

Culture Blind: How the Cross-Race Effect Influenced the Wrongful Conviction Rate

Keisha Vita

Purchase College

State University of New York

School of Liberal Arts and Sciences

Senior Capstone Project

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Abstract

The following investigation explored the impact of a psychological phenomenon known as the CRE (Cross Race Effect) on the wrongful conviction rate in the United States. Research suggests that people are 50% more likely to misidentify individuals outside of their own race.

The literature highly suggests that eyewitness procedures are at times flawed and fail to protect against misidentification, particularly those involving cross race individuals. Using an analytical approach to notable law reviews, scientific journals, and case studies other contributors such as flawed eyewitness procedure, incentivized informants, mishandled DNA evidence, official misconduct, coerced confessions, and racial disparities, are illuminated. Possible solutions and procedural reforms are proposed. Burgeoning scientific research suggests that awakening other sensory tools such as olfaction during eyewitness procedure may lend toward more accurate identifications in the future.

Introduction

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Throughout the years, the justice system has evolved from what began as a rather primitive model into what it is today. Comprised of more than one institution, there are both federal and state statutes which are both deeply rooted in the ethics of the U.S. Constitution. Law enforcement, adjudication, and corrections serve a vital function in maintaining the integrity of the judicial process. Although most cases are handled with the utmost precaution and ultimately result in the prosecution of criminals, there are exceptions. Undeniable achievements in the forensic sciences have ushered criminal investigations into a new era, combining a microscopic understanding of biology, chemistry and physics to identify physical evidence. Yet research spanning the past 20 years has yielded significant proof of a disturbing pattern wreaking havoc upon the criminal justice system. A 2015 study by the *Seattle University Law Review*, *Cross-Racial Misidentification: A Call to Action in Washington State and Beyond*, revealed that roughly a third of DNA exonerations were attributed to inaccurate cross racial identifications. (V, Taki & E. C. Flavaris, 2015) According to social and psychological research, the cross race-effect is a phenomenon which demonstrates that people are 50% more likely to falsely identify those outside of their own race. (Christian A. Meissner & John C. Brigham ,2001) Both scholars and researchers propose that wrongful convictions may indefinitely raise the overall crime rate. *The New York Times* echoed concerns in a recent article which emphasized non-existent crimes and the heightened risk of criminals remaining at large to commit additional delinquencies. (Chokshi & Niraj.,2018) According to *Human Law and Behavior*, Eyewitness procedure fails to protect against risks associated with the CRE and jury sensitivity falls short due to an absence of instruction regarding eyewitness testimony. (Jordan Abshire & Brian H. Bornstein (2003).

The National Registry revealed that most wrongful convictions are attributed to some form of eyewitness misidentification, half of which victimized innocent black men. It is critical to investigate both system and estimator variables to implicate changes in procedure and scientific exploration. (Chatman, C.,2018) As emphasized in *CRE: The Role of Social and Individual Factors in Face Recognition Process*, the current state of eyewitness procedure fails to properly protect against misidentifications during criminal investigations particularly those involving cross race individuals. (Kovalenko, A., & Surudzhii, M. (2014). What influence does the presence of the CRE have upon other notable system failures? Studying other contributors is critical to begin determining the superfluous rate of wrongful convictions.

Both case studies and scientific research indicate that eyesight may not be the most accurate method for proper memorization and identification especially when compared to other sensory tools. (Kovalenko, A. et. al, 2014) According to the National Registry of Exonerations website faulty eyewitness identification contributed to 29% of all wrongful convictions and 70% of those exonerated by The Innocence Project through DNA analysis, making it the leading known cause to date. (Innocence Project) What measures may be taken to help promote more well-rounded identification skills and increase accuracy while identifying individuals that differ racially? The following research illuminated various afflictions which have contaminated the integrity of criminal investigations and contributed to a pattern of injustice within the United States.

Applicable research was broken down into the following sections. *Literature review* includes a summation of comprehensive data regarding contributing factors associated with wrongful conviction rates. Such factors include official misconduct, false confessions, incentivized witnesses, misapplied forensics, evidence tampering, and ineffective assistance of

counsel. Law reviews, magazine articles, scientific journals and various studies draw attention to additional variables such as procedural discrepancies in police lineups, geographic influence, time, stereotyping (categorization), and unfamiliarity (perception based upon prototypes). The *Approach* section details the data collection process and the nature of experimentation such as the use of mock trials as they shed light upon the effects of eyewitness confidence level, stress, and even time restraints. The *Discussion* section follows dividing topics according to variable. Case studies are referenced to establish support differing schools of thought regarding why the CRE occurs. The interplay which inevitably exists between these variables such as the overwhelming effects of time upon evident racial disparity is observed in several cases which transpired during the 1980s. The effects of geography, unfamiliarity, and categorization are weighed against each other as well. (Kovalenko, A. et al., 2014) Policy reform and new procedures are introduced based upon deficiency models within certain jurisdictions that have boasted unusually high exoneration rates. This was reiterated by *The Christian Science Monitor* in Dallas Targets Wrongful Convictions and Revolution Starts to Spread. (Barber, E. (2014) The *conclusion* discusses implications and proposes potential remedies to increase eyewitness accuracy. Additional jury instruction regarding the CRE, an exposure to diversity during infancy, and procedural reforms which utilize olfaction sensory may offer potential remedy to reduce misidentifications in the future.

Literature Review

Rise of Exonerations

According to a study by the National Registry, exonerations are on the rise. There were 139 convictions overturned in 2018 alone. The Registry provided valuable insight into contributing factors which attribute to wrongful convictions in America. Included within a vast

data base which chronicles exoneration since 1989, are charts comprised from mostly public data which separate crimes according to race and contributing factor. Established in 2012, the organization is dedicated to the study and reporting of wrongful convictions in the United States. The Registry is a project of the Newark Center for Science & Society at University of California Irvine, the University of Michigan Law School and Michigan State University College of Law.

This recent trend is due in part to The Innocence Project a nonprofit organization founded by two public defenders, Barry Scheck and Peter Neufield at Cardoza School of Law in 1992. Through the power of DNA testing, they have helped free 356 people over the course of 26 years in operation. They also concern themselves with the reformation of laws and practices to initiate preventative measures and solutions for those who fall victim to this miscarriage of justice. When the project first took off, there were no laws that supported the right to access post-conviction DNA for testing. Today all 50 states have since implemented such laws, 20 have taken to improving eyewitness procedures and 25 now record all interrogations. (Innocence Project) The organization is an independent venture that is comprised of attorneys and law students working toward litigation reforms, implementing policies, and providing support to exonerees through social work. (Innocence Project)

According to The Registry, the latest exoneration total is at 2201 since 1989. These growing numbers are partially attributed 33 integrity units and 52 private organizations dedicated to investigating the wrongly convicted. However, there is no denying that countless years have been wasted which can never redeemed. The longest known incarceration being that of Richard Phillips who served 45 years and 2 months for a murder he took no part in. (Innocence Project) Darryl Hunt had 20 years stolen, Kevin Green endured 16, while Devontae Sanford suffered through 8. For those fortunate enough to be exonerated, there is not always a guarantee for

compensation. Only 32 states offer monetary redemption to victims. California awarded Green a modest \$620,000 for 16 years lost. (Innocence Project) Sanford won a lawsuit against Michigan for \$408,000. The court ruled in favor of Hunt in a suit against North Carolina for over a million dollars due to proof of official misconduct by the Salem Police Department. When convictions are overturned it is often revealed that the actual perpetrators went on to commit other crimes. Kevin Green was convicted for a crime committed by a serial rapist and murderer dubbed the “Bedroom Basher”. While Green was incarcerated, Gerald Parker would continue to terrorize California towns, committing 5 more murders during the 70’s and 80’s (Innocence Project).

False Confessions

False confessions constitute 12% of overturned convictions. Although it may seem unlikely that an innocent person would confess to a crime they did not commit, the statistics prove otherwise with a recorded 274 out of 2201 individuals making false claims which led to their convictions. (National Registry) A variety of factors including confusion, intoxication, duress, ignorance, fear and coercion can all lead to falsifying information. Particularity susceptible to police coercion tactics are the young and mentally impaired although those individuals with average or even high intelligence may falter under extenuating circumstances. (Innocence Project)

Official Misconduct

When law enforcement, prosecutors, defense attorneys, judges or other government agents behave in an improper manner that in some way contributes to a conviction it is known as official misconduct. According to the National Registry, 52% of all exonerees fall victim to some form of malpractice by the very individuals expected to uphold the integrity of the justice

system. (National Registry) The Innocence Project has gathered information on their webpage regarding common examples observed from cases involving DNA exonerations. Police misconduct has occurred in instances where providing suggestions to witnesses has influenced decision making. Offering incentives such as plea bargains in exchange for information increases the likelihood of false testimony or perjury. At times, they may withhold information or evidence from prosecutors or coerce false confessions by failing to adhere to proper interrogation procedures. (Kovalenko, A. et. al ,2014) Prosecutorial misconduct may be characterized by withholding key information that will compromise the outcome of a case and offering purposefully misleading arguments. There have also been reports of destroyed or mishandled evidence in order to facilitate a cover up. Witnesses are sometimes pressured to offer misleading testimony at trial or sometimes not testify at all. The credibility of witnesses has been called into question when there is a known history of dishonesty, mental illness, or reputation as a snitch out for personal gain. (National Registry) A fear of admitting wrongdoing is also common and officials will sometimes use exhaustive measures to ensure a guilty verdict regardless of fact, an issue highlighted in *The Innocence Deniers* by *Slate Magazine* regarding the false confession of a 14-year-old boy named Devontae Sanford .(Bazelon, Lara 2018) Similarities can be drawn from the case of Darryl Hunt, a man who endured 20 years of incarceration for a rape and murder due to repeated system failures on the part of both investigators and prosecuting attorneys. When his conviction was eventually overturned in 2004, the FBI discovered that the Salem Police had facilitated an elaborate coverup to protect the integrity of their department. This included denying the existence of usable DNA, disregarding exculpatory evidence, and using inadmissible statements by incentivized witnesses in court. (National Registry)

Ineffective Assistance of Counsel

With the odds stacked against them, an innocent defendant facing criminal charges has but one confidant, their appointed public defender. Inevitably, a state assigned attorney poses substantial risk to an individual who may lack the resources to choose their own defense team. With no guarantees, futures hang in the balance of public servants who don't prove competent in all situations. A statutory assurance, suspects in criminal cases are guaranteed a right to a fair trial by the government which includes adequate defense to anyone who stands accused of wrongdoing. (U.S. Constitution, Sixth Amendment). In a study by NCSC (National Center for State Courts) investigating claims regarding Habeas Corpus, it was revealed that while half of those convicted assert a request for a new trial, only 8 percent are heard and retried. In 2010, 54 of 255 DNA exonerees had made the argument for themselves but were denied assistance in most cases. (Innocence Project) Devontae Sanford fell victim to a public defender who advised him to plead guilty considering his false confession which seemed insurmountable to beat. That same attorney would have his license stripped due to additional evidence of misconduct while defending other clients. (Bazelon, L. 2018)

Faulty Forensics

According to the Registry, misleading or misapplication of forensics has been attributed to 24% of those recorded since 1989. As of 2018, 2201 convictions have been overturned largely due to newly discovered evidence, advancements in technology and organizations dedicated to investigating the discrepancies of previously closed cases. It was found that 525 of those convictions were due in part to some form of forensic miscalculation. As with most applications of scientist testing, there is room for human error.

Mistakes are common even in laboratories and samples easily contaminated, misplaced, or lost. Unreliable methods such as bite mark and shoe print comparison have not been validated for accuracy. Hair comparison has also been known to produce inconsistent results. According to a study on the Justice Department and FBI conducted in 2015 by the National Association of Criminal Defense Lawyers (NACDL) and the Innocence Project, a staggering 257 out of 268 cases were found to have flawed hair analysis testimony.(Innocence Project,2018) As reported in 2016, 74 exonerees have been wrongly convicted of a crime due to inaccurate hair analysis (National Registry).Before DNA testing was introduced for the first time in 1989, any collected samples were stored away and could not be utilized to determine origin. Fabricated findings have even been reported in some cases. Another major issue is misleading testimony by forensic analysts. At times, they have been known to use overstated confidence when reporting findings without any statistical research to back their claims. Some exaggerate, downplay, or omit significant evidence as well as oversimplify data and fail to state the limitations of their results. As a corrective measure, *The Forensic Science Discipline Review* (FSDR) was established to assess the scientific validity of forensic testimony. In 2009, The National Academy of Sciences published *Strengthening Forensic Science in the United States: A Path Forward* which offered comprehensive guidelines for the advancement of forensic practices.

Eyewitness Misidentification

The National Registry reported that misidentification contributed to 29% of all wrongful convictions and 70% of those exonerated by The Innocence Project, making it the leading known cause to date. Many of these blunders are honest mistakes as memory can be malleable and highly inaccurate. People are easily influenced by even the subtlest of suggestions. Lineups can sometimes be misleading and pressure witnesses into making a positive identification. Shock or

confused due to trauma may affect accuracy and cloud proper judgment. Witnesses identifying Darryl Hunt offered differing accounts while Kevin Green was identified by his own wife who had suffered a severe brain injury from her attack. Perjury lends to 57% of wrongful convictions since incentivized testimony and informants are often unreliable. The false testimony of two jailhouse snitched helped solidify Darryl Hunt's conviction. (National Registry)

Andrew Cohen of *The Atlantic* did not mince words in the title of his analysis, *Yes, America, We Have Executed an Innocent Man*. One of the most notable cases involving a misidentification due to the danger of the CRE was that of the Carlos Deluna, sentenced to death in 1984 for the murder of a gas station attendant in Corpus Christi Texas. He would become the poster child for these types of fatal errors. Based upon the testimony of a single eyewitness who pointed the finger at DeLuna, the police narrowed their investigation immediately. Deluna himself insisted that the witness had confused him with another Hispanic man named Carlos Hernandez, a violent criminal. Often mistaken for twins, he and Hernandez shared the same height and weight. Hernandez even bragged that another man was taking the fall for his crime. However, he was never investigated as law enforcement denied his existence, dubbing him the "phantom". (Cohen, A.,2012) Critical DNA evidence was lost and therefore never tested. Despite relentless appeals, Deluna was sentenced to death and executed by lethal injection in 1989. Speculation surrounding his death sparked a nationwide controversy as many experts believed Texas had executed an innocent man. In 2012, *The Columbia Human Rights Law Review* only furthered those suspicions by dedicating an entire issue to a detailed investigation into both Carlos Deluna and Carlos Hernandez. The 436-page account offered compelling evidence as to why Hernandez was the actual culprit. It was titled *Los Tocayos Carlos: An Anatomy of a Wrongful Execution* and resulted from the relentless investigation conducted by

Columbia students and Professor James Liebman. The Review has been referenced in various articles and studies which have drawn attention to the risks posed by capital punishment.

(Pilkington, E.,2012) Of the 356 exonerated by the Innocence Project, 20 served time on death row. As of December 31, 2017, there have been 161 death row exonerations in 28 states.

(National Registry)

Time Period

The *Cornell Law Review* tackled the subject of procedural error in 1984 while the study of the CRE remained in its infancy. Psychologists had already observed a recurring phenomenon which irrefutably confirmed that individuals are more often susceptible to error when identifying individuals who differ from their own racial group. Previously, most judges were opposed to jury instruction regarding the risks of eyewitness testimony as it pertains to cross race effects since it had the potential of creating an added element of racial disparity to the case at hand as any matter regarding race could spark inevitable controversy. In order to test reliability of cross racial identifications, a 1965 study by Patrick Wall concluded that identifications regarding individuals who belong to minority groups rather than majority groups are more likely to be misidentified by people who differ ethnically. At the time, no research had been conducted to have drawn this conclusion and was based on his observation of a case where 5 white individuals misidentified a black man who had been hundreds of miles from the scene of the crime. At the time, results were mixed for black subjects and Asians were understudied. Further research corroborated previous findings. Barkowitz and Brigham conducted 10 studies using white individuals from differing locations, age groups and professions. Only 2 participants did not exhibit signs of the CRE however appeared to be affected by “atypical” faces which may have skewed results. In one study, subjects struggled to recognize Asian faces with greater difficulty than their black

counterparts. Results of black participants exhibited mixed results showing a reduced ability to recognize white or Asian characteristics rather than black subjects just not as often. It was found that incentives such as monetary prizes did not alter test results regarding cross race misidentifications which may suggest that witnesses in actual criminal trials, although under great pressure may not have the ability to govern whether they are using great enough care in their selections since they may lack awareness. (Barkowitz & Brigham,1982)

Familiarity/Prototypes

In 1973, further investigation by Elliott, Will and Goldstein utilized students from segregated and non-segregated schools. Results demonstrated that students who lacked contact with other race faces struggled more than those attending mixed schools when attempting to identify other ethnic groups. The same study designated “schema rigidity” as a contributing factor or the presence of a “prototype” comprised of familiar faces which may lead to the notion of normal or abnormal face types. Researchers speculate that for some people, unfamiliarity or inexperience with certain ethnicities may contribute to difficulty differentiating faces that they would rarely encounter, thus resulting in misidentifications. In “The other-race effect develops during infancy: evidence of perceptual narrowing” a comprehensive test showed signs of the CRE emerging by 6 - 9 months in infants. (Kelly, D. J., Quinn, P. C., Slater, A. M., Lee, K., Ge, L., & Pascalis, O, (2007))

Others speculate that people tend to categorize certain facial types that have become associated with crime through social conditioning. Research has shown that there may be a link between what are considered “prototypical” black features and witness misidentification where the CRE is involved. These individuals possess wider noses, deeper set eyes, and fuller lips. Although often associated with black faces these featural similarities may be possessed by

individuals of all shades. A study entitled *Wrongful Convictions and Prototypical Black Features: Can a Face-Type Facilitate Misidentifications?* drew attention to this notion. The study concluded that these individuals may stand a higher risk of being wrongly convicted due to misidentification. (Kleider-Offutt, H. M., Knuycky, L. R., Clevinger, A. M., & Capodanno, M. M. (2017) Attractiveness and atypicality however lowered misidentifications as corroborated by previous research. (Barkowitz et al,1982)

Confidence Level/ Accuracy

As previously stated by *The Cornell Law Review*, Psychologists have not in fact directly linked accuracy with confidence level regarding identifications. Neither test subjects or study of eyewitnesses could glean any such results. Lab studies exhibited a 30 percent difference in accuracy from cross race and same race individuals. Stress however was demonstrated to decrease accuracy. (Johnson, S. L.,1984) Thirty-four years later and yet the same dilemma persists in court rooms throughout the United States. The matter is addressed *in Expert Testimony on Eyewitness Evidence: In Search of Common Sense* (Houston, K. A., Hope, L., Memon, A., & Don Read, J. (2013.) In recent years, Psychologists have been called upon to impart knowledge to the jury regarding eyewitness testimony and how to watch out for factors which may contribute to false identifications (lineup procedures, cross race effect, witness confidence not always relevant, weapon focus, stress level). However, the option of including this type of instruction is usually left to the discretion of the judge, varying from state to state and case to case. This procedure is often rejected for the following reasons:

- a. The testimony regarding eyewitness id is so obvious that it may be deemed unnecessary or perhaps even patronizing for jurors to endure.

- b. Testimony references research rather than and hand and therefore may not be applicable.
- c. The instruction may cast prejudice on the jurors and cause them to become overly discerning in their decision making. Research on this matter has used a variety of methods to test the influence of such testimony on witnesses including simulated trial experiments where expert testimony is integrated and then removed. Results revealed that it can go both ways, either causing overs speculation or honing decision-making skills to be more accurate based on data collected on the subject. (Houston, K. et. al, 2013)

Juror Sensitivity to the CRE discussed how expert testimony can be an integral part of decision making for a jury however it is not always applicable or relevant to the case at hand. The result of a series of mock trials concluded that jurors lack sensitivity and knowledge regarding the risks of witness misidentification including the CRE. Upon conducting a mock trial using both black and white defendants, jurors, and eyewitnesses it appears that the race of the eyewitnesses themselves did not affect the verdict however the race of jurors and defendants appeared to vary according to ethnicity. (Abshire J. et. al,2003)

While a study which examined two experiments featuring differing stimuli to test the categorization-individuation model on white/black subjects yielded mixed results, individuation instructions improved the discernibility of all test subjects. The categorization-individuation model (categorizing features of cross race individuals) was tested as an independent variable that led to cross racial misidentifications. The same study concluded that while black subjects showed no sign of the CRE, several white participants did. However, instruction regarding cross race witness ID improved discernibility for most test subjects. (Pica, E. et. al,2015)

Geographical/Jurisdiction

Wrongful convictions occur more often in areas where crime is prevalent and there is a greater population of people who often fall prey to stereotyping such as ethnically dense neighborhoods. In *State Liability for Wrongful Conviction: Incentive Effects on Crime Levels*, policy implications are discussed as they pertain to judges who may be corrupted by the notion of state liability which compensates the wrongly convicted. (Vincy Fon & Hans-Bernd Schäfer (2007)

According to the author, compensation for the innocent may reduce criminal activity and result in lower crime rates. Wrongful convictions may also increase the overall crime rate as in some cases the crime did not even occur. (Vincy F., et. al, 2007)) Based upon this study and prior case analysis, Texas, New York, and Illinois are the most highly effected by wrongful convictions and Texas may require added jury instruction regarding race. In *Race, Wrongful Convictions, and Texas: An analysis of the impact of juror and defendant ethnicity on wrongful convictions in Texas*” The *Young Researcher* explored the impact of wrongful convictions on different states. (Howard-Waddingham, H.,2018) Racial disparity in Texas is evident regarding exonerations. House Bill (34) may prove to be less than helpful as it fails to stipulate about race. It would however implement procedures which would attempt to prevent false confessions, forensic error, throw caution to the wind regarding incentivized witnesses and provide guidance for eyewitness identifications. (Waddingham, H.,2018) The same study challenged the significance of geography and familiarity when Texas is comprised of a nominally smaller black populace and a shocking half of exonerates out of the southern state are black. (Howard-Waddingham, H.,2018)

The *New York Law Review* provided insight into the flawed pretrial system in which guilt and innocence don't necessarily determine who gets convicted. (Gross, S. R.,2011). Ultimately the decision rests on prosecutors and law enforcement who offer incentives such as plea deals which can render false confessions in exchange for lighter sentences. Additionally, the issue of plea deals and incentivizing as it pertains to police procedure and pretrial preparation were also addressed. The author revealed that most criminal defendants do not even get a trial as charges are dismissed or the defendant pleads guilty upon being offered a deal regardless of guilt or innocence. (Gross, S. R.,2011).

Developments in Scientific Research

In a recent breakthrough study, *PLOS ONE* researchers utilized the human sense of smell to detect individual body odors for the purpose of forensic identifications. Coining the term *nosewitness*, subjects were exposed to clips featuring both violent crimes and neutral activity. They were then asked to decipher a variety of body odors associated with the violent imagery. Subjects showed a higher accuracy recalling smells associated with imagery that incited negative emotion over those that did not. Test subjects were able to pick men from a line up based on BO alone. These results exhibited a far better likelihood of accuracy over chance. (Alho, L., Soares, S. C., Ferreira, J., Rocha, M., Silva, C. F., and Olsson, M. J. (2015) *Frontier's in Psychology* tested retention level, or the length of time that has passed between an emotional event and the ability to recall that memory. Essentially the experiment questioned the quality and volume of what had been retained by the subject. Utilizing sample sizes of 3,5, and 8, and retention levels spanning from 15 minutes up to one week, results exhibited a pattern of relative accuracy, but one test exhibited a drop-in memory precision over the course of longer retention levels. Any resulting discrepancies are difficult to weigh as there remains neither true-life or experimental

comparative measures by which to make a definitive summation regarding the accuracy of memory retention level retrieved via olfactory senses. The test demonstrated how smell is more closely tied to emotional memories than sight due to the proximity of the olfaction system to the temporal lobe. Both sight and hearing are utilized regularly during investigations and are often flawed as statistics on wrongful convictions continuously demonstrate. (Alho L. et al., 2016)

Quantum Magazine reported that the future of artificial intelligence may someday mimic the infrastructure of the olfaction system rather than the current trend of building replications based off visual channels. As of late, the result is AI which lacks coding strategies and reasoning skills. Olfaction research began to develop exponentially in the 1990s when Linda Buck and Richard Axel identified genes responsible for odor reception. Upon studying the infrastructure of a fly's olfaction system, scientists observed that when an odor is detected, a tag forms, leaving behind the signature of a scent which is located closest to areas of the brain responsible for laying down emotional responses. Scientists believe the olfaction system could unlock the key to higher learning in Artificial Intelligence. (Cepelewicz, J., 2018)

Appropriate attention must be given to what scientists have labeled as a “super recognizer” or a person who possesses superior face recognition capabilities. Superior Face Recognition discusses the innate ability which allows for select individuals to recognize faces which they only encountered for brief periods or identify people that they have not seen in ten years or more. Observations of the brain indicate that these individuals process faces in a “holistic” or wholesome manner whereas people who lack this skill tend to process faces in a more “configural” manner. Configural meaning that they focus on specific features rather than visually perceiving the whole picture. People who damage parts of the brain responsible for face

recognition fall victim to prosopagnosia or “face blindness” (Anna K. Bobak & Sarah Bate,2018).

Approach

The following investigation utilized an empirical analytical approach by examining data collected from the National Registry of Exonerations regarding the wrongful conviction rate. Researchers for the Registry out of the Newkirk Center for Science and Society University of California Irvine released a 32-page analysis detailing wrongful conviction statistics and their correlation with race and CRE as one of the leading risks to minority groups. Findings from the study were weighed against data provided in The Registry. (Stephens, Klara , Samuel R. Gross & Maurice Possley,2017).

Empirical research conducted on eyewitness identification was gathered from select Law Reviews starting from a 1983 review out of Cornell which detailed early research on cross racial misidentifications and courtroom procedure. (Johnson, S. L. (1984)). Included is The *Columbia Human Rights Law Review* and investigation into the case of the now executed man from Texas whose alleged innocence was exemplified as a grave causality of the CRE.(Liebman,J. Crowley S., Markquart A., Rosenberg L., Gallo L., Zharkovsky W. D (2015) Additionally, The *Seattle University Law Review* demanded a call to action regarding the unusually high rate of wrongful convictions in this country (Taki, V. et. al).

Drawing from secondary sources such as a study which tested the effects of police procedure on eyewitness accuracy, findings support the notion that the human memory is easily altered by even the subtlest of suggestions. Choosing Your Words and Pictures Wisely: When

Do Individuation Instructions Reduce the CRE? analyzes the order in which photographs are shown to potential eyewitnesses. (Pica, E., Warren, A. R., Ross, D. F., & Kehn, A. (2015)

Eyewitness confidence and accuracy were weighed. Results suggested no evident correlation. (Houston, K. A. et. al,2013.) Studies intending to test the relationship between the CRE and misidentifications included mock lineups, mock trials, and even facial recognition tests utilizing infants. Both jurors and eyewitnesses revealed that Caucasians were the most effected by cross race effects whereas other ethnicities fell lower on the scale. (Howard-Waddingham, W. (2018) The interplay between existent theories regarding categorization, geography, and time period were supported by select cases which exemplified patterns of system failures. Those cases include Kevin Greene, Carlos DeLuna, Ronald Cotton, Cornelius Dupree, William Bernard Jackson, Darryl Pinkins, Devontae Sanford, and Darryl Hunt. Each case offered insight into lives forever changed by various forms of official misconduct, cross-race misidentifications or other contributing factors such as misleading forensic evidence. (National Registry).

Of course, there are vast limitations when conducting research based upon wrongful conviction statistics. Numbers vary with exonerations occurring throughout the United States daily. Each case offers new criteria to be investigated and may raise questions regarding race, social class, misconduct, and even gender issues. Additionally, research into wrongful convictions only investigates data available attached to cases which have been uncovered thus far. Furthermore, contributing factors such as official misconduct and faulty forensics have only been studied using wrongful conviction cases and not those in which the defendant was culpable for the crime. The general study into main contributors lacks an element of perspective, unable to report upon the presence of known contributors for convictions which were justified. The author of a 2005 article titled “The Study of Miscarriages of Justice,” took a second glance at the piece

which speculated that the study of wrongful convictions required more sophisticated methods to advance academic value and the study of criminology. Ten years later, he credited contributions in method and theory but argued that inherent causes have yet to be discovered. Contributors studied by social scientists fail to demonstrate the bigger picture. (L. A, Richard, 2005). The following study sought to evaluate a broader understanding of what may be done to reduce eyewitness misidentification based upon recent breakthroughs in olfaction research for the purpose of forensic applications. (Alho L. et al., 2016)

Analysis

A new wave of exonerations has revealed a disturbing pattern of eyewitness inaccuracy when it comes to cross racial misidentifications. In a modern age where technology reigns supreme, it may seem arbitrary to adopt the notion that the most predominant contributor could ultimately be human error. Further investigation however may or may not support that ideology.

A staggering 50% of people exhibit symptomology related to the CRE which increases the likelihood for inaccurate identifications in cases involving cross race individuals (National Registry). What is the impact of the CRE on other significant factors such as official misconduct or even false confessions? How significant are variables such as time, geography, unfamiliarity, or categorization to the CRE? If so, are there remedies with which to promote increased accuracy? Furthermore, do eyewitness misidentifications increase the overall conviction rate?

CRE Against Other Contributing Factors

As aforementioned, supplementary factors which lead to unjust convictions are significant however one could speculate that the presence of an eyewitness misidentification as a prevailing factor in the face of other system failures may aid in perpetuating the guilt of a truly

innocent person. First off, any mishap has potential to weaken the integrity of the investigative process. (National Registry) According to a study conducted by the Registry in 2017, 38% of exonerees were under eighteen when they confessed while 70% were shown to have some mental illness or intellectual disability. Adults which lacked any reported mental limitations boasted a far lower number at around 7%. In 2008, Devontae Sanford was convicted for a quadruple homicide known as the “Runyon Street Killings” in East Detroit. Partially blind, he read at only a 5th grade level. Despite failing to match any eyewitness descriptions, he was subjected to hours of interrogation without a parent or attorney present. After being held for more than 24 hours, he gave a coerced confession that did not match details of the crime scene. There was no forensic evidence to solidify his claims. Despite a confession that should have been suppressed due to improper interrogative procedures, he was provided with an unfit lawyer who encouraged a guilty plea which would be irrefutably considered ineffective assistance of counsel. That same lawyer would later be stripped of his license due to incompetence. Tried as an adult, Devontae was granted a sentence of 39 years to life. In the months that followed, the actions of law enforcement and prosecutors would prove to be at the very least, criminal. Weeks after the shooting, the detailed confession of Vincent Smothers, a career hit man, would reveal compelling evidence that stood to exonerate the young man. Not only did his account completely exclude Devontae of any wrongdoing, he implicated an accomplice and provided corroborating evidence regarding the ballistics of firearms found at the scene. The confession would be ignored and stashed away for nearly nine years until the Michigan Innocence Clinic Center on Wrongful Convictions of Youth and Northwestern’s Center on Wrongful Convictions of Youth joined forces to reopen the case. His conviction was vacated in 2016 due to proof of state misconduct and insurmountable evidence pointing toward Vincent Smothers. Since his release, this story has

become the topic of various articles and discussions regarding official misconduct including the “The Innocence Deniers” in *Slate Magazine*. (Bazelon, L.,2018) Thus, an added element such as a cross racial misidentification could easily be the cincher of an entire case especially when official misconduct is involved. (National Registry)

Consider Carlos Deluna, a Hispanic man executed by Texas in 1989 for the murder of a shopkeeper. According to ample evidence uncovered post execution by the *Columbia Human Rights Law Review*, Deluna was the victim of a cross racial identification which led to fatal results. Like Sanford, he was also mentally impaired which rendered him defenseless in the face of the false identification. Despite his denials, official misconduct by the police and prosecutors perpetuated the belief that he was guilty for the crime. (Liebman. 2015) The identification remained the sole piece of evidence against him and for that he would pay the ultimate price. Once convicted, DeLuna’s defense was weak and his appeals denied with each passing year. Without the intelligence, resources, and prowess to investigate his own case, Deluna was utterly dependent upon his defense team who proved ineffective at the bitter end. While other contributing factors are rampant throughout wrongful conviction cases, the surplus of cases involving black suspects and official misconduct rank higher than those effecting other minority groups. (National Registry) Since most wrongful conviction cases involving eyewitness misidentification have been shown to target black males, one must consider that on average, black people are stopped and searched more often than their light skinned counterparts, which inevitably heightens the risk for unjustified arrests.(Leo, R. A. (2017) Ultimately the presence of the CRE during an eyewitness identification would likely go unnoticed or ignored in the face of rampant official misconduct. Darryl Hunt was not just a victim of bad forensics but official misconduct as well. (National Registry) On appeal in 1989 his conviction was over turned due to

prosecutorial misconduct when statements of Hunt's girlfriend were used in court after she had already recanted. Plea deals are often tempting for those who wish to evade heavy sentencing, but Hunt would not relent. When prosecutors offered a deal to either plead guilty or be retried, he refused and stood before an all-white jury who found him guilty regardless. It has been suggested that Hunt's race played a role in his treatment as the case involved a black man raping a white woman in the south during the 1980s. Whether or not he was given a fair trial has been the subject of debate as well. The domino effect of a cross racial misidentification may essentially strip the freedom of an otherwise innocent civilian as demonstrated by the case of Darryl Hunt. (National Registry)

Another component to consider is that misidentifications are not always attributed to a faulty eyewitness ID. At times these critical errors are due to law enforcement who did not in fact witness the crime itself. (Taki, V. et. al) The story of Michael Marshal emphasizes a particularly severe instance of cross racial misidentification by a police officer. After a violent car jacking a composite sketch was created by a forensic sketch artist based upon an eyewitness description. Soon after officers responded to reports of a man found unconscious in a hallway. The responding officer took the liberty of matching the unconscious man to the sketch. After charging Marshal, he was offered a plea deal to avoid a 25-year sentence. As aforementioned, these deals often leave the innocent to choose between the better of two evils. After 2 years served, DNA evidence from items at the crime scene would fully exonerate him. This extreme instance exemplifies how all members involved in the investigative process may affect a wrongful conviction through ID or other means, particularly when a civil servant expected to uphold the truth makes a fatal mistake. Essentially Marshal was convicted based upon an

interpretive sketch of a black man which resulted in the loss of his constitutional right to freedom. (Kovalenko, A. et. al, 2014)

Effect of Time on CRE

Determining the “effect of time” on wrongful convictions involving the CRE may be initially approached by looking at the quality of the literature available from the 1960s to the 1980s which contain racially charged undertones and understudied theories. Available data regarding the wrongful conviction rate demonstrates a noticeable split between the rate of black convictions over other ethnic groups suggesting that black individuals stand a greater risk for being wrongfully convicted (National Registry). Take note that even within a highly esteemed *Cornell Law Review*, terminology which is used would be considered insensitive or even politically incorrect according to current standards. Words such as “oriental” or “yellow” for example to refer to Asian individuals would be considered offensive. Such primitive terminology indicates how new the research was as much of the review draws from studies from the 1970s. (Elliott, Will & Goldstein (1973). Years later terms have evolved, and new data emerges regularly. There exists a racial disparity which indicates discrimination to be a factor as well. A 1940s study demonstrated that individuals with admitted racial prejudice toward black individuals showed a decrease in accuracy from those who did not. (Seeleman, 1940) However, another study in 1973 revealed no correlation between prejudice and accuracy which contradicted earlier findings. (Elliott et. al, 1973). Unfortunately, race may be a contributing factor in some cases. Revealed by data from the National Registry, black Americans are more likely to be wrongfully convicted according to recent figures regarding ethnicity. Of those recorded, black Americans have constituted 1024, 856 were Caucasian, 271 Hispanic, and 51 were listed as “other”.

Cases which occurred before 1989 stood a higher risk for convictions based upon premature forensics that offered inconclusive findings. Kevin Green was charged in 1980 for the brutal rape and attempted murder of his own wife and second-degree murder of his unborn child in California. Before DNA testing, semen found at the scene could not be properly determined. His blood type however matched the perpetrator. He was sentenced to 15 years to life. He would later be exonerated by DNA testing in 1996 which would lead to a convicted murderer.

(Innocence Project) It is not beyond belief that expert witnesses are given a high level of trust by a jury. As was demonstrated in the case of Darryl Hunt, their proclamations can be some of the most damning in determining guilt. During August of 1984 in Winston Salem North Carolina a local copy editor was sexually assaulted and murdered. Darryl Hunt was arrested after an eyewitness eventually identified him as a perpetrator only after police had drawn attention to Hunt as a suspect. The forensic evidence leading to his conviction came from an analyst that claimed his hair was a definite match to a single strand found at the crime scene. While semen samples were collected, they were initially labeled too degraded to generate a DNA profile even when testing was introduced in 1989. Then in 1994, following years of tribulation and at the request of Hunt's attorney's, the DNA sample was proven substantial and excluded from that retrieved at the crime scene. However, this was the first case where DNA did not officially exonerate a person. The court felt that the findings were inconclusive, and 10 years of legal appeals would follow. Finally, after running the DNA through CODIS in hopes of a cold hit, there was a match to a violent criminal who had somehow alluded suspicion. In 2004 Hunt was exonerated after spending 20 years behind bars. (National Registry) Time can open a window of hope for those awaiting exonerations through DNA or other forms of exculpatory evidence. However, time can also pose substantial risk for those facing illness or the possibly of execution

on death row. Carlos Deluna would serve 5 years before time ultimately ran out. He would be executed the same year DNA testing was employed. A bloody knife found at the scene was never tested and may have held the key to excluding Deluna as a suspect.

Effects of Geography on Categorization

Studies which indicate that there may be certain Africanized facial features, or a “prototypical” face more often associated with crime were most certainly influenced by media depictions of violent criminals who may possess what would be considered Africanized features such as a wider nose, full lips, and deep-set eyes. The implementation of Jury and witness instruction could play an integral role in preventing misidentifications that involve cross race subjects. “Africanized” features (wider nose, thicker lips) may be categorized more often as “criminal” and lead individuals with limited experience with other races to make false accusations (Kleider-Offutt et. al, (2017))

It was December 1989 in Hammond Indiana, a woman is intentionally hit by another vehicle and subsequently 5 men proceed to rob and sexually assault the victim, shielding her with a pair of coveralls to avoid recognition. After being released, the victim recollected that all 5 men had indeed ejaculated, leaving behind their genetic material. In a neighboring town, a second woman was assaulted that same night. The coveralls were traced back to the Luis Brother’s Company, where Daryll Pinkins and Roosevelt Glenn were employed. Having reported their uniforms stolen a few days earlier, they were immediate suspects. Serological testing was employed to tie both men to the crime including hair analysis. Later findings would reveal the testing to be inaccurate and “overstated”. Although the woman claimed to be slightly intoxicated initially and would not be able to make a proper ID, at trial the victim testified that Pinkins was undoubtedly one of her attackers as she had seen him when she was first approached. He was

sentenced to 65 years while Glenn was given 36. In 2015 both men were excluded from genotypes found on her clothing. Using True Allele technology, it would be the first used to be utilized for an exoneration. The case was dismissed after 17 years served. (Innocence Project). The case of Darryl Pinkins exemplifies a man who was falsely identified by a white victim for a violent sexual assault in the 1980's. He possessed what would be considered "prototypical" black features which serves to support the theory of categorization as it pertains to certain facial features. Inferences which can be drawn indicate that segregation in schools may have led to unfamiliarity based upon a study which revealed students who were separated or segregated from other races experienced a more difficult time differentiating during eyewitness identifications involving cross races. (Elliott et al.,1973)

After a series of break-ins and rapes in Franklin County Ohio during the late 70's. The perpetrator was labeled the "Grandview rapist". After being picked from a lineup by several of the victims, Jackson was convicted at the age of 24 and sentenced 14-50 years for the rapes of 2 white women, of the 2, only 1 identified him. The sole evidence against him was eyewitness testimony. Prior to DNA testing, any hope of freedom post-conviction was second to none. It would be five years before a man would be discovered burglarizing the home of two women. Dr Franklin Jackson was a well-respected physician employed by Columbus hospital. Further investigation would reveal a "rape kit" and a list of the victim's names including the women who had identified William Jackson 5 years prior. The two men shared similar features and even last names. While behind bars, William Jackson had endured unspeakable brutality at the hands of other prisoners. He would lose his son to a fatal car crash. When questioned by the media, he drew his own grim conclusions, claiming he was guilty of being black man who looked like someone else. (National Registry) The case was racially charged after he was convicted by an

all-white jury based solely upon the victim's testimony (National Registry). When individuals fall victim to categorizing faces as "out" or "in" groups, individuals that may bear even a slight resemblance to a criminal perpetrator stand a greater risk than those with faces that are considered "atypical" or even attractive. Barkowitz and Brigham observed that while individuals struggled to decipher other race faces, the presence of attractiveness or distinct features allowed for more accurate recognition between cross race individuals. Geography may also influence familiarity which stems from the school of thought that suggests a lack of exposure to other race faces may cause a person to lack information about facial variances in the facial features of other ethnic groups. Rural areas often fall victim to a lack of exposure as there are less people spread over a relatively large geographic location. Most of the American public would be considered Caucasian while only 13% would identify as black. (National Registry) This statistic alone indicates that there is a greater likelihood of encountering white individuals and thus unfamiliarity to black faces persists. Along those same lines, studies have shown that early and frequent exposure to other race faces may prevent "perceptual narrowing" of an infant and ultimately their ability to properly perceive later in life. The phenomenon of the CRE refers to a lack of information which limits one's ability to decipher faces which are unknown to them. Facial input from the infant's visual environment is crucial for shaping the face-processing system early in infancy, resulting in differential recognition accuracy for faces of different races in adulthood. (Kelly, David J et. al, 2018) Thus, an interplay inevitably exists between location and familiarity as geography often dictates the type of faces one will ultimately encounter on a regular basis.

CRE and Confidence Level Accuracy

Even under circumstances where the witness is highly confident about an identification, they can still get it horribly wrong. This was highlighted in the book, *I Am Ronald Cotton: Teaching Wrongful Convictions in a Criminal Law Class* which outlined the unfortunate case of Ronald Cotton who spent 11 years incarcerated for sexual assaults which he did not commit. After the brutal rape of two young women in 1984, one of the victims, Jennifer Thompson Canino identified Ronald Cotton from a photo array. She had payed attention to every detail or, so she thought. She was confident that he was the man who had committed the crime and her adamance would convince a jury of 12 to rule in her favor. He was given a life sentence plus 50 years. 10 years later as Cotton sat in a North Carolina prison, a new discovery would turn the case on its head. After testing DNA recovered from both victims, he was excluded as the perpetrator. The identity of the perpetrator came as a shock and when Canino was asked if she could recognize her true attacker, she denied any recollection of him. Her confidence had stripped the freedom of an innocent man. The case spoke volumes about the risks involved with relying solely on witness identifications and oddly enough, the two became close friends. They now travel the nation to educate people on the dangers of witness misidentification especially as it pertains to the CRE. (Jones, C. E., 2012).

Based upon a “confidence level” study which utilized lineup identification tests, the CRE was exhibited when highly confident witnesses misidentified members outside their race more often than same race suspects. (Dodson, C. S., & Dobolyi, D. G. (2016) Confidence level tests such as the one above indicates that time restraints can influence accuracy during procedures such as police lineups. The CRE was exhibited when participants proved to be less accurate with subjects outside of their own race although being highly confident in their choices. Additionally,

metamemory or one's Socratic awareness of their own memory reveals CRE type symptomology to even be present in those who consider themselves to be highly discriminate when distinguishing between faces that are noticeably different from their own. Such is a clear implication that confident eye witness identification holds great weight upon a jury in limbo, perhaps too great as exhibited in the case of Ronald Cotton. (Jones, C. E.,2012). The case of Cornelius Dupree whose conviction was overturned in 2017 due to DNA evidence, exemplifies a case out of Dallas county which benefited from a newly implemented policy by a recently appointed district attorney which would require that DNA samples be preserved for an extended period post-conviction. (Howard-Waddingham, W.,2018) *The Alaska Review* tackled this issue in 2018, examining policy reform in Alaska which has implemented jury instruction in court rooms where it had been previously limited to the discretion of the trial judge. (Best, S. H.,2018) This advancement in eyewitness instruction varies greatly from literature written some 34 years prior which questioned the validity of jury instruction inside the court room. Other states however have yet to follow suit. (Johnson, S. L., 1984) Rushed investigations and pressure from the community to secure convictions often lead prosecutors and law enforcement to overlook integral elements of a case. A high rate of convictions may be equated to a type of victory and offers feigned validation that elected officials and enforcers of the law are keeping the streets free of violent criminals. (Best, S. H.,2018)

Implications

Throughout history the foundation of human connection has relied heavily upon one's innate capacity to observe and process the facial features of other individuals. The capability to discern between facial variances is integral to operating successfully within any society for both the purpose of building relationships and maintaining the integrity of certain professions which require superior levels of face recognition skills. The likes of which include law enforcement, security, and passport control among other occupations that require similar skill sets. (Bobak A.K. et. al,2018) Indeed, the power of perception is paramount to survival and a necessity for social interactions on many levels which extend beyond the legal system. For both the purpose of building new relationships and maintaining a safe environment, proper metamemory to recognize the likes of either friends or enemies is paramount. Unfortunately, a different pattern appears to be emerging with this new bevy of exonerations, one of grave misperception. (Houston, K. A., et. al, 2013)

With the odds seemingly stacked against the accuracy of an eyewitnesses, how might procedural changes facilitate more discerning facial recognition skills? One could speculate that people who suffer from cross race effects may be exhibiting recognition inaccuracy simply because they perceive in a configural manner, exhibiting limitations like face blindness but to a lesser extent than those who suffer from prosopagnosia. (Bobak A.K. et al,2018) Research has shown that people tend to process the features of same race faces "holistically" but falter when viewing other race faces. (Pica, E. et. al,2015) Law enforcement is no exception to the rule and misidentification by an officer not uncommon. Direct evidence should outweigh circumstantial components such as eyewitness ID in all instances for a variety of reasons but particularly since guilt cannot be determined beyond a "reasonable doubt" based solely upon a circumstantial

identification. That being so, eyewitness procedures may be improved by promoting a more holistic forms of identification such as those utilized by the acclaimed “super recognizers”. (Bobak A.K. et al,2018) Mock trials which demonstrate an increase in accuracy due to CRE instruction provide support for mandatory instruction for witnesses and jurors alike. (Pica, E. et. al,2015)

The effect of geography may pose varying risks for wrongful convictions according to jurisdiction. In many ways these individuals were failed by the system itself which lacked procedural safeguards when it comes to eyewitness identifications. Variations throughout jurisdictions may lead to heightened convictions rates (lineups, unrecorded interviews) which may have led to the rise of exonerations in Dallas County Texas. (Barber, E.,2014).

Categorization may be due in part to unfamiliarity however stereotypes regarding black males have been incessantly communicated through crime statistics and classifications based upon social conditioning dating back to slavery and civil unrest. (Houston, K. A. et. al, 2013).

Falling victim to a racial stereotype is like being profiled for driving a red sports car. There are certain features that law enforcement may have been trained to seek out. Being targeted for the color of one’s skin is comparable to driving a red sports car, the chances of being noticed are heightened by color alone. This theory is supported by empirical data which demonstrated that black drivers are pulled over more often than other groups. (Leo, R. A.,2017) The danger in accepting basic numerical data regarding conviction rates is that it may be inherently based upon a false statistic. One would be apt to trust that black individuals outweigh other groups for sexual assault when depending solely upon crime statistics. (Kovalenko A., et al,2014). Further inspection would reveal this number to be false, due partially to a revelatory number of sexual assault exonerations involving innocent black men. (National Registry)

The passage of time has born inevitable influence upon the investigation process. Advancements in technology provide access into the human body through the study of DNA and other forensic sciences which promote precision and accuracy. With the introduction of DNA analysis, the likelihood of a false conviction is lowered by the expectation that science would reveal the true culprit. Time as a variable can only be weighed by the past which exhibits a history of human errors.

There exists however a rather unconventional method which has yet to be utilized during any criminal investigation thus far, the possibility of awakening memories that are tied to smell. To increase eyewitness accuracy in sexual assault cases, victims may benefit from exposure to the bodily odors of possible suspects as there is no doubt that victims of assault are often heavily traumatized by the highly emotional and terrifying experience. (Alho L. et. al, 2016) This is due to the structure of the brain which relies upon two portions of the temporal lobe; the hippocampus and the amygdala. Memories which remain for long periods or “long term memories” remain in the hippocampus while the amygdala is responsible for processing emotional responses. The sense of smell can reach these portions of the brain with immediacy rather than sight which must travel a farther distance. (Alho L. et. al, 2016)

The breakthrough study by *PLOS* utilized the body odor of male participants to test the ability of olfactory senses for conjuring emotional memories. Such results indicated that the best identifier of strangers is by bodily odor rather than visual stimulants. Odor is like a fingerprint in that it is tailored to each individual and comprised of a unique formula which is inclusive of both diet and genetics. (Alho, L. et. al 2015) Furthermore, an increasing interest into the study of the olfaction system by machinists and scientists seeking to remedy coding problems among Artificial Intelligence has opened new doors for scientific exploration. Scientists believe such

mysteries may be uncovered by studying more advanced portions of the brain. Olfactory circuits are are being studied at length to improve AI technology. Self-driving cars may experience limitations when based upon visual cues alone since there are certainly more pertinent factors involved in maneuvering a city street. (Cepelewicz, J., 2018) The biophysicist Adam Marblestone (MIT) called the general dependence on visual accuracy a “historical fluke”. (Alho L., et. al, 2016) Ultimately, scientists are eager to test the potential for higher learning based upon how the brain learns to smell. Similarly, humans have been shown to lack coding skills when deciphering other race faces. Sight has proven to be a meager identifier for victims of severe trauma. (Alho L. et. al, 2016) Research into intricacies of the olfaction system could ultimately unveil new avenues of learning that may be in turn utilized to understand and improve identification procedures.

One must speculate what may have happened in the case of Ronald Cotton if smell had perhaps been a factor rather than reliance upon the overly confident testimony from one of the victims. In the case of the wrongly accused Darryl Pinkins, the victim’s sight was obstructed by a pair of coveralls while the assault took place. (National Registry) This may have heightened her other senses such as olfactory while the violent assault unfolded. Would the victim have been so quick to misidentify Pinkins if she had been exposed to the bodily odors of other suspects? One can only speculate. The notion of using smell as an identifier during criminal trials is understudied however. Not all eyewitnesses experience close contact with the perpetrator of a crime and appealing to olfactory senses may not be as applicable or useful to crimes which do not involve any extended periods of trauma involving close bodily proximity or contact. (Alho L. et. al, 2016)

Conclusion

Can the risks of misidentification be reduced? If so, how can policy reform promote accuracy? While procedures regarding jury and eyewitness instruction may attempt to reduce these perceptual errors, the information will likely be presented to adult juries whose cognitive development and recognition skills have formed through familiarity or personal prototypes over time and may be affected by variables such as stress level and time constraints. Exposure to a variety of differing ethnic groups in infancy may decrease the likelihood of cross race effects becoming manifested later in life which may in turn reduce the rate of misidentifications involving individuals of differing races.

Results of this study indicated that although “time” may have increased the likelihood of racial disparity and categorization in certain individuals, racial preference or bias is not usually a determinant for identification accuracy. (Kovalenko, A. et. al, 2014) Geography generates potential for “unfamiliarity” based upon rural conviction rates. Jury instruction lacks specificity, and eyewitness confidence levels are overly esteemed by jurors when determining a verdict.

The only recourse then may be to utilize advancements in science to further explore advanced regions of the brain. Scientific application utilizing relevant information about the perceptual process may unveil new truths and a deeper understanding of the mind’s complex infrastructure. Eyewitness procedures which rely primarily upon visual perception are weak and may benefit from additional methods which promote more holistic identifications. This may be achieved through inciting other sensory tools such as olfaction which may be more closely tied to memory accuracy.

False ID due to the CRE may have indefinitely boosted the conviction rate altogether. (Taki, V. et. al, 2015) Implementing diversity during infancy may promote the likelihood of increased facial recognition skills and divert from undeveloped prototypes. (Kelly, D. J. et. al, 2007) Policy reform regarding eyewitness procedure may draw attention to other senses tied to memory, reducing the number of misidentifications over time. Further investigation is required before olfactory sensory may be implemented during criminal investigations. It may however aid in establishing a more “holistic” perceptual process for victims who have experienced severe trauma. The purpose of analyzing risks associated with the CRE is not intended to target enforcers of the law but rather to protect the basic freedoms of innocent civilians, maintain the integrity of criminal investigations, and ultimately advance the pursuit of justice.

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