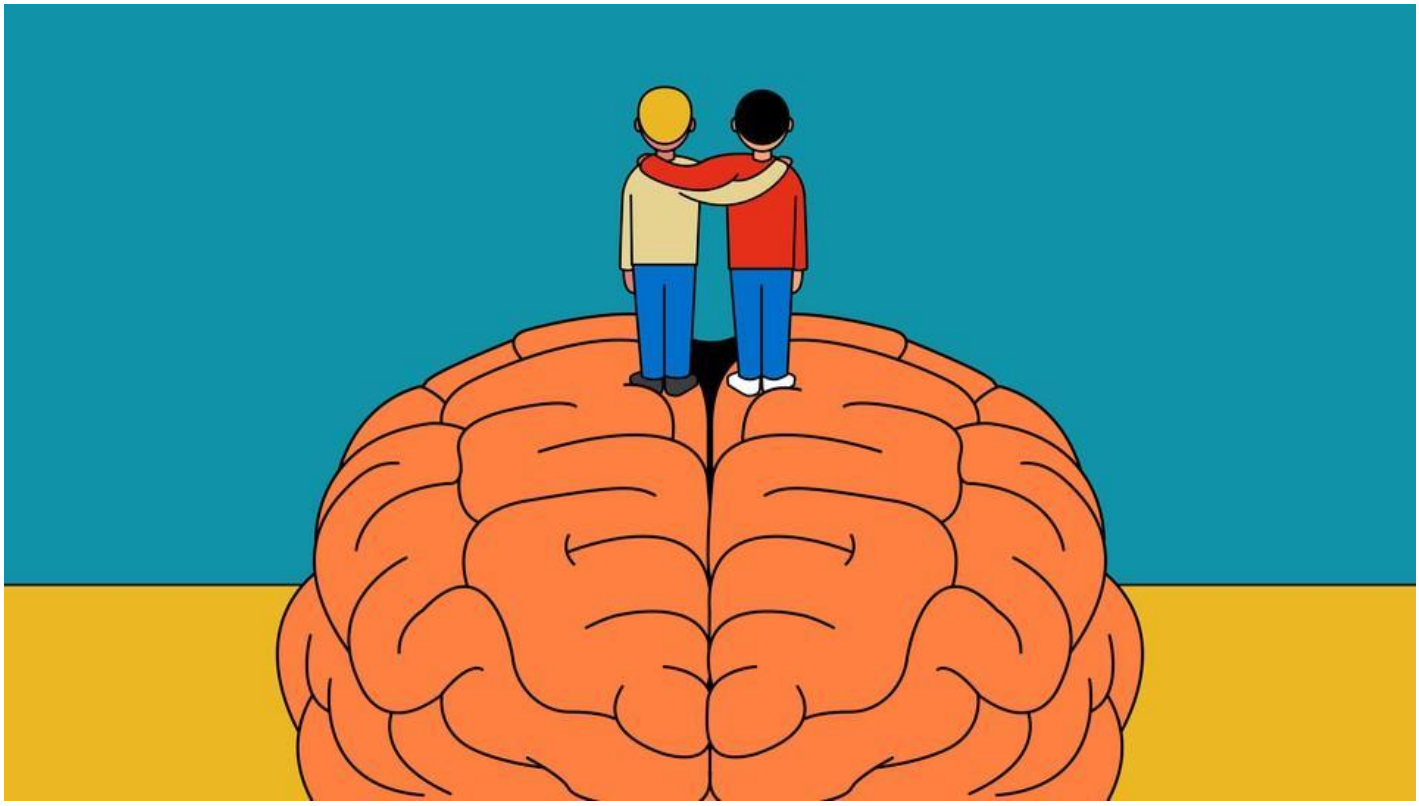
The Outsize Influence of Your Middle-School Friends

The intensity of feelings generated by friendship in childhood and adolescence is by design.

By Lydia Denworth



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JANUARY 28, 2020
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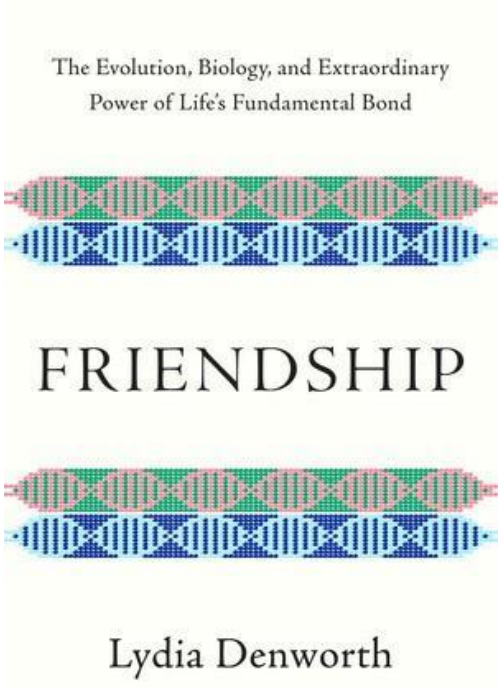
Early in 2010, the year we moved to Hong Kong, our three boys were 11, eight, and six. When we sat them down to tell them we'd be moving there for a few years, we tried to sell it as a challenging adventure. Their responses were mixed. Jake was anxious. Alex, our baby, was excited. But Matthew, our middle son, was inconsolable. He was having none of it.

“What about my friends!” he cried.

We tried to reassure him.

“You’ll be back … you’ll have your family … you’ll make new friends.”



This article was adapted from *Friendship: The Evolution, Biology, and Extraordinary Power of Life's Fundamental Bond* by Lydia Denworth.

Matthew looked at us with anguish and said, “And then I’ll have to leave them, too.”

It went on like that for weeks.

Matthew has always been the outgoing one. He seemed to recognize at a very early age the sustenance he got from other people. As a toddler he waved and grinned at strangers from his stroller. His second-grade teacher once told me he might have been the funniest child she ever taught. Another mother once marveled at his “profound social skills.”

Such gregariousness generally gives him confidence. And it wasn't the prospect of making new friends that worried him. It was the wrench of separation from the ones he had. Matthew's friends felt like his whole world.

In this, he was acting like many of his peers. The ability to make and keep even one close friend has been seen as vital to children's well-being for more than half a century. What has changed is that we now understand at a biological and even evolutionary level why that is so. And we are beginning to appreciate that the intensity of feelings generated by friendship—or loneliness—in childhood and adolescence is by design. The complexity of human brain development takes time. Much of that time is spent honing a new, more advanced set of social skills.

"Middle school is about lunch."

I turned and looked at Mary, the woman who had spoken. We were sitting on a beach watching our kids swim. It was August, and though we were still on vacation, our thoughts had turned to the coming school year. That September, Jake would be starting middle school—which began in fifth grade for him, but more often encompasses sixth through eighth grade. Mary's oldest daughter was a few years ahead, so Mary was sharing her wisdom.

As they reach middle school, children drift away from the pure play of running in the yard at recess or building with Legos. Middle school brings the beginnings of puberty for some, first crushes for many, and a shift from child to teenager for all. It brings higher levels of academics. But if you want to know whether your child is going to be happy or miserable, confident or anxious, being a fly on the wall at lunch would probably tell you a lot.

Initially, the biggest shift middle school brings is one of context. Most American students move from spending the bulk of the day in one classroom and with one set of classmates—a social bubble of sorts—to multiple classrooms and multiple new classmates. Their number of potential social possibilities swells. Children are entering a period of maximum concern over acceptance or rejection and over how they will be perceived.

No wonder lunch looms large. In many schools, it is the time in the day when these preteens have the most agency. It is why the movies are filled with so many scenes of anxious children holding a tray and not being sure where to sit. If we needed a reminder of the intense vulnerability lunch period brings, we got one in the efforts of a teenager named Denis Estimon. When he was a newly arrived Haitian immigrant in a Florida elementary school, lunch was the worst part of his day. He decided to do something about it when he reached high school and cofounded a club called We Dine Together. "It's not a good feeling, like you're by yourself. And that's something that I don't want anybody to go through," Estimon told CBS. Club members spend the lunch hour wandering the cafeteria and courtyard of their Boca Raton school in search of anyone eating alone. Then they sit down with their own lunch and chat.

Out of curiosity, I spent a few minutes recently standing on a street corner outside my neighborhood's largest middle school, which allows students to leave the building for lunch. A group of three girls giggled and whispered together as they crossed the street to the deli. Two boys dribbled a basketball on the sidewalk as they headed to a nearby court. Everyone studiously avoided the playground in the park across the street—maybe because they thought they had outgrown monkey bars. There seemed to be some early attempts at flirting going on inside the pizza parlor behind me. These were little kids turning into teenagers. The change was unfolding before my eyes like time-lapse photography.

Jaana Juvonen doesn't stand on street corners and watch middle schoolers interact in order to guess at the quality of their friendships. She asks them. Juvonen is a developmental psychologist at the University of California at Los Angeles. Appropriately, she and I met for lunch to talk about her work, although the café near the UCLA campus where we ate was full of adults, not middle schoolers.

About 10 years ago, Juvonen set out to capture how peer relationships change over the course of adolescence. Over a period of three years, she and her team recruited 6,000 sixth graders from 26 different middle schools in Los Angeles and then followed each cohort. Every year, the participating children filled out a series of questions about peers: Name your closest friends. Does this kid have your back? Can you talk to him or her about anything? Do they come to your house? Have you ever been bullied? Have you seen anyone else be bullied?

The study revealed that instability rules, at least at the beginning. Two-thirds of the children entering their first year of middle school changed friends between the fall and the spring. Juvonen suspects that has to do with the structure of the school system. Students arrive from smaller elementary schools knowing a few other children from fifth grade. At the start of the year, they stay close physically and emotionally to those familiar classmates. But as they settle into life in the new environment, their social horizons expand. They gravitate to those with similar interests of the kind that begin to solidify in these years—soccer, theater, robotics. Similarities, as always, attract. Earlier friends often fall by the wayside.

Friendship has real power for kids. Juvonen thinks that friendship may even begin to resemble an attachment relationship like what children initially have with parents. "[These] are really very, very close and emotionally intimate relationships," Juvonen told me. "And even if that particular relationship doesn't last, it has ramifications on subsequent relationships."

Too often educators and parents fail to appreciate the potential upside of these strong ties. Teachers often separate friends, whose banter can be disruptive in the classroom. Yet when researchers record student conversations during class, there is evidence that while kids are problem solving or working together, students collaborate more effectively with their friends. "Their dialogue is much deeper, cognitively more complex, than when we ask kids to work with just any classmate," Juvonen said. "It's really interesting that we as adults in the society often regard friendships more as a nuisance and a distraction rather than give them the value that they really deserve."

But there is also a dark side to the social world of middle school, as anyone who has been through it will remember. Sixth graders who do not have friends are at risk of anxiety, depression, and low self-esteem. About 12 percent of the 6,000 sixth graders in Juvonen's study were not named as a friend by anyone else. They had no one to sit with at lunch and no one to stick up for them when bullied. Of that group, boys outnumbered girls nearly two to one, and African American and Latino students were more likely to be friendless than white kids. Inspired by the University of Chicago social psychologists John Cacioppo and Louise Hawkley's work on perceived social isolation and the sense of threat that comes with it, Juvonen and her student Leah Lessard investigated whether perceptions of social threat could explain the mental-health difficulties that beset friendless middle schoolers. Their hypothesis was that not having friends in sixth grade triggered a greater sense of threat in seventh grade, which led to increased internalizing difficulties, such as depression and anxiety, by eighth grade. Their research confirmed that theory: It wasn't friendlessness alone that created problems, it was the resulting sense of threat.

Then there is bullying, which Juvonen has studied extensively. "Friendships take place in this larger context where there's a status hierarchy," she told me. "Kids know very well which kinds of kids are friends with one another and where they stand in that overall status

hierarchy." Most of the time, bullying is a very strategic effort to gain and maintain status, she said. If anything has surprised her, it is how consistently popular bullies are, at least in the short term. "Why should they change their behavior? The rewards are so great."

Juvonen and her colleagues have closely examined the role of friends for children who are bullied. As you might expect, those with the sparsest social networks were the most likely targets. But did it help or hurt, the researchers wondered, for a child to have a friend who had also been victimized? Hanging out with other victims could just make life worse, or it could make a child feel less alone. They found support for the latter. "Shared plight helps," Juvonen said. And children with at least one other friend are less likely to get victimized or bullied in the first place. "Friends can be the buffers."

At the age of 14, Ben Steinberg was generally a very levelheaded kid. But late one night, he did something foolish. He had spent the evening with a group of friends at another boy's house watching the movie *Happy Gilmore*. Around 2 a.m., it struck the boys as a great idea to sneak out of the house where they were hanging out, run to the nearby home of a girl one of the boys liked, and throw pebbles at her window. But they didn't just wake the girl. They set off the burglar alarm in her house. Then, when a police car showed up, they scattered and ran—a potentially more dangerous offense. When pressed later by his father to account for what he was thinking, Ben said, "That's the problem—I wasn't."

As it happens, Ben's father, Laurence Steinberg, is a Temple University psychologist who, at the time of Ben's adventure, was overseeing a group of researchers studying adolescence and juvenile justice. Ben's experience inspired Steinberg to look more closely at the role of friends in the risk-taking behavior for which adolescents are notorious. He suspected that if his son had been alone, he probably would never have sneaked out in the first place and certainly would never have run from the cops.

We know that when they're with their friends, adolescents are more likely to behave recklessly. A teenage driver who has other teenagers in the car is four times more likely to crash than one who is alone. The same is not true of adults. Teenagers are more likely to commit crimes when they're together. Adults tend to be alone when they break the law. A teenager's first sip of alcohol, or toke of marijuana, or experimentation with other drugs is more often in the company of friends than not. Specifically, they are seven times more likely to drink with friends than family and almost never drink for the first time when alone. Most adults think the blame goes to peer pressure—the sometimes overt, sometimes subtle urging by a teenager's friends to try it, to chug, to just have one hit. But Steinberg has shown that it isn't as simple as that. He and his colleagues discovered what they call a "peer effect." Pressure doesn't have to come into it, merely presence.

When I reached him on the phone, Steinberg explained how they figured it out. Fittingly, they used a video game. Adolescents and adults came into the laboratory at Temple and brought two friends with them. The game put participants in the driver's seat of a simulation driving game. The goal was to successfully navigate a course as quickly as possible. "Drivers" repeatedly came to yellow lights. Stop or run the light? There were competing incentives. On the one hand, the need for speed encouraged taking risks. On the other hand, drivers were warned, at some intersections, that a car would come through just as they entered on yellow. Crashes cost time, so there was a counterincentive to drive carefully and not push one's luck. To make things more interesting, the researchers promised an extra reward in the form of an additional payment to those who completed the route faster.

Drivers did not make their decisions entirely alone. Sometimes the friends they had brought were in the room with them. Sometimes the friends were in the next room visible on a monitor but unable to communicate with the driver. The results were striking. With friends in the room watching, adolescents regularly took more chances. Adults did

not. With friends out of the room but nearby, watching on a monitor but unable to communicate, adolescents still took more chances. In that situation, it wasn't possible for the friends to exert verbal peer pressure, but it didn't matter. "When teenagers knew their friends could see their performance, it increased the amount of risk taking they engaged in compared to when they were alone," Steinberg told me.

Then Steinberg joined forces with the Temple neuroscientist Jason Chein and began running the same experiments with the "driver" in a brain scanner. They saw the same peer effect, and now they could see what was going on in the brain as well. "When kids were in the presence of peers, it activated reward centers in the brain," Steinberg said. "The more that happened, the more risks kids took." The scientists developed a more nuanced theory than one about pressure. "When kids are around other kids it primes their reward system to be more easily aroused and more easily activated. That in turn leads them to pay undue attention to the potential rewards of a risky choice and relatively less to the potential costs."

Well, okay, but what if just knowing the friends are there is still a form of peer pressure? The teenager being tested no doubt suspects that what would impress his friends is to race through the intersections and finish in record time. In anticipation of this, Steinberg, Chein, and their colleagues came up with a way to rule out that possibility. They needed adolescents who wouldn't or couldn't care what their friends thought of them. They used mice.

After raising peer groups of mice, Steinberg and Chein gave them alcohol, which triggers reward systems in mouse brains just as it does in human brains. They randomly assigned the mice to be tested alone or in the presence of their peers, and tested half as juveniles (the equivalent of adolescents) and half as adults. In the presence of other mice, adolescent mice drank more than they did when they were alone. In adults, there was no difference in the amount that they drank. "There's something

about the brain during adolescence in mammals that is hardwired to be especially sensitive to peer influence and to be more reward-seeking in the presence of peers," Steinberg said. Instead of calling the phenomenon peer pressure, they began calling it "peer presence."

Importantly, peer presence can be a force for good as well as for bad. "When teenagers are with each other, everything that feels good feels even better," Steinberg said. If what feels good is something that also carries some danger to it, then kids get into trouble because they are ignorant of the danger—or choose to ignore it. But Steinberg and his colleagues have also shown that teenagers learn faster when they're with their peers than they do by themselves. And they engage in more exploratory behavior when they're with their peers.

Who the peers are becomes very important. "Parents shouldn't worry about peer pressure or peer influence," Steinberg said. "They should worry about who the peers are that their kids are hanging around with." When kids hang around with students who get better grades, their own grades go up over time. Teenagers can also pressure one another not to use drugs. Of course, the reverse is true as well. "Virtually all kids, because of the nature of adolescence, are going to be susceptible to peer influence and peer pressure," Steinberg told me. "The question really is, whom are they influenced by and what is it they are being pressured to do?"

No wonder, then, that researchers studying a phenomenon known as *social buffering* found some puzzling results when they studied teenagers. Social buffering is a way of describing the protective, positive effect of one individual on another. It describes the power of one person to reduce another's stress.

When mothers calm their children, what they are doing is lowering levels of the stress hormone cortisol and increasing levels of oxytocin, a bonding hormone. A group of psychologists at the University of

Wisconsin subjected 61 girls between the ages of seven and 12 to a battery of stress-inducing tests, including timed public speaking and math problems. After the test, the researchers measured the girls' levels of stress hormones and oxytocin. Then one-third of the girls were reunited with their mothers for 15 minutes. The moms were allowed to comfort their daughters in any way they chose—talking, hugging, and generally being loving and supportive. Another third of the girls got to talk with their mothers on the telephone immediately after they finished the testing. The third group had no contact with their mothers immediately afterward. Then all of the girls watched a neutral film to allow researchers to observe how hormones recover back to baseline levels, after which they again measured the girls' levels of stress hormones and oxytocin, which surges upon positive interaction with a loved one. All three groups experienced a rise in cortisol after taking the tests, but those who interacted with their mothers afterward saw a reduction in those levels—physical touch sped up the process, but voice was enough to have an effect. Those who had no contact with their mothers still showed higher levels of cortisol one hour after the stress test. Contact with mothers had an effect on the release of oxytocin, as well. It was boosted by contact within fifteen minutes, but there was no change for the girls who did not interact with their mothers.

But how does that response change as kids grow older? That's what the neuroscientist Dylan Gee, now at Yale University, wanted to know. She studies how brain circuits mature, and has found that puberty is a turning point for dealing with stress. In children up to the age of 10, mothers calmed down the amygdala by engaging prefrontal circuitry in children's brains that works to control stress. In adolescents, who were 11 to 17 in this study, Mom's presence no longer worked the same magic. The brain's response to stress remained highly reactive. On the plus side for teenagers, the necessary brain circuitry for managing the stress—a network that connects the amygdala to the prefrontal cortex—is more fully developed, so they are on their way to mature responses.

It seems logical that when parents no longer serve as social buffers, friends might take over, given how important friends are to teenagers. A 2011 study found evidence for exactly that in 11- and 12-year-olds. The children regularly recorded how they felt about themselves and their experiences throughout their days, and they recorded who was with them. Their cortisol levels were measured as well. Having a best friend present during an experience significantly buffered any negative feelings, lowering cortisol levels and boosting a sense of self-worth.

But things get more complicated later in adolescence. Researchers from the University of Minnesota induced stress in 15- and 16-year-olds using the same lab test we saw earlier that combines stressors like public speaking and mental arithmetic. Not only did the presence of friends not reduce stress, it made things worse. "We were blown away … until we thought about it," said Megan Gunnar, the lead investigator and an expert on social buffering. She realized that the structure of the experiment increased the level of social evaluation because the speech teenagers had to give was about why someone would want to be their friend. "So your friend is actually sitting there helping you evaluate yourself. Oh my God!" Gunnar told me, with the wisdom of hindsight.

Gunnar suspects that further investigation of what's going on at this turning point will be very instructive. "Up until puberty, your parents are actually physiologically scaffolding you," Gunnar said. Then that changes. "Parents are supporting you [in adolescence], but they're not in your hypothalamus anymore. They've moved out of your body."

I shared that result with my younger sons, Matthew and Alex, one night over dinner. They were 16 and 14 by then, and they were not in the least surprised.

"Of course," Alex said. "Who wants to look silly in front of your friends?"

Lydia Denworth is a contributing editor for *Scientific American* and the co-author, with Dana Suskind, of the forthcoming book *Parent Nation*.