THE RADIO FREQUENCY IDENTIFICATION TECHNOLOGY AS A NEW WEAPON TO REDUCE CRIME AND MODERN JURISPRUDENCE

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Abstract

This paper gives an overview of the current state of radio frequency identification (RFID) technology. Radio frequency identification technology is a new identification card, if we implant a micro-chip as identification tool in human body. Modernization of crime as well modernization of policies is requirement of time. If we implant a micro-chip into human body, that microchip will work with help of satellite or mobile technology. It will help in investigation process and it will also helpful to reduce crime before happening. It will work as a technical pressure on human being. In recent years, radio frequency identification technology has moved from obscurity into mainstream applications that help to reduce crime rate. RFID enables identification from a distance, and unlike earlier bar-code technology, it does so without requiring a line of sight. In this paper, the author introduces the principles of RFID, discusses its primary technologies and applications, and advantages of this technology. In this new dimension science can be used to reduce crime.

Keywords: *RFID, Microchip, Modernization of Crime, Crime and Technology, Use Of Technology, Modernization Of Policies, Satellite And Mobile Technology, Effect Of Radio Frequency And Its Solution, Issues And Challenges.*

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INTRODUCTION

Crime is a bolt on society not only our nation but whole world is suffering from the same Along with many types of crime like violence, property, organized and many other forms. In many countries crime is increasing. The main reason behind this is growth of unemployment. The cost of living is rising and some people commit crimes to fulfil their desires. People in India and around the world are becoming more vigilant in reporting crime. In earlier days, people preferred not to report crime, so increased perception of crime is in parts increased reporting of crime. Movies, TV shows and Internet gives people new ideas, new ways to commit crime. Before internet, no one would have done hacking but as internet is growing so is the crime of hacking. In earlier days there were harsher punishments for crime. Your hands may be cut off, you may be crushed under an elephant or skinned alive. Now those kinds of punishments are gone. People know they can commit crime and even if they are caught they will be locked up in Jail for few months only.

RADIO FREQUENCY IDENTIFICATION

The term RFID[1] refers to Radio Frequency Identification, a technology which uses radio waves to automatically identify items or people. Most commonly this involves the use of an RFID tag and a reader device. In general terms, Radio Frequency Identification systems consist of an RFID tag (typically many tags) and an interrogator or reader. The interrogator emits a field of electromagnetic waves from an antenna, which are absorbed by the tag. The absorbed energy is used to power the tag's microchip and a signal that includes the tag identification number is sent back to the interrogator. ***Radio Frequency*** identification is a new and emerging technology that helps humans identifies other humans or machines remotely.

This technology can be embedded within smart devices so they can identify and communicate with each other autonomously. In addition, this new electronic and wireless identification technique is an embedded hardware software approach that does not require much space for implementing it. **RFID** comprises a small chip including a tiny antenna and a small-scale integrated circuit. These chips that we will call **tags** can seamlessly be attached to merchandise, animals or humans without affecting them. What makes the use of an **RFID tag**

[1] Radio Frequency Identification is a technology which uses radio waves to automatically identify items or people. Most commonly this involves the use of an RFID tag and a reader device.

even more appealing is its capacity to receive power from a remotely located emitter and hence, there is no need for constantly providing it with power; all is done wirelessly. Furthermore, the size of a tag is application-dependent but is usually less than few centimetres which make it compliant with any targeted object. In order to recognize and treat data, a handheld or stationary scanning device is used. These high-speed computing devices are capable of receiving and treating data issued by hundreds of tags per second. Therefore, long-lasting tasks can now be simply replaced with simple and prompt steps.[2]

ARTIFICIAL INTELLIGENCE

Artificial Intelligence[3] refers to the intelligence of machines. This is in contrast to the natural intelligence of humans and animals. With Artificial Intelligence, machines perform functions such as learning, planning, reasoning and problem-solving. Most noteworthy, Artificial Intelligence is the simulation of human intelligence by machines. It is probably the fastest-growing development in the World of technology and innovation. Furthermore, many experts believe AI could solve major challenges and crisis situations.

Artificial Intelligence Computers are everywhere today. It would be impossible to go your entire life without using a computer. Cars, ATMs, and TVs we use every day, and all contain computers. It is for this reason that computers and their software have to become more intelligent to make our lives easier and computers more accessible. Intelligent computer systems can and do benefits us all; however people have constantly warned that making computers too intelligent can be to our disadvantage. Artificial intelligence is a field of computer science that attempts to simulate characteristics of human intelligence or senses. These include learning, reasoning, and adapting

Expert systems are also known as knowledge based systems. These systems rely on a basic set of rules for solving specific problems and are capable of learning. The laws are defined for the system by experts and then implemented using if-then rules. These systems basically imitate the expert's thoughts in solving the problem. An example of this is a system that diagnosis medical conditions. The doctor would input the symptoms to the computer system and it would then ask more questions if need or give diagnoses. Other examples include banking

[2] Available at: http://www.tragging.com/about-rfid-2/

[3] Artificial Intelligence refers to the intelligence of machines. This is in contrast to the natural intelligence of humans and animals.

systems for acceptance of loans, advanced calculators, and weather predictions. Natural languages systems interact allow computers to interact with the user in their usual language. They accept, interpret, and execute the commands in this language. The attempt is to allow a more natural interaction between the computer and user. Language is sometimes thought to be the foundation of intelligence in humans. Therefore, it is reasonable for intelligent systems to be able to understand language. Some of these systems are advanced enough to hold conversations. A system that emulates human senses uses human sensory simulation. These can include methods of sight, sound, and touch. A very common implementation of this intelligence is in voice recognition software. It listens to what the user says, interprets the sounds, and displays the information on the screen [4]A recent study led by Northumbria University[5] highlights how Artificial Intelligence can help to crack unsolved crimes, especially by providing insights into the weapons used.

The use of Artificial Intelligence in policing to date has largely been in areas such as facial recognition and helping to deploy resources in the most effective ways, but a recent study led by North Umbria University highlights how it can also help to crack unsolved crimes, especially by providing insights into the weapons used in committing the crime.

"Machine learning uses a series of algorithms to model complex data relationships," the authors say. *"Through careful fine-tuning, these can be applied to predict important characteristics of the ammunition used in a particular shooting event from those of the respective gunshot residue (GSR) deposited on surrounding surfaces or items, such as spent cases, wounds, and, potentially, also the shooter's hands."*

The team believes their approach represents a marked improvement from current methods of GSR analysis, with the new approach affording unprecedented accuracy. It's an approach that the team believes could bring fresh insights to some high profile, unsolved crimes of the past such as the Bloody Sunday killings of 1972.

"After Bloody Sunday, the problem was to determine if gunshots were fired by civilians or military staff," they explain. "The investigators found large amounts of GSR all over victims and concluded that these resulted from shooting activities. It was later established, however, that these were likely due to the secondary, post-event transfer of contaminations from

[4] Available at: https://www.bartleby.com/essay/Artificial-Intelligence-FKCTUKQZTC
[5] North Umbria University is a university located in Newcastle upon Tyne in the North East of England

military staff – whose hands were rich with GSRs – to dead bodies. Small amounts of GSR, indeed, may be transferred by prolonged contacts with contaminated surfaces, such as those that took place when soldiers helped transport victims to the hospital after the event."

The team has extensive knowledge of utilizing Machine Learning for forensic applications, with data collected from firing a range of ammunition, including the gun cartridges and the smokeless powders to determine a relationship between the ammunition and the residue. Their initial success has prompted the team to believe their work could be applied more widely in forensic science, and potentially even in analytical chemistry more generally. The path from laboratory to market is seldom an easy one, but the results from this study are certainly interesting enough to suggest that police officers will soon have additional help when it comes to solving murders.[6]

What's more, as the study of 3 year olds and other research have shown, many of these brain differences can be measured early on in life, long before a person might develop into actual psychopathic tendencies or commit a crime.

Criminologist Nathalie Fontaine of Indiana University studies the tendency toward being callous and unemotional (CU) in children between 7 and 12 years old. Children with these traits have been shown to have a higher risk of becoming psychopaths as adults.

"We're not suggesting that some children are psychopaths, but CU traits can be used to identify a subgroup of children who are at risk," Fontaine said.

Yet her research showed that these traits aren't fixed, and can change in children as they grow. So if psychologists identify children with these risk factors early on, it may not be too late.

Fontaine said, *"We can still help them," "We can implement intervention to support and help children and their families, and we should."* Neuroscientists' understanding of the plasticity, or flexibility, of the brain called neurogenesis supports the idea that many of these brain differences are not fixed.

"Brain research is showing us that neurogenesis can occur even into adulthood," said

[6] Available at: https://dzone.com/articles/how-ai-can-help-solve-unsolved-crimes

psychologist Patricia Brennan of Emory University in Atlanta. Biology isn't destiny. There are many, many places you can intervene along that developmental pathway to change what's happening in these children. Furthermore, criminal behavior is certainly not a fixed behavior. Psychologist Dustin Pardini of the University of Pittsburgh Medical Center found that about four out of five kids who are delinquents as children do not continue to offend in adulthood. Pardini has been researching the potential brain differences between people with a past criminal record who have stopped committing crimes, and those who continue criminal behavior. While both groups showed brain differences compared with non-criminals in the study, Pardini and his colleagues uncovered few brain differences between chronic offenders and so-called remitting offenders. "Both groups showed similar results," Pardini said. "None of these brain regions distinguish chronic and remitting offenders."

Yet even the idea of intervening to help children at risk of becoming criminals is ethically fraught. "Do we put children in compulsory treatment when we've uncovered the risk factors?" asked Raine. "Well, who decides that? Will the state mandate compulsory residential treatment?"

What if surgical treatment methods are advanced, and there is an option to operate on children or adults with these brain risk factors? Many experts are extremely hesitant to advocate such an invasive and risky brain intervention — especially in children and in individuals who have not yet committed any crime.

Yet psychologists say such solutions are not the only way to intervene. "You don't have to do direct brain surgery to change the way the brain functions," Brennan said. "You can do social interventions to change that."

Fontaine's studies, for example, suggest that kids who display callous and unemotional traits don't respond as well to traditional parenting and punishment methods such as time-outs. Instead of punishing bad behavior, programs that emphasize rewarding good behavior with positive reinforcement seem to work better.

Raine and his colleagues are also testing whether children who take supplemental pills of omega-3 fatty acids - also known as fish oil - can show improvement. Because this nutrient is thought to be used in cell growth, neuroscientists suspect it can help brain cells grow larger, increase the size of axons (the part of neurons that conducts electrical impulses), and regulate

brain cell function.

"We are brain scanning children before and after treatment with omega-3," Raine said. "We are studying kids to see if it can reduce aggressive behavior and improve impaired brain areas. It's a biological treatment, but it's a relatively benign treatment that most people would accept."

The field of neuro-criminology also raises other philosophical quandaries, such as the question of whether revealing the role of brain abnormalities in crime reduces a person's responsibility for his or her own actions.

"Psychopaths know right and wrong cognitively, but don't have a feeling for what's right and wrong," Raine said. "Did they ask to have an amygdala that wasn't as well functioning as other individuals'? Should we be punishing psychopaths as harshly as we do?"

Because the brain of a psychopath is compromised, Raine said, one could argue that they don't have full responsibility for their actions. That - in effect - it's not their fault.

In fact, that reasoning has been argued in a court of law. Raine recounted a case he consulted on, of a man named Herbert Weinstein who had killed his wife. Brain scans subsequently revealed a large cyst in the frontal cortex of Weinstein's brain, showing that his cognitive abilities were significantly compromised.

The scans were used to strike a plea bargain in which Weinstein's sentence was reduced to only 11 years in prison. "Imaging was used to reduce his culpability, to reduce his responsibility," Raine said. "Yet is that not a slippery slope to Armageddon where there's no responsibility in society?"[7]

It is described by the father of modern criminology Cesare Lombroso[8], according to the theory of the Cesare Lombroso. He believing essentially that criminality was inherited and that criminals could be identified by physical attributes such as hawk-like noses and bloodshot eyes, Lombroso was one of the first people in history to use scientific methods to study crime.

[7] Available at: https://www.livescience.com/13083-criminals-brain-neuroscience-ethics.html

[8] Cesare Lombroso, was an Italian criminologist, physician, and founder of the Italian School of Positivist Criminology.

Lombroso is the subject of a historical novel by former criminal barrister Diana Bretherick. Here, writing for *History Extra*, Bretherick tells you everything you need to know about him, and explains why his influence on today's study of crime cannot be ignored…

It began in Italy in 1871 with a meeting between a criminal and a scientist. The criminal was a man named Giuseppe Villella, a notorious Calabrian thief and arsonist. The scientist was an army doctor called Cesare Lombroso, who had begun his career working in lunatic asylums and had then become interested in crime and criminals while studying Italian soldiers. Now he was trying to pinpoint the differences between lunatics, criminals and normal individuals by examining inmates in Italian prisons.

Lombroso found Villella interesting, given his extraordinary agility and cynicism as well as his tendency to boast of his escapades and abilities. After Villella's death, Lombroso conducted a post-mortem and discovered that his subject had an indentation at the back of his skull, which resembled that found in apes. Lombroso concluded from this evidence, as well as that from other criminals he had studied, that some were born with a propensity to offend and were also savage throwbacks to early man. This discovery was the beginning of Lombroso's work as a criminal anthropologist.

Lombroso wrote: "At the sight of that skull, I seemed to see all of a sudden, lighted up as a vast plain under a flaming sky, the problem of the nature of the criminal – an atavistic being who reproduces in his person the ferocious instincts of primitive humanity and the inferior animals.

Lombroso concluded from this evidence… that some were born with a propensity to offend and were also savage throwbacks to early man

"Thus were explained anatomically the enormous jaws, high cheek bones, prominent super ciliary arches, solitary lines in the palms, extreme size of the orbits, handle shaped or sessile ears found in criminals, savages and apes, insensibility to pain, extremely acute sight, tattooing, excessive idleness, love of orgies and the irresistible craving for evil for its own sake, the desire not only to extinguish

Essentially, Lombroso believed that criminality was inherited and that criminals could be

identified by physical defects that confirmed them as being atavistic or savage. A thief, for example, could be identified by his expressive face, manual dexterity, and small, wandering eyes. Habitual murderers meanwhile had cold, glassy stares, bloodshot eyes and big hawk-like noses, and rapists had 'jug ears'. Lombroso did not, however, confine his views to male criminals - he co-wrote his first book to examine the causes of female crime, and concluded, among other things, that female criminals were far more ruthless than male; tended to be lustful and immodest; were shorter and more wrinkled; and had darker hair and smaller skulls than 'normal' women. They did, however, suffer from less baldness, said Lombroso. Women who committed crimes of passion had prominent lower jaws and were wicked than their male counterparts, he concluded.

Essentially, Lombroso believed that criminality was inherited and that criminals could be identified by physical defects that confirmed them as being atavistic or savage.

Inspired by his discovery, Lombroso continued his work and produced the first of five editions of *Criminal Man* in 1876. As a result Lombroso became known as the father of modern criminology. One of the first to realise that crime and criminals could be studied scientifically, Lombroso's theory of the born criminal dominated thinking about criminal behaviour in the late 19th and early 20th century.[9]

RFID set to reduce crime

MSNBC news reports that Kestrel Wireless is still in talks with Hollywood studios and expect to announce deals this summer. Kestrel Wireless's 'Radio Frequency Activation' or RFA for short is set to protect optical media such as DVD's, audio CD's and video games from theft both in store and in transit.

The principle is pretty simple: a tiny UHF RFID chip controls a digital shutter which covers the optical media's surface. If the surface is darkened then the media is rendered useless as the optical drive cannot read data stored on the disc. The chip and shutter are incorporated in the optical disc during manufacture; the disc's are shipped in a dormant state and only enabled at the point of sale. Working on the principle that people don't steal things that have no value this would mean there is no need for the awkward to remove film packaging, alarm

[9] Available at: https://www.historyextra.com/period/victorian/the-born-criminal-lombroso-and-the-origins-of-modern-criminology/

tags or secured glass display cabinets. It's also predicted that this technology could be used to protect electrical and electronic items in much the same way with a UHF RFID tag used internally to enable/disable the device.

In the case of optical media I'm not sure how effective this would be—while the protocol used to activate the disc is said to be encrypted it may not prevent cruder methods of circumvention. If an electrical charge is required to clear the shutter layer then could it be activated by other means? Failing that could this layer simply be ground off of the discs using a rotary scratch remover? The protective film is said to be 1/50th the thickness of a human hair. What happens to this layer if it's scratched/damaged?[10]

After prisoners serve prison sentences, they often repeat violent and harmful crimes after being released. Examining a person's previous actions is the best way to form a solution to prevent future actions Do nothing, hoping that a lesson was learned in prison.

WHO WILL CARRY THE CHIP?

- Any person who has been convicted of a violent crime, rape/sexual assault, and/or murder. Convicts will still serve their sentence in prison,
- The degree of the crime and length of prison sentence will determine the amount of time for which the ex-felon is tracked and
- Ex-felons could be tracked for a period of time ranging from a month to their entire lifetime.

Tracking

- On a monitor in their cars, law enforcement officers would have access to the positions of every tracked ex-felon,
- There would be local stations, as well as a federal station that would track the felons as well.

The Database

- The database would contain personal data of the ex-criminal as well as the criminal history,

[10] Available at: https://www.techrepublic.com/blog/data-center/rfid-set-to-reduce-crime/

- It would also contain the exact location of the ex-felon at all times throughout the tracking period.

Tracking periods would be one day intervals and backed up monthly to prevent excessive storage build-up

Additional Technology

- Along with the database, a program would be written to direct law enforcement officers through areas highly concentrated in chip carriers,
- If a convicted bank robber was spending a lot of time around a bank, the police with jurisdiction for the district would be warned, as well as the bank.

Chip Removal

- Special polyethylene sheath would help the skin bond to the chip, holding it in place,
- This makes it difficult and extremely painful for the ex-felon to remove the chip,
- At the end of the tracking period, the chip would expire, and the ex-felon would have the option of having the chip painlessly removed,
- With or without removal, the ex-felon will no longer be tacked.

Australia Becomes First Country To Begin Microchipping Its Population. RFID Implants in the Human Body.[11]

CONCLUSION

Crime have ever been a problem for human civilization .There are thousands of religion, million billion rules and regulations all over the world but these are only words and words can note change the society if words has ability to change the society there were only need of quotations somehow given by the great personalities of this universe likewise Gita by lord Krishna, Bible, Quran and many more books .Twenty first century is the world of practical phenomena there is no need of any sin , curse and just and unjust only the power of punishment can miracle to reduce crime or the criminal mind nevertheless technology can become a greatest tool to cure human behaviour by extra effort .RFID is one of the tool which can make human life easier few countries like Australia, Sweden are using this

[11] Global Research, October 04, 2016

technology to reduce crime. Artificial intelligence is helping people as lifesaving equipment human being are using artificial intelligence in their daily life but no one is thinking about RFID which could be a better tool to investigate crime and to solve crime.

Suggestion

- Government should pay attention to RFID technology,
- RFID technology must be compulsory implant in every citizen body,
- Our scientist must improve RFID technology as human friendly,
- This technology has loop hole that be a reason of cancer but how far it is right or wrong and
- RFID can also be used as a unique identification of citizen.