; in the other classrooms, they used a traditional book-reading style. Frequency mattered, too: Preschoolers who heard print-focused reading four times a week developed better skills, but results were inconsistent for those who were read to only two times a week. The results can help inform programs for preschoolers living in poverty.

There's now substantial evidence that children who attend formal preschool programs in industrialized nations are likely to do well. But what about the impact of similar programs in developing countries? To evaluate the benefits of preschool programs in a developing nation, **Rao et al.** (p. 864) measured outcomes associated with three major preschool programs in Cambodia—state preschools, community preschools, and home-based programs. The study featured a randomized sample of eight hundred and eighty 5-year-olds from six mainly rural provinces of the country; the children attended one of the three programs or no program. The study assessed their developmental gains at the start and end of a school year. Findings: In Cambodia, while the effects of the preschool experience on children's development at age 6 depends on the type of preschool attended—children attending state preschools improved more than those attending the other two programs—any type of preschool program is better than none at all.

Aggression and Family Conflict

Family conflict is common, but families vary in how they handle it—some settle disputes calmly, while others get angry and aggressive. Harsh family environments may affect youths' stress response systems, although research is mixed on whether children in these families show over- or underactive stress responses later in life. **Saxbe, Margolin,**

Shapiro, and Baucom (p. 821) studied more than 50 teens (average age 15) who talked with their parents in the lab about a topic the families said was heated (think chores, time with friends, cell phone use). The teens' saliva was tested to measure how their levels of cortisol, a stress hormone, changed during the discussion. Teens from more aggressive families had less overall cortisol than teens from less aggressive families, and their cortisol levels decreased more if they said the talk was more heated. This dampened response appeared to be adaptive. Youths from aggressive families who showed increasing rather than decreasing cortisol were also the most likely to have behavioral and psychological problems. In other words, tuning out from conflict may help protect teens in high-risk families from stress's negative effects.

As early as elementary school, some children are surprisingly narcissistic. These children have a strong need to be admired for a grandiose sense of self, believe that they're entitled to special privileges, and think they're more important than others. **Pauletti, Menon, Menon, Tobin, and Perry** (p. 831) studied more than 230 children in fourth through eighth grades. They find that narcissistic children of both genders are often aggressive and selfish with peers, but some are depressed. Some narcissistic boys are aggressive because they've bought into the stereotype that boys should be macho, while others act this way because they have low self-esteem. It's less clear why narcissistic girls are aggressive. Narcissistic children who fail to achieve their desired grandiose self—that is, those who see themselves as unattractive or unappreciated—are often depressed. The study suggests that narcissism doesn't act alone, but rather combines with other self-relevant knowledge to affect children's mental health.

All Hands on Board

Full-term newborns can learn about an object's property (e.g., how it feels or how it's shaped) with one hand and discriminate a new object with their opposite hand, an ability called intermanual transfer. To learn to what degree information that's in one hand transfers to information in another, **Lejeune et al.** (p. 794) studied two dozen preterm babies from 33 to 35 weeks of gestation. They find that intermanual transfer of information about the shape of an object exists from 33 gestational weeks, in spite of the immaturity of babies' brains. Their findings suggest that early brain function, and in

particular the transfer of information across the corpus callosum, is more sophisticated than previously thought.

Infants acquire new motor skills rapidly over the 1st year of life. **Loucks and Sommerville** (p. 801) asked: What do these developments mean for perception and cognition? Do changes in infants' motor abilities influence their cognitive development? They tested more than 60 infants (at 10 months) in two different tasks that involved grasping to determine whether they understood that different grasps predict different future actions (e.g., if we see someone reach for a heavy object with a whole-hand grasp, we might predict that they'll pick up the object). The infants understood the functional consequences of another's grasp only if they could perform the precision grasp themselves. The study adds to a growing body of literature suggesting that infants' own motor abilities influence their perceptions of others and the world around them.

Parental Influence

Does spanking have fewer detrimental effects on children's behavior in cultural contexts in which it's normative, and thus more frequent, such as among Black families, which report more frequent use of spanking? Using a national sample of more than 11,000 kindergartners and their moms and teachers, **Gershoff, Lansford, Sexton, Davis-Kean, and Sameroff** (p. 838) assessed spanking and children's behavior problems in kindergarten and third grade. Black moms reported more spanking than moms from White, Hispanic, and Asian families, but there were no differences in the ties between spanking and children's behavior problems over the 3-year study. Across all of the groups, early spanking predicted small increases in children's behavior problems, while early child behavior problems elicited small increases in spanking over time. The findings suggest the benefit of communicating to parents that spanking children doesn't lead to better behavior.

Sleep problems are common in young children. Several factors likely contribute to these problems, and mothers' depression has consistently been tied to infants' sleep disturbances. **Teti and Crosby** (p. 939) sought to determine why. They studied 45 moms and their infants, who ranged from 1 to 24 months, in home visits over seven consecutive days, including videotaping on the final night. Infants of moms with higher levels of symptoms of

depression and more worries about their children's sleep had more disrupted sleep. In addition, their moms behaved in ways that appeared to disrupt babies' sleep, for example, picking up infants who were sound asleep or waking infants from a sound sleep to nurse. Although there was greater support for moms' behavior explaining the tie between symptoms of depression and babies' night wakings, the researchers suggest that it's likely that each factor influences the other.

The substantial increase in births to unmarried parents over the last 40 years has sparked federal policy initiatives to encourage people to marry. Supporters say that growing up with two married, biological parents leads to better cognitive, academic, and behavior outcomes than growing up in other types of families. To determine if these benefits apply to children in families targeted by these initiatives, **Ryan** (p. 1085) studied almost two thousand three hundred 3-year-olds who were part of the Fragile Families and Child Well-Being Study. She finds that the benefits to children's early cognitive development of being born to married parents are reserved for children whose parents are very likely to be married. This suggests that the average differences between children in married and unmarried families may overestimate the benefit of marriage in groups that are most affected by non-marital birth. As such, it calls into question policies aimed at encouraging marriage.

Talking It Out

As a society, we tend to believe that males want to talk about their problems, but don't because they're embarrassed or don't want to appear weak. In four studies of about 2,000 children and adolescents, **Rose et al.** (p. 844) found otherwise. The youths, in grades three through nine, were asked to rate how much they expected to feel 15 emotions—some positive, some negative—if they talked about problems. Boys weren't more likely than girls to expect that talking about problems would make them feel embarrassed, worried that others would think badly of them, or bad about not taking care of the problems themselves. Instead, boys were more likely than girls to indicate they'd feel weird talking about problems and to believe doing so was a waste of time. In contrast, girls held largely positive expectations about discussing their problems, which may make it easier to share with close friends but could also involve risks of talking too

much about problems, which is linked to depression and anxiety.

Support Systems

Staying actively engaged in school is important to students' educational success. To better understand the impact of social support on adolescents' engagement in school, **Wang and Eccles** (p. 877) studied 1,500 adolescents from 23 schools in an ethnically and economically diverse part of the country. They looked at four indicators of engagement: complying with school rules, participating in extracurricular activities, identifying with one's school, and valuing learning. They also asked whether social support from teachers, peers, and parents contributes to students' engagement in school. Findings: Adolescents' school engagement decreases from seventh to eleventh grades. Positive social support from teachers, parents, and peers helps promote teens' ability to achieve desired outcomes and protect against the normative declines in school engagement, but not all sources of support are equally important. When it comes to complying with school rules, teachers' and parents' support had positive effects. Teachers also reduced declines in students' sense of identification and their valuing of learning. Parents' support played a strong role in participating in extracurriculars, school identity, and valuing learning. Peers had both positive and negative influences, depending on what types of peer groups teens hung out with.

Youths from African American, Native American, and Latino backgrounds continue to be underrepresented in the fields of science, technology, engineering, and mathematics (known as STEM subjects). Many think this is because these students lack mentors or role models from the same background as they are. In a short-term longitudinal study, **Syed, Goza, Chemers, and Zurbriggen** (p. 896) asked: Do ethnic minority adolescents want mentors who share their background? They gave surveys to more than 260 high-school students attending a summer residential science camp. The teens were ethnically diverse and very high achieving. All students had contact with ethnically diverse mentors through the course of the camp. Findings: Having contact with a same-ethnicity mentor matters to some students, but not to others. For students who said it mattered, feelings of identity as a science student rose when they had contact with mentors who shared their ethnicity, and the

experience encouraged their commitment to a career in STEM fields.

How Preschoolers Learn

Who do children copy—the children in their class who are the cleverest, the ones who show the most success, or the “cool” kids? In a study out of Scotland, **Flynn and Whiten** (p. 911) gave almost 90 preschoolers (ages 2–4) a puzzle box and observed them as they worked out the solution, watching to see how they learned from others. They find that rather than helping each other, young children copied from the popular children in their group and from their close friends. The study helps us understand how children acquire and pass on the important information that they need to act appropriately in their social groups.

When young children engage in pretend play, it's sometimes puzzling to adults. After all, they know so little about the world, so why do they playfully misrepresent things instead of learning about them? **Sutherland and Friedman** (p. 1064) showed more than 50 mostly White, middle-class Canadian children ages 3–5 pretend scenes about an unfamiliar animal, then asked the children questions about real members of the same species. Children showed signs of learning from pretend play when they were asked both force-choice and open-ended questions, and even when they watched scenarios not featuring pretend sounds or speech. This suggests that rather than competing with learning, pretending allows children to acquire general knowledge.

Vowels and Verbs

Infants are born with an innate predisposition to process speech. However, by the end of their 1st year of life, infants' speech perception has narrowed from a broad-based ability to a selective sensitivity to just those speech sounds used in their native language. In a Spanish study, **Pons, Albareda-Castellot, and Sebastián-Gallés** (p. 965) examined the interaction between initial acoustic perceptual biases and language experience through infants' native vowel perception. The researchers studied almost 150 infants learning Spanish and Catalan (two related languages with different patterns) when they were 4, 6, and 12 months to determine their perception of vowels. They find that at the earlier ages (4 and 6 months), the infants perceived

the vowels in the same way, but when they were older (12 months), they perceived the vowels differently. Results indicate that infant perception of native vowels changes during the 1st year of life.

Most children produce their first verbs sometime before their second birthdays, but we know little about when and how infants make sense of the actions and events referred to by verbs. To find out how infants discriminate and group together those actions and events referenced by verbs, **Pruden, Göksun, Roseberry, Hirsh-Pasek, and Golinkoff** (p. 977) studied about 50 babies aged 10–12 and 13–15 months. The babies saw movies with animated characters and were observed for how they watched the different ways in which the characters moved. Babies as young as 13 months looked longer at a new way of moving. The ability to detect changes in the way a character moves (e.g., noting differences between running and skipping) requires infants not only to understand the differences but also to look for similarities across actions and events, and then group them into categories. Looking longer at a new way of moving suggests the infants had formed a category, and thus that they could make sense of events before they'd learned their first verbs. The findings shed light on the way we acquire language.

Do You Hear What I Hear?

How do babies fill in gaps in experience when a moving object is temporarily covered by another? Can they mentally imagine the object while it's out of sight or does perception fill in the gap? In a study out of the U.K. of more than 70 infants of 4 months, **Bremner, Slater, Johnson, Mason, and Spring** (p. 954) find that when infants were given auditory information—they heard sounds related to an object's changing location—it enhanced their ability to anticipate where the object was going to be. When the babies heard sounds that offered conflicting information about where the object was or sounds that went off and on when the object disappeared and reappeared, they had more trouble perceiving the continual movement of the object, and therefore had more difficulty anticipating where it would be. The findings regarding the effects of sound support a perceptual explanation of infants' ability.

Children learn many words through direct instruction, with an adult directing attention to an object and repeatedly naming it. Developing the ability to follow another person's gaze is therefore

thought to be an important part of language acquisition. **Gluga et al.** (p. 926) examined about 50 British 3-year-olds, some of whom had older siblings with autism spectrum disorders (ASD). The children were shown a video in which an adult taught them a new word while gazing toward an object; using an eye-tracker, the experimenters monitored where on the screen the children looked. All the children followed the adult's gaze, but those with poor social and communication skills (as measured by an autism diagnosis scale) didn't learn the associated word. Thus, although gaze following might be necessary, it's not on its own sufficient for learning words. This suggests that language difficulties among children with ASD might not be tied to their inability to follow someone's gaze, but rather that these children might not understand that the word they hear and the object they're looking at go together. The study has implications for how children with ASD are taught language.

Ecological Reasoning

One thing that makes humans smart is our ability to draw inferences. When we learn a new fact, we assume that fact might be true of related things. In biology, for example, if we learn a new fact about ducks, we might use what we know about biological categories to infer that the same would be true of other birds. Or we might use what we know about habitat to infer that it would be true of other pond-dwellers, like otters. This latter kind of ecological reasoning is important because it shows an appreciation of species as members of interconnected natural systems. **Coley** (p. 992) interviewed 350 children aged 6, 8, and 10 from different types of communities (urban, suburban, and rural), asking about the children's nature-related hobbies and activities, then gave them a series of inference problems related to nature. The results showed both direct, unstructured experience with nature and being raised in rural rather than urban communities were associated with higher levels of this kind of ecological reasoning. Surprisingly, going to zoos and aquariums or taking care of pets weren't related to this type of reasoning. The study helps us understand how experience can shape thinking in this area.

Extraordinary Abilities

Children's media is full of characters with extraordinary perceptual and mental abilities, such as

Superman's x-ray vision. Religious doctrine also exposes children to beings with special abilities, such as an all-knowing God. How do children develop an ability to conceptualize beings with such extraordinary abilities? When and how does their exposure to ideas about extraordinary beings help them develop this ability? **Lane, Wellman, and Evans** (p. 1007) examined these issues with children who attended religious preschools. They looked at more than 60 children aged 3–5, observing how they reasoned about the knowledge and beliefs held by a variety of beings. Findings: The children had difficulty conceptualizing extraordinary mental powers, and even though they attended religious preschools, did not think of God as having extraordinary mental abilities until age 5. But children as young as 4 attributed extraordinary knowledge to a being when they were explicitly instructed and reminded about the being's extraordinary mind, which contrasts with how secularly schooled children responded in a prior study.

The Social Part of Self-Regulation

Self-regulation—the ability to control impulses, focus attention, and remember multiple instructions—is important for early mental health and school readiness. These executive processes undergo a lot of development in the toddler and preschool years, and with advances in the brain's frontal regions, provide a window into how such influences as parenting affect children's development. In their longitudinal work, **Conway and Stifter** (p. 1022) studied almost 70 mostly White, middle-class mother-child pairs starting when the children were 2 and following up at 4½. Children were given a problem-solving task to complete with their parents; moms' efforts to keep their toddlers' attention on the task were assessed, as were moms' attempts to redirect the youngsters' attention. When moms of shy children primarily supported their toddlers' attention to the task, the children were better at controlling their impulses 2 years later. When moms of shy and exuberant toddlers primarily redirected their children's attention away from the task, the children had more trouble controlling their impulses, remembering rules, and initiating behavior 2 years later. These findings contribute to our understanding of children's temperament and social processes such as parenting behaviors in the development of self-regulation.

Discovering Memory

Our ability to remember what happened has been extensively documented, but we don't know how children develop the ability to remember the time and place something has occurred, or why memory abilities gradually increase throughout childhood. To better understand how and why children develop episodic memory, **Picard, Cousin, Guillery-Girard, Eustache, and Piolino** (p. 1037) studied more than 100 French children and adolescents between the ages of 4 and 16. The youngsters completed behavioral tasks, then were tested on their abilities to recall and recognize information that had been previously presented. The study finds that children's ability to recall what happened changes and develops until ages 9–10, while the ability to recognize the same information emerges at age 6. Children's abilities to remember the where and when of past events (as opposed to their ability to recall the correct answer for a test) develop more slowly because they're seemingly constrained by other cognitive abilities.

Understanding False Beliefs

Children's ability to consider a false-belief situation—making predictions about the behavior of someone who believes something different from themselves—is an important benchmark of development. Children usually adopt this understanding at age 4, but there's debate over how it develops. **Low and Simpson** (p. 1072) tested how labeling different parts of a false-belief task affected 3- and 4-year-olds' performance on the task. Four-year-olds' performance improved when labels were used to point out both the content of a false-belief (the protagonist's perspective) and the true state of reality (the child's perspective), and also when only the

protagonist's perspective was labeled. However, these results were not replicated with 3-year-olds. Labels may have the effect of making alternative perspectives more salient but only when children have begun to develop a sophisticated understanding of belief. By indicating that 3-year-olds' conscious representational false-belief understanding isn't complete, the results provide insight into the mechanisms underlying the development of theory of mind, as well as the role language plays.

Human Rights

When the United Kingdom ratified the Convention on the Rights of the Child, the country entered a reservation enabling it to withhold special protection for refugees and immigrants. Although the reservation was subsequently withdrawn, permitting these children the full range of rights and protections under the Convention, the estimated 82,000 refugee minors living in the U.K. don't have the same rights as minors with British citizenship. As a result, teens and young adults there may consider asylum seekers to be less deserving of various rights than British citizens. **Tenenbaum and Ruck** (p. 1102) examined the attitudes and reasoning of 260 young British people (ages 11–24) concerning the rights of youths seeking asylum, such as Muslims. Youths supported religious self-determination and nonreligious nurturance rights more than religious nurturance and nonreligious self-determination. Patterns of reasoning also varied based on the type of right. This suggests that how British youths think about rights is influenced by both the type of right and the situation in which the right is embedded.

Anne Bridgman