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**An Analysis of the Sophistication–Maturity of Justice and Non-Justice
Involved Youth and Young Adults**

A DISSERTATION

Submitted to the Faculty of
Montclair State University in partial fulfillment
of the requirements
for the degree of Doctor of Philosophy

by

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Montclair, NJ

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Dissertation Chair: Dr. Christopher M. King, J.D., Ph.D.

MONTCLAIR STATE UNIVERSITY
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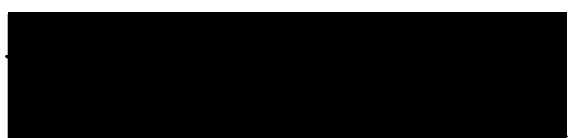
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Abstract

Juvenile transfer refers to a set of mechanisms whereby a juvenile's case may be processed in criminal court. Forensic mental health evaluators often assess youths' risk/dangerousness, sophistication–maturity, and treatment amenability to assist judicial determinations regarding youth disposition. Of these three factors, sophistication–maturity—in which the law is concerned with the extent to which a juvenile defendant's criminal sophistication and maturity level parallels that of an adult—has traditionally been the most challenging for practitioners to define and apply in practice. The Risk-Sophistication-Treatment Inventory (RSTI) is the only commercially available, specialized forensic assessment instrument for the assessment of youths' sophistication–maturity. However, this tool has not yet been comprehensively examined with young adults, which precludes direct youth-adult comparisons to assist with the interpretation of a juvenile defendant's sophistication–maturity to inform transfer. The current study examined RSTI-measured developmental maturity and criminal sophistication among a sample of justice-involved young adults ($N = 102$) and non-justice involved college students ($N = 103$) aged 18–29 years, using secondary data. Young adults' sophistication–maturity was compared to that of justice-involved adolescents derived from the RSTI's normative sample ($N = 591$). The RSTI's sophistication–maturity scale demonstrated moderate to good interrater reliability with young adults. Interrater reliability estimates for the criminal sophistication scale were mixed. Justice-involved young adults exhibited significantly higher average levels of sophistication–maturity than justice-involved adolescents. While non-justice-involved young adults exhibited higher average levels of developmental maturity, the reliability of criminal sophistication for this group was doubtful. Findings from the current study suggest that justice-involved young adults may constitute an important comparison group for

interpreting youths' sophistication-maturity for transfer. Implications for advancing developmentally informed transfer policies, enhancing the assessment of youths' sophistication–maturity for transfer, and promoting rehabilitative efforts that are focused on youths' healthy, psychosocial development are discussed.

Keywords: juvenile transfer, developmental maturity, sophistication–maturity, juvenile justice

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Contents

Chapter 1: Introduction.....	1
Overview.....	1
The Juvenile Justice System: A Historical Overview Relevant to Juvenile Transfer.....	2
Transfer Mechanisms.....	6
Psycholegal Models for Transfer Evaluations	8
Chapter 2: Literature Review.....	10
Defining the Psychological Aspects of Developmental Maturity and Criminal Sophistication for the Legal System.....	10
Developmental Maturity and Criminal Sophistication Models	14
Adolescent Brain Development	20
Assessing Developmental Maturity and Criminal Sophistication	23
Chapter 3: Current Study	27
To Whom Should Youth be Compared?.....	27
Current Study	31
Primary Aims	32
Exploratory Aims.....	32
Study Hypotheses and Exploratory Comparisons.....	33
Hypotheses 1 and 2	33
Exploratory Contrasts 1 and 2.....	33
Exploratory Contrasts 3 and 4.....	33
Chapter 4: Method	33
Participants and Procedures	33
Power and Precision Planning	36
Measures	37
Demographic Questionnaire	37
Risk-Sophistication-Treatment Inventory (RSTI): Semi-Structured Interview Booklet	38
Scoring.....	40
Posthoc Scales.....	43
Measures Included in the Original Study that are Not a Primary Focus of the Current Study	44
Data Analysis Plan.....	45
Descriptives.....	46
Interrater Reliability.....	46

Group Comparisons	47
Chapter 5: Results.....	47
Sample Characteristics.....	47
Justice-Involved Young Adults.....	47
Non-Justice-Involved Young Adults	48
Justice-Involved Youth.....	49
Interrater Reliability.....	50
Exploratory Reliability for the CS Scales Among Non-Justice-Involved Young Adults.....	50
Group Comparisons	51
Developmental Maturity	52
Justice-involved young adults vs. justice-involved youth	52
Non-justice-involved young adults vs. justice-involved youth.....	53
Justice-involved young adults vs. non-justice-involved young adults.....	53
Criminal Sophistication	54
Justice-involved young adults vs. justice-involved youth	54
Non-justice-involved young adults vs. justice-involved youth.....	56
Justice-involved young adults vs. non-justice-involved young adults.....	58
Chapter 6: Discussion	58
Exploratory Aims.....	59
Hypotheses 1 and 2	62
Exploratory Comparisons 1 and 2.....	63
Exploratory Comparisons 3 and 4.....	64
Strengths and Limitations	65
Implications and Future Directions.....	69
Policy Implications	70
Practice Implications.....	77
Future Research	78
Conclusion	81
References.....	84

Tables and Figures

Table 1 98

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

Chapter 1: Introduction

Overview

The United States criminal justice system has two distinct systems for processing youth and adults accused of criminal conduct. Each system is informed by divergent perspectives on offending and purposes of punishment. Nevertheless, every jurisdiction has mechanisms to facilitate the transfer of some youth to adult, criminal court. *Juvenile transfer* refers to various legislative, executive, and judicial mechanisms whereby a justice-involved youth's case may be processed in criminal court. The rate of youth judicially waived to criminal court has significantly decreased since its peak in the early-to-mid 1990s. Recent estimates suggest that less than 1% of justice-involved youth are judicially waived to adult court each year (Griffin et al., 2011; Hockenberry & Puzanchera, 2020). However, these estimates do not account for recent increases in other commonly utilized transfer mechanisms (e.g., statutory exclusion, prosecutorial discretion/direct file) and likely underestimate the true proportion of youth processed in criminal court each year in the United States (Griffin et al., 2011). Though research findings are somewhat mixed, some scholars note that transferring youth to criminal court may have iatrogenic effects. These include increased rates of future delinquency, longer and harsher sentences, an increased risk for victimization, and an enhanced risk of developmental disruption, relative to youth retained in the juvenile justice system (Griffin et al., 2011; Larson & Grisso, 2016; Mulvey & Schubert, 2012).

Forensic mental health evaluators often provide an assessment of three psycholegal factors relevant to juvenile transfer to assist judicial determinations. These factors are risk for dangerousness, developmental maturity and criminal sophistication (i.e., sophistication–maturity), and treatment amenability. Of these three factors, sophistication–maturity has traditionally been the most challenging for researchers and practitioners to define and measure

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

and several gaps in current knowledge remain regarding the application of this construct in practice. The current study sought to further refine the construct of sophistication–maturity by conducting a novel comparative analysis of youths’ sophistication–maturity relative to young adults. Implications for research, practice, and policy related to juvenile transfer are also discussed.

The Juvenile Justice System: A Historical Overview Relevant to Juvenile Transfer

The first juvenile court in the United States was established in the late 1800s and reflected society’s general acknowledgement that youth differ from adults in several meaningful ways (Cauffman et al., 2018; Feld, 2017; Levick & Feirman, 2016). Since the inception of the first juvenile court, the legal landscape of juvenile rehabilitation and punishment has shifted (Heilbrun et al., 2017; Slobogin & Fondacaro, 2011). In contrast to the modern system, preliminary juvenile courts prioritized the “best interest of the child” (Roesch & Viljoen, 2016, p. 251) and operated under the assumption that juveniles were less culpable and more amenable to rehabilitation than adults due, in part, to their immaturity and perceived lack of culpability (Feld, 2017; Owen-Kostelnik, 2006; Slobogin & Fondacaro, 2001). Accordingly, the *parens patriae era* (i.e., “the state acting as a parent;” Heilbrun et al., 2017, p. 37) of juvenile justice prioritized treatment over punishment. As a consequence, procedural protections were considered less essential for youth (Feld, 2017; Larson & Grisso, 2016; Weithorn, 2006). For instance, juvenile court proceedings were regularly closed to the public and less adversarial than adult proceedings, youths’ criminal records were regularly sealed, and clinicians and caseworkers were considered the predominant legal players (Weithorn, 2006).

In practice, however, this rehabilitative ideal was inconsistently applied, with many youth being subjected to “adult-like” dispositions while being afforded limited due process protections

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

(King & Grove, in press; Slobogin & Fondacaro, 2011; Weithorn, 2006). Moreover, many youth failed to meet eligibility criteria for juvenile court processing and were automatically waived to adult court (King & Grove, in press). As a result, the *due process* or *rights reform* era of juvenile justice sought to expand procedural safeguards to youth (Heilbrun et al. 2017). Through a collection of landmark cases decided by the Supreme Court of the United States in the 1960s and 1970s, increased due process protections were afforded to youth (e.g., *Kent v. United States*, 1966; *In re Gault*, 196; *In re Winship*, 1970).

In *Kent v. United States* (1966), the Supreme Court extended several due process protections to youth facing judicial waiver to adult court. The case involved a 16-year-old adolescent who argued the merit of the judicial waiver of his case to criminal court on the basis that he did not receive sufficient due process rights before his transfer (Heilbrun et al., 2016; Larson & Grisso, 2016). In addition to its holding concerning youths' due process rights in the judicial waiver context, the Supreme Court included, as an appendix, eight criteria used in the District of Columbia for juvenile court judges to consider prior to transferring a juvenile's case to adult court. (That is, these criteria were *dicta*, not being central to the Court's holding in the case; but these criteria nevertheless proved influential over time.) Some of these criteria included the nature and seriousness of the alleged offense, the youth's risk for future dangerousness, the youth's history of arrest and adjudication, the youth's level of sophistication and maturity, and the youth's potential for rehabilitation (Heilbrun et al., 2017; Salekin et al., 2016a; Larson & Grisso, 2016). This listing of factors proved influential to judicial waiver policy nationwide and reflected the importance of weighing public safety and prosecutorial and judicial interests against a youth's rehabilitative potential, developmental capacities, and related needs (Heilbrun et al., 2017).

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

A few decades after *Kent*, a legal and policy shift occurred whereby juvenile justice prioritized public safety and retribution over rehabilitation (Cauffman et al., 2018; Grisso, 2003, 2013; Heilbrun et al., 2017; Slobogin, 2016). This was, in part, in response to perceptions of rising juvenile violent crime rates during the 1980s and 1990s. These perceptions served as a catalyst for states to expand their transfer mechanisms and resulted in a significant increase in the number of juveniles tried in criminal court (Cauffman et al., 2018; Griffin et al., 2011; Slobogin & Fondacaro, 2016). Thus, the *punitive era* of juvenile justice became notable for strengthening the intersections between the juvenile and adult court (King, 2018).

Though the mechanisms for, and prevalence of, juvenile transfer significantly increased during the punitive era, the juvenile justice system had always possessed mechanisms for transferring youth to adult court. Salekin and colleagues (2016a) describe the historical purpose of juvenile transfer as fourfold: (1) given the juvenile court's historical rehabilitative focus, dangerous youth with entrenched criminal propensities were considered unamenable to rehabilitative services in the juvenile system; (2) youth who could not be successfully rehabilitated were viewed as a threat to public safety; (3) such youth were to be transferred to adult court so as to reserve valuable and scarce rehabilitative resources in the juvenile system; and (4) mature juveniles were viewed as more culpable for their alleged crimes and evidently considered more suitable for transfer. Prior to the 1970s, it was rare for juvenile courts to waive their jurisdiction over youth, with only eight states having legislation in place to facilitate this (Griffin et al., 2011). During this period, transfer was typically reserved for older adolescents who were charged with more serious offenses (Larson & Grisso, 2016). However, by the mid-1980s and through the 1990s, legislation facilitating juvenile transfer for younger adolescents charged with a wider range of offenses increased dramatically throughout the country. After this,

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

nearly every state had one or more mechanisms to transfer youth to adult court (Griffin et al., 2011; Larson & Grisso, 2016).

As the rate of juvenile violent offending decreased after the 1990s, so too did the rate of juvenile transfer (Griffin et al., 2011). As a result, the late 1990s and early 2000s evidenced another shift in juvenile justice practice and policy. The *developmental era* was marked by increases in policies that acknowledged the developmental differences between youth and adults (Cauffman et al., 2018; Heilbrun et al., 2017). This era served as a response to the increasingly harsh juvenile justice policies of the punitive era, which many scholars viewed as inconsistent with developmental science (Heilbrun et al., 2017). Advancements in developmental neuroscience during this period highlighted that adolescents differ from adults in a number of legally relevant ways, including with respect to planning, reasoning, and judgment; behavioral and emotional control; and decision-making (Howell, 2009; Luna & Wright, 2016; Steinberg, 2008). As a result, adolescents were viewed as generally less culpable than adults based on their relatively incomplete development (Steinberg & Scott, 2003). Such developmental findings informed landmark Supreme Court rulings regarding the unconstitutionality of the death penalty for all juveniles (*Roper v. Simmons*, 2005) and life sentences without the possibility of parole for most juveniles (*Graham v. Florida*, 2010; *Miller v. Alabama*, 2012). These cases, coupled with advancements in developmental research, highlighted the importance of considering youths' general development within specific justice contexts (Cauffman et al., 2018; Salekin et al., 2016a).

Some scholars recognize a newer era of juvenile justice. Informed by recent research on risk and needs assessment, the *preventative or evidence-based justice era* is notable for policies seeking to balance rehabilitation with accountability to prevent reoffending (King & Grove, in

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

press; Heilbrun et al., 2017). Concerning juvenile transfer in this era, some scholars posit that reducing the rate of transfer to adult court will mitigate risk to public safety by ensuring that youth receive community-based interventions that are tailored to their criminogenic needs, which in turn, will effectively reduce reoffending risk (Slobogin & Fondacaro, 2011). Such notions are consistent with the Risk-Needs-Responsivity model, which is an evidence-based and theoretically informed correctional rehabilitation framework for both youth and adults (Bonta & Andrews, 2017).

Transfer Mechanisms

Today, all jurisdictions in the United States allow for the processing of a juvenile's case in adult court; however, transfer mechanisms and related eligibility criteria vary considerably by state (King, 2018; Griffin et al., 2011). The age at which youth can be transferred to adult court also differs by state; it typically begins at the age of 14, though some states allow youth between the ages of 10 and 13 to be processed as adults depending upon the offense charged (Salekin et al., 2016a). In most states ($n = 42$), the highest age at which a juvenile can be adjudicated delinquent is 17, while 16 represents the upper age boundary in a minority of states ($n = 8$; Juvenile Justice Geography, Policy, Practice, and Statistics [JJGPS], 2016). Though varied, all transfer mechanisms typically fall within three basic categories: judicial waiver, statutory exclusion, and direct file/prosecutorial discretion (Griffin et al., 2011; Larson & Grisso, 2016; Salekin et al., 2016a). These mechanisms are collectively referred to as *juvenile transfer* or *juvenile waiver*.

Judicial waiver, also termed *juvenile waiver*, has historically been the most prevalent transfer mechanism (it is currently in place in 46 states; JJGPS, 2016; Griffin et al., 2011). It refers to the process whereby a juvenile court judge determines whether to transfer a youth's

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

case to adult court following a hearing on pertinent *Kent*-type criteria (Larson & Grisso, 2016). In contrast, some youth are automatically processed in adult court based upon a combination of eligibility criteria including age, offense type and severity, and waiver history, via a process called *statutory exclusion* (Larson & Grisso, 2016; Salekin et al., 2016a). At present, 28 states use statutory exclusion to transfer certain youth to criminal court (JJGPS, 2016). Estimates suggest that statutory exclusion is the most utilized transfer mechanism today (Giffin et al., 2016). Through this mechanism, transfer occurs automatically without a formal evaluation of the youth and therefore does not rely on the discretion of a juvenile court judge or prosecutor (Larson & Grisso, 2016; Salekin et al., 2016a). Finally, *prosecutorial discretion* reflects laws that empower prosecutors to make determinations about whether to file a youth's case in juvenile or adult court. As with statutory exclusion, no formal hearing is held prior to filing, though age and offense type and severity are often relevant determinates to prosecutors' decisions (Larson & Grisso, 2016; Salekin et al., 2016a). Currently, 14 states allow juveniles to be transferred to adult court through this method (JJGPS, 2016).

Nevertheless, 28 states have safeguards in the transfer process termed *reverse waiver*, *reverse transfer*, or *decertification* (JJGPS, 2016). Through these mechanisms, criminal or juvenile court judges determine whether to transfer or decertify youth from adult court to juvenile court following a hearing based on various characteristics of the youth, typically including *Kent*-type criteria. In some states, youth can be reverse transferred regardless of whether they were automatically processed in adult court or discretionally or judicially waived (King, 2018; Salekin et al., 2016a). This mechanism is considered a "safety net" for youth who may be inappropriate for adult court processing (Salekin et al., 2016, p. 298).

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

One additional quasi-transfer mechanism is worth noting. Some states utilize *blended sentencing* whereby a juvenile court judge (i.e., *juvenile blended sentencing*) or a criminal court judge (i.e., *criminal blended sentencing*) can enforce a mix of both juvenile and adult sanctions while retaining jurisdiction over the youth (King, 2018). Blended sentencing represents an effort to flexibly balance public safety, rehabilitation, and the individualized needs of the youth (Larson & Grisso, 2016). Such mechanisms are utilized in 15 and 23 states, respectively (JJGPS, 2016).

Psycholegal Models for Transfer Evaluations

Judicial waiver and reverse waiver are the two transfer mechanisms which have historically utilized forensic mental health experts to assess youths' legally relevant psychological functioning (King, 2018). Although criteria like those in *Kent* helped to reduce the subjective nature of judicial decision-making related to transfer, it was originally unclear as to which criteria were most essential for forensic mental health assessment. Over time, scholars refined *Kent*-type criteria as relevant to forensic mental assessment in several ways (King & Grove, in press). Initially, scholars considered an assessment of youths' treatment amenability to be the most important factor in transfer evaluations and recommendations (Melton et al., 1997), while others equally emphasized treatment amenability and risk for dangerousness (Barnum, 1987; Witt & Dyer, 1997). Others extended these basic models to include risk for dangerousness, criminal sophistication and developmental maturity, and treatment amenability (Ewing, 1990; Kruh & Brodsky, 1997; Penney & Moretti, 2006; Salekin, 2015); contextual factors related to the alleged offense, intellectual or developmental disability, and mental illness (Heilbrun et al., 1997); and public safety, cognitive functioning, various social and family factors, and mental health (Dattilio & Fromm, 2011), among others (King & Grove, in press).

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

Currently, a three-factor model comprised of risk for dangerousness, sophistication–maturity, and treatment amenability is the leading framework for forensic mental health assessment in juvenile transfer cases (Salekin, 2015; Heilbrun et al., 2017). In a recent review of state transfer and reverse transfer laws, King (2018) observed that most states with both mechanisms either explicitly or implicitly mentioned these factors in their statutes. These findings further highlight their relevance for juvenile transfer evaluations.

Risk for dangerousness primarily reflects concerns for public safety by considering youths' risk for recidivism and violence (Salekin et al., 2001; Salekin et al., 2002; Salekin et al., 2016a). Originally, scholars were hesitant to provide an assessment of youths' violence risk due to limited empirical data on the reliability of juvenile risk assessment coupled with a lack of readily available and well-validated specialized risk assessment tools (Ewing, 1990, Kruh & Brodsky, 1997). However, advancements have been made with respect to the reliability and validity of structured juvenile risk assessment tools (e.g., the Youth Level of Service/Case Management Inventory 2.0 [YLS/CMI]; Hoge & Andrews, 2010; the Structured Assessment of Violence Risk in Youth [SAVRY; Borum et al., 2006]). Forensic mental health evaluators are now better able to provide more accurate appraisals of youths' criminogenic and violence risk. Current recommendations for assessing youths' risk for dangerousness include assessing for the presence of both negative (e.g., static and dynamic risk factors, vulnerability factors) and risk-reducing (protective factors, resiliency, mitigating factors) factors associated with reoffending; considering youths' personality and individual factors (e.g., callous–unemotional traits, violence history); and incorporating empirical, developmental data on juvenile delinquency pathways (King & Grove, in press; King, 2018; Salekin et al., 2016a). In addition, experts caution against making dichotomous appraisals of youths' risk for dangerousness. Rather, evaluators are

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

encouraged to provide estimates of different problem behaviors in specific contexts (e.g., serious offending, community violence, institutional misconduct) within shorter time frames (King & Grove, in press; Larson & Grisso, 2016).

Treatment amenability generally refers to youths' capacity to engage in and benefit from services primarily targeting reductions in recidivism or violence risk, though non-criminogenic needs (e.g., psychopathology) may be a secondary target (King & Grove, in press; King, 2018; Salekin et al., 2016a). Recommendations for the assessment of youths' treatment amenability include considering the type and appropriateness of services available to the youth in the juvenile justice system, evaluating the youth's prior response to intervention, evaluating the youth's current or past psychopathology, assessing the youth's motivation to change, and evaluating the youth's interpersonal and affective functioning (King & Grove, in press; King, 2018; Salekin et al., 2016a). A detailed overview of the definition and assessment of the sophistication–maturity factor is the focus of the remainder of this review.

Chapter 2: Literature Review

Defining the Psychological Aspects of Developmental Maturity and Criminal Sophistication for the Legal System

Adolescence is a distinct developmental period characterized by rapid maturation in biological, social-emotional, and cognitive domains (Barbot & Hunter, 2012; Cauffman & Steinberg, 2000). As a result, youth are generally less able than adults to control their impulses and limit sensation and reward seeking tendencies; effectively anticipate, appraise, and weigh risks in their decision-making; appropriately manage their emotions; and resist social influence. These factors are pertinent to considerations of youth culpability, competency, and disposition (Albert et al., 2013; Cauffman & Steinberg, 2000; Luna & Wright, 2016). Thus, defining

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

adolescent maturity for the legal system is multifaceted and goes beyond merely assessing youths' intellectual functioning relative to adults (Heilbrun et al., 2017; Cauffman et al., 2018). As demonstrated in cases like *Kent*, legal criteria for transfer often include considering “the sophistication and maturity of the juvenile as determined by a consideration of his home, environmental situation, emotional attitudes, and pattern of living,” (pp. 566–567). Though notably vague, this criterion suggests that developmental maturity and criminal sophistication are two distinct but related concepts (Heilbrun et al., 2017; Salekin et al., 2002).

Adolescent maturity within the transfer literature is often referred to as *developmental maturity*, *psychosocial maturity*, or *sophistication–maturity*. While these terms are often equated, they are distinct, though partially overlapping, constructs (Heilbrun et al., 2017). Developmental maturity is the most broadly defined and widely applicable of the three terms. It generally refers to youths' maturation in physical, emotional, cognitive, or social domains, irrespective of their involvement with the justice system (Heilbrun et al., 2017; Salekin et al., 2016b). Closely related and often used interchangeably, psychosocial maturity is defined as the “complexity and sophistication of the process of individual decision-making as it is affected by a range of cognitive, emotional, and social factors” (Cauffman & Steinberg, 2000, p. 743). In other words, psychosocial maturity specifically highlights youths' “maturity of judgment,” including the ways in which various psychosocial factors (e.g., risk appraisal, sensation seeking, emotion regulation, resistance to peer influence, future orientation) influence youths' decision-making both within and outside of the legal context (Steinberg et al., 2009; Cauffman & Steinberg, 2000). Sophistication–maturity (i.e., with *sophistication* referring to *criminal* sophistication) differs notably from the other two definitions. It is a psycholegal concept referring to the process whereby youths' normative developmental maturity and criminogenic risk factors (e.g., criminal

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

thinking patterns; callous-unemotional traits) intersect to influence antisocial conduct (Heilbrun et al., 2017; Salekin et al., 2016b). It has also been defined as youths' involvement in "adult-like" offending (Grisso, 2010–2011). Thus, developmental and psychosocial maturity underlie sophistication–maturity (Heilbrun et al., 2017), though youth can be developmentally mature but not criminally sophisticated (Salekin, 2004).

While all three *Kent*-type psycholegal factors have unique research and practical challenges, developmental maturity and criminal sophistication has been especially difficult to define, measure, and apply in practice (Grisso, 2010–2011; Salekin, 2004; Salekin, et al., 2016a). The law's definition of this construct is vague and difficult to discern. Practitioners must also grapple with complex weighing of, or potential interaction effects for, this factor in relation to the other two (i.e., risk for dangerousness and treatment amenability; Salekin et al., 2001; Salekin, 2004). For instance, developmentally mature youth who possess high-level cognitive skills, who can effectively regulate their emotions, and who are socially adept, may be better able to engage in and benefit from treatment within the juvenile justice system compared to their more immature counterparts. Alternatively, higher levels of maturity may also contribute to a more ingrained, sophisticated, and treatment-resistant criminal orientation (Salekin, 2004). Furthermore, developmental maturity is not a dichotomous construct (mature vs. immature). Instead, maturity is multifaceted, referring to "incomplete (having not reached one's levels of maturation) or delayed (in relation to one's peers) development" (Grisso, 2005, p. 18); comprises various components which develop "at different rates along different timetables" (Steinberg & Icenogle, 2019, p. 32); is dependent upon youths' functional abilities irrespective of their chronological age; varies considerably from one adolescent to the next; and can be impacted by a

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

variety of environmental factors (Borum & Grisso, 2007; Grisso, 2005; Steinberg & Icenogle, 2019).

From a historical standpoint, the juvenile court was established on the notion that adolescents are less developmentally mature and criminally sophisticated than adults. Such youth are presumed to be less culpable for their criminal behavior and, in general, are thought of as suitable for dispositions that prioritize rehabilitation over punishment (King & Grove, in press; Grisso & Larson, 2016; Weithorn, 2006). However, the justice system allows for an exception. Some youth are viewed as more developmentally mature and criminally sophisticated than their peers, such that more “adult-like” youth may be appropriate for adult case processing (King & Grove, in press; Salekin et al., 2016a). Thus, the justice system is interested in determining whether youth offending occurred because of premediated, “adult-like” criminal sophistication, or immature judgment related to impulsivity, susceptibility to peer influence, or an inability to anticipate or consider the consequences of one’s actions (Grisso, 2010, 2011; Larson & Grisso, 2016). Therefore, a primary task of assessing youths’ sophistication–maturity for transfer is to differentiate maturity (or anticipated future maturity) that will protect against risk for reoffending (e.g., engaging in prosocial activities, taking responsibility for one’s behavior) from maturity which will potentially be utilized for criminological purposes (Salekin, 2004).

Complex issues also arise when applying the developmental maturity and criminal sophistication facet of *Kent* to first-time versus repeat juvenile offenders. Contact with the justice system, including associating with antisocial peers, can impeded developmental maturity (Dmitrieva et al., 2012), advance criminal sophistication, and decrease youths’ views of the legitimacy of the justice system (Fine et al., 2015). Much of the research on the relationship between sophistication–maturity and offending is correlational. Thus, it is difficult to disentangle

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

the effects of prolonged justice involvement on youths' developmental maturation and criminal sophistication. Moreover, within the transfer context, it is important to recognize that varying degrees of criminal sophistication may underly different categories of offenses. For example, youth facing transfer to criminal court are often charged with the most serious offenses, including person offenses, which may ultimately require a lesser degree of criminal sophistication than white-collar offenses, which typically do not rise to the level of transfer.

Several theories have been developed to further refine the concept of adolescent maturity. Though differences among these theories are evident, the field generally acknowledges that cognitive capacities, emotion regulation skills, autonomous decision-making abilities, moral reasoning skills, and social–interpersonal skills are fundamental components of adolescent developmental maturity and criminal sophistication relevant to juvenile transfer (Heilbrun et al., 2017; King & Grove, in press). A detailed overview of the developmental models most notable for assessing developmental maturity broadly, including the specific facet of sophistication–maturity, are discussed next.

Developmental Maturity and Criminal Sophistication Models

One seminal theory of juvenile offending posited that delinquency is a distinctive and normative developmental process of adolescence which gradually declines as youth mature (Moffitt, 1993; Scott & Grisso, 1997). Research suggests that offending increases during the early teen years, peaks in late adolescence, and then steadily declines during the late teens and early twenties in what is widely referred to as the age–crime curve (Landsheer & van Dijkum, 2005; Moffitt, 1993; Rocque & Posick, 2015). Moffitt (1993) proposed a developmental taxonomy to explain different juvenile offending trajectories. She hypothesized that delinquency occurs along two divergent pathways which she termed *life-course persistent* and *adolescent limited*. Moffitt's

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

model predicts that a small proportion of individuals follow the life-course persistent pathway such that they generally engage in chronic offending throughout each developmental period across the lifespan. This is thought to occur as a result of an interaction between neurological/cognitive vulnerabilities and adverse, or criminogenic, rearing environments. In contrast, a larger proportion of individuals who engage in delinquency during adolescence are categorized as adolescent-limited offenders. These individuals begin to desist from antisocial behavior as they transition into adulthood. According to Moffit’s model, antisocial behavior during adolescence is attributed to the “maturity gap” between youths’ biological age and their desire to behave and appear more socially mature (Moffit, 1993, p. 687). Accordingly, youth engage in antisocial behavior in ways that promote their autonomy and social independence (Moffit, 1993; Moffit & Piquero, 2010; Steinberg et al., 2015). One assumption inherent in this model is that adolescent-limited offenders desist from antisocial behavior as they mature, and mature youth “age out” of offending sooner than their immature counterparts (Steinberg et al., 2015, p. 3). While Moffit’s theory has been influential in conceptualizing components of juvenile offending, modern theorists and researchers have critiqued this taxonomy as overly simplistic. They note that not all youth classified within these two categories follow expected trajectories (Salekin et al., 2016b).

More recent research suggests that this curve might be better conceptualized as an “age-recklessness curve.” In other words, it is a general increase in a propensity for engaging in risky behavior (which may also include criminal behavior as well as other harmful behaviors like illicit drug use and unsafe driving practices) that peaks in mid-to-late adolescence rather than crime-specific behavior (Monahan et al., 2015, p. 581). Monahan and colleagues (2015) suggest that, on a neurobiological level, youth who engage in crime are like youth who engage in other risk-

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

taking behavior; however, youth who engage in crime differ in their normative maturation level (see also Cauffman et al., 2018).

Other theories define adolescent maturity according to its specific subcomponents or facets. In one of the earliest theoretical models of developmental maturity, Greenberger and Sorenson (1974) identified three defining subcomponents of psychosocial maturity. These subcomponents are individual adequacy, interpersonal adequacy, and social adequacy. *Individual adequacy* refers to youths' "identity development, self-reliance, and work orientation" (p. 129). *Interpersonal adequacy* relates to youths' "communication skills, trust (e.g., rational dependence), and knowledge of major roles" (p. 129). *Social adequacy* refers to youths' level of "social commitment (e.g., orientation toward long-term social goals), openness to sociopolitical change, and tolerance of individual and cultural differences" (p. 129; see also Greenberger et al., 1975). Inherent in Greenberger and Sorenson's (1974) model is the concept of mature judgment such that psychosocially immature youth lack the ability to make self-guided, autonomous decisions in accordance with their own values (Salekin et al., 2016b). While this model laid the foundation for subsequent theories, critics have noted that aspects of this model are difficult to measure in practice and may not be applicable to justice-involved youth with more antisocial orientations (Salekin et al., 2016b).

Steinberg and Cauffman (1996) further refined the definition of maturity as it relates to judgment and decision-making. Their conceptualization also consists of three factors—responsibility, temperance, and perspective. *Responsibility* refers to youths' "autonomy, self-reliance, and clarity of identity" (p. 745). *Temperance* refers to youths' ability to curb their impulses and consider all aspects of a situation prior to making a decision to act. *Perspective*

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

refers to youths' ability to view situations from various perspectives and frame those decisions within a broader context.

Steinberg and Cauffman's (1996) model has been extensively researched across a wide range of legal contexts, including for predicting youths' adjudicative competency (Kivisto et al., 2011) and capacity to waive their *Miranda* rights (Colwell et al., 2005). Most relevant to transfer, Cauffman and Steinberg (2000) found that higher levels of psychosocial maturity (i.e., responsibility, temperance, and perspective) inversely related to decisions to engage in antisocial behavior for both youth and adults. Other studies have likewise indicated that Cauffman and Steinberg's (1996) three factors reliably predict juvenile delinquency and risky decision-making (Steinberg et al., 2015; Riggs Romaine, 2019), as well as long-term offending trajectories (Monahan et al., 2009). These findings demonstrate the model's relevance for juvenile transfer.

In addition to theoretical models, prior research has used empirical methods to develop definitions of developmental maturity for various legal contexts. In one of the earliest of such studies, Grisso and colleagues (1988) surveyed juvenile court personnel to examine the characteristics of youth regarded as most relevant to juvenile transfer, pretrial detention, and disposition decisions. With respect to developmental maturity, the following characteristics clustered together within one factor: autonomy, maturity, sophistication, "adultlike physical characteristics," "cool and composed" (i.e., emotion regulation), and "knowledge of street survival" (e.g., "street smarts;" p. 422). Contrary to earlier developmental models (e.g., Greenberger & Sorenson, 1974), juvenile court personnel did not highlight elements of prosocial development in their considerations. Rather, they emphasized maturity as it related to decisions to engage in offending (i.e., criminal sophistication; Salekin et al., 2016b).

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

Utilizing a similar methodology, Salekin and colleagues (2001, 2002) further refined the definition of maturity by conducting prototypical analyses of the characteristics that child–adolescent clinical psychologists, forensic diplomates, and juvenile court judges considered relevant to risk for dangerousness, sophistication–maturity, and treatment amenability.

Prototypical analyses identify the principal components of a construct by asking respondents to identify attributes that they consider to be the most representative of the construct (Salekin et al., 2016b). In their first study, Salekin and colleagues (2001) generated a sample of items related to each of the three psycholegal constructs. Clinical psychologists then rated the prototypicality of items within each domain. Forensic diplomates also rated each item in reference to specific juveniles whom they evaluated and were subsequently transferred to adult court.

The most prototypically rated items for sophistication–maturity included “criminal sophistication, capable of planned and premeditated criminal behavior, understanding of behavioral–societal norms, and the ability to identify alternative actions” (Salekin et al., 2001, p. 397). A factor analysis revealed a two-factor solution for the sophistication–maturity construct consisting of (1) emotional and intellectual maturity (e.g., self-concept, autonomy, insight) and (2) criminal sophistication (e.g., level of premeditation, manipulative traits). This finding further lends support to the distinct, but related, features of developmental maturity and criminal sophistication. While forensic psychologists’ ratings were generally consistent with those of clinical psychologists for risk for dangerousness and treatment amenability (e.g., high scores on dangerousness should predict transfer; high scores on amenability should predict retention), there was more variability in ratings for the sophistication–maturity items. This highlights the complexity in assessing this construct. Forensic psychologists rated emotional and intellectual maturity as prototypically lower among transferred youth than was predicted by clinical

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

psychologists who anticipated that youth scoring higher on these items would be recommended for transfer. The authors hypothesized that forensic psychologists may therefore place greater emphasis on criminal sophistication in their recommendations than on the more general emotional and intellectual elements of the construct.

In a follow-up study, Salekin and colleagues (2002) asked two groups of juvenile court judges to either rate the importance of each item in their transfer determinations or to base their ratings on an actual juvenile waiver case in which the youth was transferred to adult court. Results from a confirmatory factor analysis indicated that a three-factor structure of developmental maturity was the best fit for the data. The three factors were autonomy, emotional skills, and cognitive capacities. Items related to *autonomy* included the “ability to resist pressure from others,” adopting an “internal locus of control,” having “clarity of self-concept,” and having a “consideration of life goals,” among others (p. 391). *Cognitive capacities* included the “ability to think abstractly,” “identify alternative actions and consequences,” “goal-setting behaviors,” “engages in cost–benefit analysis,” and “has future time perspective” (p. 391). *Emotional skills* included the ability to “regulate emotions,” “delay gratification in pursuit of goals,” “cope with frustrations,” and set clear values and priorities (p. 391). Prototypical items related to *criminal–sophistication* included the ability to manipulate others and engage in premeditated and “adult-like” crimes.

Though varying in their terminology, Salekin and colleagues (2016b) note that the aforementioned models (Greenberger & Sorenson, 1974; Salekin, 2001, 2002; Steinberg & Cauffman, 1996) converge on the factors of autonomy, cognitive skills, and emotional skills as the essential, underlying components of developmental maturity. For instance, the theoretical model proposed by Steinberg and Cauffman (1996) overlaps with the empirically derived model

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

proposed by Salekin and colleagues (2001, 2002). Responsibility, perspective, and temperance are comparable to autonomy, cognitive capacities, and emotion regulation skills, respectively (Heilbrun et al., 2017; Salekin et al., 2016b). These factors also roughly align with Greenberger and Sorenson's (1974) model apart from the more prosocial items (Salekin et al., 2016b). Salekin's (2001, 2002) model adds the additional component of criminal sophistication.

Adolescent Brain Development

Neuroscience research shows that the brain undergoes significant reorganization and maturation throughout adolescence and early adulthood (Luna & Wright, 2016). Advancements in developmental neuroscience allow researchers to identify age-related changes in brain structure and circuitry as well as changes in brain function throughout adolescence and adulthood (Luna & Wright, 2016; Monahan et al., 2015). Myelination, pruning of synapses, and rapid growth and development of neurons occur during adolescence and contribute to a range of skills underlying maturity, including the development of forethought, reasoning, and decision-making (Monahan et al., 2015; Salekin et al., 2016b). Other changes include increases in the density of dopamine receptors and their distribution, as well as significant changes in white matter in the prefrontal cortex. These changes are thought to contribute to sensation seeking behavior and higher-order cognitive processes, respectively (Monahan et al., 2015). Such findings provide important insights into the underlying neurological contributors to youths' legally relevant judgment, decision-making, and behavior (Luna & Wright, 2016).

Many researchers propose that adolescent immaturity results from a "maturational imbalance" between two critical neurobiological systems, which undergo significant change in adolescence along two differing timeframes (Casey, 2015; Casey et al., 2008; Luna & Wright, 2016; Steinberg & Icenogle, 2019). The social–emotional system is largely located in the brain's

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

limbic system and contributes to sensation seeking, reward sensitivity, and heightened emotional arousal (Albert et al., 2013; Steinberg & Icenogle, 2019; Luna & Wright, 2016). In contrast, the cognitive control system is located primarily in the prefrontal cortex and is responsible for self-control, curbing impulses, planning, judgment, and regulating emotions (Albert et al., 2013; Steinberg & Icenogle, 2019; Luna & Wright, 2016). The reward-seeking system rapidly develops during puberty, while the self-regulatory system continues to mature well into the mid-twenties (between the ages of 20 to 25). The imbalance between youths' well-developed reward seeking system and immature cognitive control system is hypothesized to contribute to adolescents' risky and impulsive decision-making. This is especially relevant during situations that are emotionally arousing (Casey, 2015; Steinberg & Icenogle, 2019; Steinberg, 2008). Empirical behavioral research compliments neuroscientific findings on youths' maturity gap. These findings demonstrate that youths' cognitive abilities reach their adult level around the age of 16, but their psychosocial maturity continues to mature into early adulthood (Icenogle et al., 2019; Monahan et al., 2013; Monahan et al., 2015). Such findings help frame adolescent delinquency and culpability for various legal contexts.

The trajectory of normative development can be impacted or delayed by several socioeconomic and environmental factors. Justice-involved populations often have more criminogenic and non-criminogenic risk factors than their non-justice-involved counterparts. These include higher rates of mental health diagnoses (Beaudry et al., 2021; Sarteschi, 2013; Shufelt & Coccozza, 2006), higher rates of substance used disorders (Fazel et al., 2006), increased risk of trauma exposure (Baskin & Sommers, 2013; Dierkhising et al., 2013), more academic needs (Cavendish, 2014; Mazzotti & Higgins, 2006) and lower socioeconomic status (Sarteschi,

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

2013). Each of these factors are linked to deficits in developmental maturity (Salekin, 2015; Salekin et al., 2016b).

Disadvantaged socio-cultural and academic environments can negatively influence neuronal growth and delay normative maturation (Chung et al., 2005; Heilbrun et al., 2017). For example, exposure to positive parenting relationships, associations with prosocial peers, and engagement in nutritive educational environments are linked to more advanced psychosocial development (defined as temperance, perspective, responsibility) during adolescence (Steinberg et al., 2004). Research also suggests that varying degrees of justice-system involvement, including confinement and incarceration, are associated with significant declines in relative developmental maturity over time (Dmitrieva et al., 2012). In sum, research suggests that various social and environmental conditions can directly influence developmental maturity. Adolescents who are raised in supportive, nurturing, and non-criminogenic environments may show higher levels of developmental maturity. Such youth may be more likely to utilize their maturity in a prosocial manner compared to their counterparts raised in more impoverished environments (Heilbrun et al., 2017; Salekin et al., 2016b).

Thus, quantifying adolescent maturity for the legal system is complex as maturity refers to a gradual and multifaceted process that develops at varying rates. This process differs from youth to youth, from youth to adult, and between justice-involved and non-justice involved populations (Salekin, 2015; Steinberg & Icenogle, 2019). As Steinberg and Icenogle note, “Legal policy often necessitates the identification of a discrete chronological cut point before which individuals are considered immature and after which individuals are considered mature. Determining at what age we can comfortably draw this line while remaining true to extant scientific evidence is a challenge” (p. 34). Such “cut points” are typically established based on

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

traditional societal understandings of adulthood rather than relying upon empirical data driven by developmental science (Larson & Grisso, 2016). Current recommendations in the developmental science literature regarding age-based cut points for maturity are mixed. Research generally supports the notion that age-based distinctions warrant a careful consideration of the specific legal (e.g., competency, culpability, criminal offending) and decision-making (e.g., emotionally laden, pressured) context in question (Steinberg & Icenogle, 2019).

Assessing Developmental Maturity and Criminal Sophistication

Several clinical instruments are available to assess youths' intellectual/cognitive functioning, reasoning abilities, emotion regulation abilities, and interpersonal skills (Grisso, 2010–2011; Heilbrun et al., 2017; Salekin, et al., 2016b). Nevertheless, assessing the specific psycholegal construct of sophistication–maturity for transfer has traditionally posed challenges for clinicians as the law does not provide a clear operationalization of this construct (Salekin et al., 2001). Several assessment tools have been proposed to tap into various facets of sophistication–maturity, though some remain experimental in nature. Such tools can be variously classified. *Traditional clinical measures* have relevance for both clinical and forensic applications. *Forensically relevant assessment tools* measure clinical constructs that are relevant to the legal system and may also be used in research. *Forensic assessment instruments* are tools that have been purposely developed for forensic use and are often commercially available.

Early recommendations for assessing sophistication–maturity for the transfer context included assessing youths' cognitive maturity through standardized intelligence and achievement tests and evaluating youths' emotional maturity through a combination of interview and traditional psychological assessment methods (Ewing, 1990; National Council of Juvenile and Family Court Judges, 2005). In a practitioner survey, Ryba and colleagues (2003) asked mental

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

health professionals ($N = 80$) to describe the most common methods they used to assess youth maturity for adjudicative competency evaluations. Commonly endorsed assessment methods included interviews (77%), psychological testing (68%), behavioral observations (35%) and record review (35%). Most (79%) respondents reported using more than one assessment method. The most endorsed assessment instruments were intelligence tests, personality assessments, and behavioral measures.

Scholars have also highlighted the potential utility of certain self-report measures for assessing youth maturity (Salekin, et al., 2016b). However, caution is warranted with respect to the use of such measures in practice, given that their use has generally been limited to research settings (Heilbrun et al., 2017). Common experimental self-report measures of aspects of adolescent developmental maturity include the Psychosocial Maturity Inventory (PSMI; Greenberger et al., 1975); Weinberger Adjustment Inventory (WAI; Weinberger & Schwartz, 1990); Consideration of Future Consequences Scale (CFCS; Strathman et al., 1994); and Resistance to Peer Influence scale (RPI; Steinberg & Monahan, 2007), among others (see Salekin et al., 2016b).

Regarding the assessment of intellectual functioning in reference to maturity, research has demonstrated that IQ correlates only modestly with measures of developmental maturity, if at all (Leistico & Salekin, 2003; Salekin, 2004). Thus, while modern scholars recognize the relevance of IQ testing in juvenile transfer evaluations, other assessment instruments are also commonly used in conjunction with traditional cognitive testing. More recent practice recommendations in the assessment of sophistication–maturity for transfer include using a combination of intelligence, achievement, or neuropsychological assessments; measures of child and adolescent psychopathology; personality assessments; an available specialized forensic

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

assessment instrument; and experimental/clinical self-report measures (Heilbrun et al., 2017; Salekin, 2015; Salekin et al., 2016b). Given the role of environmental factors on normative maturation, assessments of youths' home and community life are also recommended (Heilbrun et al., 2017).

Assessments of youths' sophistication–maturity had historically been limited to a compilation of traditional clinical and cognitive assessment instruments, due to a lack of available specialized forensic assessment instruments for this purpose. To address this gap, Salekin (2004) developed the Risk-Sophistication-Treatment Inventory (RSTI) for the assessment of the three psycholegal factors for juvenile transfer evaluations (i.e., risk–dangerousness, sophistication–maturity, and treatment amenability) among youth aged 9 to 18. To date, the RSTI is the only commercially available, specialized forensic assessment instrument for the assessment of youths' sophistication–maturity. The RSTI consists of a semi-structured interview guide and accompanying clinical rating scale. This format facilitates a multi-source and multi-method evaluation of youth for transfer and disposition proceedings.

The RSTI's Sophistication–Maturity (S–M) scale consists of 15 items which are organized within three clusters—Autonomy, Cognitive Capacities, and Emotional Maturity. Items within each cluster were developed based upon Salekin's conceptualization of developmental maturity. He derived these items from prototypical and factor analyses with child–adolescent clinical psychologists, forensic diplomates, and juvenile court judges (Salekin et al., 2001; Salekin et al., 2002). In general, the Autonomy cluster assesses youths' sense of personal identity and the strength of their self-concept; internal locus of control; and ability to make autonomous, self-directed decisions while anticipating consequences. The Cognitive Capacities cluster broadly assesses youths' maturity of judgment, including their understanding

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

of behavioral norms and lawful behavior, and their ability to anticipate and weight the benefits and drawbacks of their decisions. The Emotional Maturity cluster generally measures youths' emotional awareness and regulation, conflict resolution and interpersonal skills, and moral development. The RSTI's S–M items are neither inherently prosocial nor antisocial. Rather, the scale broadly measures a youth's developmental maturity. It then allows clinicians to rate whether the youth utilizes a mature skill for criminogenic purposes (i.e., criminal sophistication) via its Criminal Sophistication (CS) supplemental scale. Data gathered through the interview with the youth is considered alongside collateral information (e.g., review of records or interviews conducted with third parties) and is scored according to detailed criteria outlined in the RSTI manual.

The RSTI was normed on a diverse sample of justice-involved children and adolescents ($N = 591$). The sample included both detained and non-detained youth, youth who were transferred to adult court and those who were retained in juvenile court, youth adjudicated for both violent and nonviolent offenses, and both first-time and chronic delinquents (Salekin, 2004). Though the RSTI has a normative sample, the manual does not provide cutoff scores for disposition recommendations. Rather, clinicians are encouraged to interpret youths' scores and percentile-based standings using clinical judgment (Salekin et al., 2016a).

Research on the psychometric properties of the RSTI suggest that the instrument demonstrates adequate internal consistency (ranging from .78 to .83) and interrater reliability (ranging from .74 to .94; Salekin, 2004). In one early study, Leistico and Salekin (2003) found that the S–M scale significantly correlated with non-violent offenses ($r = .28$), and youth who were transferred to adult court had significantly higher scores on the scale than youth who were retained in juvenile court. Moreover, the S–M scale does not correlate strongly with youths'

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

scores on intelligence or achievement tests, indicating that the scale assesses other abilities (e.g., “street smarts,” emotional maturity) not measured through traditional intelligence and achievement tests. Nevertheless, modest correlations have been observed between the S–M scale and some indicators of intelligence, including the Full-Scale IQ score on the Kauffman Brief Intelligence Test ($r = .29$) and analytic, practical, and creative intelligence as measured with the Sternberg Triarchic Abilities Test (r s ranging from .18 to .21; Salekin, 2004).

An experimental self-report version (RSTI-SR; Salekin, 2010) and an abbreviated screening version (RSTI-A; Salekin, 2012) have also been developed. The pilot version of the RSTI-SR consisted of 74 items rated on a three-point scale ranging from 0 to 2 (0 = *no*, 1 = *some*, 2 = *yes*), though refinement efforts for this measure have resulted in at least one shorter experimental version. The RSTI-A is essentially the same as the RSTI, except that the semi-structured interview has been shortened. As with the full version, items on both the RSTI-SR and RSTI-A fall within the three broader facets of Risk for Dangerousness, Sophistication–Maturity, and Treatment Amenability. Each facet is comprised of the same three clusters of items. Preliminary findings suggest that both tools show promising psychometric properties. For instance, Gillen and colleagues (2015) found that the RSTI-SR demonstrated good internal consistency (.78 to .88) and correlated moderately to strongly with the RSTI-A (Ang et al., 2018). Furthermore, in the first factor analysis of the RSTI-SR, Ang and colleagues (2018) found that the proposed three-factor model was a good fit for the data, among other indicators of promising construct validity.

Chapter 3: Current Study

To Whom Should Youth be Compared?

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

As reviewed, forensic mental health evaluators presently have a fair amount of research at their disposal to inform their transfer recommendations and decisions. Several forensically relevant clinical instruments are also accessible to aid the assessment of youths' sophistication–maturity. One specialized forensic assessment instrument is also available. Nevertheless, several research questions remain with respect to how the sophistication–maturity construct is applied in practice. Of relevance to the current study, Grisso (2010–2011) notes that there is a gap in knowledge regarding “what *degree* of maturity is relevant for purposes of transfer” (p. 184, emphasis added). Many traditional clinical measures and forensically relevant instruments used to assess aspects of youths' cognitive and emotional development, have been normed on both adolescent and adult samples. Such norms facilitate comparisons of a youth's functioning relative to that of their similarly aged peers as well as adults. Moreover, adolescent and adult norms provide an approximation as to when youths' developmental capacities within a particular domain may approximate adult levels (Grisso 2010–2011). Yet, there is currently no established age standard for which to compare youths' sophistication–maturity. As Grisso (2010–2011) notes:

Shall we compare the youth to an 18-year-old because that is the state's youngest age for criminal court jurisdiction? Will we use 21 as an age of ‘majority’? Or shall we use 25 or 30, given that research indicates continuing changes up to that age in development of brain structures that are important for decision making and self-regulation? Moreover, the average maturity of young adults in the criminal justice system is likely to be dissimilar to the average maturity of young adults generally. Shall we compare juveniles specifically to samples of adults in the criminal justice system? (p. 184)

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

As emphasized by Grisso, there is a gap in the literature in terms of the most appropriate reference sample for which to compare juveniles' sophistication–maturity for transfer. In other words, when determining whether youth demonstrate “adult-like” sophistication–maturity, to whom specifically should youth be compared to facilitate opinions about this matter? This is especially challenging since neuroscience findings show that developmental maturation continues through the age of 25. Research also demonstrates that justice-involved populations often have significant environmental risk factors for delayed maturation.

Of the various assessment tools available, the RSTI offers the most comprehensive assessment of youths' sophistication–maturity for transfer. Yet, while the RSTI's normative sample comprises a diverse justice-involved youth sample, the tool has not been normed on adults. Thus, youth–adult comparisons for RSTI-measured sophistication–maturity is not currently possible. Only one prior study examined the RSTI's S–M scale with young adults. Iselin and colleagues (2009) used the RSTI to examine the relationship between sophistication–maturity (and prosocial vs. criminal applications of maturity skills) and cognitive control among a sample of justice-involved adolescents ($n = 43$) and young adults ($n = 40$), the latter aged 18 to 23. However, there are some notable limitations of this study, including its modest sample size and restricted young adult age range. Other limitations concerned a novel scoring method that was used to examine prosocial and antisocial maturity. For instance, the authors noted that the interrater reliability for criminal maturity ratings, measured via the intraclass correlation coefficient (*ICC*), was relatively low (.45). The authors attributed this modest *ICC* to the fact that the researchers scored the assessment based solely on interview data. In contrast, prior research with the RSTI incorporated file data. They noted that criminal maturity ratings may be somewhat ambiguous for coders to reliably score. Thus, additional research is needed with respect to the

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

administration of the RSTI's CS supplemental scale in research settings. Research is also needed to gather additional young adult data for the S–M scale and CS supplemental scale reflecting more young adult participants and a broader age-range definition of young adulthood. For example, to age 25 based on neuroscience research, or to approximately age 30 based on the potential for delayed maturation among the often disadvantaged backgrounds of justice-involved persons, and their infrequent reflection in the samples of available neuroscience research.

Another gap in the extant literature further relates to the justice-status of comparison samples. Many studies assessing developmental differences among adolescents, or between adolescents and adults, utilize homogenous groups such that only justice-involved groups are compared, and likewise for non-justice-involved samples (Cauffman & Steinberg, 2000; Icenogle et al., 2019). Some research is also available comparing levels of confinement (e.g., a secure detention facility vs. confinement in a residential treatment facility; Dmitrieva et al., 2012) and detention (e.g., youth detained in a juvenile detention center vs. supervised in the community; Fried & Reppucci, 2001) on various facets of developmental maturity. Relatively fewer studies have directly compared the developmental maturity evidenced by individuals who are and are not justice-involved (Fried & Reppucci, 2001; Grisso et al., 2003; Modecki, 2008). Even less research has simultaneously compared justice-involved and non-justice-involved youth and young adults (Grisso et al., 2003; Modecki, 2008). Moreover, no study has yet comprehensively assessed developmental maturity and criminal sophistication simultaneously among justice-involved and non-justice-involved young adults and justice-involved youth.

Of note, one may question the rationale for examining criminal sophistication in a non-justice-involved sample. For it can be argued, on the one hand, that this construct—inherently tied to criminal offending—is conceptually inapplicable to a population with no or *de minimis*

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

criminal history. On the other hand, however, relatively minor offending behaviors may have gone undetected among young adults who are not involved with the justice system. Thus, while lower levels of criminal sophistication may be expected among non-justice-involved young adults, the absence of any criminal sophistication is not a foregone conclusion. Whether the construct of criminal sophistication can be extended to and reliably assessed among non-justice-involved young adults has not before been explored.

Current Study

The current study sought to fill an important gap within the juvenile transfer literature by informing the question, “which adult represents the standard for maturity to which we will compare the youth?” (Grisso, 2010–2011, p. 184). If the field is to begin to answer this question, one relevant direction is to compile comprehensive young adult data for the RSTI’s S–M scale and CS supplemental scale. As previously mentioned, only one study has examined the S–M scale and an approximation of the CS supplemental scale with young adults (Iselin et al., 2009). As was also mentioned previously, this study had a modest sample size, a restricted adult age range, and only sampled persons who were justice involved. No study has yet comprehensively compared both justice-involved and non-justice-involved youth and young adults on the RSTI’s S–M scale and CS supplemental scale.

The current study sought to expand upon Iselin and colleagues’ (2009) methodology by examining RSTI-measured developmental maturity and criminal sophistication among a larger sample of justice-involved young adults, aged 18 to 29. The current study also explored the feasibility of assessing these constructs among a non-justice-involved young adult sample, also in the 18–29 age range. Data from the current study relied on preexisting interview data that remained to be scored (including with adequate reliability). These data were then compared to

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

preexisting youth data derived from the RSTI's normative sample. Such comparisons provide important information pertinent to interpreting juvenile defendants' developmental maturity and criminal sophistication to better inform juvenile transfer research, practice, and policy.

Primary Aims

Directly compare RSTI-measured developmental maturity (S–M scale) and criminal sophistication (CS scale) of justice-involved young adults and justice-involved youth (the latter derived from the RSTI's normative sample). These primary aims, however, were partially dependent on some of the exploratory aims of the current study.

Exploratory Aims

Develop and implement a reliable scoring method for the RSTI's S–M scale and CS scale using data derived from previously collected semi-structured interviews with justice-involved young adults and non-justice involved college students (aged 18 to 29). It was anticipated that the RSTI's S–M scale would be scored with adequate reliability among justice-involved and non-justice-involved young adults, as evidenced by good to excellent interrater agreement as measured by the intraclass correlation coefficient. It was also anticipated that the RSTI's supplemental CS scale would be scored with adequate reliability among justice-involved young adults.

The extent to which criminal sophistication could be reliably assessed among non-justice-involved young adults was exploratory due to uncertainty about the generalizability of this construct to a primarily non-offending population. We anticipated that the RSTI's CS supplemental scale could be scored with acceptable interrater reliability in this sample. However, comparative analyses utilizing the RSTI's CS scale with non-justice-involved young adults were

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

exploratory given uncertainty as to whether this construct could be meaningfully applied to and interpreted with this sample.

Study Hypotheses and Exploratory Comparisons

Hypotheses 1 and 2. Small sized, statistically significant differences would be observed between the average sophistication–maturity evidenced by justice-involved adolescents relative to justice-involved young adults. Specifically, justice-involved adolescents would demonstrate lower scores on the RSTI S–M scale and CS supplemental scale than justice-involved young adults.

Exploratory Contrasts 1 and 2. Compare the average sophistication–maturity evidenced by justice-involved adolescents relative to non-justice-involved young adults. Specifically, justice-involved adolescents’ scores on the RSTI S–M and CS scales vs. those of non-justice-involved young adults.

Exploratory Contrasts 3 and 4. Compare the average sophistication–maturity evidenced by non-justice-involved young adults relative to justice-involved young adults. Specifically, justice-involved young adults’ RSTI S–M and CS scale scores vs. those of non-justice-involved young adults.

Chapter 4: Method

Participants and Procedures

Data for the current study relied on preexisting data collected as part of a larger, repeated measures and longitudinal research project examining various topics related to correctional rehabilitation, including young adults’ sophistication–maturity. The original research study was approved by Montclair State University’s Institutional Review Board (IRB-FY16-17-519). The current study consisted of three primary conditions: (1) justice-involved young adults, (2) non-

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

justice-involved young adults, and (3) justice-involved adolescents derived from the RSTI normative sample.

The first condition consisted of justice-involved young adults ($N = 168$) who were recruited from a privately-operated reentry classification facility. Data collection began in May 2018 and proceeded until March 2020, at the outset of the COVID-19 pandemic. All newly admitted adult corrections clients, regardless of age or gender, were eligible for recruitment for participation related to other original study aims, so long as they were able to communicate in and read English. However, only young adult participants (aged < 30) contributed fully to an original study aim concerning sophistication–maturity. The data from these young adult participants was partially utilized for the current study.

In the original study, a stratified sampling approach for the sophistication–maturity study aim was employed, such that the ages of enrolled participants were monitored, and data collection for the sophistication–maturity aim was selectively discontinued once approximately 10 participants of each age within the 18 to 29 range had contributed complete data. To date, this has resulted in the following *ns* for each age between 18 and 29: age 18: 0; age 19: 3; age 20: 5; age 21: 10; age 22: 17; age 23: 15; age 24: 14; age 25: 23; age 26: 27; age 27: 23; age 28: 15; and age 29: 16.

Due to their incarcerated status, justice-involved participants were legally precluded from receiving compensation for their participation. After providing informed consent to participate, the justice-involved young adult participants were administered various measures pertinent to all the aims of the original research study, including the sophistication–maturity aim. Within approximately one week of completing initial study measures, justice-involved young adults were administered an adapted version (for young adults) of the S–M section of the RSTI semi-

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

structured interview booklet by trained research assistants (RAs). Interviews were conducted individually in a private room within the facility.

The second condition consisted of non-justice involved young adults ($N = 143$) who were a convenience sample of college students (both men and women) primarily enrolled in Introduction to Psychology and Introduction to Psychological Research courses at Montclair State University. Eligible participants aged 18 to 29 who could read and communicate in English were recruited via either the SONA subject pool system or through flyers/advertisements posted on campus research solicitation channels. Participants in the undergraduate research participant pool were compensated through standard research credit administered via the SONA system. Students recruited outside of the research pool were compensated with a \$10 Amazon gift card. The same stratified sampling procedure was utilized for the non-justice involved participants as the justice-involved young adults, resulting in the following age-specific *ns*: age 18: 25; age 19: 26; age 20: 23; age 21: 30; age 22: 10; age 23: 9; age 24: 6; age 25: 6; age 26: 2; age 27: 0; age 28: 0; and age 29: 2. After providing informed consent to participate, non-justice-involved participants completed several study measures on campus that were all connected to the original study's sophistication–maturity aim, including being administered the S–M section of the RSTI semi-structured interview booklet by trained RAs.

The third study condition consisted of justice-involved adolescents who completed the RSTI semi-structured interview as part of the tool's standardization. The RSTI's normative sample ($N = 591$) is comprised of justice-involved children and adolescents (aged 9–18) from five study sites. The sample includes detained and non-detained youth, youth who were transferred to adult court and those who were retained in juvenile court, youth adjudicated for violent and nonviolent offenses, and first-time and chronic delinquents (Salekin, 2004). The

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

normative sample consists of the following distinct age groups. Mean S–M scores are reported for each age group in the RSTI manual, which were utilized for all comparative analyses.

The RSTI manual does not report average CS supplemental rating scores for the normative youth sample, which prevented planned youth-adult comparisons on this construct. To address this gap, average CS supplemental scores for the justice-involved youth condition were derived from three peer-reviewed studies. Each of the studies utilized the RSTI S–M scale, and the accompanying CS supplemental scale, with justice-involved youth and reported associated means. In the first study—which contributed partial data to the RSTI’s normative sample—Leistico and Salekin (2003) examined CS supplemental scores among a sample of transferred ($n = 30$) and non-transferred ($n = 94$) adolescent males aged 12 to 17 years. In the second study, Iselin et al. (2009), examined CS supplemental scale scores among a sample of justice-involved males housed in a juvenile detention center ($n = 44$) and justice-involved young adults ($n = 41$) housed in a medium-security adult correctional facility. In the third study, Gillen et al. (2015) administered the RSTI-A, and the supplemental CS scale, to adjudicated boys and girls ($N = 63$) aged 13 to 18 years housed in a juvenile detention facility.

Power and Precision Planning

The originally intended sample size was 240, with 120 participants in each of the two conditions ($ns = 10$ for each age between 18 and 29), which was selected with a consideration of the practical constraints of collecting data within a justice setting. Prior to data collection for the original study, power analyses were conducted based on planned comparisons of the original study’s two young adult conditions ($ns = 120$) with the three subgroups from the RSTI normative sample (9 to 13 year olds: $n = 75$; 14 to 15 year olds: $n = 231$; and 16 to 18 year olds: $n = 285$). Using the projected sample size, the planned omnibus test would be sufficiently powered ($1-\beta =$

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

.80) to detect a small effect ($f = 0.12$) with 95% confidence. Using the smallest sample size ($N = 195$), planned posthoc contrasts would be adequately powered to detect a medium sized effect ($d = 0.37$) without correcting for multiple comparisons. The posthoc contrast with the largest sample size ($N = 405$) would be sufficiently powered to detect a small sized effect ($d = 0.27$). No interim or stopping rules were planned for the original study sample.

Additional precision analyses were also undertaken for the current study, for the planned posthoc contrasts used for power analysis in the original study—specifically, for the most conservative of those contrasts: justice-involved young adults ($n = 120$) vs. youth aged 9 to 13 ($n = 75$). Using even more conservative sample size approximations of $n = 87$ and $n = 64$ for both groups, the closest available sample size options in *Exploratory Software for Confidence Intervals (ESCI; Cummings & Calin-Jageman, 2017)*, precision analyses suggests that the 95% confidence interval around the effect size would be, on average, 0.35 or 0.30 in standard deviation units.

Measures

Demographic Questionnaire

A demographic questionnaire, partially adapted from the demographics form accompanying the Advanced Clinical Solutions Test of Premorbid Functioning (ACS TOPF; NCS Pearson, Inc., 2009), was developed as part of the original study. It collects information about participants' age, biological sex, race and ethnicity, marital status, socioeconomic status of neighborhood in which one grew up, socioeconomic status of most recent neighborhood in which one resided, quality of elementary education, criminal history, parental education and parental occupation. The non-justice-involved participants in the original study completed the same

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

demographics form as the justice-involved participants, except that the criminal history item was excluded.

Risk-Sophistication-Treatment Inventory (RSTI): Semi-Structured Interview Booklet

The RSTI (Salekin, 2004) is a semi-structured interview and rating scale used to assess justice-involved youth between the ages of 9 and 18 with respect to three transfer-relevant psycholegal factors: risk/dangerousness, sophistication–maturity, and treatment amenability. In the original study, justice-involved and non-justice-involved participants were administered the Developmental Maturity (Legal History and Criminal Involvement, Developmental Maturity) section from the RSTI semi-structured interview booklet, modified for experimental use with young adults. In accordance with the RSTI manual, interview data was compiled and scored to produce a total score for the individual’s sophistication–maturity.

In addition to yielding a total score, the 15-item RSTI S–M scale contains three content clusters—Autonomy (S-AUT), Cognitive Capacities (S-COG), and Emotional Maturity (S-EMO). S-AUT consists of four items which assess an examinee’s level of autonomy, internal locus of control, established self-concept, and self-reflection. The S-COG domain consists of six items which assess an examinee’s awareness of the wrongfulness of crime, understanding of behavioral norms, ability to identify alternative courses of action, foresight, ability to engage in cost–benefit analysis, and ability to anticipate consequences. Finally, S-EMO consists of five items which measure an examinee’s ability to delay gratification, moral development, self-regulatory capacities, conflict resolution skills, and interpersonal skills. Each item is rated on a 3-point scale ranging from 0 to 2 (0 = *absence of the characteristic/ability*, 1 = *subclinical/moderate*, 2 = *presence of the characteristic/ability*). Total raw scores can range from 0 to 30.

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

Of note, the S–M scale items are neither prosocial nor antisocial; thus, individuals scoring high on this scale can significantly differ in terms of their level of criminal sophistication. Therefore, the RSTI provides supplemental ratings of criminal sophistication to assess whether an examinee utilizes a particular skill or characteristic for antisocial purposes. The CS supplemental rating scale has demonstrated moderate interrater agreement as indicated by the intraclass correlation coefficient ($[ICC] = .60$; Leistico, 2002).

The RSTI has demonstrated adequate internal consistency (ranging from .78 to .83) and interrater reliability (ranging from .74 to .94). The S–M scale, specifically, has demonstrated acceptable internal consistency (Salekin, 2004), interrater reliability (Liestico, 2002), construct validity (Salekin, 2004), and ecological validity (Leistico, 2002; Leistico & Salekin, 2003; Zalot, 2002).

Given that the RSTI interview is semi-structured, it affords evaluators some flexibility to ask follow-up questions according to applicable probes and queries provided in the interview booklet in order to garner additional information or clarify discrepancies. In the original study, to ensure consistency across interviewers, graduate RAs were trained on RSTI administration and instructed to follow standardized probes. Training consisted of practicing administration with other trained RAs, observing a trained RA administer the interview to a participant, and being observed administering the interview by a trained RA. The S–M interview portion begins by asking participants to describe the circumstances pertaining to their most recent alleged offense. Justice-involved participants were asked to recount the offense which resulted in their current incarceration. Non-justice-involved participants were asked to describe previously unlawful behavior such as underage drinking or shoplifting. Participants who either did not admit to

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

engaging in previously unlawful before or disclosed relatively minor infractions, like exceeding the speed limit, were excluded, and their interviews were not scored.

Scoring. A primary aim of the current study was to develop a standardized and reliable scoring method for the RSTI S–M scale, including the CS supplemental rating scale, among justice-involved and non-justice-involved young adults. The established scoring method was informed by the RSTI manual, which provides a detailed explanation of each scale item and accompanying examples to facilitate scoring. Collateral information was not available to augment interview data. Thus, scoring was solely based upon information gathered during the interview.

One prior study assessing the CS supplemental scale with a youth sample found that the scale evidenced moderate interrater reliability, as assessed via an *ICC* (.60; Leistico, 2002). However, in a prior study using the S–M scale with young adults, also without collateral data, the results were indicative of poor reliability for the CS ratings (*ICC* = .45; Iselin et al., 2009). Salekin (2004) suggests that the CS supplemental scale obtains relatively lower *ICCs* than the RSTI’s other scales due to the inherent difficulty of measuring this construct. Thus, the current study sought to improve upon prior interrater reliability estimates by yielding good to excellent (*ICC* = .75 to .90) interrater agreement for both the RSTI S–M scale and CS supplemental scale.

The current study deviated from standardized RSTI administration procedures in two notable ways: (1) the semi-structured interview was slightly modified for use with young adults and (2) collateral information was not available to facilitate scoring. To account for these differences, and to enhance interrater reliability, the recommended scoring guidelines outlined in the RSTI manual were slightly modified for use in the current study. The modified scoring guide included simplified definitions of scale constructs, supplemental scoring rules and additional

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

examples for each scale item, and indicators of where to locate relevant responses in the interview booklet.

S–M items were scored based upon the 3-point scale (ranging from 0 to 2) described previously. As indicated in the RSTI manual, any S–M item scored 1 or higher warrants a consideration as to whether the individual *primarily* utilizes a particular skill or ability to engage in criminogenic behavior. To enhance interrater reliability given the complexity of scoring criminal sophistication without collateral information, including with a non-justice-involved sample, this scale was slightly modified for the current study. In the current study, any S–M item scored 1 or higher warranted a consideration as to whether the individual (1) utilized the skill to commit the *instant* offense (i.e., the offense which was the focus of the interview); 2) *chronically* utilized the skill for criminological purposes (which is most akin to the RSTI’s original criminal sophistication supplemental scale); and (3) *currently* utilized the skill for criminological purposes. Ratings for each of the three indicators (*instant*, *chronically*, and *currently*) were rated dichotomously as either present or absent. Supplemental scale items were scored independently and irrespectively of one another. For example, a participant could have received a score for *chronically* utilizing the skill in the commission of crime, though they did not utilize the skill to commit the *instant* offense and vice versa. Raters were trained to be conservative in their ratings; when there was evidence present both for and against the participant using the skill primarily for criminogenic purposes, raters scored the item as –99.

Five raters were trained on the scoring procedures outlined above. One of these raters was the first author while the others were masked to the current study hypotheses to reduce potential biases in scoring based on expected study outcomes. Given the nature of the interview, raters were not masked to study condition; however, raters were generally masked to

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

participants' race, gender, and age. All the justice-involved interviews were independently scored by each of the five raters, and each participant was given an ultimate consensus-based score for the S–M and CS supplemental scales. Three of the original raters, including the first author, were retained to score the non-justice-involved interviews. The decision to reduce the number of raters from five to three was based on logistics. The number of raters is consistent with general interpretive suggestions for *ICCs* (Koo & Li, 2015).

After training, raters independently scored a random sample of four justice-involved interviews. Raters took detailed notes with accompanying examples from the interview to support their scores and facilitate consensus meetings. Following independent scoring, a consensus meeting was held, and raters' scores were reviewed. Discrepancies among raters were resolved through consensus. The scoring guide was also modified to clarify confusion when warranted. Decisions to modify scoring procedures were also based upon consensus. Thereafter, raters independently scored approximately four to eight interviews, weekly, and met regularly for consensus meetings. Planned interim *ICC* analyses were conducted after approximately a third of interviews were scored to monitor interrater agreement. The scoring guide was reviewed and modified to resolve discrepancies and enhance reliability when warranted.

The scoring guide, which was first developed for use with the justice-involved young adult sample, was slightly adapted for use with the non-justice-involved young adult sample to account for idiosyncrasies between the two conditions. All non-justice-involved interviews were scored in the same manner described above and resolved through consensus. In sum, each interview for the non-justice-involved young adult sample was independently scored by each of the three raters, and each participant was given an ultimate consensus-based score for the S–M and CS supplemental scales.

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

Posthoc Scales. Due to the complexity of rating CS in lieu of collateral data, three distinct posthoc CS supplemental scales were created after interview scoring but prior to data analyses. Planned analyses were conducted and reported for all posthoc scales when applicable, and any similarities or differences in results are reported.

Because raters were trained to score CS supplemental items conservatively, there was a high degree of missing data (e.g., –99s) for the justice-involved young adult sample. Scores of –99 generally reflected uncertainty in raters' scores due to the lack of corroborating collateral information, rather than true missing data. To resolve this issue, scores were recoded; original scores of 1 were transformed to scores of 2 (e.g., *strong or convincing evidence the individual used the skill criminogenically*), original scores of –99 were transformed to scores of 1 (e.g., *the presence of some information that suggests the individual used the skill criminogenically, but information is too insufficient or unclear to justify a score of 2*), and scores of 0 remained 0 (e.g., *none or very little evidence that the individual used the skill criminogenically*). Thus, for each of the 15 S–M items, participants could have received scores ranging from 0–2 on each of the three CS indicators (i.e., *instant*, *chronically*, and *currently*).

A posthoc, aggregate CS scale was then created (hereafter referred to as the *aggregate CS scale*), which represented the extent to which the participant utilized their S–M in the commission of the instant offense, chronically, and currently to engage in criminogenic behavior. This scale was created by summing all scores for the *instant*, *chronically*, and *currently* scales and could range from 0 to 90. Because this scale was uniquely developed for the current study, it was only planned to be used in analyses comparing CS between justice-involved and non-justice-involved young adults.

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

A second, posthoc CS scale was also created in order to replicate the CS supplemental scale described in prior research (hereafter referred to as the *supplemental CS scale*). This scale represented the sum of S–M item scores for only those skills that were identified as being used to *chronically* engage in criminogenic behavior and could range from 0 to 30. This scale was created using the recoded variables (e.g., –99 recoded to 1) described previously. This scale best aligned with the RSTI’s CS supplemental scale, which assesses the extent to which the examinee *primarily* uses their S–M skills criminogenically. This scale was planned to be utilized to compare CS scores among the two young adult conditions and justice-involved youth derived from prior research (Gillen et al., 2015; Iselin et al., 2009; Leistico & Salekin, 2003).

A third, and more conservative, posthoc CS supplemental scale (hereafter referred to as the *instant offense CS scale*) was also created by excluding scores that were originally coded as –99. Due to the high degree of –99s for the *chronic* scale among the justice-involved young adult sample, only those skills that the participant utilized in the *instant* offense were included. In sum, this scale represented the sum of S–M item scores for only those skills that were identified as being used in the *instant* offense and could range from 0 to 30. This scale was also planned to be utilized to compare CS scores among the two young adult conditions and justice-involved youth derived from prior research (Gillen et al., 2015; Iselin et al., 2009; Leistico & Salekin, 2003).

Measures Included in the Original Study that are Not a Primary Focus of the Current Study

As part of the original study, justice-involved participants also completed proprietary or experimental measures of person-first or condition-first language preferences for justice-involved persons (Language Preferences Questionnaire); cognitive functioning (Advanced Clinical Solutions Test of Premorbid Functioning [ACS TOPF; NCS Pearson, Inc., 2009]); response style (Paulhus Deception Scale [PDS; Paulhus, 1998]); criminogenic risk, maturity, and

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

treatment amenability (Risk-Sophistication-Treatment Inventory–Self-Report [RSTI-SR; Salekin, 2010]); and criminogenic risk and needs (Inventory of Offender Risk, Needs, and Strengths [IORNS; Miller, 2006], Self-Appraisal of Risk and Needs [SARAN; King, 2016], Self-Appraisal Questionnaire [SAQ; Loza, 2005]). They were also administered an evaluator-scored criminogenic risk and needs assessment tool (Level of Service/Case Management [LS/CMI; Andrews et al., 2004]) by correctional facility staff, with the results of the LS/CMI administrations being extracted from facility records for use in the original research study. These measures were not analyzed for the current study.

The non-justice-involved participants in the original study were only administered some of the measures administered to the justice-involved participants. Namely, the Language Preferences Questionnaire, ACS TOPF, PDS, and RSTI-SR.

Data Analysis Plan

Data were analyzed with IBM Statistics for Mac, version 29. For participants with partial missing data, cases were excluded listwise per analysis. Assumption tests were conducted prior to all analyses (e.g., normality, homogeneity of variance). All assumption violations, including non-parametric alternative tests, were reported when applicable.

Multiple planned significant difference tests were utilized in the current study. Thus, correcting for experiment-wise error through use of a Bonferroni correction was considered. However, the current study was a pilot study assessing the feasibility and utility of administering and scoring the RSTI's S–M scale and CS supplemental scale with a novel young adult sample. While a Bonferroni correction is an effective method for reducing risk for Type I error given multiple comparisons, there is a tradeoff in reductions to statistical power and, in turn, increased risk of committing Type II errors (Moran, 2003). Ultimately, the current study was partially

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

exploratory as to whether the RSTI could be utilized and reliably scored with young adults in order to establish an empirical foundation for future replication studies. Thus, an exploratory approach was utilized for interpreting significance levels as opposed to an approach to decrease risk of Type I error. Moreover, the magnitude, precision, and practical significance of study findings, in terms of effect sizes and confidence intervals, were deemed more informative for interpretation than specific p -value cutoffs (Moran, 2003).

Descriptives

Descriptive statistics (e.g., means, standard deviations, frequency counts) are reported for all study variables when applicable. Namely, demographic variables, the RSTI S–M scale, and the various CS supplemental scales. Descriptive statistics for all outcome variables are provided in Table 1.

Interrater Reliability

Interrater reliability was assessed using the intraclass correlation coefficient (ICC). Given that the same set of raters was used to rate all interviews within each condition, a two-way random-effects model was utilized, and the selected form type was single measurement. That is, $ICC(2,1)$: each participant was assessed by each rater and reliability was calculated from a single measurement. The random-effects model is most appropriate when researchers aim to generalize their reliability results to raters that come from a similar population and have similar characteristics (Koo & Li, 2016) and was the same method utilized to assess interrater reliability in the RSTI manual (Salekin, 2004). Estimates were based on absolute agreement (as opposed to consistency) amongst raters, which is defined as different raters assigning the same score to the same participant. $ICCs$ range from 0 to 1. Values less than .50 are indicative of poor reliability; values between .50 and .75 are indicative of moderate reliability; values between .75 and .90 are

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

indicative of good reliability; and values exceeding .90 are indicative of excellent reliability (Koo & Li, 2016).

Group Comparisons

One-sample *t*-tests were used to compare mean S–M scores among the two young adult conditions and the three youth subgroups from the RSTI’s normative sample (e.g., 9 to 13 year olds, 14 to 15 year olds, and 16 to 18 year olds). One-sample *t*-tests were also used to compare mean CS supplemental scale scores among the two young adult conditions and justice-involved youth derived from Leistico and Salekin (2003), Iselin et al. (2009), and Gillen et al. (2015). Independent samples *t*-tests were conducted to compare mean S–M scale scores and CS supplemental scale scores between the two young adult conditions. Effect sizes and their 95% confidence intervals are reported for all group comparisons and are provided in Table 1.

Chapter 5: Results

Sample Characteristics

Justice-Involved Young Adults

The justice-involved young adult sample consisted of 168 participants, 102 of whom completed the RSTI interview. Justice-involved young adults were predominantly male (92.1%), identified as Black or African American (58.4%), and had an average age of 25.03 (*SD* = 2.75, *Range* = 19–29). At the time of analysis, *ns* for each age between 18 and 29 were: age 18: 0; age 19: 3; age 20: 3; age 21: 7; age 22: 9; age 23: 8; age 24: 11; age 25: 11; age 26: 15; age 27: 14; age 28: 10; and age 29: 11. Most participants reported having a high school diploma (39.6%) or equivalent (17.8%). Approximately half of participants described their community while growing up as “poor” or “somewhat poor” (49.5%). Most participants were charged with weapons (41.6%) and drug- or alcohol-related offenses (30.7%).

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

Average evaluator-rated S–M, based on consensus scores, was 20.86 ($SD = 4.93$, $Range = 9–30$). Average *aggregate CS* was 29.64 ($SD = 13.60$, $Range = 0–68$), which was based on the posthoc scale encompassing the extent to which the participant utilized their S–M in the commission of the instant offense and chronically or currently to engage in criminal behavior. Average *supplemental CS*—which was the sum of S–M item scores for only those skills that were identified as being used to *chronically* engage in criminogenic behavior—was 10.68 ($SD = 6.96$, $Range = 0–28$). Average *instant offense CS*—which was the sum of S–M item scores for only those skills that were identified as being used to engage in the *instant* offense—was 11.57 ($SD = 4.88$, $Range = 0–23$). Age was not significantly correlated with S–M ($r = .11$, $p = .28$), aggregate CS ($r = -.01$, $p = .94$), supplemental CS ($r = .02$, $p = .87$), nor instant offense CS ($r = -.14$, $p = .26$).

Non-Justice-Involved Young Adults

The non-justice-involved young adult sample consisted of 143 participants, 103 of whom provided complete responses to the RSTI interview and met inclusion criteria based on their self-reported unlawful behavior. Non-justice-involved young adults were predominantly female (61.2%), identified as White (49.5%), and had an average age of 20.65 ($SD = 2.05$, $Range = 18–26$). To date, *ns* for each age between 18 and 29 are: age 18: 14; age 19: 19; age 20: 19; age 21: 21; age 22: 8; age 23: 7; age 24: 4; age 25: 5; age 26: 2; age 27: 0; age 28: 0; and age 29: 0. Most participants had accumulated two or more years of college experience (50.5%). Over half of the sample described their community while growing up as “average” (57.3%). Most participants self-reported to having engaged in drug- or alcohol-related offenses (85.4%), primarily underage drinking and marijuana use.

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

Average evaluator-rated S–M, based on consensus scores, was 20.81 ($SD = 4.16$, $Range = 11–29$). Average aggregate CS was 13.51 ($SD = 7.12$, $Range = 0–54$), average supplemental CS was 0.73 ($SD = 2.53$, $Range = 0–14$), and average instant offense CS was 9.38 ($SD = 2.94$, $Range = 0–17$). Age was not significantly correlated with S–M ($r = .07$, $p = .49$), aggregate CS ($r = .04$, $p = .67$), supplemental CS ($r = .10$, $p = .35$), nor instant offense CS ($r = .01$, $p = .90$).

Justice-Involved Youth

The RSTI's normative sample ($N = 591$) is comprised of justice-involved children and adolescents (aged 9–18) from five study sites. The sample included detained and non-detained youth, youth who were transferred to adult court and those who were retained in juvenile court, youth adjudicated for violent and nonviolent offenses, and first-time and chronic delinquents (Salekin, 2004). The normative sample consisted of the following distinct age groups: 9 to 13 year olds ($n = 75$), 14 to 15 year olds ($n = 231$), and 16 to 18 year olds ($n = 285$).

The 9 to 13 year old sample was 74.7% male. Average S–M for males was 10.2 ($SD = 5.0$) and 12.2 ($SD = 3.8$) for females (aggregate $M = 11.20$, $SD = 4.40$). The 14 to 15 year old sample was 80.1% male. Average S–M for males was 10.8 ($SD = 8.2$) and 12.7 ($SD = 4.0$) for females (aggregate $M = 11.75$, $SD = 4.10$). The 16 to 18 year old sample was 81.4% male. Average S–M for males was 11.1 ($SD = 4.3$) and 12.4 ($SD = 4.5$) for females (aggregate $M = 11.75$, $SD = 4.40$). The normative sample, encompassing all three age groups, was 80.0% male, and 52.2% of youth identified as Black or African American. Average S–M across all three age groups and gender was 11.57 ($SD = 4.30$).

There were no statistically significant differences found among S–M scores across the three adolescent age groups comprising the RSTI's normative sample; however, statistically significant differences were observed between male and female youth (Salekin, 2004). Because

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

the justice-involved young adult sample was predominantly male (92.08%), mean differences based on gender were not analyzed in the current study. To account for this difference, aggregate means for male and female youth within each age condition were utilized for all one-sample *t*-test analyses.

Interrater Reliability

To examine interrater reliability, *ICCs* and their 95% confidence intervals were calculated based on a two-way random effects model using a single measurement (*ICC* 2, 1) and based on absolute agreement among raters. Interrater reliability for the RSTI S–M scale for the justice-involved young adult sample was .78 (.72 to .84), which is indicative of good reliability. Interrater reliability for the RSTI S–M scale for the non-justice-involved young adult sample was .71 (.63 to .79), which is indicative of moderate reliability.

Interrater reliability for the aggregate CS scale was .59 [.46 to .70] for the justice-involved young adult sample, which is indicative of moderate reliability. Interrater reliability for the supplemental CS and instant offense CS scales among the justice-involved young adult sample were .59 [.49 to .69] and .68 [.52 to .81], respectively. These coefficients are indicative of moderate reliability. Interrater reliability was also analyzed for each of the three indicators (i.e., *instant*, *chronically*, and *currently*) for the justice-involved sample (using the recoded scales). Interrater reliability was .48 [.36 to .58], .62 [.51 to .72], and .55 [.50 to .64] for the instant, chronically, and currently indicators, respectively, for the justice-involved young adult sample. These *ICCs* range from poor to moderate.

Exploratory Reliability for the CS Scales Among Non-Justice-Involved Young Adults

The extent to which criminal sophistication could be reliably assessed with, and meaningfully applied to, a non-justice-involved population was examined on an exploratory

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

basis. This was due to the inherent uncertainty about the generalizability of this construct to a primarily non-offending sample in the absence of corroborating data. Interrater reliability for the aggregate CS scale was .33 [.20 to .45] for the non-justice-involved young adult sample, which is indicative of poor reliability. Interrater reliability for the supplemental CS scale could not be assessed among the non-justice-involved young adult sample due to limited variability among raters' scores. The supplemental CS scale demonstrated a substantial floor effect, with over 90% of participants receiving a score of 0 on this scale. However, these results should be interpreted with caution. While these data may suggest that non-justice-involved young adults do not primarily utilize their maturity to advance their antisocial conduct, these low scores could also be attributed to their lack of self-reported offending more broadly. Moreover, collateral data was not available to corroborate participants' self-report. The extent to which the offense they disclosed in the interview actually represented their most significant or most recent criminal conduct is unknown. These data were interpreted as indicating that these measures of criminal sophistication could not be reliably scored with a primarily non-offending sample, and thus the scores were invalid and uninterpretable.

More variability was observed among raters' scores for the instant offense CS scale. Interrater reliability for this scale was .57 [.46 to .67], which is indicative of moderate reliability. Owing to the still modest reliability of the criminal sophistication construct measured this way among the non-justice-involved sample, analyses using this scale were included for exploratory purposes only. Substantial caution is warranted when interpreting CS results for the non-justice-involved sample due to the overall low reliability of this construct, variously scored, and the lack of collateral and historical data to corroborate participants' self-reports.

Group Comparisons

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

Table 1 provides a summary of descriptive statistics for all outcome variables.

Summaries of significance difference testing, including effect sizes and confidence intervals, are also reflected therein.

Developmental Maturity

Justice-involved young adults vs. justice-involved youth. There were no outliers among S–M scores for the justice-involved young adult sample, as assessed by inspection of a boxplot; however, S–M scores among the justice-involved young adult sample were not normally distributed, as assessed by the Shapiro-Wilk’s test ($p < .05$) and inspection of a Q-Q plot. Values of skewness and kurtosis were also examined ($S = -.39$, $SE = .24$; $K = -.57$, $SE = .48$), neither of which were statistically significant as determined by dividing skewness and kurtosis values by their standard errors (Field, 2018). The non-parametric alternative, the one-sample Wilcoxon signed-range test, which uses the median score rather than the mean score, could not be utilized because median S–M scores are not reported in the RSTI manual. However, the one-sample t -test is fairly robust to violations of normality especially as it relates to Type 1 error (Field, 2018; Laerd Statistics, 2015); therefore, the one-sample t -test was utilized for all S–M comparisons utilizing the justice-involved young adult sample, despite violating the assumption of normality.

Three discrete one-sample t -tests revealed that the average S–M of justice-involved young adults ($M = 20.86$, $SD = 4.93$) was significantly greater than the average S–M of justice-involved youth aged 9 to 13 years ($M = 11.20$, $SD = 4.40$, $t(100) = 19.71$, $p < .001$, $d = 1.96$, 95% CI [1.63, 2.30]), justice-involved youth aged 14 to 15 years ($M = 11.75$, $SD = 4.10$, $t(100) = 18.59$, $p < .001$, $d = 1.85$, 95% CI [1.53, 2.17]), and justice-involved youth aged 16 to 18 years ($M = 11.75$, $SD = 4.40$, $t(100) = 18.59$, $p < .001$, $d = 1.85$, 95% CI [1.53, 2.17]). A one-sample t -

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

test also revealed that the average S–M of justice-involved young adults ($M = 20.86$, $SD = 4.93$) was significantly greater than the average S–M of justice-involved youth across all age categories (aggregate $M = 11.57$, $SD = 4.30$, $t(100) = 18.96$, $p < .001$, $d = 1.89$, 95% CI [1.56, 2.21]).

Non-justice-involved young adults vs. justice-involved youth. There were no outliers among S–M scores for the non-justice-involved young adult sample, as assessed by inspection of a boxplot. Non-justice-involved young adults' S–M scores were normally distributed, as assessed by the Shapiro-Wilk's test ($p > .05$) and inspection of a Q-Q plot. Values of skewness and kurtosis were also examined ($S = -.35$, $SE = .24$; $K = -.51$, $SE = .48$), neither of which were statistically significant. Three discrete one-sample t -tests revealed that average S–M of non-justice-involved young adults ($M = 20.81$, $SD = 4.16$) was significantly greater than average S–M of justice-involved youth aged 9 to 13 years ($M = 11.20$, $SD = 4.40$, $t(102) = 23.42$, $p < .001$, $d = 2.31$, 95% CI [1.93, 2.68]), justice-involved youth aged 14 to 15 years ($M = 11.75$, $SD = 4.10$, $t(102) = 22.08$, $p < .001$, $d = 2.18$, 95% CI [1.81, 2.53]), and justice-involved youth aged 16 to 18 years ($M = 11.75$, $SD = 4.40$, $t(102) = 22.08$, $p < .001$, $d = 2.18$, 95% CI [1.81, 2.53]). A one-sample t -test also revealed that average S–M of non-justice-involved young adults ($M = 20.81$, $SD = 4.16$) was significantly greater than average S–M of justice-involved youth across all age categories (aggregate $M = 11.57$, $SD = 4.30$, $t(102) = 22.51$, $p < .001$, $d = 2.22$, 95% CI [1.85, 2.58]).

Justice-involved young adults vs. non-justice-involved young adults. An independent-samples t -test was conducted to determine if there were significant differences in mean S–M scores between justice-involved and non-justice-involved young adults. There was homogeneity of variances, as assessed by Levene's test for equality of variances ($p = .103$). Mean S–M scores

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

did not significantly differ between justice-involved young adults ($M = 20.86$, $SD = 4.93$) and non-justice-involved young adults ($M = 20.81$, $SD = 4.12$), $t(202) = .089$, $p = .931$, $d = -0.01$, 95% CI $[-0.29, 0.26]$). The non-parametric alternative, the Mann-Whitney U Test, was also conducted to account for violations of normality among the justice-involved young adult sample. S–M median scores did not significantly differ between justice-involved young adults ($Mdn = 22.00$) and non-justice-involved young adults ($Mdn = 21.00$), $U = 5073.50$, $z = -.304$, $p = .761$.

Exploratory analyses were also conducted comparing average scores across the three S–M facets scores—*autonomy*, *cognitive capacities*, and *emotional maturity*—between the two young adult conditions. Because these analyses were exploratory, no *a priori* hypotheses were established prior to data analysis. Justice-involved young adults exhibited significantly higher levels of autonomy ($M = 6.40$, $SD = 1.34$) than non-justice-involved young adults ($M = 5.56$, $SD = 1.51$), $t(203) = 4.22$, $p < .001$, $d = 0.59$, 95% CI $[0.31, 0.87]$). Justice-involved young adults did not differ from non-justice-involved young adults in their average scores on the cognitive capacities subscale ($M = 7.78$, $SD = 2.55$; $M = 8.19$, $SD = 2.02$; $t(191.84) = -1.28$, $p = .102$, $d = -0.18$, 95% CI $[-0.45, 0.10]$) nor their average scores on the emotional maturity subscale ($M = 6.69$, $SD = 2.12$; $M = 7.05$, $SD = 1.81$; $t(195.77) = -1.28$, $p = .100$, $d = -0.18$, 95% CI $[-0.46, 0.10]$).

Criminal Sophistication

Justice-involved young adults vs. justice-involved youth. There were no outliers among supplemental CS scores for the justice-involved young adult sample. Supplemental CS scores were not normally distributed as assessed by the Shapiro-Wilk's test ($p < .05$) and inspection of a Q-Q plot. Values of skewness and kurtosis were also examined ($S = -.25$, $SE = .24$; $K = -.86$, $SE = .48$), neither of which were statistically significant. Inspection of a histogram

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

and frequency table indicated that supplemental CS scores were normally distributed, except for 22% of scores which were 0, causing a spike in the left tail of the distribution. There were no outliers among instant offense CS scores, and scores were normally distributed as assessed by the Shapiro-Wilk's test ($p > .05$) and inspection of a Q-Q plot. Values of skewness and kurtosis were also examined ($S = .06$, $SE = .30$; $K = -.14$, $SE = .60$), neither of which were statistically significant.

Differences between average supplemental CS scores among justice-involved young adults and justice-involved youth were first assessed using mean scores derived from Leistico and Salekin (2003). Three discrete one-sample t -tests revealed that average *supplemental CS* of justice-involved young adults ($M = 10.68$, $SD = 6.96$) was significantly greater than average CS among youth transferred to criminal court ($M = 8.50$, $SD = 4.07$, $t(101) = 3.16$, $p = .002$, $d = 0.31$, 95% CI [0.11, 0.51]); youth retained in the juvenile justice system ($M = 5.84$, $SD = 3.04$, $t(101) = 7.02$, $p < .001$, $d = 0.70$, 95% CI [0.48-0.91]); and youth across both conditions (aggregate $M = 7.17$, $SD = 3.56$, $t(101) = 5.09$, $p < .001$, $d = 0.50$, 95% CI [0.30, 0.71]). Three discrete one-sample t -tests were also conducted using the more conservative instant offense CS scale. Justice-involved young adults exhibited significantly greater mean levels of CS ($M = 11.57$, $SD = 4.88$) than youth transferred to criminal court ($M = 8.50$, $SD = 4.07$, $t(62) = 4.99$, $p < .001$, $d = 0.63$, 95% CI [0.36, 0.90]); youth retained in the juvenile system ($M = 5.84$, $SD = 3.04$, $t(62) = 9.31$, $p < .001$, $d = 1.17$, 95% CI [0.85, 1.49]); and youth across both conditions (aggregate $M = 7.17$, $SD = 3.56$, $t(62) = 7.15$, $p < .001$, $d = 0.90$, 95% CI [0.61, 1.19]).

Differences between average supplemental CS among justice-involved young adults and justice-involved youth were also assessed using mean scores derived from Iselin et al. (2009). A one-sample t -test revealed that average supplemental CS scores of justice-involved young adults

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

($M = 10.68$, $SD = 6.96$) were significantly higher than average CS among detained youth in this sample ($M = 2.98$, $SD = 2.92$, $t(101) = 11.17$, $p < .001$, $d = 1.11$, 95% CI [0.86, 1.35]). A one-sample t -test also revealed that average instant offense CS scores of justice-involved young adults ($M = 11.57$, $SD = 4.88$) were significantly higher than average CS among detained youth in this sample ($M = 2.98$, $SD = 2.92$, $t(62) = 13.96$, $p < .001$, $d = 1.76$, 95% CI [1.36, 2.15]).

Finally, differences between average supplemental CS among justice-involved young adults and justice-involved youth were assessed using mean scores derived from Gillen et al. (2015). A one-sample t -test revealed that average supplemental CS scores of justice-involved young adults ($M = 10.68$, $SD = 6.96$) were significantly higher than average CS among youth in this sample ($M = 7.14$, $SD = 4.30$, $t(101) = 5.13$, $p < .001$, $d = 0.50$, 95% CI [0.30, 0.71]). A one-sample t -test also revealed that average instant offense CS scores of justice-involved young adults ($M = 11.57$, $SD = 4.88$) were significantly higher than average CS among youth in this sample ($M = 7.14$, $SD = 4.30$, $t(62) = 7.20$, $p < .001$, $d = 0.91$, 95% CI [0.61, 1.20]).

Non-justice-involved young adults vs. justice-involved youth. As mentioned previously, the supplemental CS scale among the non-justice-involved young adult sample demonstrated a substantial floor effect, with over 90% of participants receiving a score of 0 on this scale. The 9 participants who attained scores higher than 0 were considered outliers. This indicated that nearly all non-justice-involved young adult participants were rated as not having utilized their S–M to chronically engage in criminal behavior. Due to the lack of variability among supplemental CS scores, as well as a lack of collateral information to corroborate participants' self-report, this approach to scale scoring was deemed unreliable and invalid, and not suitable for further analysis. There was greater variability in instant offense CS scores for the non-justice-involved young adult sample. There were no outliers among instant offense CS

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

scores and scores were normally distributed as assessed by the Shapiro-Wilk's test ($p > .05$) and inspection of a Q-Q plot. Values of skewness and kurtosis were also examined ($S = -.12$, $SE = .24$; $K = -.61$, $SE = .48$), neither of which were statistically significant. The instant offense CS scale was utilized for all comparative analyses between non-justice-involved young adults and justice-involved youth. Nevertheless, such analyses were exploratory given the overall poor reliability of the criminal sophistication construct, variously scored, among the non-justice-involved sample.

Differences between average CS of non-justice-involved young adults and justice-involved youth were first assessed using mean scores derived from Leistico and Salekin (2003). Three discrete one-sample t -tests revealed that average CS of non-justice-involved young adults ($M = 9.38$, $SD = 2.94$) was significantly higher than average CS among youth transferred to criminal court ($M = 8.50$, $SD = 4.07$, $t(99) = 2.20$, $p = .002$, $d = 0.22$, 95% CI [0.02, 0.42]); youth retained in the juvenile system ($M = 5.84$, $SD = 3.04$, $t(99) = 12.06$, $p < .001$, $d = 1.21$, 95% CI [0.95, 1.46]); and youth across both conditions (aggregate $M = 7.17$, $SD = 3.56$, $t(99) = 7.53$, $p < .001$, $d = 0.75$, 95% CI [0.53, 0.97]).

Differences between average CS supplemental scores among non-justice-involved young adults and justice-involved youth were also assessed using mean scores derived from Iselin et al. (2009). A one-sample t -test revealed that average CS scores of non-justice-involved young adults ($M = 9.38$, $SD = 2.94$) were significantly higher than average CS among the detained youth sample ($M = 2.98$, $SD = 2.92$, $t(99) = 21.80$, $p < .001$, $d = 2.18$, 95% CI [1.18, 1.82]).

Finally, differences between average CS supplemental scores among non-justice-involved young adults and justice-involved youth were assessed using mean scores derived from Gillen et al. (2015). A one-sample t -test revealed that average CS of non-justice-involved young

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

adults ($M = 9.38$, $SD = 2.94$) was significantly higher than average CS among youth in this sample ($M = 7.14$, $SD = 4.30$, $t(99) = 7.63$, $p < .001$, $d = 0.76$, 95% CI [0.54, 0.98]).

Justice-involved young adults vs. non-justice-involved young adults.

As mentioned previously, for the non-justice-involved sample, the supplemental CS scale demonstrated a substantial floor effect and so was not utilized in analyses. Rather, the instant offense CS scale was used to compare CS supplemental scores between justice-involved young adults and non-justice-involved adults. An independent samples t -test was conducted to determine if there were significant differences between mean instant offense CS scores among justice-involved and non-justice-involved young adults. Homogeneity of variances was not evident, as assessed by Levene's test for equality of variances ($p < .001$). Welch's t -test was therefore used. Justice-involved young adults exhibited significantly higher levels of instant offense CS ($M = 11.57$, $SD = 4.88$) than did non-justice-involved young adults ($M = 9.38$, $SD = 2.94$, $t(90.50) = 3.21$, $p < .001$, $d = 0.67$, 95% CI [0.25, 0.90]).

Chapter 6: Discussion

The primary aims of the current study were to utilize the RSTI to compare S–M and CS scores among justice-involved young adults and justice-involved youth—the latter derived from the RSTI's normative sample. The exploratory aims were to develop and implement a reliable scoring method for semi-structured interview data for the RSTI's S–M scale and CS supplemental scale, previously collected from justice-involved young adults and non-justice-involved college students. It was hypothesized that small sized, statistically significant differences would be observed between the average sophistication–maturity of justice-involved adolescents relative to justice-involved young adults. Specifically, justice-involved youth were expected to demonstrate lower scores on the RSTI S–M scale (Hypothesis 1) and CS

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

supplemental scale (Hypothesis 2) than justice-involved young adults. All comparisons involving non-justice-involved young adults S–M and CS scale scores were exploratory (Exploratory Contrasts 1 through 4). As the primary aims were dependent on some of the exploratory aims, findings about the latter are summarized first below.

Exploratory Aims

RSTI S–M scale scores for the justice-involved young adult sample demonstrated good interrater reliability ($ICC = .78$) as assessed via the intraclass correlation coefficient. The ICC obtained in the current study is comparable to those obtained for the RSTI's normative sample ($Range = .73$ to $.82$). The interrater reliability coefficient for RSTI S–M scores for the non-justice-involved young adult sample was slightly lower ($ICC = .71$), though still in the moderate range. These results are promising and indicate that a slightly adapted version of the S–M portion of the RSTI semi-structured interview was able to be scored with adequate reliability in a research context with justice-involved and non-justice-involved young adults, even without collateral data.

Interrater reliability estimates for the various CS supplemental scales varied. Interrater reliability coefficients for the aggregate CS scale ($ICC = .59$) and the supplemental CS scale ($ICC = .59$) were in the moderate range for the justice-involved young adult condition. These coefficients were slightly lower than the $ICCs$ obtained for the RSTI's normative sample ($Range = .60$ to $.70$) and those obtained by Gillen et al. (2015; $ICC = .61$) and Leistico and Salekin (2003; $ICC = .60$). However, the interrater reliability coefficients obtained in the current study are higher than those achieved in the only other study to examine RSTI-measured CS among justice-involved young adults, also without using collateral data (Iselin et al. 2009; $ICC = .45$). Of note, interrater reliability coefficients across these various studies should be compared and

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

interpreted with some caution. The current study developed a novel scoring procedure to assess criminal sophistication given the complexity of scoring this construct without collateral data. Posthoc scales were then created as a best approximation rather than a one-to-one replication of the CS supplemental scale as outlined in the RSTI manual. These modifications to scoring procedures evidenced the inherent complexity of assessing criminal sophistication in a research context and pointed to the need for future efforts to develop more reliable methods to score this elusive construct.

The interrater reliability coefficient for the *aggregate CS* scale for the non-justice-involved young adult sample was poor ($ICC = .33$). As noted previously, over 90% of the sample received a score of 0 for *chronically* or *currently* utilizing their S–M to advance their antisocial conduct. This resulted in little variation among scores, which negatively impacted interrater reliability estimates for the various CS supplemental scales, making this scale unusable and uninterpretable. More variability was observed among the *instant offense CS* scale for the non-justice-involved young adult sample. The interrater reliability coefficient for this scale was in the moderate range ($ICC = .57$) and comparable to the ICC obtained for the justice-involved young adult condition.

The current study examined whether criminal sophistication could be reliably assessed in a non-justice-involved sample who reported engaging in relatively minor illicit conduct. Because the construct of criminal sophistication is definitionally linked to offending, one may anticipate that this construct cannot be reliably and validly extended to a non-justice-involved population. Accordingly, efforts to score this complex construct with the non-justice-involved sample proceeded in the current study an exploratory basis.

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

Though the current study yielded reliable data to suggest that non-justice-involved young adults applied their S–M skills to commit their index offense, the extent to which this sample utilized their maturity to primarily engage in criminogenic behavior beyond the index offense they disclosed was deemed unreliable. It is important to highlight that barring a sophisticated sampling approach, which was not utilized in the current study, the notable difference among the non-justice-involved sample in terms of their demographic composition, nature and quality of their offense types, and the lack of collateral data available to corroborate their self-report, likely collectively contributed to the unreliable results. Accordingly, the current results concerning criminal sophistication for the non-justice-involved sample need be interpreted with significant caution. Future researchers are urged to be thoughtful—especially about sampling—in planning investigations of criminal sophistication with non-justice-involved persons, toward enhancing the interpretability of results.

Obtaining interrater reliability estimates in the moderate range for the various CS supplemental scales for the justice-involved young adult sample was encouraging given the difficulty of scoring this scale without collateral information, with a novel young adult sample, and with the various experimental scoring methods utilized. These estimates were roughly consistent with prior research, which also did not utilize collateral information to facilitate scoring, while continuing to shed light on the inherent complexity of assessing this construct in a research context. In the RSTI manual, Salekin (2004) noted the following:

The ICCs for the CS supplemental ratings were relatively lower [than those obtained for the S-M scale], probably because this was a difficult and elusive construct for the clinicians to define given the lack of knowledge about this concept. However, as

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

knowledge accumulates from a variety of subfields of psychology and these constructs are tested over time, it is anticipated that the ICCs will increase. (p. 71)

Unfortunately, little progress has been made in advancing knowledge about the criminal sophistication construct mentioned in *Kent* in the 20 years since the RSTI was developed.

Moreover, the current study is only the second to attempt to reliably score this construct with a young adult sample. Thus, there are ample opportunities for future research to further refine the construct of criminal sophistication and its measure to aid clinical practice.

Hypotheses 1 and 2

Justice-involved young adults exhibited significantly higher average S–M than did justice-involved youth across all age categories. The magnitude of this effect was large: the mean difference between average S–M of justice-involved youth and young adults was 9.30 (95% CI [8.32, 10.26]). In more practical terms, the average S–M scale score for justice-involved young adults (20.86) translates to 70% of the possible max score on the scale (30); whereas youths' average score of 11.57 translates to 39%.

Criminal sophistication was assessed by summing S–M items scores for only those skills that were identified as being used to chronically engage in criminogenic behavior. This provided a scale score that could be directly compared to CS supplemental scores for justice-involved youth obtained in prior research (Gillen et al., 2015; Iselin et al., 2009; Leistico & Salekin, 2003). Justice-involved young adults were more likely to utilize their maturity in primarily criminogenic ways relative to youth who were retained in juvenile court, those waived to criminal court, and those adjudicated and detained while awaiting disposition. Criminal sophistication was also assessed more conservatively via the instant offense CS scale. Regardless

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

of which scale was utilized, justice-involved young adults exhibited significantly higher levels of CS than justice-involved youth. Hypothesis 1 was therefore supported.

Exploratory Comparisons 1 and 2

Non-justice-involved young adults also exhibited significantly higher average S–M than did justice-involved youth across all age categories. The magnitude of this effect was large: the mean difference between the average S–M of non-justice-involved young adults and justice-involved youth was 9.24 (95% CI [8.42, 10.05]). In more practical terms, the average S–M scale score for non-justice-involved young adults (20.65) translates to 68% of the possible max score on the scale (30); whereas youths' average score of 11.57 translates to 39%.

As for findings pertaining to the CS supplemental scale, over 90% of the non-justice-involved young adult sample were rated as not having utilized their S–M to chronically engage in criminogenic behavior, which made the supplemental CS scale unusable. Due to the demographic composition of this sample, the nature and quality of their self-reported unlawful behavior, and the lack of collateral data to corroborate their self-report, assessing criminal sophistication with this sample was considered unreliable and uninterpretable.

The extent to which non-justice-involved young adults utilized their S–M in the commission of the instant offense was also examined. This score was obtained by summing S–M items scores for only those skills that were identified as being used during the offense which was the focus of the interview. This scale exhibited significantly greater variability and subsequent interrater reliability. When using this scale, non-justice-involved young adults exhibited significantly higher levels of CS than justice-involved youth across all relevant comparison groups. However, these results should be interpreted with notable caution given the difference in the structure of this scale relative to the scale utilized in prior studies. More specifically, the

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

instant offense CS scale assessed the extent to which young adults utilized their S–M to engage in one type of criminal act versus primarily using their S–M to engage in broader antisocial conduct. This scale was developed for exploratory purposes as a best estimate of CS for the non-justice-involved young adult sample who did not appear to chronically engage in illicit behavior. Thus, this scale is not a one-to-one replication of the scale utilized in prior research (Gillen et al., 2015; Iselin et al., 2009; Leistico & Salekin, 2003). Taken together, these findings suggested that non-justice-involved young adults have the capacity to utilize their higher levels of maturity to engage in unlawful behavior in ways that may be more criminally sophisticated than adolescents, though the extent to which they utilize their maturity to chronically engage in offending could not be reliably assessed or meaningfully interpreted in the current study.

Exploratory Comparisons 3 and 4

Prior literature suggested that disadvantaged sociocultural and academic environments—which justice-involved populations experience at disproportionately higher rates—can delay normative cognitive development and psychosocial maturity (Chung et al., 2005; Heilbrun et al., 2017; Steinberg et al., 2004). The average S–M evidenced by non-justice-involved young adults did not differ from average S–M evidenced by justice-involved young adults. One possible explanation for this null finding may be due to the skewed age distributions within each young adult condition. Age was negatively skewed in the justice-involved young adult sample; the average age of justice-involved participants was 25 with few to no participants in the younger age categories (e.g., 18 to 21). Age was positively skewed in the non-justice-involved sample; the average age of non-justice-involved participants was 20 with few to no participants in the older age groups (e.g., 26 to 29). Though age was not significantly correlated with S–M scores in

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

the current study, it is possible that with more extended age ranges in both conditions, differences among S–M scores would have emerged.

As noted previously, the aggregate CS and supplemental CS scales were interpreted as indicating that these measures of criminal sophistication could not be reliably scored with a primarily non-offending sample, and thus scores on these scales were invalid and uninterpretable. However, the current study yielded reliable data indicating that justice-involved young adults exhibited significantly higher levels of CS during their instant offense than did non-justice-involved young adults, though these analyses should still be interpreted with some caution given their exploratory nature.

Strengths and Limitations

The current study advances the juvenile transfer literature in that it involved a novel and direct comparison of the developmental maturity and criminal sophistication of youth and young adults. This study is only the second to examine sophistication–maturity among justice-involved young adults and justice-involved youth using the RSTI S–M scale and CS supplemental scale. It is also the first study to compare RSTI-measured S–M and CS between justice-involved and non-justice-involved young adults and between young adults and justice-involved youth derived from the RSTI’s normative sample. The current study replicates and extends Iselin and colleagues’ (2009) methodology by utilizing a larger and more diverse sample size, extending the young adult age range (e.g., from 23 to 29), and adding a non-justice-involved young adult comparison group.

The current study obtained moderate to good interrater reliability estimates for RSTI-measured S–M among non-justice-involved young adults and justice-involved young adults, respectively. These findings highlight that with only slight modifications to interview questions

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

and scoring procedures, the RSTI S–M scale can be successfully administered and reliably scored with young adults who are and are not justice-involved. These results are promising and suggest that developing a young adult comparison sample for the RSTI S–M scale is a viable and potentially worthwhile venture. However, additional research is still needed toward enhancing the reliability of the RSTI’s measurement of CS.

The current study has several limitations that are worth noting, especially with respect to external validity. The first generalizability limitation relates to the sample characteristics of the two young adult conditions. The non-justice-involved young adult sample was one of convenience and encompassed mostly undergraduate psychology students who participated in exchange for course credit. The majority of the college student sample identified as white and female, which stands in stark contrast to the demographic composition of the RSTI’s normative sample and the justice-involved young adult sample, both of which included participants who predominately identified as Black or African American and male. The nature, quality, and demographic composition of the former sample limits the generalizability of current results to other non-justice-involved young adults in the broader community and to justice-involved populations with more diverse backgrounds. In addition, the non-justice-involved young adult age range was largely constricted to the lower end of the range (i.e., 18 to 21), which limited additional analyses based on age. Average S–M scores may differ among relatively older and younger non-justice-involved young adults.

Another limitation specific to the non-justice-involved sample and relevant to both internal and external validity concerned the types of unlawful behavior reported by the non-justice-involved sample. The overwhelming majority of college students reported engaging in underage drinking or marijuana use (of note, interviews were collected prior to the legalization

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

of marijuana in New Jersey). These types of unlawful behavior tend to reflect relatively normative antisocial conduct among college students (Schulenberg et al., 2021). The perceived regularity of this behavior, as well as the recent increase in the decriminalization and legalization of marijuana across the United States, may have impacted participants' responses to interview questions pertaining to their offense. This may have ultimately impacted scores on some of the RSTI S–M items (e.g., awareness of wrongfulness of crime). Relatedly, the nature and quality of these offenses, and the extent to which they require extensive levels of criminal sophistication, differ from the types of offenses reported among the justice-involved young adult sample. Consequently, the CS supplemental scale could not be reliably scored for the non-justice-involved sample. Also of note, the types of illicit conduct reported by this sample are appreciably different from the types of offenses that tend to prompt transfer to adult court.

The justice-involved young adult sample was recruited from a secured reentry classification facility. The sample encompassed young adults who were undergoing reentry to the community after having served a portion of their custodial sentence. This is a unique justice-involved sample; therefore, current findings may not generalize to justice-involved young adults in other types of correctional settings or those who are in earlier stages of the justice system. The justice-involved young adult age range was also largely constricted to the higher end of the range (i.e., 26 to 29). Average S–M and CS scores may differ among relatively older and younger non-justice-involved young adults. Of note, data collection is ongoing, with a focus on recruiting younger justice-involved young adults from a youth-focused, secure state prison that includes young adults aged 18 to 21 years among its residents. Data collection began in January 2023 and was not complete at the time of current analyses. All analyses should be replicated once a more extended young adult age range has been achieved.

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

Another limitation pertaining to internal validity relates to the lack of collateral information available to facilitate scoring. Because scoring was based solely upon information gathered during the interview, scores were dependent upon the quality of the interview and the information obtained therein. Scores could have been negatively impacted by an interviewer failing to utilize standardized probes or elicit additional responses from participants. The lack of collateral information also significantly hindered the reliability and validity of CS ratings, especially for the non-justice-involved sample who endorsed engaging in relatively minor antisocial conduct. The overarching purpose of the supplemental CS scale is for the examiner to assess the extent to which the examinee *primarily* utilizes their maturity to advance their criminal conduct. In contrast to the scales original design, raters had to rely solely on participants' self-report and description of their prior criminal conduct during the interview to determine the extent to which they utilized their S–M in a primarily criminogenic manner. While justice-involved young adults generally provided sufficient details about their offense histories to approximate the CS scale, assessing this construct among non-justice-involved young adults was significantly more challenging, and generally deemed unreliable. In practice, evaluators have access to numerous collateral sources (e.g., police reports, criminal history, educational records, collateral interviews) to facilitate more accurate appraisals of criminal sophistication.

To account for the complexity of scoring criminal sophistication in the absence of collateral data, several experimental CS supplemental scales were created as best estimates of the CS scale utilized in the RSTI manual and in prior research. As mentioned previously, these scales are not necessarily a one-to-one replication of the RSTI CS scale. Relatedly, the RSTI manual does not report mean scores for the CS supplemental scale for the normative youth sample, which hindered planned comparisons. Therefore, “normative” youth data were derived

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

from three published studies. Current findings are limited by the quality and characteristics of those studies (e.g., sample size, sample characteristics, scale construction). All of this bears on the internal and external validity of the current study.

Finally, regarding statistical validity, a large number of significant difference tests were run without correction for risk of experiment-wise error. While a justification for the decision not to employ a Bonferroni correction in interpreting results was set forth, it nonetheless remains the case that some of the significant results may have been spurious. Nevertheless, calculation and interpretation of effect sizes helped to temper this limitation somewhat, particularly for relatively larger sized effects with reasonably narrow confidence intervals. It is acknowledged that the choice against adjusting for experiment-wise error can be debated, and future research is needed in order to replicate current study results.

Implications and Future Directions

The current study is the first to highlight the feasibility and utility of developing a young adult comparison group for RSTI-measured sophistication–maturity to facilitate transfer decisions and recommendations. Findings from the current study add to the widely acknowledged body of evidence indicating that juveniles are distinctively different from young adults in their average developmental maturity and criminal sophistication. However, of the utmost importance for policy and practice, it may well matter to which young adult sample youth are compared. Findings from the current study demonstrated that justice-involved young adults utilized their S–M to engage in their instant offense to a greater degree than did non-justice-involved young adults. Justice-involved young adults were also significantly more likely to utilize their advanced levels of maturity in ways that were more criminally sophisticated than justice-involved youth. While non-justice-involved young adults exhibited some degree of

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

criminal sophistication in the commission of their instant offense, the extent to which they utilized their maturity to chronically engage in criminal offending could not be reliably assessed. Moreover, the types of unlawful behavior reported by this sample, coupled with significant differences in their demographic makeup relative to justice-involved youth in the RSTI's normative sample, suggest that justice-involved young adults may represent a more appropriate reference sample for youths' criminal sophistication. Additional policy and practice implications, as well as suggestions for future research, are discussed in the following sections.

Policy Implications

Policy discussions within the juvenile transfer literature center around the function, utility, and fairness of juvenile transfer mechanisms and their impact on various youth outcomes and public safety (Mulvey & Schubert, 2012). Some central policy questions include the following. (1) Whether jurisdictions should continue to utilize transfer mechanisms, and if so, which mechanisms are the most developmentally informed and have the best safeguards in place (Chen & Salekin, 2012; Heilbrun et al., 2017). (2) Whether there are differential impacts on recidivism between youth who are transferred to adult court and those retained in the juvenile system (Loughran et al., 2010; Mulvey & Schubert, 2012). (3) Whether transfer to adult court has a specific and/or general deterrent effect on youthful offending (Redding, 2010; Jordan & Myers, 2011; Zane et al., 2016b). (4) Whether transfer to adult court exposes youth to adverse conditions that can negatively impact their developmental trajectory and subsequent offending risk (Mulvey & Schubert, 2012; Steinberg et al., 2015).

Research findings pertaining to these assorted policy questions are mixed, with some research suggesting that there may be differential effects of transfer on various youth outcomes depending on individualized factors of the youth, including prior offense history (Loughran et

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

al., 2010; Redding, 2016; Zane et al., 2016b) and level of psychosocial maturity (Steinberg et al., 2015). One of the primary assumptions underlying transfer policies is that transferring youth to criminal court has both a general (i.e., broadly for all juveniles) and specific (i.e., for transferred youth) deterrent effect on youthful offending. However, findings from individual studies remain mixed as to whether transfer actually accomplishes this goal. Zane and colleagues (2016b) conducted one of the only systematic literature reviews and meta-analyses on recidivism risk among youth transferred to adult court and those retained in juvenile court. Nine studies met the authors' stringent inclusion criteria, including those that employed rigorous controls and matching procedures. Findings regarding the deterrent effects of transfer were mixed: five studies demonstrated that transferred youth exhibited higher odds of recidivism than youth retained in the juvenile justice system, three found no statistically significant differences in the odds of recidivism between the two groups, and one concluded that youth retained in the juvenile justice system exhibited higher odds of recidivism than those transferred to adult court. Meta-analytic results utilizing pooled data across the nine studies indicated that transfer to adult court had a small but non-significant effect on the odds of recidivism, with transferred youth exhibiting higher recidivism risk. Notably, however, there was substantial heterogeneity in findings across the nine studies. Factors like study characteristics (e.g., sample sizes, outcome measures), offense type, transfer mechanism, and adult court sanctions appeared to moderate recidivism outcomes. The authors thus concluded that the current evidence of the effect of transfer on juvenile recidivism was indeterminate.

Thus, adopting a “one-size-fits-all” approach to juvenile transfer policy is generally not supported in the literature (Loughran et al., 2010; Redding, 2016; Zane et al., 2016). Consequently, as Loughran et al. (2010) suggest, perhaps policy discussions should transition

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

away from determining whether transfer is “good” or “bad” and “move toward a focus on where to ‘redraw the line’ for determining transfer to do the most good and the least harm (p. 11).”

Along the same lines, Zane and colleagues (2016b) highlight that transfer is not uniformly “good” nor “bad” for all youth; rather, the effects of transfer on youth outcomes, like recidivism, likely vary depending on the individual characteristics of the youth, the transfer mechanism employed (e.g., judicial waiver vs. statutory exclusion), and the types of sanctions and rehabilitative services youth receive in the criminal versus juvenile system (see also Zane, 2016). Considering these findings, researchers and legal scholars suggest that the juvenile justice system should shift away from mandated transfer mechanisms toward more individualized approaches that necessitate psychological evaluations of youth—as to factors such as their developmental maturity and criminal sophistication—prior to transfer (Chen & Salekin, 2012; Heilbrun et al. 2017; Redding, 2016). Though remaining mindful of the potential for differential impacts of different transfer mechanisms on racial and ethnic minority youth is likewise advisable (Zane et al., 2016a).

While addressing all the aforementioned policy questions relating to juvenile transfer is beyond the scope of the current study, findings pertinent to youth and young adults’ sophistication–maturity can be utilized to promote transfer policies and practices that are more grounded in developmental science. The thrust of the *Kent* criteria is concerned with balancing interests in public safety with appreciation of adolescents’ incomplete development and malleability relative to adults (Heilbrun et al., 2017). A central finding from the current study is that youth aged 18 and younger significantly differed from justice-involved young adults in their average level of developmental maturity and their tendency to utilize their maturity to advance their criminal conduct. In other words, as a group, adolescents are less likely to exhibit “adult-

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

like” maturity and criminal sophistication when directly compared to justice-involved young adults. These findings align with the developmental literature which demonstrates that various facets of developmental maturity (e.g., emotion regulation, autonomy, future orientation, delay of gratification) continue to develop beyond adolescence (Icenogle et al., 2019; Steinberg & Icenogle, 2019).

Current study findings also lend to several additional questions and considerations. One consideration relates to how prolonged or repeated contact within the justice system during adolescence may impact youths’ developmental trajectory and subsequent criminal orientation. It is well-supported that most youthful offenders will “age out” of delinquency as they transition into young adulthood (Moffitt, 1993; Steinberg et al., 2015). Maturing out of delinquency has been linked to brain maturation in areas that impact impulse control, future orientation, delay of gratification, and resistance of peer influence (Icenogle et al., 2019; Monahan et al., 2009; Steinberg et al. 2015). The underlying premise is that youths’ relatively incomplete development and psychosocial immaturity contributes to juvenile delinquency that will naturally decline as youth approximate “adult-like” levels of maturation (Steinberg et al. 2015). Notably, research has found that youth who fail to reach those core developmental milestones are more likely to persist in their criminal behavior in adulthood relative to youth who desist (Monahan et al., 2009; Steinberg et al., 2015). Steinberg and colleagues coin this phenomenon “arrested development” and suggest that the relationship between offending and developmental immaturity is likely bidirectional. They highlight that repeated contact with the justice system, including placement in juvenile detention, during the critical developmental period of adolescence may impede developmental progress and lend to increased recidivism risk (see also Augustyn et al., 2017).

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

It is therefore important to interpret findings from the current study within the context of the broader developmental literature. While findings indicate that youth generally exhibit lower levels of developmental maturity and criminal sophistication than young adults, it is important to acknowledge that lower levels of these constructs do not necessarily equate to lower risk. It is therefore important to recognize that youths' developmental maturity should not be interpreted in isolation; rather, the interaction among youths' developmental maturity, risk for dangerousness, and treatment amenability is vital to consider for policy and practice (Salekin, 2004). It is also critical to assess how youths' developmental maturity is evolving over time and whether it is advancing in prosocial or antisocial ways (Leistico & Salekin 2009; Spice et al., 2010). For instance, Spice et al. (2010) found that antisocial maturity (i.e., criminal sophistication), as opposed to general developmental maturity, predicted transfer to adult court. This finding highlights that courts may weigh criminal sophistication more heavily than developmental maturity in their determinations about youth disposition. In reference to these issues, future research can assess the extent to which recurring justice system contact in early adolescence may negatively impact youths' developmental maturation and enhance their criminal orientation. In relation to the current study, future research could investigate whether the number and type of prior justice contacts during adolescence impacts RSTI-measured S–M and CS among young adults.

As mentioned previously, transfer laws are vaguely written with respect to what constitutes “adult-like” developmental maturity and criminal sophistication. There is a growing need for additional clarification of the law's definition of maturity and the way in which maturity is considered in the transfer context (Spice et al., 2010). It is currently unclear whether courts in various jurisdictions differentiate aspects of maturity which are utilized prosocially versus

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

antisocially in their transfer decisions, and the law does not currently inform this matter (Spice et al., 2010; Iselin et al., 2009). Further legal clarification on the sophistication–maturity facet of *Kent* would promote a more uniform application of this construct (or constructs) in practice (Spice et al., 2010).

Findings from the current study best align with policies that seek to enhance the delineation of youth and adults under the law. The state of the current developmental literature, coupled with current study findings, best indicate that transfer should be conservatively applied based on individual characteristics of the youth (Spice et al., 2010). Over the last two decades, developmental research has been leveraged to promote juvenile justice reform and advance policies that appreciate the differences between youth and adults within the legal system. From *Roper v. Simmons* (2005) to the more recent “Raise the Age” movement, the criminal justice system has begun to appreciate youths’ incomplete development relative to adults. This has resulted in more developmentally informed and rehabilitative-focused juvenile justice policies and practices (Cauffman et al., 2018; Heilbrun et al., 2017). Nevertheless, many youth still face severe adult dispositions in the United States. In a 2019 report, the *National Center for Juvenile Justice* estimated that 53,000 youth were prosecuted in adult court that year. Many of those youth were transferred via statutory exclusion or prosecutorial discretion (Puzzanchera et al., 2021). Such mechanisms rely primarily on age and offense criteria and do not necessitate evaluations of youth as to *Kent* criteria prior to transfer (Larson & Grisso, 2016; Salekin et al., 2016a).

Given the increase in youth transferred to adult court via mandated waivers and prosecutorial direct file (Griffin et al., 2011), “safety nets” to assess youths’ developmental maturity and criminal sophistication prior to adult proceedings remain imperative. This is

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

especially important considering current study findings that youth are generally less developmentally mature and criminally sophisticated than justice-involved young adults. Currently, 28 states have decertification mechanisms in place (JJGPS, 2016). This mechanism allows for a clinical assessment of youths' developmental maturity and criminal sophistication (among other factors) prior to further adult court processing. In addition, some scholars have called for an increase in blended sentencing options to act as another "safety net" for youth. For instance, Chen and Salekin (2012) suggest that such mechanisms would allow for youths' sophistication–maturity and other applicable factors to be re-evaluated after completing the juvenile portion of their sentence to assess whether continued adult sanctions are warranted. Such an approach balances youths' developmental progress alongside a consideration of public safety. It may also allow for better assessment and monitoring of youths' maturation and criminal orientation overtime and the extent to which juvenile sanctions and interventions have enhanced or mitigated risk. However, research on blended sentencing mechanisms is still relatively novel, and findings on their effectiveness are mixed (Caudill & Trulson, 2016; Reidy et al., 2018).

Taken together, findings from the current study also align with the emerging *preventative* or *evidenced based* era of juvenile justice reform. This approach seeks to advance policies that balance rehabilitation with accountability to prevent reoffending (King & Grove, in press; Heilbrun et al., 2017). In alignment with the Risk-Needs-Responsivity model (Bonta & Andrews, 2017), reducing the rate of youth transfer to adult court may mitigate risk to public safety by ensuring that youth receive interventions within the juvenile system that are tailored to their criminogenic needs (Slobogin & Fondacaro, 2011) and promote healthy, prosocial development (Steinberg et al., 2015; Chen & Salekin, 2012). With respect to sophistication–maturity

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

specifically, the juvenile justice system should focus on rehabilitative efforts to enhance youths' developmental maturity and reduce the extent to which youth are exposed to environments that either impede their development or enhance their criminal orientation (Steinberg et al., 2016).

Potential overlap with risk reduction efforts is also of note, as the question has been raised whether criminal sophistication reflects the influence of a third variable, such as antisocial thinking or antisocial personality pattern, on developmental maturity (Salekin et al., 2016).

Practice Implications

Findings from the current study can also inform clinical practice, especially for practitioners who utilize the RSTI in their transfer evaluations. The current study found that youth significantly differed from both justice-involved and non-justice involved young adults in their average RSTI-measured S–M. Youth also exhibited significantly lower levels of RSTI-measured CS than justice-involved young adults. One practical takeaway is that while a youth may exhibit higher S–M scores than youth in the RSTI's normative sample, they may nevertheless exhibit lower levels of S–M and CS relative to justice-involved young adults. Moreover, as highlighted in the RSTI manual (Salekin, 2004), it is critical to assess the extent to which youth are utilizing their maturity in primarily criminogenic or prosocial ways. Again, findings from the current study suggest that youth may generally be less criminally sophisticated relative to justice-involved young adults. These considerations also hold importance for assessing youths' sophistication–maturity in relation to their risk for dangerousness and treatment amenability (given some probable degree of overlap among the constructs; Heilbrun et al., 2017; King, 2018).

Transfer evaluations provide forensic practitioners the opportunity to educate the court on the sophistication–maturity facet of *Kent*, which has been vaguely defined in the law and

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

inconsistently applied in practice (Chen & Salekin, 2012; Heilbrun et al., 2017; Salekin, 2002). It may therefore be useful for practitioners to contextualize youths' sophistication–maturity relative to both youth in the normative sample and to justice-involved young adults. This would allow clinicians to frame a particular youth's offending within a more nuanced context as to their psychosocial development and provide recommendations to the court to better address the youth's rehabilitative needs. Replicating current study findings, developing additional justice-involved young adult and non-justice-involved youth comparison groups, and developing more reliable methods for assessing criminal sophistication will continue to assist practitioners in assessing these complex constructs.

The current study was hindered by a lack of collateral information to facilitate scoring. While the RSTI S–M scale could be reliably scored based on interview data alone, CS supplemental ratings were notably more difficult to score in the absence of records. As is the case with any forensic evaluation, and as highlighted in the RSTI manual (Salekin, 2004), it is critical that practitioners use all available records at their disposal to reliably score this complex construct. Sources of information that may be useful for assessing youths' criminal sophistication include reviewing their offense history and trajectory, descriptions of their offense as described in the police report, educational records, and information obtained through other collateral sources and interviews.

Future Research

Since the current study is the first to comprehensively examine RSTI-measured S–M and CS among youth and young adults, there are ample opportunities for future research to replicate and extend upon the study's methodology and findings. First and most pressing, as mentioned previously, age distributions were skewed in both young adult conditions. Efforts are currently

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

underway to recruit justice-involved young adults within the 18–21 age range from a correctional facility that specifically houses younger justice-involved individuals. Efforts should also be made to extend the non-justice-involved young adult age range, such as engaging in tailored recruitment efforts of young adult graduate students or, more ideally, recruiting more diverse young adult participants from the broader community. Expanding upon current age ranges and enhancing the demographic diversity of non-justice-involved participants will allow for more nuanced analyses of S–M and CS based on age and demographic factors. Relatedly, research suggests that racial and demographic factors have an impact on transfer outcomes, with minority youth being transferred at higher rates than their white counterparts (Bryson & Peck, 2020; Zane et al., 2016a). However, the extent to which race and other demographic factors influence evaluator-rated developmental maturity and criminal sophistication has not yet been explored, nor whether demographic factors influence judges' interpretation and application of these constructs in their transfer decisions. Also as mentioned previously, future research can investigate factors that may relate to lower RSTI-measured S–M and CS scores in young adulthood, such as offense history or juvenile justice system contacts.

Little research has been conducted since the RSTI's development to advance knowledge about the criminal sophistication facet of *Kent*. Moreover, interrater reliability estimates for RSTI-measured S–M and CS have consistently been lower than the other two scales (risk for dangerousness and treatment amenability; Iselin et al., 2009; Salekin 2002; Spice et al., 2010). Kemp and colleagues (2017) recently conducted a systematic literature review to identify empirically based characteristics underlying developmental maturity. They incorporated these characteristics into a survey for psychologists across relevant specialty areas (e.g., developmental, child neuropsychology) to assess agreement as to conceptualizations of this

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

construct in practice. Psychologists tended to agree that autonomy, decision-making, cognitive skills, and emotion regulation skills were the four essential components of developmental maturity. These findings are promising and suggest that the field generally agrees upon core elements of developmental maturity.

In contrast, little research exists with respect to criminal sophistication, as either a facet of developmental maturity, or something else (e.g., an interaction between developmental maturity and antisocial thinking or personality traits). This, in turn, raises the question of how evaluators are assessing and conceptualizing criminal sophistication. For instance, the RSTI manual states that evaluators should consider “whether the youth is using the particular characteristic/skill (e.g., forethought, planning) primarily for criminological purposes or for prosocial purposes” (p. 13). While the manual provides some guidance to help evaluators assess criminal sophistication, most descriptors are vague (e.g., “the interviewer should rate whether or not the juvenile’s autonomy tends to be primarily criminological” [p. 19]). Criminal sophistication ratings are therefore largely subjective. Future research is needed to clarify how criminal sophistication is best conceptualized and measured. For example, what sources of data do evaluators rely upon when assessing youths’ criminal sophistication? What frequency of antisocial conduct is sufficient to conclude that a youth “primarily” uses their maturity criminogenically? How much is, or which types of developmental maturity are, “adult-like.” And must criminogenic thinking or antisocial personality traits also be present? As one potential future direction here, researchers could replicate and extend Kemp and colleagues’ (2017) methodology by assessing characteristics of criminal sophistication and surveying forensic psychologists who conduct transfer evaluations. This would help clarify, as a starting point, how this construct is conceived of and measured in practice, an approach that has been generally

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

productive in this space (e.g., such an approach originally informed the development of the RSTI).

Perhaps most importantly, findings from the current study highlight that developing a justice-involved young adult comparison sample for the RSTI S–M scale is feasible. In addition, developing a justice-involved young adult comparison group may hold clinical utility for comparing youth and adults S–M to facilitate transfer decisions and treatment recommendations for youth. Future research should seek to replicate and extend current study findings by utilizing more diverse justice-involved and non-justice-involved young adult samples with a broader age range. Steps should also be taken to further refine scoring procedures for CS supplemental ratings in research settings to enhance interrater reliability, especially in the absence of collateral data.

Another prime area, and logical next step, for future research is to add a non-justice-involved adolescent comparison sample for more nuanced interpretations of youths' maturity relative to both justice-involved and non-justice-involved youth and young adults. This would shed additional light on the potential harmful impacts of justice involvement on youths' developmental maturity and criminal sophistication by directly comparing youth to their counterparts who are not justice-involved. Comparing justice-involved youth to non-justice-involved youth would also provide another referent for interpreting youths' developmental maturity and criminal sophistication to inform transfer policy. However, researchers should be mindful of the potential differences in non-justice-involved youth vs. adults' willingness disclose engagement in illicit conduct or style in answer questions about such conduct, the time between illicit conduct and disclosure, and other possible confounds.

Conclusion

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

Forensic mental health practitioners are often called upon to assess youths' risk for dangerousness, sophistication–maturity, and treatment amenability to assist judicial determinations regarding youth transfer to adult court. The sophistication–maturity construct—in which the law is concerned with the extent to which a youth's criminal sophistication and maturity level parallels that of an adult—has been challenging for practitioners to define, measure, and apply in practice. The RSTI is the only commercially available, specialized forensic assessment instrument to assess youths' sophistication–maturity for transfer. However, this tool has not yet been comprehensively examined with young adults, which raises questions about the interpretation of a juvenile defendant's sophistication–maturity relative to adults in the transfer context.

The present study sought to inform the question of “which adult represents the standard for maturity to which we will compare the youth?” (Grisso, 2010–2011, p. 184) by conducting a novel analysis of youth and young adults' developmental maturity and criminal sophistication using the RSTI. The current study is only the second to assess RSTI-measured S–M and CS among a sample of justice-involved young adults (e.g., Iselin et al. 2009). The methodology employed in the current study replicated and extended upon Iselin and colleagues' (2009) methodology by utilizing a larger sample size of justice-involved young adults, extending the young adult age range, and adding a non-justice-involved young adult comparison group. The current study is the first to compare RSTI S–M and CS scores between justice-involved young adults and non-justice-involved young adults and between young adults and justice-involved youth derived from the RSTI's normative sample.

The current study found that the RSTI S–M scale could be reliably scored in a research context with justice-involved and non-justice-involved young adults. The accompanying CS

SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

supplemental scale was interpreted as generally exhibiting acceptable reliability among justice-involved young adults. However, notable caution is warranted when attempting to applying this complex construct to non-justice-involved young adults. Findings from the current study demonstrated that justice-involved young adults may constitute an important comparison group for contextualizing and interpreting youths' developmental maturity and criminal sophistication for transfer. These findings are promising for future efforts to develop a justice-involved young adult normative sample or samples for the RSTI S–M scale and supplemental CS scale. Findings from the current study also compliment and extend prior developmental literature by demonstrating that justice-involved youth are less developmentally mature and criminally sophisticated than similarly situated young adults. Such findings have implications for advancing more developmentally informed transfer policies, enhancing the assessment of youths' sophistication–maturity for transfer, and promoting rehabilitative efforts that are focused on youths' healthy, psychosocial development.

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SOPHISTICATION–MATURITY OF YOUTH AND ADULTS

*Table 1**Descriptives, Significance Difference Testing, and Effect Sizes and Confidence Intervals for Comparative Analyses*

Scale Name	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i> [95% CI]
Developmental Maturity						
9- to 13-year-olds (RSTI manual)	11.20	4.40	−19.71	100	< .001	−1.96 [−1.63, −2.30]
14- to 15-year-olds (RSTI manual)	11.75	4.10	−18.59	100	< .001	−1.85 [−1.53, −2.17]
16- to 18-year-olds (RSTI manual)	11.75	4.40	−18.59	100	< .001	−1.85 [−1.53, −2.17]
Total RSTI normative sample	11.57	4.30	−18.96	100	< .001	−1.89 [−1.56, −2.21]
Justice-involved young adults (current study reference group)	20.86	4.93	–	–	–	–
Non-justice-involved young adults (current study)	20.81	4.16	.089	202	.931	−0.01 [−0.29, 0.26]
Criminal Sophistication (CS)						
CS—Supplemental						
Justice-involved young adults (reference group)	10.68	6.96	–	–	–	–
Leistico & Salekin (2003)	7.17	3.56	−5.09	101	< .001	−0.50 [−0.30, −0.71]
Iselin et al. (2009)	2.98	2.92	−11.17	101	< .001	−1.11 [−0.86, −1.35]
Gillen et al. (2015)	7.14	4.30	−5.13	101	< .001	−0.50 [−0.30, −0.71]
CS—Instant Offense						
Justice-involved young adults (reference group)	11.57	4.88	–	–	–	–
Non-justice-involved young adults	9.38	2.94	−3.21	90.50	< .001	−0.67 [−0.25, −0.90]
Leistico & Salekin (2003)	7.17	3.56	−7.15	62	< .001	−0.90 [−0.61, −1.19]
Iselin et al. (2009)	2.98	2.92	−13.96	62	< .001	−1.76 [−1.36, −2.15]
Gillen et al. (2015)	7.14	4.30	−7.20	62	< .001	−0.91 [−0.61, −1.20]

Note. RSTI = Risk–Sophistication–Treatment Inventory. Justice-involved young adults represent the comparison group for *t*-values, *p*-values, and effect sizes. All comparisons between justice-involved youth and justice-involved young adults were statistically significant, with point-estimated effect sizes ranging from moderate to large, and the conference intervals for the effect sizes ranging from small to large.

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