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Various Dimensions of Impact of Climate on Criminality

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Supratim Karmakar
Department of Geography, Adamas University, Kolkata, 20016, India
Email: supratim1.karmakar@adamasuniversity.ac.in

Abstract: Climate is one component that impacted human nature and civilization from time immemorial. From the viewpoint of environmental determinism, human activities are dominated by climatic elements like temperature, humidity, and seasonal variations. Deviance from the moral code of conduct is one of the important aspects of social pathology which hampers the overall sustainability of human society. Deviant forms of behaviour very often take the form of crime. Criminal offences always go against the balance between the environment and humanity. Research is going on for a long time to understand the proper correlation between climatic elements and criminality. Though they may sound quite detached from each other: climate and crime, criminologists and social theorists have been regularly studying the impact of climate change on the change in the nature of criminal offences. The present article is intended to review the major trend of the studies regarding this issue.

1 Introduction

Climate and criminality seem to be quite detached from each other. Climate is considered to be one of the important factors which shaped human society. From that point of view, individual personality has to be influenced by the climatic conditions of a geographic locale. The human body and mind get highly affected by environmental conditions. A "crime" is any act or omission in violation of a law prohibiting the action or omission. Climatic factors create changes in human nature. For example, sometimes people get irritated with a high temperature in summer as that creates some sort of discomfort within their body which gets reflected through their behaviour. Those kinds of behavioural outcomes can take the very intense form of enactment and culminate into a criminal offense. The study about the correlation between climatic factors and criminal the behaviour started in the United Kingdom by the criminologists who are the majority supporters of Positivist theories of crime. The studies mainly dealt with two categories of crime namely crimes that are based on physical harm like murder, assault, and the second category dealt with property crimes. Researchers from this field took climatic variables mainly from the seasonal dimension. The change in temperature, humidity, precipitation, the change in the length of day and night, etc are primary factors that attracted academicians to study the impact on criminal offences. With time, the issue of environmental degradation and climate change have become very relevant among researchers of all scientific domains. As an effect of that, the activities which cause environmental degradation, itself considered being criminal offences. Researchers of environmental science and global resource politics have shown a great amount of interest in working with these issues related to the activities which accelerated global warming, ozone depletion, deglaciation, deforestation, and numerous other issues of climatic concern. This is a new dimension of the study of climate and criminality. Most of the research works have been based on a secondary database of crime and climatic phenomena. As a result, the research works based on climate and criminality are mostly quantitative and highly dependent on the statistical inferences between the occurrence of crime and various criminality evoked by the change in climatic situations are quite challenging because that is highly based on the momentary personal experience of the offender. This review article is intended to cross-examine trends of study of the correspondence between climate and criminality. The present discourse will throw some light on one-to- one read avenues of climate and criminality.

2 Literature Review

In the early 19th century, Adolphe Quetelet formulated The thermal law of delinquency (1842) which held the view that crime against the body takes place more often in summer whereas property crimes take place more in number in winter. This thermal law was being supported by the criminologists like Lombroso and Enrico Ferri. Excessive heat stimulates negative emotions and irritability which were considered to be major factors behind criminal offenses. Emile Durkheim (1897) was the first scholar to draw proper inference between weather conditions and the propensity to commit suicide which is also considered as a crime against the body. Dexter (1904) has done phenomenal work on a study of criminal mentality on an individual level with a sample of six hundred deadly criminals. He wanted to see how humidity and temperature created mental irritation among them which provoked them into their cruel activities. Huntington (1945) offered an account of human heredity and the influence of climatic conditions on it. He tried to show how extreme type of climatic conditions generate cruelty and ruthlessness among human communities with the example of Beduins who are considered to be a crime-prone community. Lewis and Alford (1975) have followed the same path as Quetelete and studied the impact of seasonality on physical crimes and property crimes. They have taken data from various parts of Europe and Latin America for drawing inferences. Cohen and Felson (1979) described how seasonality brings the cyclic pattern in the occurrence of crime. This pattern of crime is designated by the Routine Activity theory. Haries (1980) conceptualized how the climatic condition of residential areas shapes criminal instincts and makes a neighbourhood crime-prone.

elements of climate.

Garofalo (1987) has done a rigorous survey on how people's lifestyle changes with the season and make them more vulnerable to criminal offense. In summer people go out more and get victimized by street crimes. Baumer and Wright (1996) interpreted the impact of seasonality on the occurrences of murder and other cruelty against the body by using FBI data on crime. Rotton and Cohn (2000) presented a detailed curvilinear autoregression analysis between the data on weather change (Temperature data) and aggravated assault in Minnesota based on Negative Affect Escape Model.

Byrne (2010) raised a very poignant question of whether the activities related to global warming can be penalized. There will be some nations that will be victimized in the future by the adverse effect of climate change. The issue of environmental ethics must be attached to the view of climate and criminality. Agnew (2012) did theoretical work on climate and criminality. He critically analyzed the existing theories of crime and tried to incorporate the issues of climate change within the context of reputed theories. White (2011) pointed out a very interesting issue of climatic data manipulation to hide the actual scenario of environmental degradation. He explained how inefficient methodologies were being used to show a fake bright picture of environmental sustainability by various countries. Ranson (2012) came up with the inference between temperature rise due to global warming and the increase in the prevalence of criminal activity. He used monthly temperature data from 1960 to 2010 and FBI data for the same period. Kramer (2012) depicted the politics behind carbon trading between developed and developing countries. The environmental degradation which is being caused due to that trading can be designated as a corporate form of crime. South (2012) published a work on environmental security that deals with legal issues related to the breaking of environmental regulations. He correlated that issue with climate change. The issue of climate change brings loopholes in the legal codes of environmental protection. Lynch and Paul (2013) brought a new dimension to the study of climate and criminality when they started to monitor the works of industries which is accelerating the rate of climate change which in turn affects the water quality. They suggested some legal protocols for the prevention of this kind of offense. Andresen and Malleson (2013) highlighted the spatiality of crime and how they vary across the year with seasonality. By statistical analysis, they showed how crime pattern follows the Routine Activity Theory. Moran and Jewkes (2014) unleashed the hidden truth behind the environmental policies regarding climate change and sustainability.

They analyzed some environmental policies implemented in the United States and how they failed and created environmental degradation. It is described as unscrupulous and criminal [19]. Landis (2014) explained how the changing length of seasons with global warming is creating a scarcity of resources which generates conflicts between the communities to have access to it [20]. White and Kramer (2015) brought a concept of ecocide where the entire ecosystem gets wiped out due to the harmful activities of human communities. They addressed various policy issues which turned out to be harmful to the environment and destructive to the ecosystem. Mares and Moffett (2016) have taken the data on violent crimes from Celsius of increase in temperature causes an increase in the number of homicides. They made a comparative study between Western and non-western countries. Nurse (2017) tried to contour the specific areas of Green Criminology. This specific subject helps to study the activities which are involved in climate change from the perspective of criminal activity as they are adversely affecting the global ecosystem. Garmond and Mazaris (2019) have done very interesting work relating to climate and marine criminality. The coastal population is getting vulnerable to a new type of criminal offense as anthropogenic effects are getting prominent in coastal climate change. Sea level rise is hampering the living conditions and occupational security of coastal communities which in turn give rise to many forms of property crimes. Lynch, Stretesky, and Long (2020) have done a cross-sectional analysis of temperature rise and increase in violent crimes with the daily temperature data of New York and London. Here they ran spatial autocorrelation analysis to define the spatial aspect of climate change and criminal offense.

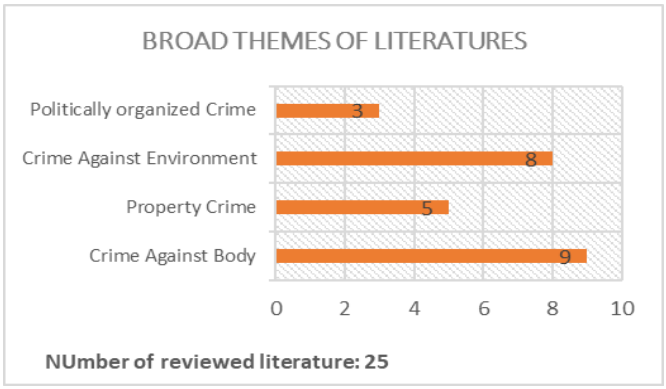

Fig 1: Broad themes of crime covered in the reviewed literature.

From Fig. 1 it is quite evident that most of the scholars related the climatic situations with a crime in terms of crime against the body. As crime is very closely related to the psychological aspects of the offender, so, it becomes quite relevant to correlate the impact of climate on the human mind and then make it a cause of deviant behaviour. The Positivist school of criminology highly supported the views of the deterministic approach to the environment over the human mind and activity. In recent times more research works are coming out based on global climate change where the issues of environmental policy and politics are getting more importance. Inter- governmental attitude towards climate change and environmental degradation is getting some momentum.

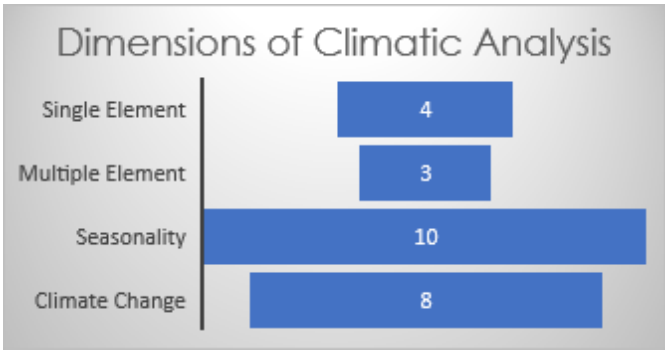

Fig 2: Dimensions of Climatic Analysis in reviewed pieces of literature

57 countries. They have tried to show how one degree

Looking at Fig. 2 it can be firmly said that seasonal variation is the most used dimension of climate when studying the occurrences of crime. Seasonality is one of the most prominent features of climatic conditions which is quite easy to find out. Seasonality has the most visible impact on human lifestyle. Other climatic elements need very minute attention for studying the impact on the human mind. The studies of the impact of climate on criminality are mostly done by criminologists who are more inclined toward the social aspects of the crime. They have little expertise in the intricate physical aspects of climatic elements. As a result, most of the researchers in this domain choose to go with the seasonality aspect of the climate.

3 Future Prospects

The review of the existing works on climate and criminality has shown there are some broad areas within which the works have been moving. In the 19th and 20th centuries, most of the works were focused on the psychological impacts of seasonal variation on the human mind and criminality. The approach was mostly positivist. As researchers headed towards the new millennium, the studies of climate and criminality took a holistic viewpoint. The issue of climate change and global warming has taken the central place in the discussion. Environmental degradation due to anthropogenic factors is considered to be a crime. Green criminology brought a fresh perspective to the study of climate and criminality. In the future more of these kinds of studies must come. Studies regarding the politics related to climatic phenomena and suppression of data on environmental degradation, methodological bias in terms of collection of climatic data are some new avenues that need to be explored more in the future by critical social theorists. With the advancement of new geoinformatics tools, kinds of literature should come on the prospects of remote sensing technologies in climatic analysis for crime scene analysis. The geospatial statistics dimension can be explored in a more in-depth way for analysis of the spatiality of crime with climatic variability.

4 Conclusion

The research works on climate and criminality is getting mileage due to the growing concern about the global climate change issues. The environmental laws are getting more stringent day by day which encourages studies in this field. But still, the study of crime is highly considered as a part of critical social theories and penal studies. Correlation between the physical elements of the environment and criminal activities is not that popular among the researchers of crime studies. As researchers from the domain of climatology, geology, environmental studies, and even pure science will come to study the phenomenon of crime, the gamut of criminology will be enriched with the knowledge base of those subjects also.

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