Articles

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Psycho-Social Analysis of Challenges Facing India's Smart Cities

Abstract

A smart city concept entails four main system components which include: Smart technology (including ICT); Smart innovation; Smart System; and Smart people. The word 'smart' in the broader sense of its meaning refers to the application of a certain kind of intelligence in finding solutions to problems; and from a humanoid angle, it also becomes a training and behavioural issue. What is meant here is that the use of smart technology and innovations efficiently, would inevitably require smart, human behaviour as well. Since there is a lack of a benchmark of social behaviour at the minimum or sub-zero levels, even the most efficient technologies and systems often fail to deliver the desired results. Open defecation, urinating in public places, spitting on public property, throwing remains of "gutkha" and "pan masalas"(commonly practiced ,deleterious, tobacco and betel nut habits of the Indian sub continent) in wash basins and public urinals, general disobedience of the traffic rules such as jumping signals, risky driving, chaotic parking are just a few of some such examples of undesirable social behaviour rampant across India, that form the basic issues which are affecting the smartness of smart systems.

Since technology alone cannot find all the answers, it can only be used to increase the efficiency of performance; and in actuality, a major change is required at the psycho-social behavioural level to make the technology smart by making the people using it, smart. It implies an operant conditioning (Skinner 1938)[1] of sorts which includes both reward and reprimand. In India, the smart city initiative will have to look into

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the psycho-social behaviour of people at large before designing the options. This paper tries to deal with the psycho-social aspect of the urban dwellers in India to propose the required benchmarking for the making of smart people for our future smart cities.

Key Words: *Smart City, defecation, BRTS, Swachh Bharat, mobility*

Introduction

Building smart cities in India is one of the ambitious flagship policies of our government, announced by Narendra Modi, after coming to power in 2014. It aims at converting a hundred selected cities of India into smart cities in a phased manner. To start with, 20 cities have been identified for this purpose, which includes among others, Bhopal, Bhubaneswar, Pune, Jaipur, Kochi, Ludhiana, Ahmedabad and Surat, the last two in Gujarat. Experts of urban policy are of the opinion that Indian cities have long suffered from a lack of proper planning, investment and/or infrastructure. The development deficit therefore grips all the big as well as small cities of India, which struggle for basic amenities such as basic drinking water, sanitation, power, transportation etc. While the development deficit looms large, cities are also under tremendous demographic pressure, which often reflects in the unplanned growth of the cities as well as its peri-urban sprawls. Statistically speaking, 38 per cent of India's population is projected to be urbanized by the year 2020, which will put tremendous pressure on the already over stretched urban infrastructure, which exists in India.

In the backdrop of such a development deficit and the ever-growing demand for more efficient infrastructure, India needs to look for better strategies to rejuvenate the urban system and infrastructure; actually the rationale of smart cities, which is both functional and ambitious. A new kind of urbanism, which will require interventions at various levels including smart technology (ICT), smart design, smart systems, smart innovation and also smart people is required to be envisioned. On one hand, the first four interventions require financial and technological support whereas, on the other, the last one: smart people require a novel approach as it depends on modulating the psycho-social behaviour of human beings.

In the psychological parallel, the 'smart' has dual connotations. In one dimension, the commonly believed one, smartness means fashionable, stylish, elegant, neat, and debonair while in the other, it also implies intelligent, wise, and adept, among others.

Sternberg (2003)[2] identifies three types of intelligence in human cognition which include analytical intelligence, creative intelligence and practical intelligence.

- Analytical intelligence means the ability to analyze and evaluate ideas for problem solving and decision-making.
- Creative intelligence (largely used in design thinking) involves going beyond the apparent and creating new options and ideas.
- Practical intelligence refers to the individual's ability to find the best connect between themselves and the environment.

The aspect of psychosocial behaviour with regard to smart cities has a great deal to do with the application of these three aspects of human intelligence.

According to a general observation, people in India have a tendency to either defile or misuse urban systems. It reflects in several ways: the way people maintain sanitation, cleanliness, obey traffic rules, maintain common amenities like roads, parks, public buildings and places, etc. There seems to be an apparent lack of social refinement and also a lack of adherence to social norms, including those pertaining to urban living. Here is where arises the likelihood of failure of technology, design and innovation intervention in smart cities. This makes an analysis of the psychosocial behavioural aspects of Indian urban dwellers imperative.

Why people behave with the urban environment, as they do, needs an in-depth enquiry. Thus, the general tendency of people of littering, poor sanitation habits, breaking of civic norms of safety and healthy living require an in-depth, behavioural study. This paper has tried to investigate the psycho-social behaviour of people from the perspective of a smart city because *a smart city cannot attain smartness unless the people in it are themselves, smart enough.* This paper will also explore the behavioural issues related to sanitation, mobility and interface with the urban systems from the psychosocial perspective.

Swachh Bharat Abhiyan: The Implementation Challenges

Does the access to a toilet ensure usage? With the excellent Clean India arrangement, the administration plans to accomplish an Open Defecation Free (ODF) India by 2019 with the development of 12 crore toilets in rustic India, at an anticipated cost of Rs 1.96 lakh crores.

Notwithstanding the way that the Administration is trying to lessen open defecation by building toilets in different parts of the nation, it remains a persistent, huge challenge. With the assistance of Government grants, individuals have built toilets yet the utilization of these toilets by people is insignificant. Individuals, mostly in rural areas and a few urban territories continue with the age-old habit of defecating in the open.

According to the latest Swachhta Status Report of 2015, the greater part of the provincial populace (52.1%) of the nation still defecates in the open. Behavioural change alone, then is the key priority of the Swachh Bharat Abhiyan, since sanitation is more of a behavioural issue, says the central government. "It involves a change of the mind set amongst people to stop open defecation and thereby adopt safe sanitation practices.

The rationale for open defecation in India is usually poverty (people are so poor that they cannot afford toilets), rural houses being constructed without toilets and profound established social standards that have allowed open defecation as a tolerable practice. So, people are lead to believe that nothing is wrong in defecating in the open which is trusted as a reasonable and acceptable practice, whereas it is believed that building a lavatory inside the house pollutes the environment of the house. Even the two thousand year old Hindu text, called the "Laws of Manu," encourages open defecation.

What is required here is a total behavioural change and keeping in mind the end goal to bring about these changes, communication programs need to be worked upon. A standout amongst the most regularly utilized methodologies for setting off this change is community-led total sanitation (CLTS). This includes uniting the occupants of a group and, through an accomplished field facilitator and intuitive sessions, motivate them to comprehend the wellbeing and health related financial implications of defecating in the open. At the point when this is done through persistent engagement, CLTS more often than not prompts the entire group to choose on the whole that it is helpful to stop open defecation and to construct and utilize toilets. This approach is practical and dependable as the group takes responsibility for issue and cooperates to roll out the improvement plans.

In practice, however, this is never so easy. There are always people who refuse to believe in the benefits of using a toilet. Many prefer to go out in the open as their ancestors have done for centuries – a habit extremely difficult to break. (Bandura and Walters 1963)[3] This entrenched customary conduct is profoundly imbued through practice from childhood; it is taught.

To persuade them generally the CLTS approach utilizes different strategies, for example, framing 'Nigrani Samitis' (watch committees) who monitor those in a town who still defecate in the open, garlanding "guilty parties" and tailing them to open defecation locales, and going around the town with a band declaring the names of open defecators.

Every one of these techniques have a few things in common; they are peaceful, generally convincing in tone, and, while they have a component of

naming and disgracing, the strategies are embraced by the group and an official conclusion to change is left to the individual.

Social standards and propensities should be changed if open defecation is to be effectively battled. Fundamentally, constructing more toilets, alone, is not going to solve the problem. The administration has effectively found a way to teach individuals about the risks of open defecation and reward the individuals who utilize toilets. In Haryana for instance, it launched the "No Toilet, No Bride" campaign that urged women to only marry men whose home had a toilet.

Similarly, people group approaches that include orderly and organized Data, Instruction and Correspondence (IEC) and Between Individual Correspondence (IPC) components are not yet incorporated in the Swachh Bharat Mission (SBM). The non-appearance of Social and Behavioural Change Communication (SBCC) exercises implies that numerous family units that get toilets have not requested them. Thus, not all individuals from the family utilize the toilets since they do not have the foggiest idea of their advantages. In few cases, no individuals from the family utilize the toilets, outlining the requirement for greater group level awareness about sanitation.

Smart Mobility

In a setting where transport systems are progressively synchronized, a snarl-up can make increasing impacts, affecting expenses, as well as the dependability of transport frameworks. The monetary and social effects of congestion remain a remarkable issue, especially in creating nations where it can obstruct financial development.

In India, street accidents add up due to numerous passing setbacks. As urbanization builds up, so does the vehicular movement. The number of individuals utilizing vehicles have increased immensely in the past few years. All state governments are attempting to give the general population, a financially viable and efficient transport system. The Bus Rapid Transit System (BRTS) is one such initiative. The BRTS transport runs on a lane dedicated and designated just for it, which now and again is however, infringed on by different vehicles and people. This disobedience of the rules is what tends to lead to an increment in the number of mishaps in an otherwise, very well planned and safe system.

Disregarding the administrative prohibition of private vehicles to ply in the BRTS hallway, the general population is not taking care to obey these principles and controls, leading to mishaps and road accidents, some of which have been demonstrated to be lethal.

Laws? What are they? What's the purpose of having them? Laws are guidelines to facilitate the safe existence of all individuals living in the society. They secure our general wellbeing, and guarantee our rights as nationals against misuse by other individuals, by associations, and by the administration itself.

A group of scientists have found that even little demonstrations of unscrupulousness – like lying on a cost report – can give individuals a prompt surge, that they term a "cheater's high" – a kind of psychological reward of breaking the rules.

Everybody cherishes a decent deal. Indeed, even wealthy individuals appreciate the fulfilment of clinching a decent deal. For a few people, however, the journey to get more for less, incorporates the desire to get something in vain – which may transform into theft or breaking of rules. Not everyone however steals because they need the goods. Kleptomania – the compulsion to steal is a sort of motivational control issue – a turmoil that is described by issues with passionate or behavioural restraint. If you have an impulse control disorder, you have difficulty resisting the temptation or drive to perform an act that is excessive or harmful to you or someone else. The same impulse control disorder probably drives people to take the dedicated BRTS Lane even when there is no rush of vehicles on the road. The individuals who trust that human conduct is represented by judicious standards are hard put to clarify quite a bit of such wrongdoings.

Jack Katz, an Associate Professor of sociology at the University of California, Los Angeles, takes note of the fact that sociological and mental investigations of fierce wrongdoings, (for example, burglary once in a while) concentrate on its recreational perspectives – what he calls ''the valid attractions'' of high-hazard criminal savagery. The specific delights of these violations are not materialistic in his view; rather we can discover why individuals confer them by realizing "what it implies, feels, sounds, tastes, or resembles" to submit them. What makes wrong doing appealing, are the joys of utilization, as is valid for different types of diversion, for example, betting or infidelity. By focusing on how and why wrong doers may discover such conduct appealing and worth rehashing, Katz reveals to us much about the identity styles of individuals who are attracted to nonsensical behaviours and gives essential insights about its counteractive action and control.

Once in a while, one comes across some lunatics who infringe upon the law; these sort of individuals are inherently mean, don't trust the law and believe it is not applicable to them. The vast majority, in any case, violate the law out of distress. They have no conscience and lack a social soul; they do not understand

the repercussions of their actions or that their activities will influence or affect others also; they cherish the momentary excitement of overstepping the law, the euphoria of doing the forbidden, which may eventually end with them in prison or at least make them liable for a fine.

Investigation on why we break rules focuses to a variety of reasons. We might want to experience a cheater's high, the good mood that follows getting away with a transgression. Or, on the other hand we may be under the misapprehension that our actions won't hurt anybody. The greater part of the outside administer breakers tested said that they had broken standards that had neither a rhyme nor reason, or on the grounds that others too had broken similar laws, or in light of the fact that the outcomes of their activities would not be too critical.

Perhaps some of these or all of these reasons cited above may be stimulating the individuals to drive into the BRTS lane even when the roads are relatively free. People take pride and pleasure in breaking the rules and it gives them a sense of high.

Solid Waste Management

There is a direct correlation between the rising urban demography and creation of solid waste, which makes municipal solid waste (MSW) management a humongous task. This is among one of the priority areas under the smart city mission. Uncollected piles of solid waste is not only an environmental and health hazard but against the spirit of the smart city concept too. Solid waste management for smart cities is both a challenge and an opportunity because it requires new alternatives and newer models to handle it. Smart cities will have to experiment with new concepts. Central Public Health and Environmental Engineering Organisation's (CPHEEO) Manual of Municipal Solid Waste Management (2016) indicates that during the 2014-15 period, 1,43,449 tonnes per day (TPD) of MSW was generated in India with an average waste of 0.11 kilogram (kg)/capita/day. Of the total 1,17,644 TPD approximately, only 80 percent was collected. Only 32,871 TPD (22%) was processed or treated. Besides, it also points out that segregation at source, collection, transportation, treatment, and scientific disposal of waste remains grossly inadequate, which contributes further to the urban mess.

But besides disposal of collected waste another major challenge that cities are facing today is that of littering of the roads and public places with 'pan masala', 'gutkha', and the stains sullying the city by spitting after consuming the same, not only on the roads but also on the walls of newly made buildings.

Another major source of littering is plastic packets, food waste and water bottles carelessly thrown away on the road and out of moving cars.

The Psychology of Littering

Littering continues to be a big environmental problem in cities. Research has shown that the behaviour trait of littering is complex and can be attributed to a variety of sources, including deliberate tossing of litter from vehicles, accidental litter from items blowing out of vehicles or from unsecured loads, and litter left behind by pedestrians.

One thing research has proven is that it is tough to label an individual as a "litterer." One may litter in certain situations, but not in another. Littering is not a consistent behaviour. Individuals can be influenced by a number of factors, including a belief that an item is not litter (such as a cigarette butt or banana peel), laziness, perceived lack of consequences for their actions, seeing litter already in a given area, or a lack of trash receptacles.

- People litter because they do not feel responsible for public areas like streets and parks. The more they litter, the more it becomes a habit, and the worse the community looks.
- People usually litter outside their own neighbourhood where their trash becomes someone else's problem.
- People litter because they believe someone else – a maintenance worker or responsible neighbour – will pick up after them.
- Once litter starts to pile up, people feel even less responsible for adding to the litter. If an area is clean, people are less likely to litter.

Litter is junk, discarded or scattered about in disorder over a socially inappropriate zone. It is terrible, costly, across the board, and risky. Littering behaviour has got relatively little research attention even with amplified public concern for more stringent protection of "our environment." Considering the extent of litter, and expenses incurred to clear it, it is astonishing that the major variables of littering behaviour have been neglected by the research community of social and behavioural scientists.

Gallup (1972)[4] discovered similar yet stronger demeanours toward pollution. Research showed education is positively related with concern about the degradation of the environment.

As per Zimbardo's theory of "deindividuation" (1969)[5] circumstances which engender a sense of anonymity may lead to abdication of personal duty. Studies suggested that people are more likely to litter anonymously, than when their name can be identified with their conduct.

Festinger's theory of social comparison (1954)[6] contends that people conform partly out of a desire to be correct and what is correct is decided largely through social comparison. On the proposition that people seek consensual validation for their behaviour from environmental signals, this review conjectured that littering would be more likely in a previously littered area than in a cleaner range.

Rokeach theorizes that values, rather than attitudes, are stable determinants of behaviour. The cognitive variables concentrate on levels of litter mindfulness, concern, and keenness to act against litter.

A Harris survey (1970) interviewed over 3000 subjects and asked them to select two or three of the most difficult issues confronting the community in which they lived. Pollution was cited most frequently, followed by crime and medications. Other survey discoveries showed that 9 percent people pointed to "tidy up of road litter" as the most imperative issue, and 68 per cent people considered visual contamination (counting litter) to be a "genuine" urban issue, with 16 percent trusting that it ought to be "attacked first." For pollution, the public was not only very willing to see government develop solutions but was also very willing to become personally engaged in building up an answer. It is one thing not to realize that one's activities constitute littering; it is another thing entirely to be aware of one's behaviour and not be concerned about or acknowledge responsibility for its results.

Festinger, Pepitone, and Newcombe (1952)[8] noticed that circumstances inciting feelings of anonymity may lead to ignorance of personal accountability. They labelled this phenomenon "deindividuation." The bursting of the bonds of self and separateness allows the "reduction of inner restraints." (Festinger, Pepitone, and Newcomb, 1952)[9] Once the individual has been "submerged in a gathering", or "deindividuated," his restrictions are lifted, and he is free to do what he desires. As indicated by this definition, being an unknown member of a crowd ought to lead to more antisocial behaviour Mobs, lynching, and other examples of mass violence speak about circumstances in which people are more likely to commit anti-social acts that they ordinarily would not engage in. Research and theory on anonymity has been performed and proposed by Zimbardo (1969)[10] who trusts that anonymity strongly advances "deindividuation". Deindividuation is a complex process in which a series of antecedent social conditions lead to changes in perception of self as well as other people, and in this way to a lowered threshold of normally restrained behaviour. (1969, p. 251).

Litterers were less willing to acknowledge responsibility for their activities than non-litterers (Heberlein, 1971),[11] and the success of an antilittering campaign aimed at changing littering behaviour by expanding personal sense of responsibility for holding fast to non-littering electives has already been exhibited. (Dodge, 1972)[12] The observation that people litter less frequently when in gatherings than when by may be because of the obscurity being enjoyed in groups and gatherings.

The study also examined the role of socio-demographical and psychological factors in taking littering prevention actions among males (770, 56.6%) and females (590, 43.4%) residents of Ibadan, Nigeria. Their age ranged from 18 to 65 years. A questionnaire was prepared for data collection. Results indicated that altruism, environmental self-efficacy, locus of control, self-concept and age accounted for variations in taking littering prevention actions. This indicated that high levels of altruism, environmental self-efficacy, self-concept and internal locus of control are motivational resources in taking littering prevention actions. Therefore, stakeholders who have littering prevention as their priority should incorporate this information when they design interventions to promote taking littering prevention actions. Psychologists should be involved in designing such procedures to ensure the inclusion of behavioural issues. An integrated approach is the most efficient tool of promoting littering prevention actions as can be seen in the study of the residents of Ibadan.

Government also deployed laws and formal governmental structures to address the problem. Despite the deployment of these regulatory tools, littering remains a problem in Ibadan. The subject matter is becoming a behavioural problem instead of an environmental problem, and because behavioural issues are domiciled in psychology, it would be seminal to explore the problem from a behavioural prism, such as taking littering prevention actions in the field of environmental psychology, taking littering prevention actions is an aspect of responsible environmental behaviour (REB, Tanner, 1999). REB covers individual's different preventive measures taken to protect the physical environment (Jensen, 2002). Consequences of taking littering prevention actions include significant reductions in time spent on sanitation and cleaning activities, and in money and manpower costs associated with serious health and environmental problems. Beyond the question of quality of life, taking 'littering prevention' – actions has implication for family and community health through reductions in bad odour, flies, cockroaches, rats, other small and dangerous insects which may breed ailments and / or reduction in dirtying the surroundings and prevention of human health endangerment.

Conclusion

The issue of cleanliness in its clean/dirty and pure/impure antinomies definitely has a social and cultural dimension**.** There is a very old saying that "cleanliness is next to godliness." It is well said by John Wesley, "Cleanliness should be given a priority in all the homes from childhood so that people practice it as a habit and can be benefitted from all through the life."

Cleanliness is like a good habit, which not only benefits a person, but can benefit the family, society, country and thus the whole planet. It can be developed at any age, however, best to practice it from the childhood and thus become responsible citizens.

References

1. Anil Cherukupalli, "Open defecation in India: forcing people to stop is not the solution", *The Guardian*, 2016, https://www.theguardian.com/global-development-professionals-network/2016/nov/18/open-defecation-india-solution-world-toilet-day#img-1
2. Arolkar Harshal, Dhamecha Kashyap, Patel Darshan, "Architecture for Accident Monitoring in BRTS Corridors Using Wireless Sensor Network", *International Journal of Enterprise Computing and Business Systems*, vol. 2(1), 2012.
3. Mihir Bholey, "India's Urban Challenges and Smart Cities: A Contemporary Study", *Scholedge International Journal of Business Policy & Governance,* vol. 03, issue 03*,* 2016, http://www.thescholedge.org/journals/
4. Margaret Bissell, "The Behavior of Organisms: An Experimental Analysis" in Daniel Schugurensky (Ed.), *History of Education: Selected Moments of the 20th Century*, B.F. Skinner publishes [online], 2001.
5. Cris Burgess, "Breaking the Rules: Why do people behave in the way they do?", *Health Forum,* https://people.exeter.ac.uk/cnwburge/pages/Rule-breaking.html.
6. T.A. Heberlein, "Moral Norms, Threatened Sanctions and Littering Behaviour" (Doctoral dissertation, University of Wisconsin), Ann Arbor, Mich.: University Microfilms, No. 72-2039, 1971.
7. Jack Katz, *Seductions of Crime: Moral and Sensual Attractions in Doing Evil,* New York: Basic Books, Inc., 1988, https://www.psychologytoday.com/blog/why-bad-looks-good/201405/breaking-bad-behavior-the-seduction-crime#_ednref1.
8. B.B. Jensen, "Knowledge, action, and pro-environmental behaviour", *Environmental Education Research,* vol. 8, no. 3, 2002, pp. 325-334.
9. Kanika Kaul, "Swachh Bharat Abhiyan: Prospects and Challenges", *Employment News*, 08 November 2014, http://www.cbgaindia.org/opinion/swachh-bharat-abhiyan-prospects-and-challenges/
10. S. McCool and Merriam L. Factors associated with littering behaviour in the boundary waters canoe area. *Science Journal*, Serial Paper No. 7357, University of Minnesota, Agriculture Experiment Station, 1970.
11. Ministry of Urban Development, Government of India, *Smart Cities Mission*, 2017. Retrieved on 21April 2017 from http://smartcities.gov.in/content/innerpage/strategy.php.
12. Paul Samuel, "Urban Infrastructure and Governance", in Ramesh, *et al.,* (Eds.) *Urban Growth and Governance in India an Overview,* London: Routledge, 2010, p. 3.

13. PWC, "Making cities smart and sustainable", 2015, retrieved on 21 February 2017, from https://www.pwc.in/assets/pdfs/publications/2015/making-cities-smart-and sustainable.pdf.
14. Nishith Rai and A.K. Singh, *New Dimensions of Urban Management in India*, New Delhi: Serials Publications, 2010.
15. M. Rokeach, "The Measurement of Values and Value Systems", in G. Abcarian and J.W. Soule (Eds.), *Social Psychology and Political Behaviour*, Columbus, Ohio: Charles E. Merrill, 1971.
16. Oluyinka Ojedokun, "The Role of Socio-demographical and Psychological Factors in Taking Littering Prevention Actions", *International Journal of Advances in Psychology* (IJAP), vol. 2, Issue 4, DOI: 10.14355/ijap.2013.0204.03
17. Stuart Norman Robinson, "Social and Environmental Influences on Littering Behaviour", Ph.D. Thesis, 1975.
18. Paurush Ambesh and Sushil Prakash Ambesh, "Open Defecation in India: A Major Health Hazard and Hurdle in Infection Control", *Journal of Clinical and Diagnostic Research*, Vol. 10(7), 2016.
19. C. Tanner, "Constraints on Environmental Behaviour", *Journal of Environmental Psychology,* vol. 19, 1999, pp. 146-157.
20. Torgler Benno, Valinas Maria, Macintyre Alison, "Justifiablity of Littering: An Empirical Investigation," Working paper, CREMA Gellertstrasse 18 CH - 4052 Basel, 2013, www.crema-research.ch
21. "Sanitation-related psychosocial stress: A grounded theory study of women across the life-course in Odisha, India", *Social Science and Medicine*, vol. 139, pp: 80-9.
22. "Sustaining Swachh Bharat Mission a Challenge", *The Hindu*, National Bureau, 04 October 2014.
23. Govt. of India, Ministry of Urban Development, *The Handbook of Urban Statistics 2016*, retrieved on 10 April 2017 from http://www.indiaenvironmentportal.org.in/files/file/handbook%20of%20urban%20statistics%202016.pdf
24. The Planning Commission, "Approach to the 12th Plan: The Challenges of Urbanization in India", retrieved on 30 March 2017 from http://12thplan.gov.in/12fyp_docs/17.pdf
25. The World Bank, *Leveraging Urbanization in India*, 2015, retrieved on 21 February 2017 from http://www.worldbank.org/en/country/india/brief/leveraging-urbanization-india
26. P. Zimbardo, "The human choice: Individuation, reason and order versus deindividuation, impulse, and chaos", in W. Arnold and D. Levine (Eds.), *Nebraska Symposium on Motivation*, Lincoln, Neb.: University of Nebraska Press, 1969, 17, 237-307, http://donttrashaz.com/highway-littering/.

    https://www.cityofchicago.org/city/en/depts/streets/supp_info/whypeoplelitter.html.