The Uses of Inductive and Deductive Reasoning in Investigations and Criminal Profiling

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Inductive reasoning is observing a set of characteristics based on a premise of broad generalizations and statistical analysis which leads to the development of a hypothesis. Deductive reasoning is observing a set of characteristics that may be reasoned from a convergence of physical and a behavioral actions or patterns within an event or a series of events such as a crime or serious of crimes (Turvey, 2001).

The theory of inductive and deductive reasoning has been a valuable tool in the criminal justice profession for over one hundred and twenty years. The theory has been utilized in the investigation of traditional criminal offenses such a robbery, theft, fraud and burglary. It has also been extensively used in the investigation of criminal profiling of serial killers, sexual predators, drug dealers, organized crime and as seen since September 11, 2001, suspected members of international and national terrorist organizations (Turvey, 2001).

The most recognized and famous use of the concept of inductive and deductive reasoning is in the works of Sir Arthur Conan Doyle in the Sherlock Holmes cannon of novels and short stories which first appeared in 1892. Sherlock Holmes utilized this
theory to not only solve crime but to build a profile of an individual based on observations of the facts and then building an hypotheses around the facts. When Holmes first met Dr. John Watson he used this theory to make a determination that Watson had an injury which was recently received from being in combat in Afghanistan. Holmes deducted by the way Watson carried his shoulder that he had recent wound. Because of the way Watson carried himself he had the air of a military man and his face was tanned. Holmes correctly deduced that Watson was an Army Surgeon recently back from battle in Afghanistan, a location in which the British Army was currently engaged in battle in which an individual could have obtained such a tanned complexion (Doyle, 1882).

The Holmes stories so effectively dramatized the theory of inductive and deductive reasoning that they are used today at the Metropolitan Police Department, Scotland Yard, at their detective school located at the Peel Academy outside of London. They are used to teach the concept of inductive and deductive reasoning in the criminal justice profession.

The first known use of the theory of inductive and deductive reasoning in criminal justice was during the same time period of the Sherlock Holmes stories. In 1888 a series of gruesome murders occurred in the east end of London known as White Chapel. They became known as the White Chapel murders perpetrated by the Victorian criminal known as Jack the Ripper. The crime, which to this day remain unsolved, were so revolting to society that the Metropolitan Police and the City of London Police tried frantically to solve the case and to identify Jack the Ripper.
Regional Police Surgeon Doctor George B. Phillips of the Metropolitan Police first utilized this theory in the examination of the physical evidence found at the crimes. This evidence included the nature of the wounds, the location of the crime and commonalities among the victims of Jack the Ripper. The theory was used in an attempt to identify the suspect known as Jack the Ripper and to anticipate when and where he might attack his next victim. Unfortunately the individual known as Jack the Ripper was never identified and after the last documented White Chapel murder he was never heard from again. The theory was utilized to identify numerous suspects but the results have never been conclusive (Turvey, 2001).

During World War II the Office of Strategic Service (OSS), forerunner of the Central Intelligence Agency, utilized the theory of inductive and deductive reasoning in the form of profiling. They attempted to profile Adolph Hitler in an effort to determine the impact of the war on his decision making. It was used to anticipate how he would direct the action of his military (Turvey, 2001).

In 1956 these theories were utilize by Doctor James A. Brussel in New York City in an effort to identify and apprehend an individual known as the “Mad Bomber”. This individual terrorized the residences of New York City throughout the 1940s and 1950s by bombing building throughout New York City (Turvey, 2001).

The use of this theory by Doctor Brussel was successful in assisting the New York City Police Department in identifying George Metsky as the bomber which lead to his arrest and successful prosecution. This case provided an opportunity to promote the theory within the criminal justice community (Turvey, 2001).
Based on the success of the use of the theory in criminal justice cases, FBI Special Agent Howard Tenten developed a behavioral science program in 1970 at the FBI National Academy located in Quantico, Virginia. The uses of the theory by the FBI behavioral science unit lead to a series of successful investigations (Turvey, 2001).

Perhaps one of the most famous members of the FBI behavioral sciences unit was John Douglas. He began his tour with the unit in 1978. John Douglas came to national attention in the 1970s when he used the theory in the Atlanta, George killings of numerous young black males. In that case he was able to accurately profile the killer of the young men. His profile of the killer being a black male with an interest in police matters was met with skepticism from the predominately black Atlanta Police Department, chief and mayor, but the profile provided by John Douglas in this case matched the suspect and lead to his arrest (Douglas, 1995).

Douglas not only used this theory in the arrest of the suspect but also utilized it to aid the District Attorney in the conviction of the defendant by providing an insight on how he would react on the witness stand and what question might lead to an admission by the defendant. With the assistance of John Douglas the defendant made an admission of guilt on the witness stand which along with the physical evidence, lead to his conviction (Douglas, 1995).

The use of the theory of inductive and deductive reasoning has become widespread within the criminal justice community. It continues to be utilized for the investigation of traditional criminal activity such as serial killers, organized crime and the drug cartel.
The new use of the theory in criminal justice is in the area of espionage investigation and counterintelligence, as well the investigation of terrorism and with the counter terrorism efforts underway by federal, state and local law enforcement and intelligence agencies.

In addition to the use of the theories by the law enforcement aspect of the criminal justice system, private and corporate security is also using this method for the investigation of fraud and internal theft within their organizations.

Perhaps the most controversial uses of inductive and deductive reasoning are in the area of criminal profiling in relation to the current terrorist threat against the United States from radical Islam. When it comes to a situation where the primary suspects of a criminal act are comprised of members of a certain ethnic or religious group and this is determined by the theory of inductive and deductive reasoning as it is applied to criminal justice, members of the suspect community and civil rights organizations begin to view the use of this theory as racial profiling and a violation of individual rights.

While there is a distinct difference between the use of the inductive and deductive theories in criminal profiling and racial profiling, the distinction can become blurred in the minds of the members of the target group. It may be an lack of understanding on how the theory is utilized, social activism or members of a terrorist organization attempting to thwart a legal and effective tool which may identify them.

Regardless of these challenges the criminal justice profession will continue to utilize this effect and proven theory of inductive and deductive reasoning to reduce and prevent crime and identify the suspects of a variety of criminal activity which threatens our country and way of life.
Inductive reasoning is the use of an inference that is established through a set of observations leading to a generalization which is known as a premise. The premise is a working assumption. While a working assumption has been established it does not mean that it is an automatically valid assumption (Turvey, 2001).

One needs to remember that propositions are only a basic building block of argumentation reasoning. A proposition is a conclusion that can be argued on the basis of one or several premises. The premises may or may not be valid but will lead to an inductive argument and the development of hypotheses (Turvey, 2001).

There are several types of inductive arguments that are more prevalent in the criminal justice profession. The first argues from the specific to the general and is known as inductive generalization. A conclusion would be formed about observations and characteristics of a single individual or single event. It may also include the characteristics and observations of several individuals or events. Based on that information a preliminary generalization is made concluding that similar individuals or events that are seen or encountered in the future will exhibit the same observations of the originally documented characteristics (Turvey, 2001).

A statistical argument is also used in the criminal justice profession. Since it is statistical, truthfulness of this type of argument is based on probability. It may appear to be sound reasoning and may appeal to a common sense attitude but they are inherently problematic and unreliable (Turvey, 2001).

An example of an inductive argument with appropriate qualifications, based on the fact that both the premises and the final conclusions must correct would be as follows:

Premise: Most known terrorists are males. Premise: Most known terrorists are from the
Middle East. Premise: Most known terrorists are Islamic. Conclusion: It is likely that a terrorist attack will be carried out by a male of Middle Eastern origin who is Islamic.

The same example with inappropriate qualifications would appear as follows:
Premise: Most known terrorist are males. Premise: Most known terrorists are from the Middle East. Premise: Most known terrorists are Islamic. Conclusion: All terrorist attacks will be carried out by a male of Middle Eastern origin who is Islamic. This type of inappropriate conclusion occurs in the criminal justice profession to the determent of the use of this theory of inductive reasoning (Turvey, 2001).

The advantages of this theory it that it is easy to apply and does not require specialized forensic knowledge, training or education in the study of behavior. It also allows the criminal justice professional to develop a theory in a relatively short period of time (Turvey, 2001). This can be critical and save lives if the case involves a serial killer or possible terrorist attack.

There are of course disadvantages with the most oblivious being that the data or information collected is limited as it is based on generalizations from a limited sample population. If the sampling is not large enough or was not conducted correctly there will be a lack of reliability and consistency with the results (Turvey, 2001).

Another disadvantage to the criminal justice field is that the sampling is limited to known suspects or offenders who have been identified in the past. This leaves a missing dataset as the most skilful or intelligent criminal have avoided detection and
apprehension over an extended period of time and therefore are not counted as part of the overall study (Turvey, 2001).

The most serious concern and disadvantage is that with the generalization in the inductive process there may be inaccuracies. Such inaccuracies may lead to the implication of an innocent individual or group of individuals. The inductive reasoning can be nonspecific and unqualified in their final conclusions (Turvey, 2001).

Deductive reasoning involves the argument that if the premise is true then the conclusion is also true. Within deductive reasoning the conclusion are arrived at through the given premises. The reasoning moves from the general to the specific when utilized by the criminal justice profession. As applied to criminal justice the offender’s behaviors and or patterns would be suggestive of critical offender characteristics (Turvey, 2001).

Deductive reasoning may appear as follows: Premise: The offender disposed of the body of his victim at remote area along the coast. Premise: SUV tire tracks were found at the disposal site of the body. Conclusion: If the tracks made by the tires belong to the offender, then he has access to the SUV and the ability to travel to the remote area where the body was disposed of.

Deductive reasoning in criminal justice includes looking at a set of characteristics of the offender that are reasoned by the convergence of all of the physical evidence in the case as well as the behavioral evidence patterns within that case or a serious of related cases and crimes (Douglas, 1995).
The scientific basis for the inductive and deductive reasoning theory as utilized by the criminal justice profession was drawn from several areas of science over a period of many years as the theory was developed and adapted for use by the criminal justice community.

One of the scientific bases of the theory came from forensic science. More specifically, forensic pathology was applied to the theory. Forensic pathology is the category of the medical profession that applies the concept of and principles of medical knowledge to the law and criminal justice profession (Turvey, 2001).

In forensic pathology it is vital to document and correlate the interaction between the victim, their environment and the cause and manner of their death. The goal of the outcome is to be able to link this documented information in the form of evident to the suspect in the crime and to be able to prove such documented facts in a court of law. If done correctly the results will be a conviction of the suspect in the case and the resolution of the crime (Turvey, 2001).

The area of behavioral science also plays a major role in the scientific bases for inductive and deductive reasoning as practiced in the criminal justice profession. Psychiatry is the area of the medical profession which deals with the concept of diagnosis and treatment of various mental disorders. Forensic psychiatry is the study of mental illness and or behavioral patterns with the application to the law and the criminal justice field (Turvey, 2001).
This information is elicited by face to face clinical interviews, studies of the history of individuals and the application of tested and validated personality measures and testing (Turvey, 2001).

Inductive and deductive reasoning, while being associated with criminal justice in the minds of most of the public, had its foundation based on the concept of empiricism or logical positivism. This theory of thinking and research was derived from the philosopher and mathematician August Comte. In modern times the philosophers Wittgenstein, Russell and Moore expanded this doctrine. They move more in the direction of traditional science in that they felt that knowledge could be attained only through the methodology of scientific verification (Indick, 2002).

The assumptions of logical positivism state that knowledge can be found in direct observation and through deduction. It is felt this is the only method to be truly free from metaphysical overtones and the influence of personal bias. The networking of science is also one of the major goals of logical positivism (Keeler, Shemberge & Zaynor, 1988).

One of the major goals of the proponents of the use of logical positivism and of inductive and deductive reasoning in recent times has been to give the theory validly and recognition within the scientific community. There is a struggle on the part of those in the social science profession to include the criminal justice profession to be recognized at the level of their colleagues in the area of physical science. One of the criticisms is that it is difficult to be an exact science when it comes to social science areas. It is like the
shadows on the cave wall described by Plato in that social science can never be as precise as the physical sciences (Retrieved October 17, 2005, from http://weblinks1.cpnet.com.library.capella.edu).

Another criticism is that positivism or inductive and deductive reasoning in the criminal justice profession attempts to turn knowledge into a universal criterion of rationality implying that it is not grounded in fact (Fuchs, 1993). Such criticism comes from the forensic science area of the criminal justice community. When working with physical evidence such as fingerprints and DNA, most results are clear cut, black and white with a definitive answer. Unlike inductive and deductive reasoning as is used in criminal profiling, the end results are not always what was envisioned or hoped it would be. It is not an exact science and does not give the definitive answer that in most cases is derived from the forensic science aspects of the criminal justice profession (Bartol & Bartol, 2005).

It is evident the use of inductive and deductive reasoning has a basis in science and in most cases has been accepted by members of the criminal justice establishment as a legitimate science to be utilized within the criminal justice profession. It has even been accepted by the courts for the purpose of providing expert witness testimony (Douglas, 1995).
Another area that is validating the theory is that numerous colleges are now offering courses in criminal profiling in which the theory of inductive and deductive reason is utilized in the study of criminal justice (Douglas, 1995). One of the first institutions of higher education to offer a course of study on the subject was Pennsylvania State University at the main campus located in State College, Pennsylvania. The program began in 1990 and has grown and continues to be successful to this day (Bartol & Bartol, 2005).

While the inductive and deductive theory utilized in the investigation of crimes and criminal profiling may never meet the standards or level of success as seen in the forensic science, it has become an accepted process (Douglas, 1995).

Based on its historical development, the fact that it is based in science, its acceptance in college curriculums around the country and the successes seen in the field of criminal justice, inductive and deductive reasoning will continue to play a vital role in the criminal justice profession long into the future.
References:

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