

VISUAL POLLUTION CAN HAVE A DEEP DEGRADING EFFECT ON URBAN AND SUB-URBAN COMMUNITY: A STUDY IN FEW PLACES OF BENGAL, INDIA, WITH SPECIAL REFERENCE TO UNORGANIZED BILLBOARDS

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Abstract

When we look around, our first impression of any environment is the visual environment. This is a conglomeration of some constructed forms intermingled with the natural surroundings. In recent times, the term pollution signifies an inclusion of those affecting in a subtle way such as visual pollution. This kind of pollution affects the overall well-being and thus the quality of life of a community, reduces aesthetic appeal, economic health and civic-sense. This may incite a psychological aversion and thus affect mental and physical health of neighbouring residents. Visual pollution, thus, may be defined as the whole of irregular formations, represents unorganized dumping of litters, billboards, cables, wires, worn-out buildings, heaped construction materials, graffiti etc. that affects a person's ability to enjoy a view or vista. This work aims at drawing attention to the hazardous and penetrating effects of the visual pollutants with special reference to unorganized billboards and to make realize that the visual environment is no less significant a part of the fabric of communities as clean water or air and animal habitat. Different places of Kolkata (South and North) and of Barrackpore and Barasat of 24-Paraganas (N) district, West-Bengal, India, were explored for abundance of visual pollutants, especially the ubiquitous billboards appearing like ghosts all around the cities and townships. Possibilities of some associated hazards were observed too. A comparison was done between areas that were visually pleasant and unpleasant. The psyche of people was followed and their innate instinct regarding visual quality of an environment was asked. The social civility and the behavior of people around solid waste were observed. It was found that in the cityscape

visual pollutants were omnipresent, billboards misarranged, torn, with bare skeletons looming large in almost all nook and corner. They were found in residential areas as well as in front of social institutions like school, hospital, church, and temple. This unsightly presence creates deep displeasure, aesthetic-appeal, thus civic sense, aesthetic appeal of the community declines and hence psychological health is bound to be affected. This is compounded with indispensable apprehension of general health hazards of different dimensions including diseases and problems like asthma, diarrhoea etc around solid waste, cause infection to animals hovering around it, driver's problem, missing of traffic signal by dazzling billboards, health problems caused by magnetic-field around cables, may create a short-circuit problem which may be extremely dangerous on water-logged roads. Some birds get electrocuted often due to exposed cables. The most vital aspect is, since this type of pollution is an aesthetic issue and have not been paid heed to earlier, hence the impact of its effect on society as a whole have remained largely undocumented. There is no denial of the fact that the sight of a beautiful natural environment stimulates human beings, soothes their soul. Conversely, the ugly sight triggers irritability. Children growing up in its vicinity get used to it losing their ability to understand the need for correcting it. This results in character-changing effects, the unique identity of the community is homogenized and entire life-style is deteriorated.

Keywords: Visual pollution, Billboards, West Bengal, aesthetic-appeal, psychological-health

Introduction

Ever since pollution has raised public concern, many types of pollution have been classified. Pollutions have negative effects on our daily lives in various ways. Apart from the most talked-about land, air and water pollution, there are some other types of pollution that affect us in a subtle yet significant way. One such example is visual pollution which is relatively newer and unconventional concept [1].

Our first impression of a community is its visual environment that entails a mosaic of built and natural forms. Visual pollution is defined as the whole of irregular formations, [1], may refer to everything altered by human-activities that are unattractive and affects people's ability to enjoy or appreciate the view and vista.

Anything that interferes with the "pretty scenes" and other defacement may become a cause of visual pollution. It may consist of garbage (solid waste) thrown in different places, cables or wires running in the urban areas in quite an unorganized way, billboards ill-arranged and dazzling, old dilapidated buildings, dumped construction materials, utility

poles, skywriting etc. They are subjective and literally, depend on the eye of the beholder. But this eye, that is, the senses gets modified on exposure to such pollutants for long.

Visual blight and visual clutter are two terms of relevance here. Visual blight may refer to dazzling billboards, power lines, ugly buildings etc. Visual clutter can be experienced in daily life in a messy desk to a congested street. It may impair a person's ability to find certain objects in such environments or in finding a person we are trying to meet in the street [ⁱⁱ].

Causes may be multifarious, including administrative negligence, excessive advertisement, vandalism. Local public administration loses control over what is built or assembled in public spaces, it does not know what and where is displayed, does not solve the problem of buildings in ruins no matter who the owner is. Excessive advertisement is literally suffocating because not even the green areas (trees, land, parks, etc.) are spared in the desire to ensure good visibility. The existence of disorganized, torn, unequal and giant billboards creates a visual menace. Though advertisement does inform the consumers about different products but the social and cultural implications of excessive advertisement remains unclear and have stirred intellectual attention in many circles. There is this confusion between perception and interpretation. Vandalism ranges from the Graffiti to offensive messages, obscenities, street markings of different groups, all made without the owner's consent of course. It can cause an intrusion into the intimacy of a person or in a group territory [ⁱⁱⁱ].

The effects of exposure to visual pollution may be vast and penetrating. They include: distraction, decreases in opinion diversity, and loss of identity [^{iv}], traffic congestion, health hazards of diverse kinds [ⁱ], irritability and psychological disturbances, eye fatigue [^v], loss of sense of hygiene and aesthetics, feeling of civility, thus overall loss of quality of life of the residing community. Children closely associated with visual pollution from childhood are generally bereft of subtle aesthetics and they get used to this unsightly surroundings, even lose their natural desire to correct it [^{vi}]. When almost all urban and sub-urban areas are infested with the same kind of visual pollution, it naturally eliminates the uniqueness of each place and causes homogenization of our communities [ⁱ].

Areas free from visual clutter, like a huge lawn, a picturesque landscape, a forest, hill, greeneries etc. are visually soothing, they help to re-energize us, soothe our pains and restore our productivity. Thus, though we feel that the visual environment is integral to our daily experience of the built and natural worlds yet, the altering of this visual environment is often taken for granted [ⁱ].

Theorists of modern psychology state that identity is a very special case that is peculiar to the individuals or society, that it is evolved not from the being itself but from its interaction with others, and that it is something that can be described by comparing it with others [i^v]. Such uniqueness is hardly perceptible in urban areas with such exhibition of similar visual clutter. Kolkata and Bengal in India too is often under-rated and the vibrance of the citizens overshadowed in the face of such visual hazards.

This pollution is comparatively recent concept with some worldwide uproar. Many cities worldwide are taking various measures to minimize this pollution.

In this report, the aspect of visual pollution is selected and analyzed by survey and simple experimentation and its impact after acute and chronic exposure, on health, on society, on psychology as a whole is indicated.

Material and Methods

Documentation through photography

Photographs were taken of different visual pollutants like the garbage heaps, billboards, electric cable in areas of different places of North and South Kolkata, Barasat, Barrackpore using Nikon D5000 camera.

A survey with respondents

A structured questionnaire was developed and persons selected randomly were interviewed. The respondents were through different ages across all sexes.

Visual comparison

Visual comparison was done between places with visual pollutants and the areas which were free from it and were visually pleasing.

Experiments on visual clutter

It was done using a box (length 35cm, width 25cm and height 6.3cm), where 20 different items were placed in four different manners (20-unarranged & arranged and 10-unarranged & arranged) and a particular object was asked to be located.

Statistical analysis

Different parameters were statistically analyzed. The ratings given by respondents of the survey were represented using a point which reflected the relative importance value index. The data is represented here as histograms and pie charts. In some diagrams percentage was calculated of the different options as preferred by the respondents.

Results

Visual Pollution from different sources

The following pictures clearly depict the hazardous visual environment where the clutter and confusion creates a state of continuous displeasure.

Billboards:



Fig-1a



Fig-1b



Fig-1c



Fig-1d



Fig - 1e



Fig - 1f

Fig 1-Billboards of different areas

Fig-1a – In North Kolkata

Fig-1b – In South Kolkata

Fig- 1c – Near Barasat area, a district town

Fig- 1d – Side of B.T. Road, a highway

Fig -1e and f – An electronic billboard near a traffic signal in South Kolkata,
(Red ring show the traffic signal, its vicinity to the electronic billboard is to be noted)

Other sources:



Fig 2-Other sources of visual pollution in our study area

Fig-2a – Garbage spills on the roadside in South Kolkata

Fig-2b – Cables before a hospital in South Kolkata

Fig- 2c – Garbage heaps beside a Church

Fig- 2d – Garbage heaps overlooking a boundary wall of a school

Fig -2e – Skyline in a district town

Fig-2f – A dilapidated ancient building in a district town

These show the glimpses of different visual pollutant and reveals how all-pervading is their unpleasant effect on the entire visual horizon in an urban or sub-urban set-up. They are omni-present even in vicinity of such social institutions as a hospital or school or Church etc (Figure 2). The threat is that they become a part and parcel of the urban life which actually degrades the quality of environment in several subtle yet significant ways which will be clearer as we proceed to the later sections.

Some relevant queries

Some basic questions were raised to our survey respondents and the result was compiled. When asked whether there is any visual pollution in Bengal, almost 95.55% of them vote for high visual pollution (Figure 3a). The respondents have also placed highest importance value to garbage followed next by billboards (Figure 3b).

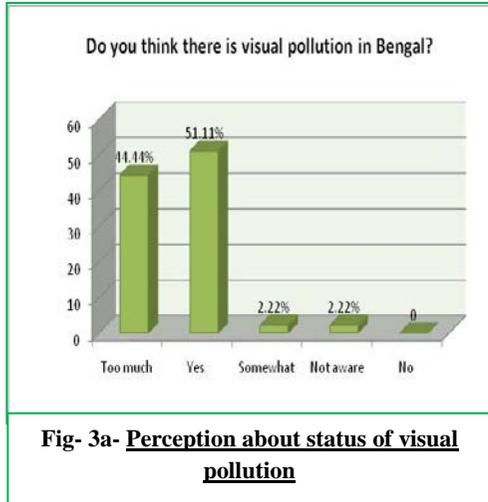


Fig- 3a- Perception about status of visual pollution

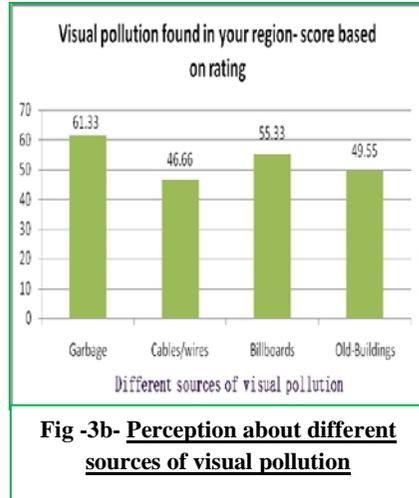


Fig -3b- Perception about different sources of visual pollution

Associated hazards related to visual pollution

Each visual pollutant comes with some associated hazards, as has been pointed out by our respondents in the survey (Data not shown). The summarized conclusions include health hazards to community, to the residents and the animals alike, electromagnetic-waves related effects (that remains largely undocumented), electrocution of birds, odour pollution, traffic congestions etc. those especially related to billboards have been depicted in Figure 4. The dazzling billboards may distract the attention of the drivers and this aspect has been given the maximum importance, also electronic billboards may create a problem in paying proper attention to traffic singalling when such signals lie in close vicinity to such hoardings. The same has been demonstrated in Figure 1e and 1f.

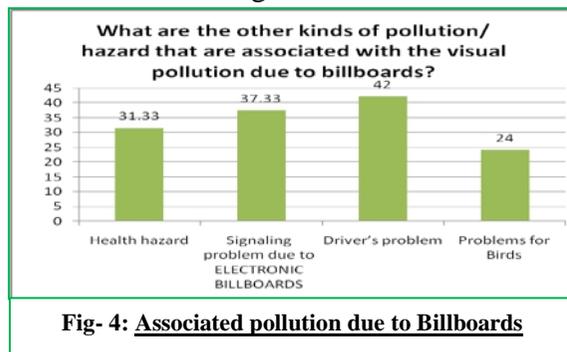


Fig- 4: Associated pollution due to Billboards

Social behavior around solid waste

Respondents were asked regarding their perceptions on some acute and chronic effects on social behavior of the inhabitants or passers-by in response to garbage heaps over the city areas (Data not shown). It was found

that there are certain immediate reactions like extreme unpleasantness of sight, experience of nauseating smell, throwing of more garbage on garbage heaps, spitting, etc. But chronic effects are far more penetrating. The most harmful being that people getting used to such environment and stopping to react. That can further create havoc in changing their aesthetic sense, sense of cleanliness etc. which will make a character-changing impact on the community as a whole, further paving the way for loss of quality of life.

Comparison between visually pleasant and unpleasant area

Of the total stretch covered including those covered in South Kolkata, North Kolkata, Barasat and Barrackpore, only 23% of the total distance covered showed good visual quality. The Eco-park, Rajarhat stretch which is newly built area of Kolkata, the cantonment area of Barrackpore etc are areas which were comparatively clutter-free (Figure 5a). It indicates that newly developed area with proper planning may culminate to a visually pleasant environment. Some more civil laws may be introduced, sources of visual pollution may be properly managed, to create a good vista. Simultaneously steps may be adopted by the civic bodies to clean up visual pollution of the older parts of urban and suburban areas so that the inhabitants feel the beauty of living in a pleasant environment.

When in another observation, a stretch especially covered for observation of only the arrangement of Billboards in that area was 29.3 Km in a part of Kolkata. Of this only a stretch of 0.8 km was found to be visually pleasant with arranged billboards, that is, only 3% of the area covered was found to have arranged billboards by the roadside (Figure 5b).

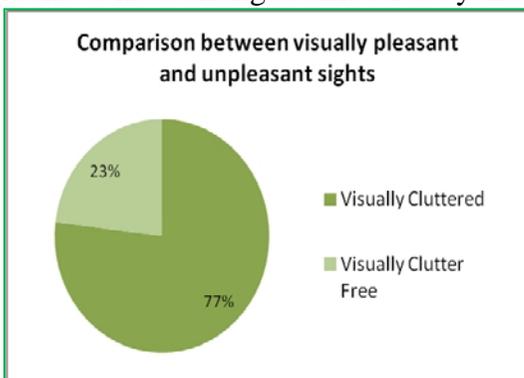


Fig – 5a – Proportion of area covered which were visually pleasant and unpleasant

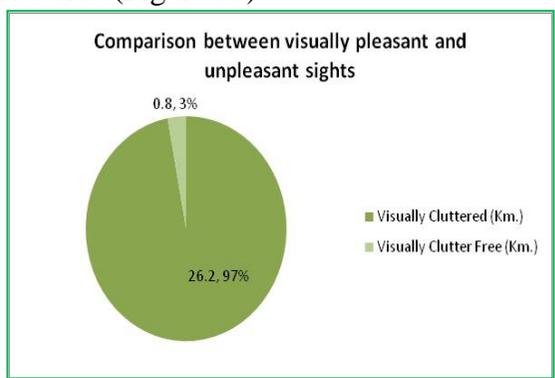


Fig – 5b – Proportion of area covered which were visually pleasant and unpleasant (in respect to



Fig 6-Comparison between visually pleasant and unpleasant areas

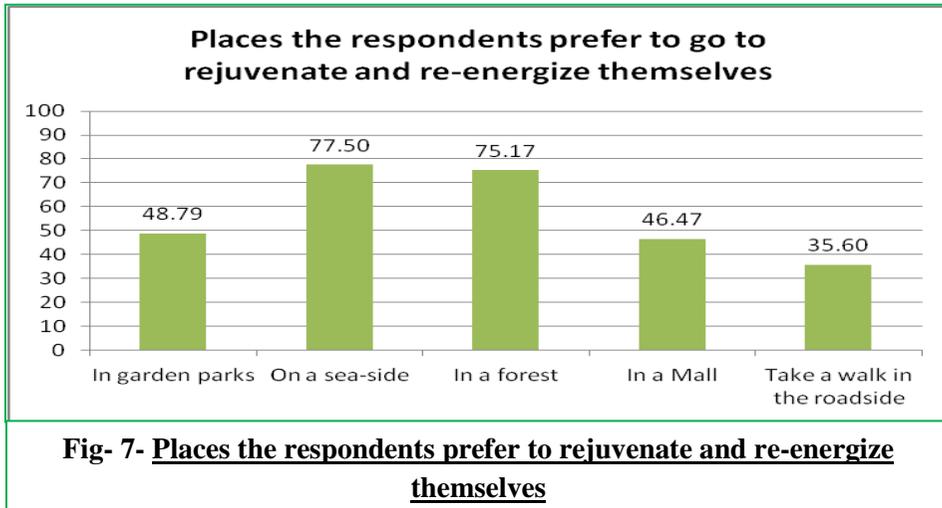
Fig-6a- Garbage dumps in Santragachhi jheel (in a district town, a place once known for abode of bird-migration)

Fig 6b- A lake in Eco tourism park in Rajarhat (a newer part of the city Kolkata)

Fig-6c- Unorganised billboards in proper Kolkata (south)

Fig-6d – Ugly iron framework for hoarding lying naked by the roadside in Kolkata

Fig- 6e – A part of a Fly-over with comparatively well-arranged series of billboards on both sides



Trends showing psychological longing (from survey results)

When our respondents were asked where they would prefer to visit for travelling, to re-energize themselves, they gave much more importance to a forest, a seaside, garden parks which are supposedly visually and aesthetically pleasing, as compared to visiting a mall or walking by roadside (Figure 7). Additionally, majority of respondents also preferred to construct their residences in areas with greeneries (Data not shown). Thus, though basically we imbibe the need to live in visually pleasant environment deep within, yet we tend to apparently ignore this significant fact.

Experiment on visual clutter

The relationship between the number of objects in a display and the time needed to find a target, have long served as the gold standard for characterizing the efficiency of visual search. From the many studies using this manipulation, it has been learnt that search efficiency often degrades roughly linearly as non-target objects are added to a display the increased load arising from these added distractors makes it harder to find the search target [vii].

In this section, experiment was performed to test how visual clutter affects the people to search a given item. When the subjects were asked to locate a certain item among 10 arranged and unarranged items, it was found that in all cases the time taken to find that item has been much less when the things were arranged ranging from two times to ten times more time needed to search an item from among cluttered objects as compared to find the same from arranged ones (Figure 8). Similar observation was there with 20 arranged and unarranged articles (Data not shown). This can be conceived as a test to exemplify how visual pollutants, especially the billboards, can

distract the drivers and the pedestrians to concentrate on traffic signals or to find a person they are supposed to meet or to find their proper way to destination in a congested city.

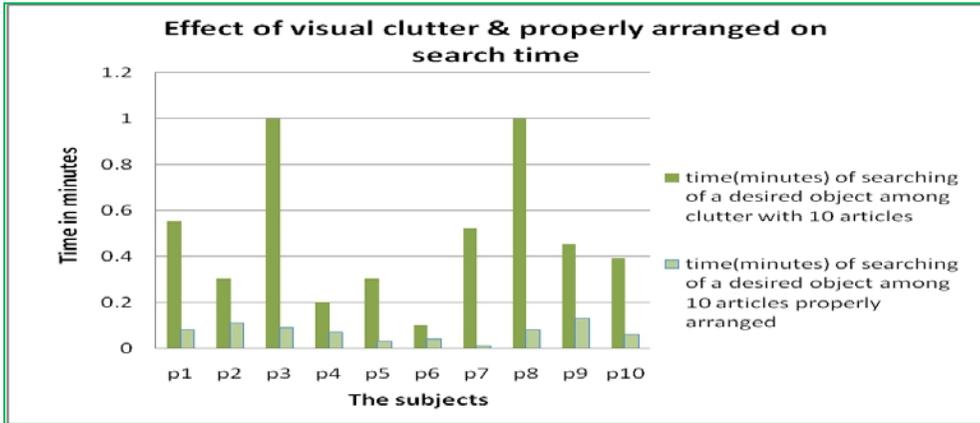


Fig -8- Effect of visual clutter & properly arranged on search time

Some relevant questions

Despite all the above discussions regarding visual pollution, the aspect remains incomplete if certain questions remain untouched. One such question was asked to our respondents, that whether the issue of visual pollution is a luxury for a third world country like India, where several people are forced to live in slums and spread their wet clothes in the dividers or on the roadside. People have been largely found to be divided among their opinions (Figure 9). So the dilemma and the debate continue.

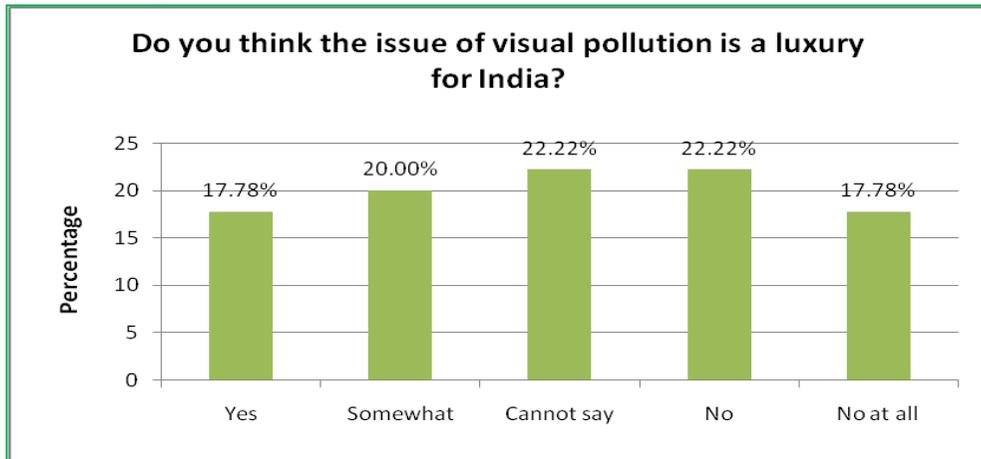


Fig – 9- Whether Visual Pollution is a Luxury in India

In this regard, however, arguments can be placed that there are communities among poorer section of the society, certain races and tribes, who despite their financial condition, live in a decorated home and strive to make their surroundings beautiful. Many folk arts that are visually pleasing have their origin in a very poor community. This habit inwardly caters to innate happiness and health in a subtle way that may go a far way in maintaining the basic quality of lifestyle in a locality.

Conclusion and Discussion

From the above discussion it is clearly indicated that visual pollution that impairs a person's purview to enjoy a pleasant environment, is creating a hazardous condition in a civic society. Among the different sources people perceive garbage, billboards, dumping of electric wires are considered to be the greatest source of visual pollution. Each brings several other associated hazards to the society. The mitigation efforts maybe either localized in certain belts or have not reached to a level where the citizens can perceive the change.

This pollution leads to a loss of sense of identity and homogenizes the community due to the presence of similar visual pollutant in many urban cities and towns. It may lead to deterioration of the civic sense, aesthetic appeal and other civic behavior of the population. Chronic effects have deeper impact and may culminate to character-changing effects on the inhabitants. Children growing up being used to such unpleasant sites may have their aesthetic senses blunted and may not feel the need to stay in a pleasant environment. Such exposure may lead to the destruction of the centers of human aesthetical taste. These children may not grow their minds programmed correctly nor scheduled to deal with a lot of maturity problems. These cause a chronic degradation in the way of life [iii].

Additionally, visual pollution can cause value degradation of property. It can deter establishment of business centres at certain places. This can cause a reduction in economic value of a place.

Healthy visual environment promotes the values of those who live there, promotes civic pride and economic health of the community because all human beings are part of natural environment. The inhabitants show an innate instinct to experience a good feeling when integrated with the beautiful Nature, which is reflected in the opinion of the respondents that they would prefer to visit to the pleasant picturesque places of natural beauty free from visually unpleasant sight to re-energize and relieve stress. Doctors explains emotions that result from a negative visual influence as an increase in the secretion of adrenaline, which raises the acidity of the stomach and rapid the heart rate, and thus speed irritability. They also explain emotions that result from a positive visual influence like, a sense of beauty, increases

the secretion of cortisone in the body, and this natural cortisone reduces the feeling of pain, especially for those who suffer from rheumatic diseases. Some studies was also done regarding where the concentration of visual pollutants is more, how concept good visual environment is used commercially, what can be different causes, in a third world country like India what would be the fate of such visual pollution and what are the different objects that we can call visual pollutant, which kind of visual pollution is increasing etc. and few other questions were asked too (Data not shown).

The pollution with gross and acute effect attracts immediate attention. Unlike such acute attention, visual pollution usually goes unnoticed, unaddressed, and overlooked. Many countries globally, for example, Seoul, Beijing, states of USA, Norway, Moscow, Czech Republic, Brazil and others, however, have recently taken this issue seriously and have incurred several restrictions to reduce visual pollution [iii]. But here it may be pointed out that the kind of visual pollution in a developed country may not match with the visual pollution in a developing country, neither the consciousness of the inhabitants in these two types can have equal bearing. For example, in developing countries garbage may be a menace of much larger magnitude than in developed country whereas in a developed nation the sources of visual pollution may be of different types.

Some future studies can be designed where different other places can be examined, a comparative account can be created between the status of visual pollution of different cities in India as well as of different countries. Some pollutants that are still not under attention can be taken into consideration and studied further. New innovative and feasible ways may be planned to mitigate this kind of all-pervading unpleasantness in the urban and sub-urban environment.

This discussion reveals the subconscious truth we all feel, that the visual environment is as indispensable as clean water or fresh air in weaving the pleasant mosaic of a healthy environment. Hence there should be joint effort from different organizations and institutions of the society, namely the government, the concerned authorities as well as the public at large. Efforts should be taken to raise awareness among them.

To thrive in a beautiful environment where there is a pleasant mosaic of natural and built forms is a dire urge of our soul and the health of our psyche. Such environment inspires creativity and productivity.

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