**The Cultural, Social, and Material Dimensions of Waste Practices: A Case Study of the Emerging Middle Class in Bengaluru**


## Abstract

This chapter explores the role of cultural, social and material factors on the waste management activities of middle-class households in the Indian city of Bengaluru. These practices can be seen as being made up of norms and values, as well as material elements, such as the role of scrap dealers, as well as composting and recycling infrastructure. The study involved 127 qualitative interviews that were gathered during a two-year research project focused on changing food consumption and waste practices, patterns, and policies related to the emerging middle class in the information-technology (IT) sector. Using the practice theoretical approach, results are structured on three different levels with the household placed in the center of this framework. First, I deconstruct the Hindu cultural worldview and its nuanced lexicon associated with leftovers or waste food. Second, the chapter analyzes consumers' attitudes with regard to recycling paper and appliances by households. Finally, I consider the role of peer and policy pressure in segregation and disposal at the level of a neighborhood or gated community. The chapter contends that a cultural reading of waste is an important, and neglected, facet of understanding both individual and collective practices. These undertakings are not isolated individual acts, but rather are embedded in a social and structural framework of relationships. The household thus becomes a point of intersection for religious, material, social, and aspirational practices.

Keywords: middle class, waste management, environmental sustainability, social practice theories

## Introduction

The study of household practices and patterns of everyday disposal of waste allows an inside look into cultural, social and material transformations at a wider and more expansive societal level. A practice theoretical approach means that research pertaining to consumption is embedded in everyday activities. This is especially true for developing societies that are in the process of undergoing massive changes in terms of economic conditions and institutional capacity and that are having a distinct impact on the organizational arrangements of individuals and households.

The Centre for Macro Consumer Research (2011) (part of the National Council for Applied Economic Research (NCAER)[1], had predicted that by the middle of the next decade, the number of middle class households in India would encompass 113.8 million households and 547 million individuals. This rapid expansion in numbers and income is believed to have contributed to notable patterns of conspicuous consumption and the disposable income and lifestyle practices of the new and emerging middle class that stand in stark contrast to the more austere principles of the pre-existing Indian middle class.

These developments are well-captured in a city like Bengaluru that began to come into its own with the rapid expansion of the information-technology (IT) sector during the decade of the 1990s. The population of the city grew during this period by

[1] Last official numbers available were 53.3 million middle-class households by 2015-16 and because of the country's relatively large household size this translates into 267 million people (Shukla, 2010).

more than 37% and today encompasses 11.5 million people. Among the fastest growing metropolises in India, this rapid growth is a result of the migration of highly skilled, English-speaking young urban professionals who have found new employment opportunities. This new middle class has risen to prominence on the basis of a shift from public sector companies to a globally connected IT-driven economy. These individuals work for both multinational and domestic technology corporations, investment banks, media, healthcare, and other service sectors (Fernandes, 2000b; Upadhya, 2008). They represent a societal group that is distinct from the "old" middle class which was largely comprised of people who were employed by the state and fell, as outlined by Misra (1961) into eleven distinct groups including teachers, lawyers, doctors, and bureaucrats. Thus, post- liberalization India saw a production of a new cultural image and social status of the Indian middle class rather than the entry of a new socio-economic group (Fernandes, 2000) and this was primarily because of the expansion of the service sector in the economy and of professional, white collar employment within the private sector, in particular within multinational corporations.

Several social scientists have enumerated the characteristics of the middle class in pre-liberalization India (Misra 1961, Beteille 2002; Markovits 2001). These scholars described the heterogeneity of the country's middle class at the time in terms of values and ethos, However, this societal grouping largely comprised members of upper castes and remained culturally homogenous (Andre Beteille, 2002; Markovits, 2001). They were also believed to be more civic minded, taking up positions of leadership in social movements and engaged in social activism.

In contrast the new expanding middle class was linked to growing civic indifference (Gupta, 2000; Verma, 1998; Beteille, 2001) buffered by state policies

that legitimized a materialistic worldview whereas Gandhism and Nehru's socialism of the 1970s -80s had emphasized other ideals (Verma, 1998). Other writers have pointed out that members of the new middle class neither took responsibility for the streets outside their homes, nor consequently for the any waste in public spaces (Chakrabarty, 1991, Kaviraj, 1998). It has also been pointed out that the proliferation of gated communities, catering to the new middle class has resulted in 'sanitisation of the cities', which excludes lower income groups from articulating their rights of livelihood, housing and protection in public spaces (Hariss 2005). The rise of gated communities is closely linked to the rise of the new middle class with western aspirations, models and modes of living and resulting in wasteful consumption.

A materialist worldview, as originally advanced by American social critics like Vance Packard (1967), is central to understanding the notion of a "throwaway society." The concept embodies a disposable mentality or culture that encourages the discarding of items that would have once been recycled or re-used. Scholars like Ramachandra Guha and Madhav Gadgil (1995) have described how the new Indian middle class re-enforces socially exploitative and environmentally destructive structures and processes because of low awareness and lack of concerted action from civil society (see also Dwivedi and Khator, 1995). Particularly in the arena of waste, there has historically been a connection in which the handling of waste in public spaces has being relegated to the lower castes (Douglas 1966; Kaviraj 1998).

The critics of the new middle class seem to suggest that there is something uniquely wasteful about consumers in post-liberalization India, however as O'Brien (2013) points out in her analysis of household waste in 20$^{th}$ century Britain, these narratives are grounded in particular relationships between consumers and waste and there does not seem to be anything inherently more wasteful about new consumers.

Particularly in Bengaluru, only one study by Kumar and Nandini (2013) have empirically examined claims about the new middle class relationship to waste in much detail. Comparing in simple binaries tends to misrepresent the past, as well as, ignore the complexity of the dynamics of the present. The idea that the new middle class is inherently more wasteful and fits into the thesis of the throwaway society more easily, is too simplistic. Instead one finds the endurance of certain ideas of thrift, value and abiding cultural processes shape the emerging middle class practices around waste. This chapter seeks to challenge the idea that significant change has transpired in the attitudes of the new Indian middle class with respect to urban environmental issues. I instead assert that normative and material contexts have play an important role in shaping and evolving middle class attitudes to issues like waste.

The central questions in this chapter center on the examination of household waste, as well as what households keep and throwaway, which then leads to an analysis of the material context of what is retained or discarded. This chapter emphasizes that there are certain cultural nuances to how waste is socially defined and this plays an important role in determining value – both economic and social – of residual materials. In addition, the infrastructure, with respect to both policy design and material circumstances, play a significant role in changing perceptions about waste and assigning meaning to items that would otherwise be treated as superfluous. Accordingly, this chapter reports on how the emerging middle class is more comfortable with conserving certain items like household appliances, newspaper, and glass because of established familiarity with the value and logics for managing these items. In contrast, we see a changing ecological consciousness surrounding food waste, which has traditionally been subject to strictly prescribed rules regarding storage and disposal that now, with the diffusion of composting, has new value

ascribed to it. This change is being driven by both policy changes at the state level that has brought about greater awareness, as well as pressure, from informal peer groups and civil society, especially in gated communities (Ganguly and Lutringer, 2017).

Before presenting data on the attitudes and practices around waste among members of Bengaluru's middle class, this chapter briefly describes the thesis of the throwaway society and provides an overview of practice theories. The aim of this discussion is to challenge the assertion that the new middle class in India is inherently wasteful and less civically minded than prior generations. I identify three logics of waste disposal that link the cultural, social, and material dimensions within which practices are embedded. Through this typology, this chapter aims to reveal that practices are influenced by several factors: historical in terms of culture, ecological because of a new green consciousness and material in the sense of broader policy macro-material dimension that influences individuals and households.

**Theoretical Framework**

Waste disposal encompasses everyday activities associated with purchasing, utilizing, exchanging, and, in due course, discarding goods. Central to these often habituated behaviors is the notion of social practices which Reckwitz (2002, p. 249) defines as "a routinised type of behaviour which consists of several elements, interconnected to one another." These involve routines surrounding everyday practices like cooking, food provisioning, eating, and working, among others that organize practices by knowledge, normative orientations and procedures. While social practices are rarely uniform and unvarying, it is possible to conceive of a synthesis of

interconnected elements to contextualize them within a broader framework of experience, culture, and resources, among others. In particular, practices generally entail some degree of repetition by which individuals reproduce habits in a certain way and individuals are seen as carriers of practices (Reckwitz 2002). In considering waste disposal in Bengaluru, this chapter analyses both the reproduction of certain routines as well as the incremental changes that provide a lens by which to interrogate the structure in which these practices are framed, as well as the individual and collective choices associated with them. This chapter contends that practice theoretical approaches, grounded as they are in cultural structures, can offer insights into theories of consumption. These approaches are particularly useful in identifying continuity in practices, while looking at the inflections of change, adjustment and resistance.

Culture can often shape resistance, informed by tacit knowledge, norms and values that structure individual practices. These constituent elements are nested in broader narratives of consumption culture that pit the consumption of the old middle class with the consumerism of the new middle class. While often conflated in contemporary discourse, Evans and Jackson (2008) make an important distinction and argue that while consumption generates environmental impacts, it can—at least in conceptual terms—be balanced against the objectives of environmental sustainability. By contrast, consumerism is a set of lifestyle preferences and is inherently unsustainable (Miles 1998). Many scholars identify a prevalent culture of consumerism as the main culprit of waste generation because of a societal "addiction" to consumption and careless disposal due to sensibilities of "disengagement, discontinuity and forgetting" (Bauman 2005, 62). While this critique may resonate with the culture of acquiring certain products that lend themselves to status-seeking

and identity-formation, it is more difficult to similarly indict more mundane consumption routines associated with ordinary food and household goods. In short, if we take a comprehensive view of consumption in all its facets, the empirical evidence does not support claims of callous and irresponsible consumers that are frequently advanced by theorists of a throwaway society (Gandy 1993; Ferrell 2006).

All social practices are rooted in context and a specific history. Moreover, both within a country and across countries, they are likely to be substantially differentiated. Much of practice is conditioned by broader economic circumstances, institutionalized arrangements characterized by time, space and social factors. Especially notable in this regard are household organization, dominate modes of exchange, and cultural traditions (Warde, 2005). Although the answers to many of the questions that pertain to practices remain historical and institutional, the boundaries are not static.

Social practices involve a set of established understandings, procedures, and objectives. In order to unpack them, it is necessary to recognize that they are governed by both formal and informal codifications that typically even the people involved in carrying them out do not reflect on them and are not self-aware of their own conduct. For instance, the preference for chicken, as opposed to other kinds of meat like pork or beef was often framed as an individual choice, although it is rooted in the culinary traditions and taboos of the religions of the subcontinent. To that extent, chicken is an effective compromise and commonality between communities, as a choice of meat that can be shared by all, particularly in public spaces. Theories of practice as advanced by scholars like Giddens (1984), Bourdieu (1984), Reckwitz (2002) emphasize processes like habituation, routine, practical consciousness, tacit knowledge, and tradition. Bourdieu's (1984) concept of habitus, defined as "the way

society becomes deposited in persons in the form of lasting dispositions, or trained capacities and structured propensities to think, feel and act in determinant ways, which then guide them" (Wacquant 2005: 316), is also instructive. With specific respect to social practices, habitus refers to the sense of embodied and structured dispositions and grasps the orderliness and predictability of people's actions when faced with apparent free choices. These are particularly important in identifying practices that are routine and have a certain amount of inertia (Ward et al., 2007), as well as those that support policy intervention

Tradition, norms, and values shape consumption patterns that are both enduring and transferrable, for example between generations. On the other hand, given that institutional contexts change, there can also be shifts in patterns. In this sense, through imbued with inertia, habitus "is not fixed or permanent, and can be changed under unexpected situations or over a long historical period" (Navarro 2006: 16).

Social practices in themselves have a constant potential for change as people are exposed to different contexts and situations and continually improvise, adapt, or innovate. In addition, accepted social conventions will usually be contested and questioned, "with some practitioners typically still attached to prior codes of conduct, while others, perhaps of a new generation, seek to replace current orthodoxies with new prescriptions" (Warde et al. 2007, 141). Conventions, tacit understanding, and tradition are unavoidably and inevitably central to practice. Thus, habitus is created through a social, rather than an individual process, standing in opposition to the idea that consumption is merely an expression of individual taste and unrelenting freedom of choice that inexorably leads to rampant consumerism and, consequently, waste.

**Methodology**

This study is based on qualitative interviews and observations among "middle-class" households in Bengaluru that were conducted between Jul-Sep 2013 and Jan-Apr 2014. Using Snowball sampling, we[2] interviewed a total of 100 household members were interviewed, a total of 100 household members mostly in a workplace setting in the IT sector. We had respondents from large companies like Infosys and EMC as well as medium-sized companies, but no small start-ups. Short, semi-structured interviews lasted approximately 30-40 minutes. Out of these, 53 respondents were men and 47 were women. In addition, in-depth semi-structured interviews were conducted among 27 household members, mostly in the household, including observations of consumption spaces in the home. Out of these, 9 primary respondents were men and 18 were women. We conducted in-depth interviews in south, southwest, East and North Bengaluru. Most gated communities in Bangalore are large residential developments consisting of multiple apartments or houses that restrict entry using physical barriers and security guards. The complexes we visited were both high-rise apartment buildings as well as individual houses within gated communities. They usually have amenities like large common areas, clubhouses and well-maintained roads, and dedicated facilities/housekeeping' staff employed to manage and maintain these spaces. A total of five communities were studied, of differing sizes (ranging from 350 to 1300 apartments), and one was an open layout.

[2] Data gathering was carried out by the author and research associate Malavika Belavangala

Out of the 127 interviewees, some 42 (33 per cent) lived in gated communities, with the rest living in a mixture of smaller apartments, private housing and paying guest accommodations.

Semi-structured interviews were conducted in English [3] and lasted approximately 30-40 minutes with each respondent and were typically fit around work-break periods. In addition, in-depth semi-structured interviews were conducted with individuals in their respective homes and included observations of household-consumption spaces. In merits noting that particular household members are by no means representative of the social practices of the household as a whole. Accordingly, in certain situations, other household members (e.g., domestic workers, spouses) present at the time of the interview were also invited to join the discussion. All of the interviews were transcribed and coded using Nvivo software. The coding followed some of the key themes identified in the design of the interview guide, as well as through an iterative process by which supplementary themes emerged during the course of analyzing the transcripts.

During the initial phases of this study, it was determined that it would be problematic to use income as a sole indicator of position in the prevailing system of social stratification. This situation was due to two factors: 1) reticence from respondents in revealing real income figures and 2) position in the hierarchy is not just a function of financial capital, but also is determined by social and cultural capital. In other words, membership to the middle class is not only associated with the norms and practices of consumption, but rather standing with respect to community, workplace, generation, and religion also key determinants and bring a more rounded interpretation of what it means to be middle class. The following analysis disaggregates the routinized social practices of consumption for the target population and interrogates idealized discursive construction of the "new" middle class. The

[3] While most interviews, save one (Kannada) were conducted in English. It must be kept in mind that respondents came from diverse backgrounds and languages thus English was not necessarily the first language of reflection.

majority of our respondents were Hindu (107), with some Christians (15) and Muslim (5). While caste was not explicitly discussed during the interviews, given the majority, emphasis has been given to the Hindu worldview rather than other religions. It must be noted, however, that Christian and Muslim respondents did not seem to have divergent practices with regards to notions of freshness or the storing and disposal of leftovers; the main difference was mainly in the choice and frequency of meat consumption, rather than associated practices.

## Analysis

The following analysis is predicated on three themes: the impact of culture on perceptions of waste; recycling and throwing away, public consciousness around waste.

### *The impact of culture on perceptions of food waste*

The notion of culture encompasses both collective meaning-making as well as the transforming nature of this meaning. Historian Grant McCracken (1986, 71) points out that "cultural meaning is located in three places: the culturally constituted world, the consumer good, and the individual consumer." In this sense, culture is embedded not just in the normative realm but in the material as well. The culturally constituted world is made up of everyday experiences, which is interpreted and shaped by an individual's beliefs and assumptions. Individuals who are not actively self-aware of their own conduct do not necessarily and regularly reflect on their everyday practices and this means that routines can embody a high degree of inertia because of how they are continuously reproduced. Theories of social practice, therefore, tend to emphasize processes like habituation, practical consciousness, tacit knowledge, norms and values, and tradition (Warde et al., 2007).

Tacit knowledge, in particular, is reflected in how language, surrounding waste is deployed. The western concept of leftovers does not capture the different

categories of waste that are part of the traditional Hindu worldview with regard to food sharing, storage, and disposal. The English word "waste" does not accord with the nuances of the highly differentiated grammar and dense vocabulary used to convey the symbols and rituals of both transforming food into something edible and rendering it non-consumable (Ganguly 2017, forthcoming). The typical middle-class respondent then loses something in translation when using English to communicate about social practices around waste.[4]

The conventional notion of leftover food, with its associations of purity and pollution (impurity), has very specific connotations in Hindu dietary customs. Pure foods, in this context, are those that are protected by a husk or peel like rice or are inherently pure like milk. By contrast, alcohol and meat are inherently impure because of their lack of protective sheathing (Kittler et al. 2012, 445). In addition, according to traditional standards, different types of cooked food should not come in contact with one another. Even if separately packaged, strict requirements advise against allowing different containers to come into direct contact. To allow such circumstances to occur would render the food polluted and hence unacceptable for consumption. Families often maintained separate kitchens[5] and utensils for vegetarian and non-vegetarian food. Other types of contamination include the sharing of plates and other tableware among people and the use of vessels containing different kinds of food, touching shared food with the hand one is using to eat, and leaving food one a plate (Ganguly 2017, forthcoming)

[4] I would like to thank Shalini Randeria for introducing me to this thread of enquiry.

[5] This was not evident in the respondents we interviewed but 15 mentioned separate kitchens in their parent's homes while many others maintained separate utensils for vegetarian and non-vegetarian food.

In our interviews, the majority of households did not observe rules about separate utensils or believe in ritual pollution or purity of food, but they did have their own codes regarding leftover food that stemmed from the notion of "freshness." This idea has specific cultural and historical roots (ibid) and observant Hindus have traditionally evaluated freshness through the senses; especially through the smell and appearance. At the same time, some interesting variations are observable in terms of how the idea of freshness is undergoing transformation. For the previous generation, where vegetables were largely purchased at wet markets, the colour and aroma of a vegetable item determined its quality. When respondents were asked to define freshness, they articulated a variety of meanings including seasonality, the idea of it being "healthy, hygienic and just plucked from the plant" or "not being marked or damaged". This visual and tactile nature of choosing produce often runs counter to the logic of the organic movement where produce often comes in non-standardized shapes and colours.

While the majority of respondents still shopped in wet markets, members of Bengaluru's emerging middle class increasingly procure fruits and vegetables in department stores. In such venues, the freshness of produce often is synonymous with particular brands (e.g., *Namdhari* and *Reliance Fresh*[6]) where vegetables are often wrapped in plastic to keep them fresh. Some respondents pointed out that they "tend not to pick up the ones [individual vegetables], which are already packed because then you don't have a choice of separating the good from the bad" or the idea that "big malls don't keep fresh stuff." In addition, several respondents themselves (or their family members) had taken up organic terrace gardening which supplemented the

[6] Names of popular supermarket chains in Bengaluru

food that they bought at the markets and which they believed was fresher because of the greater control they could exercise on restricting pesticides and other inputs.

This notion of freshness also extends to how long food is kept after being cooked. Ayurvedic principles set out that food that is stored in the refrigerator or reheated loses nutritive value. One respondent noted that a complete organic way of life which also aligns to the Ayurveda principles of eating and leftovers, and stated, "Anything that is left for three hours after it is cooked starts degenerating (losing its nutritive value)." While most respondents did not overtly follow Ayurvedic principles, the majority of them would carry over food to the next meal, but very rarely beyond that period of time. This practice meant signaled a strong reliance on freshly cooked meals with preparation being done in the house every day and vegetables' being newly procured at least three times a week. This also meant that organic waste was generated in smaller quantities everyday which pointed to greater control over the organic waste generated by households.

In the case of everyday practices regarding leftovers and food waste, it was found that practices were embedded in a context where cultural and ecological sensibilities were in alignment to the extent that organic food waste from individual houses was negligible. Given that food was freshly purchased and cooked meant that respondents had a marked understanding of eating patterns within the home and were confident about preparing amounts that would be consumed within one or two meals.

In addition to the practices and rules surrounding the storage and disposal of food, there was a general reticence to throwing away food. Most respondents stressed that they had a good grasp on the volume of food the family consumed and very rarely discarded unconsumed food. For respondents living alone or in shared apartments,

leftover food was often brought to work and shared with colleagues. Decisions to throw food out, were contingent on the particular category of item. For instance, dairy products were disposed of faster than cooked pulses and rice which retained its acceptability for longer periods (and even was re-cooked into a different dish for the next meal). A mother with two children working for an IT company remarked, "We eat it [leftovers] the next day…till it goes rancid, we eat…then we make tikkis [fried dish]…If the kids have left over a little bit of rice for instance, then the next day, maybe I will get some lentils or something and cut some onions and will make a tikki out of it so that becomes the next meal."

Items that often wasted were related to goods whose expiry date had passed or canned goods that had been stored for a long time. But as most meals were fresh, it was found that the incidence of food waste on an everyday basis was low. Respondents also commented on the morality of throwing away food in a country such a high poverty rate and they insisted that family members, particularly children, develop a responsible attitude to food waste. As pointed out by a software engineer living with his parents, "It [food waste] wouldn't be something that is really significant because it is very closely monitored by my mom. Even with fruits she is like 'eat the damn thing.'"

In 2012-2013, several national newspapers (The Hindu, Indian Express, among others) reported a "crisis of waste," especially because of structural and institutional failures, changes in consumption patterns within households with regard to fresh or cooked food, and disposal of household goods. Interestingly, our research finds that everyday consumption with regard to food specifically, does not seem to have undergone major transformations, especially in terms of volume at the level of everyday consumption.

Even in families where there was notable wastage, respondents mentioned giving it to pets, street dogs, or birds. As a 27-year old interviewee living with his parents pointed out, "[I]t goes into either two channels – one is we have a very healthy street dog because of this and otherwise, neighbors are more than happy to take it. My mom simply cannot prepare food for three people, very rarely, once in a month, she gets it right and that's a day we celebrate. There always has to be something excess…rice is a common wastage on a daily basis, I would say out of 100 kilos, we may discard 10-15 kilos as a waste. I usually see it on a daily basis…so the consumption is usually 60-70% of what we prepare for three people."

Among households living in gated communities organic food waste, which had previously been discarded, could now be transformed into new forms through composting. It has been found that many residents living in such settings set up composting pits and used the resultant compost to landscape their gardens. New social ventures like *Daily Dump* also now provide individual composting kits for households. Such companies provide demonstrations and offer training sessions, encouraging households to create wealth from waste, in the form of compost for their gardens. However, there is still reticence among many people in handling what has culturally been associated with pollution and filth. A respondent who lives with her family went through a training session on composting and recalled, "What happens in composting is there will be lot of insects and smell. And she [her mother] feels scared of those things. And I can't bear those worms and I can't even see that. I saw once inside the pot, full of worms and insects. I can't have that. And you have to handle it, pick it up, turn it. Others point out that it is something they consider important for 'the greater good of humanity.'

***Recycling and Throwing Away***

In 2012, residents of the city of Bengaluru generated 4,500 tonnes per day (t/d) of waste with the major contribution coming from residences and commercial establishments. The National Environmental Engineering Research Institute (NEERI) has projected that municipal solid waste by 2020 will be 14,550 t/d (Environmental Status Report 2012). The cultural and material aspects of waste have intersected to make recycling the norm in most households. The reticence to throw out also extends to paper, glass, and appliances. In the last few years, there has also been a distinct change in attitudes to the recycling of solid waste at the household level. The logic is both economic and ecological as there have been significant shifts in state policies around waste disposal over the last few years. The 2012-13 crisis of waste in Bangalore spurred several innovations with the government and local communities, taking the lead in dismantling centralized structures of waste management and creating more decentralized structures[7] and processes for recycling of waste.

> These rapid changes in practices are demonstrated by comparing our results with a previous study. Kumar and Nandini (2013) conducted a study of 400 households in Bengaluru and found that 85.5% had no information on waste management, with only 1% of respondents aware of recycling options for solid waste. The current study (conducted in 2014-15) found that within a relatively short period of time the trend had reversed with a majority of respondents becoming aware of recycling and more than 40% actively segregating at a household level even when they were not certain whether the waste continued to stay separated beyond their homes. While allowances need to be made to account for the overall size, the education level, and the exposure incidence of

[7] This included setting up Dry Waste Collection Centers across the city, legitimizing waste picker associations and instituting fines for non-compliance.

our sample set, it is still a significant increase. This improvement can be attributed both to the garbage crisis in Bangalore in 2012-13, that generated widespread public awareness and to aggressive information campaigns around waste management in Bengaluru that were conducted by the state.

While public campaigns have mainstreamed a conversation about waste, there is a clear lack of transparency on the implementation of these new rules around segregation. A 41-year old mother with two children who worked at a software firm observed;

> I started segregating it, but the thing is, when it goes down, though they [municipal authorities] have kept two dabbas [containers] in the apartment, the people who come and collect will mix everything…so even our maids say; 'why you are doing this? Nobody does this'…finally I want me and my children also to learn to separate it, so I said at least in the house, let us do it."

This feeling of futility was echoed by many respondents who continued to segregate their waste at the household level only to be frustrated by the lack of transparency and oversight as to where the waste ended up. Others pointed out that they were aware that the BBMP had a rule about segregation that was not being enforced but apartments were already administering it on their own to "get that discipline." Several respondents explained that they received flyers about segregation and one had heard public service announcements on the radio. While a majority of respondents was aware of segregation, and most actively followed it, there were two outliers who had no access to the infrastructure of the state or community in terms of door-to-door collection. One family, along with its neighbours, incinerated their

community garbage in open lots. The second outlier was a household who knew that the domestic help dumped garbage into a nearby lake but remained apathetic, not registering any complaint with the relevant authorities.

The distinction between what people throw away and what is considered valuable to be kept, recycled, or distributed has been nuanced culturally by, on one hand, what is traditionally considered "pollution" according to a Hindu cultural worldview and, on the other hand, what is "modern" in the sense of promising the creation of value. This evolving conception underlines the idea of what is "polluting" and what is "reusable." In the specifically Indian context, this distinction can be further elaborated. Eating or distributing leftovers from one's plate both constitute actions that are considered impure and yet leftovers from the gods are imbued with divine blessings. In Hindu temples, for example, rich and powerful people often donate food that is offered to the gods. These remains are then recycled into "divine leftovers" and distributed to a larger populace. Breckenridge (1986) argues that this act of redistribution has a larger cultural and political significance by which the donor establishes his or her moral authority. The control and reallocation of leftovers then establishes superiority and hegemony over the asymmetric distribution of food among people. While this reflects status in the more customary sense of caste, the recycling of appliances and newspapers demonstrates a reproduction and re-categorization of a social order based on class. If, the practice of removing impure food products was relegated to the impure castes, so is the removal of goods for recycling by a particular section of society, reconstituted within a new bourgeoisie social order that rewards the sanitization of public spaces.

In the practices around recycling of certain goods – electronics, paper and glass, we also find an enduring notion of thrift. While the money made from recycling

these materials usually supplemented household income in a nominal way, the outsourcing of the act of recycling now allowed for more collective programs for segregation and sanitisation. Many respondents gave their newspapers and glass bottles to their maids (or in gated communities to the support staff) who assisted with the segregation process so that they could supplement their income by selling this material to the *kabbadiwallah/raddiwallah (*scrap dealers[8]).

Traditionally, these artefacts of modernity, appliances and newspapers have been recycled in India. In fact, 90% of the sample recycled newspapers and 43% did the same with glass bottles. Appliances were mostly repaired and re-used or, failing these reconditioning strategies, were given away to household help or stored away. . People seldom threw away appliances but rather gave them away to the *kabbadiwallah/raddiwallah* as a last resort. Respondents were not quick to upgrade appliances usually waiting until the equipment had "run its life." Scrap dealers in Bengaluru fall into several categories of small, medium, wholesale, re-processors, and so forth. Households typically exchange with small or medium scrap dealers that deal with 300 kilograms or less (one tonne) of recyclable goods per day which include paper, glass, cloth, and other miscellaneous items. Even respondents who did not segregate their waste often had some cursory forms of segregation. For example, one 32-year old woman pointed out that while she had no direct composting at home, her family directly separated peels and fruit waste into pots in the garden instead of throwing them away.

The infrastructure of scrap dealing in Bengaluru means that it is relatively easy for households to access vendors who often buy and then collect material that has been stored for them or they have shops located in the neighborhood that serve as

[8] A term commonly used to refer to a person who deals with used households goods, scrap and paper.

drop-off points. However, the economic value attached to buying and maintaining appliances creates reticence around easy disposal. Similarly, the incentive structure put in place by scrap dealers for metal, glass, and paper ensures that households are less likely to dispose of materials that offer the prospect of some remuneration, however negligible. This notion has come to be applied to composting as well, specifically in gated communities, where large-scale composting units have been set up for residents to sell the compost to the property managers who use it for landscaping. The role of economics is clearly evident the response of a mother who remarked, "You do a lot of conservation in India, like switch off the power supply and those kinds of things without actually thinking that you are conserving the power. It's more like the money-oriented thing." It is similar for waste disposal where value rather than ecological consciousness dictates conservation behavior.

***Public Consciousness around waste***

In 2014, there was a standoff between the police and the residents of Mandur, a small community less than twenty kilometers from Bengaluru. The villagers blockaded the 500-strong garbage trucks that use the local commons as a landfill and demanded that the municipal government find other alternatives for its trash (Times of India, June 3 2014). Several similar demonstrations had been occurring for the past two years and each episode led to the streets of Bengaluru becoming piled high with garbage because there was nowhere to dispose of it, earning the city a new moniker "garbage city" and undermining its earlier reputation first as a "garden city" and then, because of the IT boom, a "global city." This less glamorous label was the result of years of mismanagement, inadequate political will, and insufficiently robust laws and

implementation to deal with the refuse of a growing population. In spite of the assertion of BBMP officials that "it is not waste at all, it is a resource" (Siraj 2014), the private contractors and truckers hired by the government effectively create a stranglehold on the system, operating as a "mafia," and discouraging any steps to encourage recycling. A senior member of the Expert Panel on solid waste management was quoted as saying, "There is an almost unbreakable nexus between corporators, officials and garbage contractors who do not want segregation at source and biomethanisation of the waste at ward level. They profit from trucks ferrying the garbage. The benefit increases in direct proportion to the distance a truck travels." (Siraj 2014).

The visibility of waste on the streets forged a sense of urgency and awareness among citizens, creating the link between public and private spaces. In this sense, recognition of being a member of an emerging middle class in a "global city" played into the imagination of what the public spaces of such a city should look like. Of course, there is a darker side to this notion of the global city that is centered on the contestation of rights around urban citizenship and constant tension between the clean and ordered sidewalks of Western countries with the unkempt landscapes of urban India. While urban activism has been dismissed as "Bourgeois environmentalism" (Baviksar, 2002), in the case of waste management in Bengaluru, there has been a shift from the notion of "not in my backyard" to personal and community responsibility for waste.

In 2010, the Solid Waste Management Round Table (SWMRT) 2010 engaged with the LokAdalat,[9] directing the BBMP to implement decentralized waste management across the city. This development were reinforced during the waste crisis in 2012 when the Karnataka High Court, in response to a Public Interest Litigation (PIL) against the Government and the respective departments for failure to comply

[9] People's court - a non-adversarial system of alternative dispute resolution.

with the laws under the Environment Protection Act, directed the BBMP that all of Bengaluru's municipal waste be segregated at source, starting from the household level and that procedures should follow a decentralized approach involving processing at the ward (neighborhood) level. This led to a creation of a network of dry waste-collection centers (DWCCs), a largely citizen initiative which made Bengaluru the first city in the country to create a neighborhood waste recycling initiative.

While some wards are more efficient than others and open incineration and dumping continues in many parts of the city, there is a growing awareness about segregation and waste management, which is evident in respondents' answers. Nonetheless, it is apparent that the residents of gated communities have taken the lead on structuring processes and institutions around waste within their own communities to a greater extent than has been the case among inhabitants of independent houses (Ganguly and Lutringer 2017, forthcoming).

Since the waste crisis in 2012-13, there have been several initiatives and large numbers of citizens, often working in conjunction with the state, have attempted to redress the garbage problem in the city. Groups like the SWMRT, 2bins1bag, Saahas, Swachagraha, Bengaluru Eco Team, Hasirudala, and a number of resident associations are changing the landscape of solid waste management. These groups empower the marginalized and informal waste pickers and workers, rejuvenating and strengthening systems that as Hasirudala's website states, "leverage waste pickers' expertise and entrepreneurship, generating stable livelihoods in the process."

An additional push in 2016 comprising several interlinked initiatives has cemented a new public consciousness about waste disposal in Bengaluru. The first is that the national Ministry of Environment, Forest and Climate Change revised its Solid Waste Management Rules to place more responsibility on generators of waste, introducing spot fines for littering and user fees payable by waste collectors for non-

compliance. The intention is for all of India to follow the model of segregation at source that Bengaluru has been pioneering since 2012. To this end, it has been reported that 40% of the city's residents segregate at the source, more than anywhere else in the country (Adivarekar 2016). In our sample of 126 respondents, approximately 84 people (66 %) segregated their waste. This number is slated to increase given that non-compliance by both individual households and apartments is subject to fines[10].

The hybridity and modernization of cities that in some cases enables the middle class to "render invisible that which is unaesthetic" (Awadhendra 2006, 4905) has been criticized for not dealing with the structures of inequality inherent in urban environmentalism particularly the role of the more marginalized scrap and waste dealers. However, this chapter empirically demonstrates that there is growing public consciousness about the need for inclusive solid waste management in the city that is being aided by civil society groups and sustained by structural changes in relevant policies. This sensibility is demonstrated by the SWMRT website that emphasizes inclusion, individual responsibility, and the material context in the following terms: "To shift from centralized disposal to a decentralized model, which starts with segregation at source, recycling and composting, was one of the main agenda points. To make BBMP acknowledge the importance of the City waste pickers and to give ID cards to 5000 of them, was a step towards integrating the marginalized from the informal sector."

[10] Rs. 100 fine for the first offence, increasing with subsequent offences.

**Conclusion**

This chapter reflects on the cultural, social, and material structures that encourage individual agency in waste management. Within this context, it is possible to highlight a subtle reversal in notions of purity and pollution in the behavior around waste in Bangalore over the past few years. One finds that cultural codes around buying, cooking and discarding food trickle down into enduring practices of everyday consumption. While ritual aspects of purity and pollution in the form of caste interactions have all but disappeared. Notions of freshness and codes of storage shape everyday practices of food consumption. Waste as a site of ritual impurity, is one area where tacit cultural resistance could be observed. As was the case with some respondents, handling of waste was seen as a dirty activity that had to be kept as far from the private sphere as possible, or outsourced to other people. The material and social context therefore has an important role to play in normalizing the narratives and practices around waste. In this context, one finds that the role of state and community in overcoming cultural barriers to interacting with waste plays an important role.

In particular this analysis highlights some key findings; firstly, cultural norms and social practices have embedded specific attitudes to food consumption that limit waste. Notions of freshness and tacit codes on storage encourage behaviours that are both sustainable and frugal with regard to food waste. Thus frugality and thrift play a key role in limiting household waste, both with regard to food waste as well as electrical appliances, glass and newspapers which have been traditionally ascribed with more monetary value. As Cappellini and Parsons (2013) point out, frugality and thrift are often specifically cultural values, which can be integrated into sustainable

systems for waste management. In this sense, one finds that even with the discourses of conspicuous consumption surrounding the emerging middle class, recycling certain household goods is part of the enduring middle class identity that is supported by a new configuration of social practices and robust material infrastructure that makes it as much about convenience, as about thrift and identity.

Secondly, Notions of purity and contamination have also undergone a transformation for the emerging middle class. Purity has extended from the sanctum of private homes to encompass and extend to the overall quality of the environment and the city. Many members of this particular socioeconomic group have had contact with discourses of recycling common in Western countries and are comfortable with home composting. Coming in contact with leftover food is less a marker of caste pollution and rather the refection of an ecological consciousness that marks the exposure of the emerging middle class to cosmopolitan modes of environmentalism. Transitioning from short or long-term stays in Europe, the United States, the Middle East, or Singapore, members of this new middle class demonstrate pro-environmental behaviour, supported by the infrastructure of waste collection, sorting, and recycling that has traditionally been the purview of generally poor urban residents (Anantharaman 2014). By ascribing economic value to trash, waste collectors and segregators are becoming instrumental in furthering the ease at which things can be disposed of by the middle class and both state and communities are coming to consider them as essential to the new social configurations being formalized around waste.

Thirdly, the garbage crisis of Bangalore had a very important role to play in mainstreaming initiatives of waste management. The institutional framework has

supported the development of new attitudes of personal responsibility around waste in the city. What once was the responsibility of the state and members of lower castes or socio-economic groups is increasingly coming to be considered the responsibility of individual households, neighbourhoods and communities. The prior prevalent idea that pollution needed to be cast outside of the home is in the process of becoming a management responsibility to be shared by families living in neighbourhoods and apartment complexes. In addition, entrepreneurial initiatives that connects scrap dealers into a network and campaigns against waste incineration herald important changes in collective awareness of waste disposal. These processes are being backed up by new systems of governance and more effective municipal responsiveness. Such developments have changed the culture around waste, with individuals and communities taking more responsibility for managing waste disposal, aiding state initiatives.

While this chapter deals with individual and community agency around waste, implementation of initiatives remains a challenge with a majority of respondents unsure as to where the waste ended up once it left their doorstep. This study focuses on consumer practices and values with regard to waste, however, more in-depth study is required on the implementation of the processes around waste, structural food waste in the supply chains of food procurement and storage as well as spaces like markets, hotels, wedding halls among others which must become the focus on analysis for understanding food waste scenarios in Bengaluru.

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