



## FEATURE

# Justice for teens

Psychological research on brain development and teen impulsivity is changing the way the justice system treats teens—and is trickling down to interventions that could help keep them out of the system in the first place

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Jessi Owens of Watertown, South Dakota, was 17 when she was sentenced to life in prison without the possibility of parole in 1998. She and an older female friend had broken into a home to steal money when the owner unexpectedly walked in during the robbery. Owens beat him to death with a hammer, and was sentenced to life in prison. But in 2014, a lawyer for Owens hired forensic psychologist Antoinette Kavanaugh, PhD, to evaluate her case in light of a U.S. Supreme Court decision in *Miller v. Alabama* that found mandatory life-without-parole sentences for juvenile homicide offenders violated the Constitution's ban on cruel and unusual punishment.

During a resentencing hearing before a judge, Kavanaugh noted that Owens had been abused and neglected as a child and used drugs and alcohol as a teen, but that while she was incarcerated, she earned a GED and worked diligently in multiple jobs, even offering to take care of a dying inmate.

Kavanaugh also reported that at the time of her original sentencing, Owens had not grasped how her crime had affected the family and community. Pointing to research by several psychologists, Kavanaugh showed the judge that adolescence is a time when the brain has increased sensitivity to rewards and that with more time for development, adolescent brains are better able to consider the long-term implications of bad decisions.

"If an opportunity seems like it will be emotionally arousing, [adolescents'] brain systems are primed to take action, rather than think about the longer-term consequences," explains Jason Chein, PhD, an associate professor of psychology at Temple University who has studied adolescent brain development.

Thanks to that research, Owens was resentenced to 40 years in prison and will be eligible for parole in early 2018. She is one of more than 2,000 people in the United States who are eligible for resentencing because they are serving sentences of life without parole for crimes they committed as minors. Although the vast majority of teens do not commit serious crimes, the combination of brain development and the context in which someone lives can influence the level of risk, says Temple University psychologist Laurence Steinberg, PhD, who has conducted extensive research in the area.

The research by psychologists and others has dramatically changed the way courts see juveniles. "We would not have seen this move toward more appropriate sentences for juveniles without the underlying neuroscience research that helped the court understand why youth behave the way they do," says Heather Renwick, JD, legal director for the Campaign for the Fair Sentencing of Youth in Washington, D.C. "The change has been incredibly important because it's giving hope to people who would have died in prison, and it's established a new standard going forward."



So far, hundreds of individuals have been resentenced, primarily those who have already served decades in prison, says Renwick.

## Recognized by the Supreme Court

The U.S. Supreme Court started to take notice of such psychological research in 2005, when attorneys referenced behavioral science in oral arguments in *Roper v. Simmons*, a case in which Christopher Simmons was accused of committing first-degree murder at age 17. Steinberg worked with APA on an amicus curiae brief for the case that referenced numerous studies showing that adolescents often lack the ability to make mature judgments, control their impulses and consider the consequences of their actions. Citing APA's amicus brief, the court ruled that Simmons could not receive the death penalty. Since then, capital punishment has been deemed unconstitutional for individuals under age 18.

The Supreme Court referenced this research again in another landmark case in 2010, *Graham v. Florida*, in which Terrence Graham, age 17, was sentenced to life in prison by a Florida judge for violating his probation. He had been on probation after serving one year in jail for armed robbery and committed another robbery while on probation. The justices wrote that "the part of the brain involved in behavior control continues to mature late into adolescence" and ruled that life without parole was unconstitutional for individuals under age 18 who were convicted of crimes other than homicide.

Then, in *Miller v. Alabama* in 2012, the court ruled that states could not automatically sentence juveniles to life without parole, even in cases of homicide. In this case, a 14-year-old boy was convicted of murder after he and another boy robbed and beat a neighbor before setting his trailer on fire. APA revised the original *amicus brief* used in *Roper v. Simmons*, and the court referenced this brief and stated that the science had become even stronger showing that "adolescent brains are not yet fully mature in regions and systems related to higher-order executive functions such as impulse control, planning ahead and risk avoidance."

Before psychologists' and neuroscientists' research and these court decisions, sentencing had been based on how bad the crime was, says Kavanaugh. Now, judges have the ability to consider factors such as the defendant's home environment and the influence of substance abuse, their role in the offense and the possibility of rehabilitation.

"I've known judges who felt frustrated that their hands were tied when sentencing minors because they wanted to impose a different sentence than life without the possibility of parole, but the previous law wouldn't allow it," says Shobha Mahadev, JD, a clinical assistant professor of law at the Children

and Family Justice Center at Northwestern University School of Law. "The changes are allowing judges to do their job, which is to determine sentences based on a variety of individualized factors."

## New insights from neuroimaging data

Psychologists are now building on this work. In a new study, Marc Rudolph, a researcher in the department of behavioral neuroscience at Oregon Health & Science University, and his collaborators found evidence that there is also significant variability within teen brains when it comes to impulse control—another factor that has implications in juvenile crime.



The researchers conducted a study of people ages 10 to 30 who completed a task that required them to control their impulses. The researchers added an "arousal state" in certain situations so participants would anticipate either an exciting sound or an unpleasant sound. The behavioral and neuroimaging data indicated that impulse control was weakened for certain teens during the arousal state, but not for others. Brain activation patterns in teens who had weaker impulse control resembled those

observed in younger children (*Developmental Cognitive Neuroscience*

(<http://www.sciencedirect.com/science/article/pii/S1878929316301074>)

, Vol. 24, 2017).

"This suggests that there should not be an arbitrary threshold that teens cross that warrants mandatory sentencing," Chein says. "There is a transitional period, and that needs to be taken into account."

Researchers have also discovered evidence that the power of peer influence should be considered in juvenile cases. In one study, Chein and his collaborators measured brain activity of adolescents, young adults and adults as they made decisions in a simulated driving task. He found that in adolescents, the presence of peers sensitized regions of the brain associated with the anticipation of potential rewards. They were also more likely to make risky driving decisions when friends were watching in an effort to impress them (*Developmental Science*

(<http://onlinelibrary.wiley.com/doi/10.1111/j.1467-7687.2010.01035.x/abstract>), Vol. 14, No. 2, 2011).

"What was interesting was that the underlying process was not explicit peer pressure," Steinberg says. "The peers did not communicate with the participants. Just knowing peers were watching created different brain patterns."

These findings may explain why teens are much more likely to commit crimes together than alone, Steinberg says. According to data from the National Crime Victimization Survey, close to 40 percent of crimes committed by people ages 12 to 20 have multiple perpetrators, compared with only 5 percent for adults 30 and older, says Steinberg.

## Change must trickle down

While the victories at the Supreme Court are encouraging, researchers are eager to see the discoveries in developmental science influence state and municipal courts as well.

"The vast majority of teens don't commit serious crimes, and the same logic about teen brain development applies to shoplifting or murder," says Steinberg. "Judges are making decisions every day about whether teens should be detained or not."

And research shows that contact with the justice system is bad for kids, he adds. The deeper they fall into the justice system, the worse it is for family relationships, education and healthy development. Research by Elizabeth Cauffman, PhD, a professor of psychology and social behavior at the University of California, Irvine, found this in a study of more than 1,200 first-time low-level male juvenile offenders who entered the justice system for minor offenses, such as first-time burglaries or fist fights at school. Early results from the first three years of her Crossroads Study indicate that being formally processed into the justice system—rather than diverted to informal processing such as counseling—increases the likelihood that they continue committing crimes.

"Youth [in the study] all experience the juvenile justice system, but how they experience it has an impact on their subsequent behavior," says Cauffman, who worked on the study with Steinberg. "Basically, if you have two youths who have committed the same crime but you formally process one and informally process the other, the one who is formally processed will engage in more criminal behavior and is more likely to be re-arrested."

One reason for this is that formal processing can be a form of deviancy training, she says. "They may lose the chance to be in the school system and be targeted by police. They are also grouped with other delinquent kids and they influence one another."

To help close the "school-to-prison" pipeline, Naomi Goldstein, PhD, a psychology professor at Drexel University, is working with Philadelphia's police department, school district and the city's Department of Human Services to help implement a school-based diversion program. The program launched in 2014, and youth who have committed low-level offenses for the first time are automatically diverted to support services rather than the justice system.

To qualify for diversion, a student must be at least 10 years old, have no prior delinquency or open court case and must have committed a low-level act on school grounds. The criteria are objective to reduce the chances of racial, ethnic or other biases when police are deciding who qualifies for diversion, explains Goldstein.

Before 2014, children and adolescents in Philadelphia who were 10 years old or older could be formally processed for such offenses as bringing scissors, mace or a small quantity of marijuana to school. Now, a social worker visits the student's home and asks the family what types of services would be helpful to them, such as counseling, tutoring or substance use treatment. Families are not required to accept assistance, but approximately 90 percent do, and "many say they've been trying to find services for years," say Goldstein, who is now evaluating the program's outcomes.

For her and other psychologists, programs like this illuminate how developmental science research is changing the lives of young people who would otherwise be at risk of getting trapped in the system.

"I love doing this work because we are using what we know from research to influence policy and practices," she says. "If our goal is to generate long-term positive change to help kids succeed in life and stay out of the system, then we have to use what we've learned about the brain and behavior of adolescents to guide change."

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