
Neuropsychological and Developmental Factors in Juvenile Transfer Hearings: Prosocial Perspectives

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Introduction¹

California, like most states, has proceedings available to transfer juveniles with criminal charges to the adult criminal justice system.² These proceedings are usually referred to as “transfer hearings,” and they have become an important part of juvenile delinquency law.³ In California, youths are eligible for transfer to adult court when they commit any section 707(b) offense if they are fourteen years old or older,⁴ or when they commit any felony if they are sixteen years old or older.⁵ The multiple issues related to transfer hearings is an emergent area of legal practice, as interpretations of the laws and strategies are still developing, and appellate decisions clarifying the law are forthcoming.

Developmental neuropsychological, brain, and forensic research are useful tools in understanding important issues related to transfer hearings.⁶ One approach examines these issues using the concepts of prosocial or moral reasoning in juveniles and their relevance to juvenile delinquency and justice issues.⁷ The concepts of prosocial and moral reasoning provide a conceptual framework to understand development during adolescence and explore how development relates to forensic issues, including the time-limited or adolescent specific nature of many harmful and illegal behaviors, and the treatments or interventions that can be used to accelerate prosocial reasoning to reduce recidivism.⁸ The following paper reviews research in this area that are relevant to transfer hearings, and with special reference to youths with pending sexual charges. The paper discusses:

I. The teenage brain and developmental neuropsychology.

¹ Parts of this article were adapted from with permission from RALPH NORBERT, BEING A PRO RESEARCH & THEORY MANUAL (2016).

² See CAL. WELF. & INST. CODE § 707 (West 2019).

³ PAC. JUV. DEF. CTR. LITIGATING TRANSFER CASES 1 (14th ed. 2016) (available at pjdc.org).

⁴ *Id.* at 1.

⁵ *Id.*

⁶ Ralph Norbert, *Moral Reasoning in Juveniles Who Sexually Offend*, 29 ATSA F. NEWSL., no. 2 (Spr. 2017).

⁷ *Id.*

⁸ Ralph Norbert, *Prosocial Treatment Methods for Juveniles Who Sexually Offended*, 29 ATSA F. NEWSL., no. 3 (Sum. 2017).

- II. Epidemiological and community-based studies.
- III. Neuropsychological assessment of social judgment.
- IV. Treatments to promote social reasoning in adolescence.
- V. Considerations regarding juveniles who have committed sexual offenses.

I. The teenage brain and developmental neuropsychology.

Neuropsychology and brain research provide evidence that is relevant to assessing and developing juvenile justice policies and practices. The establishment of a juvenile justice system that is separate from the adult criminal justice system, and Supreme Court decisions eliminating the death penalty and life imprisonment for juveniles, reflect the view that adolescents differ in their thinking, motivations, and prognosis regarding criminal behaviors relative to adults.⁹ Developmental psychology and research on brain development provide empirically based theories that help explain the changes that occur in prosocial or moral reasoning during adolescence.¹⁰ These theories are as basic to understanding adolescence as are the parallel physical and sexual developmental changes that take place. As youths' bodies change, their drives, interests, behaviors, and reasoning about life and relationships evolve.¹¹ And just as we would not treat adolescents' medical problems without knowledge of adolescent diseases, anatomy, physiology, and growth, we are wise to be similarly informed on developmental changes in prosocial reasoning relevant to juvenile justice practice and policies.

As adolescents' bodies grow and develop from ages ten to twenty-five, so do their brains, albeit in less apparent ways. In *The Teenage Brain*, Dr. Jensen¹² describes adolescent neuropsychological development.¹³ Her research shows that although the size and major topography of the brain is

⁹ See LAURENCE STEINBERG, AGE OF OPPORTUNITY: LESSONS FROM THE NEW SCIENCE OF ADOLESCENCE 182-203 (2015).

¹⁰ *Id.*

¹¹ *Id.* at 88-92.

¹² Dr. Jensen is Professor and Chair of the Department of Neurology at the Perelman School of Medicine, University of Pennsylvania.

¹³ FRANCES E. JENSEN & AMY ELLIS NUTT, THE TEENAGE BRAIN (2015).

largely complete at ten years old, the interconnections and pathways of the brain continue to undergo major changes past age twenty-five.¹⁴ For example, major changes occur in the pruning of neural pathways and myelination as brain regions continue developing.¹⁵ Also, there is a decline in gray matter and unmyelinated cells, and a concurrent increase in white matter and neural pathways, indicating that lesser-used neurons are pruned and existing neural pathways, including those governing prosocial actions, are strengthened.¹⁶ Jensen references the National Institute of Mental Health in summarizing brain development in the first twenty-one years of life, noting that the teenage brain is only about 80% mature by age twenty-one, and the outstanding 20% is the difference between being an adolescent and a prosocial adult.¹⁷ Thus, the process of growing into a well-functioning adult is partly related to the maturation of the brain.

Dr. Kevin Powell conceptualizes these developments in a similar fashion.¹⁸ He compares brain development in teens to creating trails across an unfamiliar territory.¹⁹ Initially, in getting from Point A to Point B, youths can take an infinite number of routes.²⁰ But with time and experience, youths use certain trails more than others.²¹ These trails become the youths' "habits" and "go to" strategies, and they are wired in as youths' continue maturing, reflecting a decrease in brain cells and connections.²² Thus, if a teen copes with a stressful situation by reacting impulsively, minimizing responsibility, and blaming others, this can become a template for dealing with life problems.²³ But the same can be true of prosocial patterns of behavior, where youths find successful strategies to meet their own needs while not breaking social rules or laws.²⁴

¹⁴ *Id.* at 57-58.

¹⁵ *Id.* at 60.

¹⁶ *Id.* at 58.

¹⁷ *Id.* at 37.

¹⁸ KEVIN M. POWELL, WORKING EFFECTIVELY WITH AT-RISK YOUTH: A STRENGTHS-BASED APPROACH 69-91 (2011).

¹⁹ *Id.* at 71.

²⁰ *Id.*

²¹ *Id.* at 73.

²² *See id.* at 73-4 (highlighting importance of youth repeatedly practicing "healthy alternative" options).

²³ *See id.* at 73 (stating unused pathways become less prominent as individuals age).

²⁴ *See id.* at 73-4 (referring to youth's health alternative choices).

Dr. Ken Kiehl’s neuropsychological research on brain development in adolescents is also relevant. Using neural imaging techniques in the form of functional MRIs (fMRIs), Kiehl compared the brains of male youths on probation and not on probation, against average adult brains.²⁵ From this, he developed a measure that he termed “brain age,” which allowed him to predict the chronological age of general population adolescents with reasonable accuracy by just examining their fMRIs.²⁶ He found that juveniles on probation had brains that appeared five to ten years less mature than juveniles not on probation.²⁷ Kiehl attributed these differences in the brains of probation-involved juveniles to immaturity, rather than cognitive or physical deficits, or differences in brain structures.²⁸

Dr. Laurence Steinberg also discusses pertinent research in his book *The Age of Opportunity*.²⁹ There, he describes adolescence as an important period of brain plasticity for the development of prosocial behavior, during which physical, and familial and peer relational changes complement brain changes.³⁰ He then conceptualizes adolescence as a period of increased drive and activity of the reward centers of the brain;³¹ increased risk-taking;³² increased strength, height, weight, and physical abilities;³³ increased mobility, including the ability to drive;³⁴ decreased supervision and control by parents and schools;³⁵ association with risk-taking youth and a strong need to fit in with these peers;³⁶ increased access to alcohol and drugs that decrease inhibition and judgment, and increase risk-taking

²⁵ Kent. A. Kiehl et al., *Age of Gray Matters: Neuroprediction of Recidivism*, 19 *NEUROIMAGE CLINICAL* 813, 813-23 (2018).

²⁶ *Id.* at 814.

²⁷ *Id.*

²⁸ *Id.*

²⁹ STEINBERG, *supra* note 8.

³⁰ *Id.* at 5.

³¹ *Id.* at 73.

³² *Id.* at 93.

³³ *See generally id.* at 52 (discussing hormonal changes that occur during puberty).

³⁴ *See, e.g., id.* at 46.

³⁵ *See id.* at 62 (discussing how schooling “stimulates the development of high-order cognitive abilities and self-control in ways that simply getting older does not”).

³⁶ *Id.* at 93.

behaviors;³⁷ critical development of judgment and control centers of the brain that regulate or put the brakes on impulsive behavior.³⁸

Dr. Abigail Baird and associates have also done germane research on problem-solving skills and brain development in adolescents.³⁹ Their research examined how adults and teens think about novel situations, such as riding a bicycle down stairs.⁴⁰ While adults in the study utilized visual processing areas of the brain, teens used prefrontal areas of the brain that are associated with planning and judgment.⁴¹ Baird and associates attributed this difference between teens and adults to research suggesting that prefrontal areas of the brain do not fully mature until age twenty-five.⁴² In another article, Baird and Fugelsang discussed the development of counterfactual reasoning in adolescents, which involves thinking about “what if” and “then what” possibilities, and constructing alternative scenarios based on different assumptions about life situations.⁴³ Thus, counterfactual reasoning is similar to what Piaget, originator of the cognitive-developmental paradigm, described as the emergence of abstract thinking in adolescence.⁴⁴ Baird and Fugelsang note:

What does the development of counterfactual reasoning mean for the justice system? One direct implication of this model is that young adolescents may lack the neural hardware to generate behavioural alternatives in situations demanding a response. For example, adolescents are more likely than most adults to engage in risk-taking behaviour. While there are a myriad of theories about why this is the case (see Spear, 2002, for an extensive review), one reason for increased risk-taking in adolescents might be their inability to generate alternatives and potential outcomes

³⁷ See *id.* at 89 (noting that adolescents are “more likely than other age groups to experiment with alcohol, cigarettes, and illicit drugs”).

³⁸ *Id.* at 70-71.

³⁹ BAIRD & FUGELSANG, *THE EMERGENCE OF CONSEQUENTIAL THOUGHT: EVIDENCE FROM NEUROSCIENCE 1797-1802* (2004).

⁴⁰ See *id.*

⁴¹ *Id.* at 1801.

⁴² *Id.*

⁴³ See BAIRD & FUGELSANG, *supra* note 38, at 1797-804 (discussing counterfactual reasoning).

⁴⁴ *Id.* at 1797, 1800.

prior to the initiation of behaviour. More specifically, a great number of adults think about driving their cars at excessive speeds, and while some adults do engage in this behaviour, adults are more likely to also envision a number of counterfactual scenarios that vary in their desirability. This is an important component of appreciating potential consequences of actions.⁴⁵

Counterfactual thinking is a major area of development during adolescence. It provides youths with the ability to consider a range of prosocial behavioral alternatives. Generally, parents “coach” their teens to think about aspects of a situation they did not consider. For example, “If you ask your friend Carlos, but not John, to go to the movies, how will John feel?” Or, “If you don’t study now, you will be too tired to get up early and do it?”

II. Epidemiological and community-based studies.

As noted above, Steinberg describes adolescence as a period of heightened potentiality and vulnerability due to a confluence of factors⁴⁶ that are complemented by judgment that has not reached adult levels.⁴⁷ In *Fourteen: the most dangerous age*,⁴⁸ Richard Alleyne notes that teens experience positive reinforcement when they face known risks and succeed, and he describes the peak age for risk-taking as fourteen.⁴⁹ Both Steinberg and Alleyne go on to note the “health paradox” of adolescence, wherein adolescence is the healthiest stage of life in terms of morbidity, but also the riskiest in terms of various health and behavioral measures, including the frequency rate of accidents.⁵⁰ Steinberg also describes a related phenomenon, the “accident hump.”⁵¹ He notes:

⁴⁵ *Id.* at 1801.

⁴⁶ STEINBERG, *supra* note 8, at 15.

⁴⁷ See JENSEN, *supra* note 12, at 38 (discussing how “teens are not quite firing on all cylinders when it comes to the frontal lobes, we shouldn’t be surprised by the daily stories we hear and read about tragic mistakes and accidents involving adolescents”).

⁴⁸ See Richard Alleyne, *Fourteen: the most dangerous age*, TELEGRAPH (Mar. 24, 2010), <https://www.telegraph.co.uk/news/science/science-news/7511842/Fourteen-the-most-dangerous-age.html>.

⁴⁹ See *id.*

⁵⁰ See *id.*; STEINBERG, *supra* note 8, at 15-16.

⁵¹ STEINBERG, *supra* note 8, at 49.

In all cultures and times, the mortality rate among boys spikes a few years after they become adolescents. It's called the 'accident hump,' and it occurs because the rise in testosterone that takes place at puberty makes males more aggressive and reckless. That makes them more likely to do things that get them killed, like picking fights or doing risky things on a dare.⁵²

Adolescence is a stage of life in which several harmful behaviors are at their highest, as evidenced in the classic "Age-Crime Curve."⁵³ Relatedly, Figure 1 shows the peak age of those accused of theft and robbery in Canada is seventeen.⁵⁴ And Figure 2 shows the peak age of those accused of sexual offenses involving children is three to four years earlier.⁵⁵ Surely statements regarding causal factors related to the shape or comparison of these curves would most rigorously be made from longitudinal studies using actual case information and analysis.⁵⁶ However, the data represented in Figures 1 and 2 is consistent with the neuropsychological research described above.

Based on Figure 1, theft appears to have both the highest incidence and the steepest "peak" of any crimes.⁵⁷ At seventeen, youths have adult-like physical abilities, increased mobility, and decreased supervision, but lack maturity in social reasoning areas requiring "if-then" and "cost-benefit" thinking that inhibit impulsive decisions.⁵⁸ Likewise, the development of such thinking progresses rapidly and is consistent with the

⁵² *Id.*

⁵³ David P. Farrington, *Age and Crime*, 7 CRIME AND JUST.: A REV. OF RES. 189, 191-200 (Michael Tonry ed., 1986) (discussing how the Age-Crime Curve suggests harmful behaviors are at their highest during adolescence).

⁵⁴ Mary Allen, *Young adult offenders in Canada, 2014*, 36 JURISTAT 1, 8 (2016), <https://www150.statcan.gc.ca/n1/en/pub/85-002-x/2016001/article/14561-eng.pdf?st=ZbsUpckq>.

⁵⁵ Adam Cotter & Pascale Beaupré, *Police-reported sexual offences against children and youth in Canada, 2012*, 34 JURISTAT 1, 13 (2014), <https://www150.statcan.gc.ca/n1/en/pub/85-002-x/2014001/article/14008-eng.pdf?st=3UT1dwa0>.

⁵⁶ *Id.*

⁵⁷ Allen, *supra* note 54, at 8.

⁵⁸ See, e.g., Part __, *supra*. [the discussion of "The teenage brain and developmental neuropsychology,"]

rapid decline in thefts and robberies after age seventeen.⁵⁹ In contrast, the curve's peak for Figure 2 occurs three to four years before Figure 1's, at ages thirteen to fourteen, when most males have adult-like sexual capabilities and drives, but lack maturity in social judgment.⁶⁰ This rapid decline may be due to brain maturation, especially in areas of the brain involving judgment and that apply the "brakes" to behavior.⁶¹ Indeed, Steinberg believes that the developmental changes that occur in the prefrontal cortex, the area primarily responsible for self-regulation, and the limbic system, the area responsible for emotion and what persons find rewarding, partly explain the curves in both figures.⁶²

Other criminological research further supports the idea that adolescence is a high-risk but transitory period for criminal behaviors, including the Orange County study, which tracked 3000 juveniles using data from 1987.⁶³ The study revealed that 71% of the juveniles did not have a new probation referral during the initial three-year study period;⁶⁴ that 21% of the juveniles went on to commit one or two additional offenses during the study period;⁶⁵ and that a small percentage of juveniles (8%) committed at least three additional offenses during the study period.⁶⁶ The latter youths accounted for more than half of the repeat offenses committed.⁶⁷

Steinberg, Cauffman, and Monahan studied 1,300 serious juvenile offenders for seven years after their convictions.⁶⁸ For their study, they developed a measure of psychosocial maturity that included impulse control, aggression control, consideration of others, future orientation, personal responsibility, and resistance to peer influences. Consistent with

⁵⁹ Allen, *supra* note 54, at 8.

⁶⁰ Adam Cotter & Pascale Beaupré, *supra* note 55, at 13.

⁶¹ *See id.*

⁶² *See* STEINBERG, *supra* note 8, at 70 (discussing how brain changes that occur in adolescence lead to emotional changes).

⁶³ Gwen A. Kurz & Louis E. Moore, *8 Percent Problem Findings*, OC PROBATION (Mar. 1994), <http://www.ocgov.com/gov/probation/about/8percent/findings>.

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ Laurence Steinberg, Elizabeth Cauffman & Kathryn C. Monahan, *Psychosocial Maturity and Desistance From Crime in a Sample of Serious Juvenile Offenders*, JUV. JUST. BULL. 4 (U.S. Dep't Just. Off. Juv. Just. and Delinq. Preven., Mar. 2015).

current research on brain maturity, they found their measure of psychosocial maturity increased through age twenty-five.⁶⁹ Moreover, they found that less than 10% of the sample of serious offenders could be characterized as chronic offenders.⁷⁰ Even the majority of high frequency juvenile offenders in the study stopped offending by age 25.⁷¹ But levels of recidivism did vary depending on psychosocial maturity: less mature individuals were more likely to be persistent offenders; and psychosocially mature, high-frequency offenders were more likely to desist from criminal behaviors.⁷² Thus, their study linked psychosocial maturity to desistance from crime. They also posited that factors that derail or delay psychosocial development may contribute to continued criminal behavior. And they suggested that policymakers should assess policies, sanctions, and interventions based on whether they promote or inhibit psychosocial maturity.⁷³

In a 2016 study, Cauffman, Skeem, Dmitrieva, and Cavanagh assessed the stability of psychopathy in 202 male juveniles and 134 adult males housed in secure detention facilities.⁷⁴ The researchers used adult and juvenile versions of the Hare Psychopathy Checklist, in which psychopathy refers to a set of characteristics associated with antisocial behavior, including selfishness, callousness, impulsiveness, rule breaking, violence, and using others without guilt.⁷⁵ The researchers measured psychosocial maturity using a standardized composite of self-rating scales.⁷⁶ They found there was a greater risk of exaggerating psychopathic traits among juveniles than adults;⁷⁷ that 37% of juveniles who met the cut score for psychopathy continued meeting the criteria years later, compared to 53% of adults;⁷⁸ and that false positive errors were more common among the youngest and least

⁶⁹ *See id.* at 6 (noting that “at age 25, most of the individuals who had been high-frequency offenders when they were in middlecence were no longer committing crimes”).

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² *Id.* at 8.

⁷³ *See id.* at 9 (suggesting that “if responses to juvenile offenders slow the process of psychosocial maturation, in the long run these responses may do more harm than good”).

⁷⁴ Elizabeth Cauffman et al., *Comparing the stability of psychopathy scores in adolescents versus adults: How often is “fledgling psychopathy” misdiagnosed?*, 22 *PSYCHOL., PUB. POL'Y, & L.* 77, 80 (2016).

⁷⁵ *See id.* at 81.

⁷⁶ *Id.*

⁷⁷ *Id.* at 84.

⁷⁸ *Id.* at 85.

psychosocially mature juveniles.⁷⁹ Additionally, increased psychosocial maturity predicted lower psychopathy scores in adolescents but not adults.⁸⁰ These findings suggest that caution should be exercised when using the construct of psychopathy with adolescents, especially when making sentencing decisions based on such findings.

The findings in this section are consistent with the view that most adolescent crime is time-limited and not part of a universal pattern of behavior for all adolescents. The findings are also consistent with research on brain development discussed above that relates the desistance of criminal behavior and psychopathy to increases in psychosocial maturity.⁸¹ In short, as the brain matures, criminal acts decrease sharply in frequency, and more so when psychosocial maturity increases.

III. Neuropsychological assessment of social judgment.

Additional psychological research support the above findings on the teen brain and the development of prosocial reasoning, including its relation to adolescent delinquency.⁸² Using meta-analysis, Stams et al. reviewed fifty studies on juvenile delinquency and social reasoning, using measures of moral reasoning.⁸³ The analysis revealed lower levels of moral reasoning in delinquent youths compared to nondelinquent youths (effect size = 0.76).⁸⁴ The researchers concluded that developmentally delayed social reasoning or moral judgment was strongly associated with juvenile delinquency, even after controlling for socioeconomic status, gender, age, and intelligence.⁸⁵ They also found that production measures that required youths to articulate information rather than just choose options produced a

⁷⁹ *Id.*

⁸⁰ *Id.* at 84.

⁸¹ *See id.* at 86.

⁸² Geert Jan Stams et al., *The Moral Judgment of Juvenile Delinquents: A Meta-Analysis*, 34 J. ABNORMAL PSYCHOL. 697, 697 (2006) (analyzing 50 studies that deal with juvenile delinquency).

⁸³ *Id.*

⁸⁴ Effect size is a standardized statistic to quantify the difference between two groups, such as an experimental and control. One mathematical definition of it is: $\text{Effect size} = (\text{Mean of experimental group} - \text{Mean of control group}) / \text{Standard Deviation}$. An effect size of .20 is described as small, .50 is medium, and .80 is large. An everyday example given is that the difference in height between 14 and 18-year-old girls can be described as a medium effect size, that is clearly visible to the eye. Robert Coe, *It's the effect size, stupid: What is effect size and why it's important* 12-14 (Ann. Conf. Brit. Educ. Res. Ass'n, Sept. 2002).

⁸⁵ Stams et al., *supra* note 82, at 697.

larger difference between delinquent and non-delinquent youths.⁸⁶ The researchers attributed this difference to respondents having to generate moral reasoning responses, rather than recognize moral reasoning responses, which allowed researchers to more directly examine respondents' moral thinking.⁸⁷

Also, the author of this article conducted unpublished research using the Roberts 2 test on probation and normative samples.⁸⁸ The Roberts 2 test uses pictures as the stimulus for youths to create stories about everyday life situations in order to generate and gather samples of their social reasoning.⁸⁹ The samples were matched for age and ethnicity, with sixty-six youths on probation and sixty-eight youths from a nonclinical sample.⁹⁰ Scales included Problem Identification, which refers to the sophistication and complexity of how problem situations are defined, and Resolution, which defines the sophistication with which problems are resolved.⁹¹ Generally, these developmental measures increase in the general population with age.⁹² Summaries of the Problem Identification and Resolution scales were used to see if youths on probation could be differentiated from the normative sample.⁹³ The data revealed that youths on probation were approximately six years behind in their social reasoning development as compared to youths not on probation—the area under the curve for Problem Identification (0.92) and Resolution (0.88) were consistent with a large effect size.⁹⁴

Another research investigated prosocial development using the Prosocial Reasoning Outcomes (PRO) instrument, which measures youths' social reasoning sophistication and complexity about everyday life situations based on their responses to questions about vignettes.⁹⁵ The

⁸⁶ *Id.*

⁸⁷ *Id.* at 698.

⁸⁸ Norbert Ralph, *Practical Prosocial Methods for Assessment and Treatment of Juveniles with Sexual Offending Behaviors*, in *SEXUALLY ABUSIVE BEHAVIOR IN YOUTH: A HANDBOOK OF THEORY, ASSESSMENT, AND TREATMENT*, at 19-17 (Barbara K. Schwartz, ed., 2017).

⁸⁹ *Id.*

⁹⁰ *Id.* at 19-18.

⁹¹ *Id.*

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *Id.*

⁹⁵ *Id.* at 19-22 to 19-25.

instrument is still in development, and the findings reported here should be considered provisional, pending subsequent confirmation.⁹⁶ The instrument is designed to discriminate between impulsive decisions, and those for which the consequences and rationale for behaviors are described.⁹⁷ Three groups of youths participated in the study: a group of high school youths not on probation (HS); and two groups of youths placed by probation in residential placements for sexual offenses.⁹⁸ One placement housed youths with a medium level of risk for sexual recidivism (ML), and another housed youths who on average had a high level of risk for sexual recidivism (HL).⁹⁹ Higher PRO scores indicated more mature levels of social reasoning. The results showed a perfect rank order among the three groups, with the HL group ranking lowest, and the HS group ranking highest (HL=1.73, ML=2.27, and HS=2.73).¹⁰⁰ This indicated the PRO instrument could distinguish youths not on probation from those in medium and high level residential programs for juveniles who sexually offend, and could presumably describe differences in their level of prosocial reasoning relevant to their group status.¹⁰¹

The discrepancy in PRO scores indicates that while developmental immaturity in prosocial reasoning is associated with delinquent behaviors, as individuals mature and their prosocial reasoning increases, they are less likely to engage in harmful criminal behaviors.¹⁰² Thus, this research complements the neuropsychological and epidemiological research discussed above.

IV. Treatments to promote social reasoning in adolescents.

There is substantial research showing that adolescents' social reasoning and judgment can be reliably assessed, and research showing that treatment methods can promote adolescents' levels of social reasoning, which are associated with decreased criminal recidivism.¹⁰³ For example, the Washington State Institute for Public Policy assessed effective

⁹⁶ *See id.* at 19-2, 19-24.

⁹⁷ *Id.* at 19-24 to 19-25.

⁹⁸ *Id.* at 19-24.

⁹⁹ *Id.* at 19-24 to 19-25.

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ *Id.*

treatments for juvenile justice populations using meta-analysis.¹⁰⁴ It yielded significant evidence that strategies that promote social skills and reasoning during adolescence, which the study's authors described as cognitive behavioral interventions, had a significant positive outcome.¹⁰⁵ Indeed, from a "cost-benefit" point of view, for every dollar spent on cognitive behavioral interventions, there was a \$38.40 return in social benefits.¹⁰⁶

One of the most comprehensive research examining the general juvenile probation population is Dr. Lipsey's and his colleagues' meta-analysis.¹⁰⁷ Their approach identified several factors connected with positive outcomes for treatment methods for juveniles on probation.¹⁰⁸ They found that methods that used skill building and counseling to promote social reasoning were the most effective.¹⁰⁹ Moreover, complementary research showed that the fidelity with which programs are administered impacts their effectiveness.¹¹⁰ Lipsey further found that even for youths with severe offenses, out-of-home placements for those with significant mental health problems were less effective than nonresidential options and could do more harm than good.¹¹¹ Indeed, residential or secure detention placements did not provide an improvement in treatment outcomes.¹¹² Lipsey writes:

In practical terms, juvenile justice systems will generally get more delinquency reduction benefits from their intervention dollars by focusing their most effective and costly interventions on higher risk juveniles and providing less

¹⁰⁴ WASH. ST. INST. FOR PUB. POL'Y, BENEFIT-COST RESULTS: JUVENILE JUSTICE. (2018), available at http://www.wsipp.wa.gov/BenefitCost/Pdf/1/WSIPP_BenefitCost_JuvenileJustice (demonstrating the costs and benefits of various juvenile justice programs using meta-analysis).

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ See MARK W. LIPSEY ET AL., IMPROVING THE EFFECTIVENESS OF JUVENILE JUSTICE REFORM: A NEW PERSPECTIVE ON EVIDENCE-BASED PROGRAMS, 21-23 (Georgetown Univ. Ctr. for Juvenile Justice Reform 2010).

¹⁰⁸ See *id.* at 24-25.

¹⁰⁹ See *id.* at 24.

¹¹⁰ See Pauline Brigitta Goense et al., *Making 'What Works' Work: A Meta-Analytic Study of the Effect of Treatment Integrity on Outcomes of Evidence-Based Interventions for Juveniles with Antisocial Behavior*, 31 AGGRESSION & VIOLENT BEHAV., 106, 106 (2016) ("[M]eta-analytically examined the effect of treatment integrity on client outcomes of evidence-based interventions for juveniles with antisocial behavior.").

¹¹¹ See LIPSEY, *supra* note 107, at 14, 23.

¹¹² *Id.* at 23.

intensive and costly interventions to the lower risk cases. Moreover, they can expect similar benefits from their intervention programs for juveniles at a given risk level whether they are treated and supervised in the community or in residential facilities.¹¹³

Optimistically, Lipsey notes that “there was no indication that there were juveniles whose risk level was so high that they did not respond to effective interventions.”¹¹⁴

In another research, Dr. Caldwell and associates developed a treatment unit for youths who failed treatment in Wisconsin’s secure detention placements because of repeated violence and noncompliance.¹¹⁵ Dr. Caldwell’s secure detention model emphasized rewards over punishment based on his research findings and clinical experience that punishment did not work with violent and noncompliant youths, but rewards did.¹¹⁶

The results showed that youths with severe aggressive and noncompliant behaviors had less recidivism if they received specialized treatment in detention, a model the researchers termed “decompression therapy.”¹¹⁷ In fact, youths receiving “decompression therapy” had a recidivism rate of 10%, in contrast to the control group which had a recidivism rate of 70%.¹¹⁸

¹¹³ *See id.* at 14.

¹¹⁴ *Id.* at 23.

¹¹⁵ *See* Michael F. Caldwell, *Efficacy of a Decompression Treatment Model in the Clinical Management of Violent Juvenile Offenders*, 45 INT’L J. OF OFFENDER THERAPY & COMP. CRIMINOLOGY, 469, 469 (2001) [hereinafter Caldwell, *Efficacy of a Decompression Treatment Model*] (Finding decompression treatment used on “highly disruptive and aggressive, incarcerated juvenile offenders” reduced criminal recidivism); *See also* Michael F. Caldwell, *Evidence of Treatment Progress and Therapeutic Outcomes Among Adolescents with Psychopathic Features*, 34 CRIM. JUST. & BEHAV., 573, 575 (2007) [hereinafter Caldwell, *Evidence of Treatment Progress*] (“[E]xamined the relation between psychopathic features and treatment progress in a group of 86 delinquent boys.”).

¹¹⁶ *See, e.g.,* Caldwell, *Efficacy of a Decompression Treatment Model*, *supra* note 115, at 473; Caldwell, *Evidence of Treatment Progress*, *supra* note 115, at 577.

¹¹⁷ *See* Caldwell, *Efficacy of a Decompression Treatment Model*, *supra* note 115, at 471-73; Caldwell, *Evidence of Treatment Progress*, *supra* note 115, at 576-77.

¹¹⁸ *See* Caldwell, *Efficacy of a Decompression Treatment Model*, *supra* note 115.

V. Considerations regarding juveniles who committed sexual offenses.

Are developmental factors in social reasoning also relevant to the subgroup of youths on probation who sexually offend, and thus relevant to the issue of transfer hearings for this group? The Canadian data in Figure 2 shows epidemiological data on age and sexual offending.¹¹⁹ It shows that sexual offenses peak at age thirteen to fourteen and then decline to about a sixth of this rate at age twenty-seven. Dr. Barbara Bonner, in reviewing similar epidemiological data, concludes that early adolescence is a high risk but transitory period for committing sexual offenses.¹²⁰ Indeed, that sexual crimes peak two years earlier than theft or robbery suggests that immaturity in social judgment may play a greater role in committing sexual offenses than other juvenile crimes. Though males are not the sole perpetrators of sexual crimes, their physiological capacity to commit them at age thirteen or younger¹²¹ is relevant to understanding the peak in the age-crime curve.

There are additional considerations with this subgroup. As a clinician who has evaluated and treated sex offending youths for nearly two decades, it is especially important to assess the rate of sexual recidivism in sex offending youths since it is often the primary reason why these youths are on probation. Even in cases where youths face multiple charges, the severity of sexual offenses are often the most germane in disposition hearings. Research Michael Caldwell found that the rate of sexual recidivism for juveniles has been 2.75% since 2000.¹²² This rate is consistent with my experience from doing trainings with probation departments in over twenty counties throughout California in the past few years. While sexual crimes are among the most serious, recidivism for juvenile sexual crimes is very low.¹²³ In fact, a follow-up study of 129 youths in residential treatment for juveniles who sexually offended found

¹¹⁹ Allen, *supra* note 54, at 7.

¹²⁰ See Barbara L. Bonner, Don't Shoot: We're Your Children. What We Know about Children and Adolescents with Sexual Behavior Problems at the National Youth Protection Symposium Boy Scouts of America (Nov. 1-2, 2012).

¹²¹ See *Male Puberty*, SEXINFO ONLINE, <http://www.soc.ucsb.edu/sexinfo/article/male-puberty> (Feb. 20, 2016).

¹²² Michael F. Caldwell, *Quantifying the Decline in Juvenile Sexual Recidivism Rates*, 22 PSYCH. PUB. POL. & L. 414, 419 (2016) [hereinafter Caldwell, *Quantifying the Decline*] (examining the decline of "the recidivism base rate for juvenile sexual recidivism" in recent decades).

¹²³ See *id.* at 414.

that none of the juveniles were on public sex offender registries 4.1 years after they turned eighteen.¹²⁴

Because of the seriousness of sexual offenses and severity of harm to victims, juveniles in California who sexually offend are frequently referred for transfer hearings. The underlying logic may be that since the youths committed a serious crime, they are best dealt with in the adult criminal justice system. Various arguments can be advanced for this position, including that sexual crimes are among the most heinous and reflect an underlying propensity for a persistent pattern of sexual criminal behaviors that are unlikely to change. But the research discussed above suggests that rehabilitation in a juvenile justice context is possible and more effective than the punitive measures used in the adult criminal justice system. Still, there are some individuals whose risk to public safety is significant, and decisions regarding their disposition need to be made on an individual basis.

Research on moral or prosocial reasoning among juveniles who sexually offended parallels the research on deficits found in the general probation population compared to those in the general non-probation population.¹²⁵ For example, the PRO instrument described above distinguished youths in high and medium probation groups from those in a non-probation group.¹²⁶ Further, a research team investigating the moral development of juvenile male sex offenders and non-offenders found lower stages of moral judgement among offenders.¹²⁷ My own research has also found delays in moral reasoning in juveniles who sexually offended compared with juveniles not on probation.¹²⁸

There is also evidence regarding the effectiveness of treatment for juveniles who sexually offended that parallels the research done with the general probation population described above.¹²⁹ Indeed, the author of this

¹²⁴ Ralph, *Practical Prosocial Methods for Assessment and Treatment of Juveniles with Sexual Offending Behaviors*, *supra* note 88, at 19-10.

¹²⁵ See Stams et al., *supra* note 82, at 697.

¹²⁶ See Robert Ralph, *An Instrument for Assessing Prosocial Reasoning in Probation Youth*, 11, *SEXUAL OFFENDER TREATMENT*, no. 1, 2016 (demonstrating the differing effects of the PRO on probation and no probation groups), available at <http://www.sexual-offender-treatment.org/150.html>.

¹²⁷ See Eveline Van Vugt et al., *Moral Development of Solo Juvenile Sex Offenders*, 14, *J. OF SEXUAL AGGRESSION*, no. 2, at 99-109 (2008).

¹²⁸ Ralph, *Practical Prosocial Methods for Assessment and Treatment of Juveniles with Sexual Offending Behaviors*, *supra* note 88.

¹²⁹ *Id.*

paper conducted three studies using Aggression Replacement Training (ART) on juveniles who sexually offended.¹³⁰ The ART model promotes moral or prosocial reasoning, and numerous studies have documented its effectiveness in reducing recidivism among juveniles on probation.¹³¹ Amendola and Oliver summarize those studies by noting that ART is a "Model Program" for the United States Office of Juvenile Justice and Delinquency Prevention, and the United Kingdom Home Office.¹³² The author's first study involved a randomized trial that looked at psychological outcomes, and it found a positive treatment effect for ART.¹³³ A subsequent study in 2012 replicated these findings, but it did not include a control group.¹³⁴ The findings supported the hypothesis that ART contributed to therapeutic changes on psychological outcomes for these youths.¹³⁵ Furthermore, a longitudinal study showed that ART reduced the level of sexual acting out in juveniles in a residential program for juveniles who have sexually offended.¹³⁶ Additionally, the author of this paper developed an intervention to promote prosocial reasoning in juveniles who sexually offended, and he found that it increased measures of prosocial reasoning and behavior among these juveniles.¹³⁷

Although the preceding studies had several methodological limitations, other research on the effectiveness of treatments for juveniles who sexually offended complement their results. Reitzel and Carbonnel

¹³⁰ See Nobert Ralph, *A Follow Up Study of a Prosocial Intervention for Juveniles who Sexually Offend*, 10, SEXUAL OFFENDER TREATMENT, no. 1, 2015, available at <http://www.sexual-offender-treatment.org/140.html>; see also Nobert Ralph, *A Longitudinal Study of Factors Predicting Outcomes in a Residential Program for Treating Juveniles Who Sexually Offend*, 10, SEXUAL OFFENDER TREATMENT, no. 2, 2015, available at <http://www.sexual-offender-treatment.org/145.html>.

¹³¹ Mark Amendola & Robert Oliver, *Aggression Replacement Training Stands the Test of Time*, 19 RECLAIMING CHILD. AND YOUTH J., at 47-50 (2010) (explaining the positive effects of ART).

¹³² *Id.* at 48.

¹³³ Ralph, *A Follow Up Study of a Prosocial Intervention for Juveniles who Sexually Offend*, *supra* note 130.

¹³⁴ *Id.* (summarizing the previous study done in 2012).

¹³⁵ *Id.*

¹³⁶ See Nobert Ralph, *A Longitudinal Study of Factors Predicting Outcomes in a Residential Program for Treating Juveniles Who Sexually Offend*, 10, SEXUAL OFFENDER TREATMENT, no. 2, 2015, available at <http://www.sexual-offender-treatment.org/145.html>.

¹³⁷ See Nobert Ralph, *A Validation Study of a Prosocial Reasoning Intervention for Juveniles Under Probation Supervision*, 11, Sexual Offender Treatment, no. 2, 2016, available at <http://www.sexual-offender-treatment.org/157.html> [hereinafter Ralph, *A Validation Study*].

provide an authoritative summary of this area of research.¹³⁸ Every study in their research showed a positive treatment effect.¹³⁹ Performing meta-analysis on other meta-analytic studies, Kim, Benekos and Merlo studied the effect size of treatments on recidivism for juvenile and adult sex offenders.¹⁴⁰ They identified a medium effect size for adolescent programs (-0.51) and a small effect size for adult programs (-0.14).¹⁴¹ This indicated that treatment programs for those who sexually offended had a larger effect size for juveniles compared to adults.¹⁴² This finding is consistent with the hypothesis that these treatments are more effective with adolescents than adults, presumably due to adolescents' brain plasticity and capacity for prosocial development—as described above.¹⁴³

Summary

The above literature review presented research and theory relevant to juvenile transfer hearings. It should be noted that the research cited had methodological limitations that limit the generalizability of their findings. For example, not all research had multiple replications, by different authors, and with large sample sizes, as is preferable in statistical research. With that noted, several qualified conclusions appear reasonable:

1. The peak age for violent and nonviolent offenses over a lifespan is late adolescence.¹⁴⁴ Immaturity in social reasoning is a crucial developmental risk factor for criminal behavior.¹⁴⁵ This is a trait that can be reliably assessed.¹⁴⁶ The peak age for sexual offenses

¹³⁸ See generally Lorraine Reitzel & Joyce Carbonell, *The Effectiveness of Sexual Offender Treatment for Juveniles as Measured by Recidivism: A Meta-Analysis*, 18, *SEXUAL ABUSE: A J. OF RES. & TREATMENT*, at 401-21 (2006) (studying the results of a meta-analysis about effects of treatments for juveniles).

¹³⁹ *Id.* at 413.

¹⁴⁰ See generally Bitna Kim et al., *Sex Offender Recidivism Revisited: Review of Recent Meta-Analyses on the Effects of Sex Offender Treatment*, 17, *TRAUMA, VIOLENCE, & ABUSE*, no. 1, at 105–17 (2015) (examining effect sizes across different age populations and effect sizes across various sex offender treatments).

¹⁴¹ Stams et al., *supra* note 82.

¹⁴² *Id.* at 88.

¹⁴³ See the discussions above for more information.

¹⁴⁴ See Kim et al., *supra* note 140, at 107; see also Stams et al., *supra* note 82, at 700.

¹⁴⁵ See Stams et al., *supra* note 82, at 697; see also Kim et al., *supra* note 140, at 107.

¹⁴⁶ See Stams et al., *supra* note 82, at 697; see also Kim et al., *supra* note 140, at 107.

appears to be two years younger than that for offenses such as theft.¹⁴⁷

2. Social reasoning in adolescence increases over time, appears to be a risk factor for delinquency, and distinguishes probation from non-probation groups, including those who sexually offended.¹⁴⁸ While the rate of violent crimes rises dramatically during adolescence, it declines significantly in late adolescence and young adulthood, again presumably in part due to maturing prosocial reasoning skills.¹⁴⁹
3. Significant evidence exists that treatment methods can increase youths' levels of prosocial reasoning, which is associated with decreased criminal recidivism, even for youths at the highest level of risk.¹⁵⁰ While the passage of time itself will on average reduce an individual's risk of recidivism, an appropriate type and amount of prosocial treatment can accelerate this process.¹⁵¹ Not all treatments are equal, however. Treatments that are shown to be effective, implemented with high fidelity, and appropriately targeted, have the best chance of successful outcomes.¹⁵²
4. The findings described above for the general probation population are also applicable to the subset of juveniles who sexually offended.¹⁵³ An additional consideration with this population is the low risk of recidivism for sexual offenses, about 3%, though their total recidivism is likely 10 times higher.¹⁵⁴ The earlier peak age of incidence for sexual crimes and the low recidivism for juveniles who sexually offend support the argument that developmental factors are perhaps more important for this subgroup than for the general juvenile

¹⁴⁷ See Stams et al., *supra* note 82, at 700; see also Kim et al., *supra* note 140, at 107.

¹⁴⁸ See Stams et al., *supra* note 82, at 700 (arguing that juvenile repeat offenders invoke morality standards to minimize the badness of their behavior).

¹⁴⁹ See *id.*

¹⁵⁰ See Kim et al., *supra* note 140, at 107 (stating that juvenile sex offenders that receive treatment have low rates of reoffending).

¹⁵¹ *Id.* at 114 (“One of the most promising findings is that every meta-analysis in this review found significant recidivism reduction outcomes.”).

¹⁵² See *id.*

¹⁵³ See *id.*; Stams et al., *supra* note 82.

¹⁵⁴ Caldwell, *supra* note 122, at 419 (“The 33 studies conducted over the past 15 years reported a mean sexual recidivism rate of 2.75%.”).

delinquent population.¹⁵⁵ Sexual offending, for most, is not a lifetime, highly prevalent, or persistent problem.¹⁵⁶

The above literature review has implications for decisions concerning transferring juveniles to the adult justice system. With regard to California, according to the analysis of the Pacific Juvenile Defenders Center, the central issue to consider is a youth's amenability to treatment within the juvenile justice system.¹⁵⁷ Both Caldwell's and Lipsey's research described above identified no population of delinquent juveniles where treatment failed to produce a significant effect when adequately administered.¹⁵⁸ In Caldwell's study, taking arguably the "worst of the worst" from juvenile prisons in Wisconsin, youths receiving specialized treatment had a recidivism rate of 10%, compared to the control group's higher rate of 70%.¹⁵⁹ Disposition planning, of course, always needs to be individualized. However, based on current research, it is difficult to discern what public good would be served by transferring juveniles to the adult justice system if the goals are to improve public safety and rehabilitate individuals. There is no evidence supporting the efficacy of this transfer policy, and a reasonable conclusion is that youths are likely to have much poorer outcomes in the adult justice system.

The focus of this article has been on moral or prosocial development, but other psychological factors may be relevant in transfer hearings. For example, a Florida study with a large juvenile probation population found that 50% of the juveniles had a history of significant disruptive or traumatic childhood experiences.¹⁶⁰ Also, as I have documented elsewhere, there is a high incidence of comorbid psychiatric, learning, substance abuse, and attentional problems for youths in the criminal justice system.¹⁶¹ All these might be considered under the heading of "mitigating factors" in transfer hearings.

Moreover, the literature obliquely supports two notions: first, that effective evidence-based treatments depend on accurate evidence based-

¹⁵⁵ *Id.* at 419; see Stams et al., *supra* note 82, at 700.

¹⁵⁶ Caldwell, *supra* note 122, at 419.

¹⁵⁷ Pac. Juv. Def. Ctr., *supra* note 3.

¹⁵⁸ See Lipsey et al., *supra* note 107; Caldwell *supra* note 122.

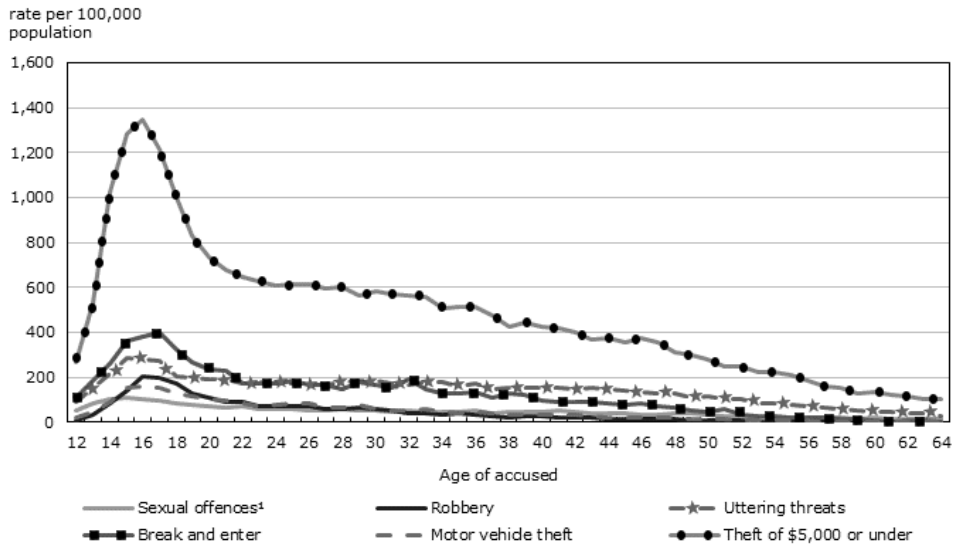
¹⁵⁹ Caldwell, *supra* note 122, at 2-3.

¹⁶⁰ Michael T. Baglivio et al., *The Prevalence of Adverse Childhood Experiences (ACE) in the Lives of Juvenile Offenders*, 3 OJJDP 1, 1-23 (2014).

¹⁶¹ Ralph, *A Validation Study*, *supra* note 137.

assessments, and comprehensive psychological and neuropsychological evaluations tailored for "high-risk" youths; second, that successful outcomes depend on appropriate treatments being faithfully given in appropriate doses. In transfer hearings, sometimes someone will suggest that a youth is not amenable to treatment because the youth was previously treated, and problematic behaviors continued. Yet, in all the cases I have reviewed, the youths were never given an adequate type or amount of treatment. Instead, youths were commonly undertreated, not treated at all, or treated with the wrong method.

Selected offences which peak during youth and decline rapidly with age, 2014



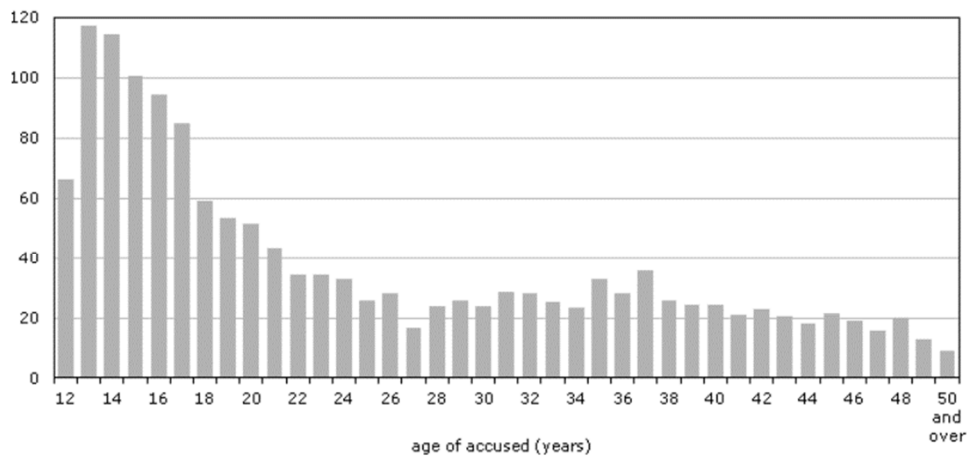
1. Sexual offences include sexual assault (levels 1, 2, and 3) as well as sexual violations against children.
Note: Rates are calculated on the basis of 100,000 population at each age in 2014. Populations are based upon July 1st estimates from Statistics Canada, Demography Division. Accused under age 12 cannot be charged with an offence under the *Criminal Code*.
Source: Statistics Canada, Canadian Centre for Justice Statistics, Incident-based Uniform Crime Reporting Survey, 2014.

Figure 1: Canadian Age- Crime Curve. Source: Statistics Canada, *Young adult offenders in Canada, 2014*. Reproduced and distributed on an "as is" basis with the permission of Statistics Canada.

Mary Allen, *Young adult offenders in Canada, 2014*, 36 JURISTAT 1, 8 (2016), <https://www150.statcan.gc.ca/n1/en/pub/85-002x/2016001/article/14561-eng.pdf?st=ZbsUpckq>.

**Persons accused of sexual offences against children and youth,
by age of accused, Canada, 2012**

rate per 100,000
population



Note: The sexual offences in this chart include aggravated sexual assault (level 3), sexual assault with a weapon or causing bodily harm (level 2), sexual assault (level 1), sexual interference, invitation to sexual touching, sexual exploitation, sexual exploitation of a person with a disability, incest, corrupting children, making sexually explicit material available to children, luring a child via a computer, anal intercourse, bestiality (commit/compel/incite), and voyeurism. Includes victims under the age of 18 only. Rates are based on a subset of incidents where there was a single accused person and a single victim. Excludes a small number of victims in Quebec whose age was unknown but miscoded as 0.

Source: Statistics Canada, Canadian Centre for Justice Statistics, Uniform Crime Reporting Survey.

Figure 2: Ages of those accused of sexual offenses against children and youth. Source: Statistics Canada, Police-reported sexual offences against children and youth in Canada, 2012, 2014. Reproduced and distributed on an "as is" basis with the permission of Statistics Canada.

Adam Cotter & Pascale Beaupré, Police-reported sexual offences against children and youth in Canada, 2012, 34 JURISTAT 1, 13 (2014), <https://www150.statcan.gc.ca/n1/en/pub/85-002-x/2014001/article/14008-eng.pdf?st=3UT1dwa0>.