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Abstract

This article examines how a shared object—trash—is managed through a field study of its generation and disposal within a public setting. Collaboration around trash, examining ownership, accountability, shared responsibility, and social control over acceptable behavior, is investigated and discussed. An analysis to explore the production of public trash through everyday social practices rather than through reference to theory is developed, arguing that it is only through examining the material properties of the artifacts in use and their social context that the nature of refuse creation and the negotiation of social behavior around places of waste disposal can be understood. The authors extend the findings to examine their broader consequences on our understanding of, and design for, social behavior around shared objects within public spaces.

Keywords

mundane behavior, material culture, street furniture, video ethnography, interaction analysis

Introduction

The shared management of trash, or “waste” material, is one of our defining activities as socialized beings, and historically there has been a great deal of interest within the anthropological literature about what constitutes “waste,” its taboos, social norms, and the practices around it. Even within our own homes and the places we visit, what is deemed to be acceptable behavior and which may even be legally enforced is a topic of practical concern to us on a daily basis. However, despite its importance in everyday activity, both in our homes and in far-off lands, little is known about the mechanisms that we use to discard our waste when it is considered as a social phenomenon (O’Brien, 1999). This article therefore enquires into the creation, use, and disposal of trash, taking a social rather than a psychological or economic perspective on this. We do this through an examination of the material properties of the artifacts involved and the social practices surrounding waste-making behavior.

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For the purposes of this article, we use the terms *trash*, *rubbish*, *garbage*, *refuse*, and *waste* as synonyms, while recognizing that there are subtle differences in the definition and use of these terms that give expression to a more complex picture of disposal than is explicit in their simple use as interchangeable terms. In this article, we show how the management of objects is carried out in a social setting in which the ownership of visible objects is negotiated, responsibility for those objects is partitioned and allocated, people are made accountable for their actions, and social control is exerted on allowable actions. We demonstrate how people assume ownership of objects (and we generalize this to extend beyond trash), how they make their behavior accountable to others in relation to the objects in use, and how they socially allocate responsibilities for those objects between themselves. To achieve this, they concurrently need to negotiate whether a material is to be discarded (thereby becoming “trash”), *when* this trash is to be removed, *who* is to remove the trash, and *how* it is to be trashed. What this reveals is how people appear to make use of the material properties of the physical elements present in their environments in combination with our existing social protocols and sense-making skills in managing waste.

Background

It is helpful to examine the literature on how trash is practically created and managed within social settings and how trash comes into being and is recognized, at least from a social standpoint, as being a waste material, and no longer as something that constitutes a valuable resource. In this respect, waste, or the production of rubbish, is often seen as a major feature of the consumer culture, as “an inevitable consequence of the society in which we live” (de Coverly, McDonagh, O’Malley, & Patterson, 2008), although it clearly precedes modern-day patterns of consumption, and the production of refuse is a feature of most, if not all, forms of human habitation. Yet modern life, and the apparently boundless availability of material stuff, seems to have increased this waste production to a new zenith. These changes in consumption have not gone unnoticed by academia, and a fascinating “ethnoarchaeological” discipline known as garbology has grown up to investigate the topic. This set of approaches (see, e.g., the “Tucson Garbage Project” described by Rathje & Murphy, 1992) studies trends in patterns of consumption through the examination of material from household trash bins as well as excavations in landfill tips, and it has provided rich evidence of what people actually consume (or rather, what they discard) through direct empirical data.

Although the literature on waste management covers a wealth of material on the constitution of trash (e.g., Rathje & Ritenbaugh, 1984), its toxicity and treatment (e.g., Williams, 2005), management and governance (e.g., Fagan, 2002), politics and economics (e.g., O’Brien, 2007), and statistical data surrounding its generation (e.g., Fagan & Murray, 2006; Krogman, 2005), this is unfortunately of little use to us in examining practices of social interaction around it. Nor are we concerned with where trash is generated (the home, workplace, or municipal areas), the demographics of who produces trash of different types, the economic consequences of its disposal, and so on. All these are interesting questions and topics of enquiry into the content, value, and emergent physical, legislative, and social problems of waste production. However, they do not help elucidate our key question with regard to this article: How do people practically manage their everyday behavior around the disposal of waste within the social and public contexts that these activities take place within? For this, we have to take a turn to the social and anthropological literatures.

In his journey via economics and anthropology into “the creation and destruction of value,” Thompson (1979) makes a clear case about the socially determined value of rubbish, showing that, and how, this categorization depends on social processes. He defines the *rubbish* category of objects as “those with zero expected lifespan and zero value (excluding site and scrap value)” (p. 36), and then extends the discussion outside of our “folk” understanding of rubbish, to capture a wide range of philosophical, economic, political, cognitive, social, and cultural topics. Yet in his wide-ranging thesis on the topic of trash, Thompson largely neglects the important features

of what makes things valueless, how people recognize things as having no value, and how such things are managed within the sociocultural systems that they inhabit.

Studies on the practices of consumption from the literature on “material culture” also offer insights into our understanding of the process of trash creation. Two such studies are particularly interesting, in that they deal with the micromechanics of the production of waste material and the objects that this involves. The first of these examines our relationship with waste through the attitudes that people have toward its production, and the “systemic smoothing mechanisms” that we use to keep waste “out of sight and out of mind” (de Coverly et al., 2008). The authors contend that to conceal the unacceptably huge amount of waste that the society creates, a variety of mechanisms have arisen through which waste is “rendered invisible.” These mechanisms include human socialization against waste, the role of rubbish bins, and the work of garbage collectors. The authors also provide rich qualitative data on how these features of modern life are used and understood. The second article exploring the social construction of waste (Chappells & Shove, 1999) deals with the changing role of the dustbin in domestic life, and how our practices and relationships with waste are mediated through such waste receptacles. They describe waste receptacles as not just as a means of physically containing rubbish, but as “an intrinsic part of the system that serves to protect consumers from the evidence of their consumption by hiding waste.” Although both of these articles offer tantalizing views into the use and understanding of waste-related behavior, their topical concerns are not framed in such a way as to empirically address the interactive or social mechanisms by which people actually organize their actions around trash. Moreover, their general focus on domestic waste is likely to differ from the more public activities and practices that surround the generation of waste in public places.

There is a small, social psychology literature surrounding one aspect of the production of waste in public: *littering*. This body of work largely examines ways of reducing public littering, or ways of assessing the relative effectiveness of different antilittering methods in public campaigns (e.g., Chapman & Risley, 1974; Geller, Witmer, & Tuso, 1977). In a recent study of littering, de Kort, McCalley, and Midden (2008) present a quantitative study of how the design of the trash receptacle affects its use, finding significant differences around age and gender. Although this study examined the likelihood of a trashing event occurring depending on some of the circumstances of the context for this behavior, it did not closely examine the practices of its production, which is typical of this body of research. One of the foci for this literature is an attempt to (quantitatively) examine how people orient their likely actions toward social norms (usually around attitudes to littering, e.g., Cialdini, Reno, & Kallgren, 1990), although the experimental approaches are largely theoretical or statistically derived in nature, and are not seen in light of participant descriptions or contextual investigations. One of the distinctions that was made by Sibley and Liu (2003) in this literature is that between “active” and “passive” littering in which people *actively* place litter in the environment, or *passively* do not remove it when vacating an area. This is an interesting distinction given some of the phenomena that we have observed, and we return to reexamine this in the analysis of our own data. In another study of note for our own examination of litter and littering, Grasmick, Bursik, and Kinsey (1991) have experimental findings that suggest that littering campaigns based on moral appeals are more effective than those based on legal sanctions. Although they do not show how these moral sanctions might be practiced or even socially enacted, this is interesting, in that it serves to illustrate that culture and orientation to social norms plays a very important part in littering and the use of trash bins.

In one of the very few detailed qualitative studies on the production of trash, Paulos and Jenkins (2005) cover the generation of, and activity around, trash. The study was conducted in a similar way to the research in this article, albeit with a more explicitly “technical” spin, directed, as it was, to the redesign of a computer-augmented waste receptacle. As part of a larger examination into technological and networked urban spaces, the researchers used an “urban-probes” approach to better understand the use of urban spaces, in which they explored the phenomenon of urban trash.

Their research provided data on physical movement and activity around an urban public trash can in San Francisco, through which the authors attempt to develop an “urban archaeology” of space. To do this, a single trash can was video-recorded in three observation periods, and this was followed up with limited interview data from some of those observed using it. Objects that were trashed were logged: The “vast majority” of these logged objects were said to be “food related, primarily the packaging from nearly cafés, coffee stands and fast food restaurants” (p. 347). As will become clear in our study, this is a finding common with our own experience. The observations themselves are also revealing, with the trash generated over time according to the daily rhythms of the place. However, although the study provides rich details of the trash, it does not really attempt to chronicle social activity around the trash can, or how people behave in the time prior to and subsequently after the trashing event. The emphasis of the study appears to have been intended to examine the objects and histories of the trash itself, rather than its trajectory through use, and of the social and physical mechanics of handling it around the trash can.

What then do *we* mean by trash and the practices of social interaction around trashing? Trash is commonly associated with dirt and pollution, and this may provide a useful view into what it constitutes and our belief and behaviors around it. Lord Chesterfield’s humorous characterization of dirt as “matter out of place” is an early attempt to define it, and insightfully points toward a social definition (through reference to what we understand by its orderings of place) rather than a compositional one. This socially derived understanding of the nature of trash is continued in the anthropological literature (e.g., Thompson, 1979); indeed, Thompson characterizes rubbish as something that we have no social definition for. Thompson’s work is particularly interesting here, in that it addresses an issue in material culture, namely, the “thingishness of things” (see also Straw, 1999), illustrating this with the point that once something has no economic life, it retains a physical life—and this is what we call rubbish.

Alongside an understanding of rubbish through reference to its social value, other views on the tangibility of the material itself and its cultural symbolism can be found. As with Thompson’s “rubbish theory,” these are also centered on categorization. This is linked to the well-established literature on pollution, contagion, hygiene, “dirt,” defilement, taboo, and ritual (e.g., Douglas, 1975), and there are a number of well-documented anthropological studies of how pollution rules are enforced (e.g., Steiner, 1967), both directly and indirectly. One of these indirect enforcements is through self-punishment—associated with pollution beliefs, where people can consider themselves, or others, as contagious, whether or not this is real or imagined, and these dangers and punishments are used to enforce conformity. Trashing behavior is perhaps somewhat unusual from many of these anthropologically documented taboos in that there is a very real risk of contagion, albeit small. This may explain what underlies much of our behavior around the creation of trash—that at some stage something becomes classified as “rubbish,” with its connotations of dirt and contagion, and which we wish to physically distance ourselves from. However, this understanding cannot tell us about how these beliefs give rise to actual behaviors and how trashing is enacted within a context, and for this we must turn to real-world, empirical data. We remain impartial as to the objective quantification of the nature of rubbish, and subscribe to Strasser’s (2000) maxim that “nothing is inherently trash,” rather, it is a designation that is offered to something, based on the conferred utility of an object to its current holder.

Method and Analysis

Data Collection

Although trash is necessarily a physical object, examining it directly can tell us only a little of *how* it has been used. On the other hand, examining the psychological experiences and values

associated with trashing are extremely hard to measure, and tell us little about its use within an embodied and socially rich context, where the activity occurs within an ecology of relationships to other objects, people, and places. Rather than investigate the physical material of rubbish directly, or, at the other extreme, at its psychological properties indirectly, we chose to look at the treatment of the physical artifact—rubbish (or trash)—as a social object, and hence to investigate its generation and management within its social context. This meant that action around trash was of interest to us, but problematically this could only be empirically determined retrospectively: We could not know in advance what was going to become trash until it was disposed of, and this led us to our central data object, the dustbin (also referred to here as the trash can). This was achieved through observation of activity around dustbins, following the actions that led to a trashing episode backward in time.

To make the observations, we made use of a multiperson team of five experienced social science researchers, who observed and recorded video of people using trash bins. Approximately 5 hours of high-quality digital video material was collected over 2 days of filming; this was reviewed and all complete and clearly visible instances of trashing and trash-related events (around 50) were selected and downloaded onto a computer for detailed review and analysis. Deploying a multiperson team for data collection proved extremely useful as it allowed a holistic picture of the scene to be observed, with different observers following different participants and parts of the developing scenario, from different angles. This allowed us to extend our analysis beyond the recorded material on the videotape, which by its nature is focused on and framed by the recording field of the (single) camera and its operator's attention. Thus, events developing off camera could be followed, enriching the data with added contextual depth (see also Laurier, 2004). Multiple observers also allowed us to turn the camera toward situations developing opportunistically. This technique was of enormous value in the later analysis in which multiple perspectives on the situation could be reviewed, so that when the people interacted with each other, their previous behaviors could be reconstructed even when this was not visible in the recording.

The recorded material has undergone a lengthy and extensive encoding, review, and analysis by the authors and other team members, belying the relatively short duration of the data collection exercise. In the tradition of Suchman and Trigg (1991), we describe this as videoethnography, an explicitly qualitative analytic approach. Our intention was to look at how the events surrounding waste-related behavior were mediated through the involvement of other people, the material artifacts that they employed in this activity, and in the interaction between these elements. The analysis is thus derived from close inspection of individual episodes and follows an ethnographic tradition in its representation. Where appropriate to understand the mechanics of ongoing social interaction, we have carried out detailed interaction analysis of the data to expose the minutiae of observed actions as they unfold, much as a conversation analyst might examine the orderliness and structure of talk in interaction. The methods of data collection and their analysis are similar (although derived entirely independently) to those described by Lee and Watson (1993, p. 10) in their investigations of interaction in urban public spaces, which have a similar interest in the topics of concern to us, most notably in queuing, and in copresence and co-orientation within these spaces.

One feature of recording observed activity was our inability to collect coherent or fully audible verbal exchanges, because of the distance from the camera to the activity. Nevertheless, this proved to be less of a hindrance than expected as the majority of trash-related acts were behaviorally moderated, and *visibly* not conversational—an interesting observation in itself. Following Laurier (2004), we also see an important value of video data as “an aid to the sluggish imagination” (see Garfinkel, 1967, p. 38). It helps us see what we may already know, but to see it in a new light. By foregrounding mundane everyday activities through repeated viewing, discussion, and transcription, they become strange and foreign practices, and paradoxically allow us to inspect these activities as if for the first time.

There is a final important culture-specific point to be made about the data represented in this article. The data were all collected in central Stockholm, Sweden, potentially leading to a specific cultural issue of behavior that may not be recognized in other countries where cultural mores are different. The most noticeable point here is the values placed on social responsibility, in this case, with respect to litter and littering. This was physically manifested in the cleanliness of the public areas, the number of public litterbins, and in litter recycling, in comparison with urban areas in other countries, such as London, San Francisco, Lagos, or Paris. We also saw it in the public behavior that the non-Scandinavian observers found to be unusual, in the very low frequency of littering and in the observed behavior of those observing littering behaviors around them. However, this is not to say that this study is not relevant to understanding activity outside of Scandinavia: We do not attempt to provide “rules” of social action that we have “discovered,” but point to how people can make their actions and interactions visible to others, and how they use these cues to interpret an unfolding social situation. This is largely independent of the particularities of a cultural setting across cultural or national boundaries and should not limit the applicability of the data or the generalizations that can be made from it.

Contexts: The Settings Observed

Recording was conducted over a period of 2 days in two main areas—a public square and a park. There was nothing particularly unusual in these settings, which were selected on the basis of their possibilities for unobtrusive observation and video recording, their obviously public nature, the presence of public dustbins, the large populations of possible users, and the visibility of trashing behaviors to copresent others. These were very similar to the criteria used to select the settings used by Whyte (1980) in examining the relationships between public behavior and public infrastructures. We recognize that different locations may have given rise to different patterns of use and behavior, but argue that it is not the specifics of a particular context that are relevant to our claims in the article, but in how the actions performed were framed and understood as meaningful by those present. These settings are discussed in more detail below.

The square. In this location, several (approximately 30) dustbins had been placed around a busy public square in central Stockholm. The center of the square was dropped slightly below the height of the surrounding streets and had a small rectangular pond at its center. This pond could be accessed from each side by a row of steps, lending the impression of a natural amphitheatre to the square. Several restaurants, bars, and cafés were located around the square or close by to it. Within the square, a central and highly visible bin (see Figure 1) was mounted at the base of a series of steps that people could sit on and, on the days of filming, enjoy the sunshine. This was the most heavily used dustbin on the site, and the one that we focused our filming on.

The park. This was a small, circular, grassed park with a large fountain at its center. The fountain was circled by a path with several park benches, interspersed with which were 10 dustbins of several different kinds (see Figure 2). The bins fell into three types: one large, wheeled bin, and several smaller others, either mounted with holes under their fixed lids, or with flip open lids (both smaller forms can be seen in Figure 2). These bins were relatively equally used, although those on the entry and exit routes into the park had slightly higher frequency of use than those on the circuit around the pond.

This second location is somewhat reminiscent of Paulos and Jenkins’s data, with more of a walk by feel to the use of the trash bins than at the square, less frequent and less visibly social activity around the trash cans. In contrast to these unstructured environments, a short period of data collection took place in and outside a well-known franchised American-style fast food chain/burger joint to examine interaction around these very different settings. The data from this study were not examined to the same level of intense detail as with the other two settings described here, but it served as a contrasting perspective on trashing behavior.



Figure 1. The square

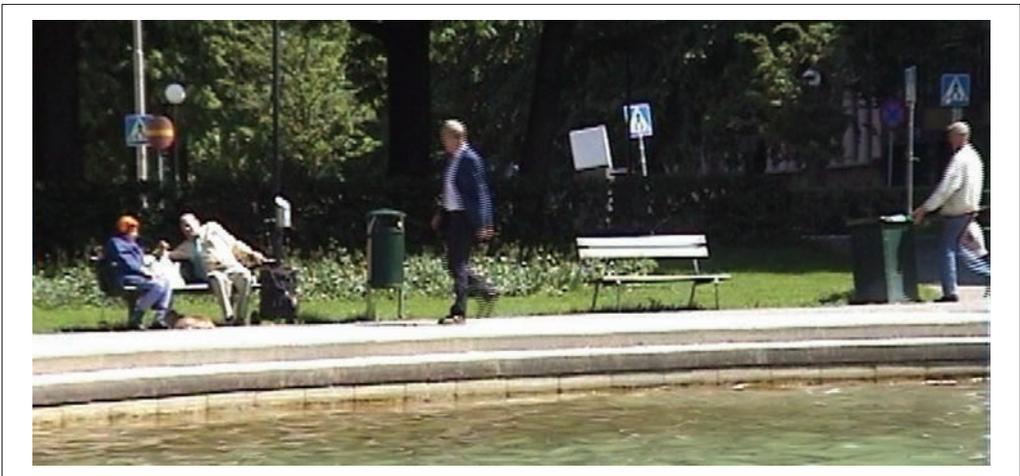


Figure 2. The park

The weather was hot and sunny on both the days the video-recorded data collection in the square and park took place, and data were collected throughout the middle of the working day, between 10 a.m. to 4 p.m. Over this period, we collected a large corpus of video data from the sites and observed several hundred individual visits to their dustbins. We recognize that this recorded data collection took place over a limited time period and that activity may differ throughout the other times of day, but for a variety of practical reasons this was not possible. However, our examination of social action around the bins is unlikely to be dramatically different outside of these times, although this is a factor that should be borne in mind when interpreting the data. Over the course of the data collection, it became clear that there was a strong temporal rhythm to the generation of litter: The main use of the trash cans took place between the late morning and late lunch time, with a noticeable peak between 12 and 1 p.m. during which the majority of episodes were recorded; activity before this time was very infrequent and fell off again afterward to a lower level.

In the following sections, we consider behavior around these bins, focusing on aspects of *visibly* social activity. By visibly social activity, we mean activity around the trash bin that clearly involved other people, evident either through their social performances, as verbal communication, gaze, and gesture, or intimate proximity to one another. We were surprised to see quite so much visibly social activity in trashing activity, as the majority of the instances recorded could be considered as being social in some way. This is possibly an artifact of the settings observed, but it does raise an interesting point about the generation of trash—as an activity, people are clearly skilled social performers in their management of waste disposal, and trashing within a public place cannot be seen as a solitary activity. The two sections that follow make an analytical distinction in the data between how people cooperate together in their waste management activities and how they deal with issues of conflict. Although these issues may initially appear to be clearly distinct, in practice, they are not so separate, and the distinction here is not intended to contrast the one with the other, but simply to recognize the different behaviors observed in the data. Indeed, within the many of the episodes observed in the sections below, both aspects can be seen.

Managing Collaboration and Working Together

Patterns in Eating Together

Most of the activity observed with the creation of trash and the use of the dustbin was to do with eating or food-related activity. Perhaps this is not surprising given the locations chosen for data collection, but this phenomenon was also observed in our (unrecorded) observations of dustbin use in public settings more distant from food-selling outlets. Eating also clearly had a distinctly social flavor, in that it was rare to see people sitting and eating on their own (cf. Whyte, 1980). Usually, they would sit with others, talking as they were eating and even sharing food and utensils. Subsequently, much of the activity around the bins had a distinct pacing and rhythm as people arrived, discussed where to sit, opened up their food packaging, ate, packed up, trashed their litter, and left the scene. Even where people did sit on their own, they made it obvious through their attentiveness to the actions of others that they were very aware of the social nature of the event.

This patterning within the situation can be helpfully understood through analogy to a scripted performance. For activities that we are familiar or similar to those that we are familiar with, this framing of behavior as following a script offers us as social actors a set of likely appropriate actions, as well as a way of understanding the actions of others. This use of a script is not applied in the sense of rigidly stepping through a predefined set of instructions, but rather as a heuristic resource that can be interpreted to guide (or “orient”) their own behavior and to interpret the behavior of others (see Schmidt, 1997; Suchman, 1987). The metaphor of the behavioral script offers actors a “precomputation of interdependencies among activities (options, required actions, sequential and temporal constraints, etc.) which, at critical points, provides instructions to actors of possible or required next steps” (Schmidt, 1997, p. 144). It is useful in the context of eating and trashing together, in that it “assists actors in reducing the complexity of coordinating their activities” (p. 144). That is, scripts allow us to understand how to behave and how to understand the actions of others unfolding over time while accounting for locally arising contingencies.

The use of a script can be clearly seen in the example of “finishing up.” Finishing up a meal forms a part of any script for eating together, and trashing forms one possible option in this. Thus, we see an unfolding set of behaviors that, given the local circumstances, is likely to lead to one probable outcome: a trip to the trash bin. But this trashing is not an isolated event, and falls within a larger context, through which other factors may also be played out. This larger context may influence the form that trashing takes (if at all), and the interpretations that other people make of those observed behaviors. Being attacked and chased off by hungry pigeons intent on

stealing your food, having your rubbish removed by attentive refuse recycling collectors, or not trashing material intended for recycling are all (legitimate) reasons why we might not see waste material dropped in the bins (indeed we observed several instances of this in the video recordings), yet, as observers, we are able to make sense of these apparently aberrant actions.

What is interesting from this analysis of scripting in the patterning of activity is that it allows us to develop an understanding of (a) the common activities that those in the setting were engaged in, and the shared knowledge and expectations that the trashers had about each other and (b) the pacing and regularity observed in the activity, in the likely normative expectations of the predictability of certain activities and forms of behavior. People who regularly use spaces and artifacts within those spaces come to know about and expect certain patterns of behavior (we can call these scripts), and this is an important sociocognitive resource: It is not necessary for the society to prescribe or actively police formal patterns of interaction in social environments because of the expectations that users of those spaces already have about what is appropriate. Moreover, by *not* following existing patterns of interaction, users can signal to other users that something is out of the ordinary without requiring a formal method of communication that alerts those others to this.

Packaging, Repacking, and Disposal

One of the most noticeable features of eating outdoors was the use of bags (plastic and paper) for a variety of functions. People tended to arrive with their food in bags, and these bags were then used to stash other packaging inside, to sit on (so as not to dirty themselves on the ground), to eat from (e.g., using a plastic bag as a plate), and as containers to collect their trash together into for disposal. This last point about packaging as a refuse container was observed frequently, and it was rare to see multiple items thrust individually into the dustbin by a single person. This may be due to people not wishing to stand by the bin for an extended period of time, or to block access to the bin for others who are waiting for it, or to avoid repeatedly physically touching the bin while disposing of individual trash items. Whatever the reason, packaging is not only useful in packing food for its sale, but in packing up rubbish.

At this point, it is useful to return to the data collected at the fast food restaurant. Here, the tray dispensed with the food performed a similar function to the bag, albeit with slightly different affordances, particularly in its openness of access: Food and other pretrashed materials were still accessible until they physically entered the trash bin. This meant that it was possible to see what other people had eaten, or for people to return to eating food that had apparently already been finished. In addition, the tray was a “messier” form of packaging than the bag, taking up more table- or lap-top “real estate,” and more likely to blow off or be tipped up, and subsequently required more effort to be put into its placement and use. These differences in the forms of packaging are interesting in that they offer very different opportunities for social action to take place around them.

In the situation of the fast food restaurant, packaging (as trays, bags, wrappers, cartons, cups, and sachets) was extensively used in eating and waste disposal, yet there was relatively little variation in the activities observed across diners. What we saw was a highly designed meal-processing environment, in which the members were both tightly constrained in the range of their possible activity options and apparently extremely practiced in their responses to the waste-related resources in the setting. This ordering can also be seen in other planned and institutionalized social spaces, such as the shopping mall (e.g., Manzo, 2005), in which “appropriate” conduct is encouraged through the use of “furniture, architecture, and design features” and how “these physical features are conducive to social control” (Manzo, 2005, p. 84). In comparison with the other two sites, there appeared to be less interactional ordering activity—by this we mean ordering in the sense of members orienting their own activities around those of the ongoing activities

of others and around the dynamics of arising and unanticipated environmental circumstances. In terms of people's performance, there was a clear trajectory of activity within which there was less opportunity or need to adjust to contingent or locally arising circumstances (commonly called articulation work; see Strauss, 1985). Much of this coordination was carefully built into the restaurant's waste management system through the restaurant services (by cleaners and counter operatives), spatial arrangements (e.g., seating plans and waste bin placement), and packaging provided. This is not to say that the site was not interesting, or that the kinds of findings that we report in the rest of the article did not occur, but that they were visible to a lesser extent, and were characterized to a greater degree by their designed status than their ongoing social orderings.

Although packaging up refuse has a value in social systems by allowing conceptually and/or temporally grouped sets of materials to be contained together, the process of visibly sorting waste items into packaging also has a utility. As people engage in an activity, such as packing up together, they are able to resolve issues that were perhaps incomplete and unresolved at the time of eating. There are a number of reasons why this might be the case, and one possible motivator for this is that if matters are not dealt with at this time, then it may be physically too late to resolve them once the interlocutors have parted. Similarly, the visibility and necessity of packing before finishing up has an important social role in allowing the participants in an activity to make judgments about appropriate junctures for activities (cf. Jefferson, 1972), such as knowing when it is appropriate to leave a meeting. One only has to look at the difficulty in exiting from activities as diverse as dinner parties, teleconference calls, or instant messaging exchanges to see the difficulty in knowing when it is appropriate to establish closure. An event that signals the end of one activity prior to the start of another one provides a resource that can be used to smoothly disengage from communication and is a social resource that can be consciously and visibly used to shift smoothly from one activity to another.

An activity that was commonly observed in the video data involved the collection of a group's waste by one person in that group. These individuals (often women with children, though not always) would collect their group's rubbish together, usually into a paper or plastic bag, and would then make a journey to the rubbish bin for its disposal by themselves. This trashing for others can be compared in some ways with gift giving, where there is some form of ritual exchange of social capital and social obligations (Mauss, 2002). Packaging makes this possible, as the number of items to carry without bags was often too great. However, what makes this interesting to us is that this "group trashing" is not just an optimization solution to removing waste (although it may be this as well, by speeding up the leaving process), but one in which *social* value surfaces. By taking responsibility for someone else's work, they accrue some social benefit. This goes far beyond the goal-oriented view of trashing as a simple activity involving just the removal of refuse, opening it up to a much wider set of interpretations.

Availability and Action Sequencing

One of the important functions of a trash bin lies in its being available—bins are there to be used, but not to be unavailable through being *in* use when they are required. If the bin is currently in use by another person, it cannot easily be used at that moment in time. In our observations, trashing was a largely sequential process, with no observed instances of people competing to deposit trash material simultaneously through an aperture currently being used. This was possibly due to a combination of (a) the physical constraints of accessing a small aperture into the trash bin and (b) the social constraints that dissuade strangers from getting too close to one another (in an invasion of personal space, and possibly particularly so in the socially awkward situation of disposing of "dirty" waste). These two are similar in some way to Lee and Watson's (1993) distinctions between queue-relevant, turn-generated categories (e.g., "head of queue," "second in line") and

contingent categories (e.g., politeness), in that both the turn-generated physical mechanics of queuing and the social dynamics of the setting have important roles to play in action sequencing. This sequentiality is enacted in practice through people skillfully timing their journeys so that they do not have to wait in a line (or possibly, *to be seen* to wait in a line) in order to access the rubbish bin.

We note that when they are not in a group that is leaving as a cohort, people may be acting in a form of queue, but that this queue is not one that is ordered by means of physically lining up. Thus, one person may be trashing, another heading toward the trash can with the rubbish, another standing up while orienting his or her posture toward the bin, and yet others are engaged in various stages of packing up. In an example from the data (<web reference 1>), we show how the formatted order of the trash bin visitors does not necessarily resemble a formatted queue (cf. Garfinkel & Livingston, 2003; Livingston, 1987), but nevertheless, an observable order is still produced. In this case, the position of the trash bin (clearly visible from where most of the people are sitting out in the square) is an important aspect in the orchestrated action of visiting the trash bin, because the act of “waiting in line” can be achieved without “standing in line.”

There are obvious problems in coordinating this form of sequential ordering that are not attendant to the linear queue: Social control in sequential access to the bin is not physically mediated by blocking access to its aperture, but through participants visibly attending to the behavior of others and making interpretations as to their potential courses of action. This can be hard to achieve accurately, and we have observed instances where people actually paused in their progress toward the trash bin as an unanticipated interloper moved in front of them.

The apparently choreographed dance of people around the trash can demonstrates the care taken in pacing and sequencing to ensure that contact and conflict does not arise at the bin itself. This coordination of multiple people wanting to access the trash can at the same time was almost wholly managed through publicly visible actions, rather than being mediated explicitly by gesture or talk. This tacit, action-based coordination possibly arose because a significant amount of trashing behavior involved action between people who were apparently unknown to each other, or where trashing was carried out by people who were engaged in other simultaneous acts, typically of some private conversation where verbal coordination would have required switching between discourses or conversants. Note that because of the nature of the data collection methods employed, we could not know whether they knew each other or not, although in practice, this knowledge is not especially relevant to the subsequent analysis that we present. What is interesting here, then, is that the affordances (and associated constraints) of the trash bin, in concert with the social constraints of the setting meant that it was relatively easy for the participants to establish consistent and mutually intelligible behavioral patterns. There is no conflict at the trash bin because it is easy, and is *made* easy by the actions of others, for the participants to tell what is currently happening and how the orderliness of the setting might become unbalanced were they to act in particular ways.

Parting and Closure

Although the trash bin may appear as a strange place for groups to linger before splitting up and heading off their own ways, this was a common occurrence in the data set. Groups sitting and eating together on the steps in the square would regularly stand, move down toward the bin, chat as they lined up to post their waste into the bin, then would separate and depart, either individually or in subgroups. On first inspection, this would seem an odd place for people to make their farewells and seemed deserving of some further investigation.

The event of trashing rubbish after a meal is clearly an “end” type of event, and although it need not necessarily mean the termination of a social event itself, it does provide an opportunity for participants to finish up the social encounter as well as finishing their meal. It is interesting to note that finishing the meal itself rarely resulted in this closure. For the vast majority of cases

in which individuals split up on leaving the area, we observed a single *group*-trashing event, with very few instances of individuals leaving their groups alone when they completed their food and drink. Similarly, there were no instances in the data of members of a group leaving to trash in different bins as they headed off in different directions: trashing occurred as a group event, at the same location, and only after this point did the group fragment and leave.

Although we do not wish to develop a grand theory about the observation about trashing as social closure, this is an interesting point to note because conversational closure (see, e.g., Schegloff & Sacks, 1973) is a socially important, yet commonly fraught, process. Events or rituals that facilitate closure make the management of the disengagement process easier and less socially awkward for those involved. Although this may not be due to any intrinsic feature of the bin itself, or social expectations of trashing, the trash bin does provide a recognizable point of event completion. Here, the necessarily temporal sequentiality of user access to the bin provides a resource for those leaving to say goodbye, move off and distance themselves from each other, or for those left behind, to linger and stay a moment longer, thus giving those in front of them the cue to say their farewells and depart. The physical features (also known in the design literature as “forcing functions,” Norman, 1988) of the bin (through, e.g., the placement, height, and number of apertures in it) provide a material resource to the participants in managing the process of event closure, in concert with the social constraints that surround trashing behavior.

Managing Conflict and Mechanisms of Control

Controlling and managing the forms of behavior exhibited within public spaces is a necessary part of civic life, and the maintenance of social order (in whatever way is deemed to be appropriate within the dominant culture) may be enforced in a number of ways, ranging from the formal (regulatory legislation) to the personal (self-regulation). This section of the article addresses how this was managed in the creation of trash as was seen in our observational data. In this, as with many other areas of social life, the primary driver as to what is allowed and how to act is conceived in relation to normative expectations of behavior, that is, people tend to act and are expected to act with reference to what would be normally expected of them under the current conditions of the setting.

Garfinkel (1967) points to the notion of orientation to normative behavior as a strong guiding force in guiding how people choose to behave, both in their reflective expectations of how other people will expect them to behave, and in their expectations about how those other people will interpret their behavior. Where people do not act as would be reasonably expected of them, this may be treated as deviant and deserving of some kind of admonition, or this may be seen as “morally sanctionable” (Heritage, 1984). Following an ethnomethodological argument, these rules are not *regulatory*, rather they are “reflexively” used by the participants to orient and align their behaviors around them. Where normative rules are “broken,” there is a breach to the orderliness of the world, and people have to make sense of this, commonly by providing a justification for this deviation (“under the circumstances, it may be reasonable”), or choosing to reprove or to sanction this behavior and attempt to rebuild the social orderliness of the situation. It is the second of these that we turn to, the first being inaccessible to the purely observational researcher, and the second more interesting to researchers examining the social protocols around which norms are enforced and moderated: the accomplishment of social order.

Social Control, Accountability, and Responsibility

Litter itself is an interesting object category. As both members of a setting and researchers examining behavior within settings, we constantly have to answer questions of ourselves about how

we determine what litter is (or indeed, what is litter?). How does it really differ from lost property? Within settings, we are often faced with circumstances when we see someone drop something and have to make decisions about whether to call their attention to it, and if so, how those interactions should be phrased and intoned, or indexically referenced with a gesture. Should we politely point out their loss (“excuse me, but you seem to have dropped your x”), or stand and point accusingly? These decisions in the classification of litter are both ongoing (we may realize our mistakes in inadvertently classifying something as, or not as, litter), and mediated by the context of the situation, correctly or incorrectly. So here again, as with trash itself, we see the creation of litter as much a social as it is a physical event, and spanning a time period before and after its moment of being dropped. It is in this light that we examine litter and littering, and the ways that these are understood and policed within a social context.

Litter and littering are commonly recognized as both antisocial and (within Sweden) illegal. However, the likelihood (in Sweden, as in many other developed nations, with some exceptions), of being caught littering the presence of an officer with the legal authority to impose a civil or criminal penalty is low. Although official sanction is relatively unlikely, social sanction is more commonly practiced. This can be observed in a variety of what might be considered as morally objectionable activities, in what has been called “uncivil attention” (Smith, 1997), in which bystanders themselves act to the extent of even physically or verbally abusing people who breach normative patterns of behavior. Unlike police officers, the people “policing” litter control do not usually wear uniforms (see Paperman, 2003, for a contrasting ethnographic view of *uniformed* policing), nor do they have any real legal authority, and they are left to enforce this policing through social mechanisms. This “moral authority” also underlies the majority of “normal” social behavior, in what is judged permissible or not in the setting within which that behavior occurs. In the context of littering, social control may be exerted through orientation to normative rules, policed implicitly through the posture and orientation of onlookers, as well as explicitly through direct questioning and action. In an insightful episode (see <web reference 2>), we follow the situated actions, expressions, and gestures created by and between three women sitting near the dustbin in the square. Like most people sitting along the stairs at the sunny day of fieldwork, these three women were engaged in eating. All of a sudden, a gust of wind rips away a paper bag from beside one of the women. This event in turn leads to a series of sequences by this woman and her two companions. Despite the fact that the bag eventually blows into the pond in the center of the square and becomes practically inaccessible, the series of actions together renders the group as responsible for the maintenance of social order in this setting.

We are not, of course, interested in the minor misfortune of this woman, but in the behavior of the group as a whole. Detailed analysis of the gaze and body posture of the two watchers were clearly used to pressurize the woman who had allowed her litter to escape, to get up and collect it (litter that notably, moments ago, she had been using to sit on and as a container for her meal). This mildly interesting episode is revealing on a number of counts, clearly demonstrating the way that coercion (in a very moderate sense) through the viewers’ visible attention to the woman’s littering is used to enforce cultural norms (which might be “don’t litter” and “pick up your own litter”). Yet here we also see a more sophisticated set of behaviors, as “enough” effort has been expended by the unwitting litterer and that the corrective issued to the transgressor was perhaps too demanding for the social sanctions that had been operated, given the windy conditions and the probability that the woman’s friends wanted to maintain a convivial relationship with her. It appears that there is only so far that relationships can be “reasonably” pushed to socially enforce some forms of behavior.

What then does this episode tell us about the nature of social control in littering? There are several interesting issues here: (a) there are normative rules (cf. Brown & Perry, 2000; de Kort et al., 2008) about littering and the level of punitive sanctions that are acceptable, and (b) although



Figure 3. Litter dropping (3.33), man walking off (4.17), and turning to look (5.30)

this may seem somewhat obvious, these rules appear to be moderated by the effort costs of retrieving litter and (c) the degree of the litterer's responsibility over the generation of that litter. In an example from the park that further illustrates these last two points, a man disposes of his rubbish in the large bin, lifting up its lid but at the same time inadvertently tipping out some material precariously balanced under the lid moments ago by someone else, unrelated to him (code: TIPPER). This can be seen in Figure 3, where the man turns away as the trash falls (circled), begins to walk away, and then turns again to see the fallen trash on the ground (clip time in seconds and milliseconds into the video segment is noted in the figure caption). He fails to pick up the litter and then continues to walk away looking straight ahead, despite being observed by an elderly woman sitting only a few feet away (off camera). Although it is not visible in the image, as he sweeps his body and face to look forward again, he looks directly at the elderly woman momentarily as he walks off past her (between clip time 6.05-6.25) and across the park. He does not look back, and continues at a steady, unhurried pace. It appears that although the (physical) effort costs of retrieving the dropped object are relatively low, his degree of responsibility over the litter that he has inadvertently generated is also low, resulting in the generation of litter.

The TIPPER episode might be usefully compared with Sibley and Liu's (2003) discussion of "passive" littering, in which litter is not deliberately thrown but left in an area after vacating it. Statistically, this litter is less likely to be picked up (Sibley & Liu, 2003), and such miscreants can provide a reasonable account for their littering (forgetting being morally less sanctionable than deliberately dropping rubbish). This case is not quite the same but bears some similarities: Litter was generated but not through an active attempt to misplace it. We could argue that there are power relations in play here, with the litterer's gender and physical stature meaning that the elderly woman's gaze has less weight in enforcing sanction to his littering. However, the fact that this man had already made a journey to the bin, lifted up its lid, and deposited his waste there with some effort demonstrates that he has a regard for social norms and his own responsibilities, and it is unlikely that he is deliberately defying sanction. This example demonstrates that public accountability, and the responsibility that is taken for one's actions, are not rigidly defined in a form of binding social contract, and that littering is a more complex activity than can be easily defined with reference to a few simple culturally defined or behavioral rules.

Socialization and Learning

What is regarded as socially responsible dustbin use (and, indeed, broader social behavior) is not something that is immediately obvious and needs to be learnt as a part of becoming an accomplished social actor. What is considered as rubbish, where and how rubbish should be deposited,

who should take responsibility for rubbish, and so on need to be enculturated if people are to act appropriately in a public context and are to be considered as a socially responsible member of society. Most often, this process of socialization is a part of growing up, but this has also recently become a matter of public debate in many countries as multicultural societies orient toward different norms and exhibit different patterns of public behavior. However, in our recorded data, the instances observed relating to socialization and learning were limited to the behavior of family groups. This most commonly included the activity of parents (particularly mothers) and their children, who actively demonstrated (normatively) acceptable behavior to their offspring. Examples of this included an adult conversing and gesticulating toward his or her charge prior to and during the child's unaccompanied visit to the bin, a woman with a buggy tipping the buggy up to allow the seated infant to deposit material in the bin, and the parent of an older child making an enforced visit to the bin while holding the child's hand and almost dragging the child. This forms a part of the child's broader socialization, by which they can learn to treat their own and one another's actions as accountable (Heritage, 1984, p. 131). Failure to do so will not only render their own behavior as recognizably antisocial, but will also leave them unable to make sense of the public behavior of others (see Garfinkel, 1967, for an extended treatment of this topic).

In addition to the practical accomplishment of actually disposing of trash, becoming competent as a socially responsible trash disposer appears to be in large part a process of becoming proficient in the management of one's visibility when trashing. It is not enough that the trash is binned appropriately, but that it has *to be seen* to be binned appropriately, so that social order is maintained and that confusions do not arise that have to be resolved. This observable maintenance of the social order can be seen in the various attempts of the woman in the previous section to retrieve her trash after its being blown away. Our data had numerous examples of this in the behavior of several adult trashers, who picked up empty bottles and flashed them around or span them in the air as they walked to the bin, or where others ostentatiously pushed their rubbish into the bin itself. The message is unmistakably that their behavior should be observed. This may be a matter of making themselves visible for any number of reasons, but it is clearly also about being seen to visit the bin. Imagine the reverse situation in which someone ostentatiously littered their rubbish on the ground, and then surreptitiously tidied it up: We might well on occasion see this behavior by people wanting to be seen as mischievous, but the explicit message given by their visible littering would be that those people are unaware of or unwilling to conform to social norms. It is the management of visibility in this tidying that marks the individual as a socially responsible actor (at least in most Western societies). Learning about how to make one's actions visible and accountable in many social situations is therefore a valuable and important part of becoming a competent actor, and although these broader skills clearly go beyond learning how to act at a trash bin, they are skills that all socially adept actors have learned and are able to use in their everyday actions.

Conclusions

The analysis and discussions around the data that we have presented identify some of the key characteristics around trashing, through a range of collaborative activities that include eating together, managing action sequences, packing up, and leaving, and the maintenance of social control, public accountability, and individual responsibility by way of actors making their actions visible to others. Although the article is not explicitly an ethnomethodological study, what we have seen in the data reflects ethnomethodological observations of human action. Ethnomethodological studies show us that "competent members" design their actions to render their behaviors as intelligible and accountable to observers, and recognizably act in accordance with normative patterns of action to demonstrate that they are responsible social actors (or that they are not, in the case of deliberate deviation), and to visibly show what they are and are not responsible for. This design of

public actions to make people's trashing behaviors intelligible and accountable to copresent others lies at the core of what we have observed and to the implications that we draw from this below.

Although the study may at first inspection have dubious relevance to broader social interaction, the findings can be seen as an insight into how people deal with social objects. With respect to these social objects, we have seen how people make their behaviors accountable to others, attempt to exert control over the behaviors of others, and learn about how to act responsibly with those objects. The implications of the research offer insights into urban design (e.g., in the placement of bins within public places), the design of street furniture (e.g., ensuring the visibility of user actions at the aperture of bins), and even the design of packaging by manufacturers (reducing littering by creating packaging that encouraged or afforded better social interactions and cohandling). The purpose of the research was not to develop fleshed out designs or "solutions" to any perceived problems of public nuisance but to offer designers an opening through which they may better understand the design settings and opportunities for moderating public behavior around their designs. These implications for the design and placement of objects within public spaces can be extended beyond trashing to cover other forms of social behavior around ticketing machines, postboxes, turnstiles, vending machines, Internet kiosks, cash machines, because these all involve the use of social objects through which public behavior is inherently visible. In many of these cases, the designs of these objects have been shaped over time to allow our existing sense-making skills and social protocols to moderate behavior around them, but our analysis still offers urban designers and the designers of emerging and novel public furniture and devices an opportunity to envisage patterns of potential use and to better suit their designs into the settings within which they are placed.

The role of visibility in social interaction around the bin may also have a connection with the well-documented relationship between littering and crime. This offers an intriguing alternative hypothesis to the "incivilities hypothesis" of poorly maintained urban and suburban spaces encouraging or leading to greater risk of crime in those areas. It may be not so much the fact that places become unkempt that leads to crime and a fear of criminality, but that places that offer opportunities for highly observable action around trashing (and which subsequently lend themselves to a public role in policing littering activities, such as those documented in this article) might also make these places suitable for other kinds of public policing and socially mediated behavioral control. There is some corroborating evidence to support this case. In her classic treatise on urban planning, Jane Jacobs (1961) suggests that natural surveillance is a strong deterrent for criminal activity, and that maximizing the visibility of people and their actions is a key feature in this. As we have shown, this is the case for littering itself, when it is viewed as a case of social deviance. Of course, we have not attempted to analyze places that offer less visibility for public actions or to examine criminality in public spaces. Nevertheless, this observation does present a slightly different perspective on visibility and social interaction in public spaces, and by extension, may offer insights into new approaches to urban planning and the design of street furniture to make actions and interactions in public spaces more publicly visible.

Even beyond the design of the physical world, the study provides some design implications for the use of collaborative objects in distributed computing, and virtual reality and embodied collaborative systems. Within our own domain of collaborative computing, this study has implications for social interfaces, for example, in maintaining concurrency control (sharing of common resources between distributed computer users), and in developing turn-taking protocols in computer-mediated communication surrounding the use of virtual objects. One of the developing areas in computer science that has received significant postmillennial interest is known as ubiquitous computing. This area involves the embedding of computing capabilities into everyday things and places, contrasting strongly against the current desktop paradigm of use; however, by decentralizing and distributing computing power across devices and into the world, the nature of interaction, and making sense of the outcomes of interaction with these systems becomes problematic. This

is made even more challenging in settings where there may be multiple people involved in these interactions, and one can even envisage situations in which people may not even be aware of the computer interactions of people that they are coproximate with (cf. Love & Perry, 2004). One of the solutions proposed to this has been for designers and users to make use of our existing social protocols in managing these interactions. Examining how people manage their social interactions around existing objects in the world therefore offers valuable insights into *what* these social protocols might be, and how we make use of the physical resources within social settings in order to support, and make meaningful, our public actions.

An instance of how this material that offers an insight to computer, or more specifically “interaction” designers is in how different types of “packaging” around shared virtual objects might offer useful affordances for mediating social interaction, for example, in supporting interactional or task closure, or in collecting assorted computer-based activities together to be the responsibility of one of the remote interactants. Although packaging is not something that we would commonly associate with the bits and bytes of a computer-generated world or might consider necessary from a functional point of view, virtual wrapping offers opportunities for novel virtual object handling techniques between users and may be mediated simply through the employment of the kinds of existing social protocols that were seen in the data reported in this article. Such virtual packaging could also be used by designers to improve our social visibility within computer worlds: This is not feedback in the strict sense of the term as it is used in interface design, but information about the state and social status of objects that can be interpreted and used in making sense of the actions of others. This is an interesting idea, particularly as we have traditionally identified packaging as primarily associated with the problems of handling physical products, keeping them protected from damage and free from contamination and keeping ourselves safe, clean, and dry. To some extent, packaging is used in the physical world as an informational device in providing a surface for advertising and product details, but this is largely for individual, and not social, consumption.

Of course, our examination of social practices around the production or trash and how trashing is practically accomplished offers few insights into the constitution of trash, of the statistical likelihood of acting in particular ways, or of the mental reasoning that lies behind its management or production. Yet, as Goodwin (2000) notes,

The necessity of social action having this public, prospectively relevant visibility, so that multiple participants can collaborate in an ongoing course of coordinated action, casts doubt on the adequacy of any model of pragmatic action that focuses exclusively on the mental life of a single participant such as the speaker. (p. 1491)

Public trashing, like all socially visible activities, takes place in a social setting, and is shaped by the actions and interactions of multiple individuals, and not just the trasher. Indeed, this point places some doubt on the value that the psychological models of trashing (such as those reported in the prior research section) might offer.

It is hardly necessary to note that observational studies cannot offer insights into underlying cognitive structures that underpin human behavior, and offer an alternative perspective on why we act in the way that we do. However, such detailed field studies may be able to offer some unique insights into why and how we come to act in the ways that we evidently do. Thus, for example, the role of eating together in the production of trash (which, by previous definition, has zero value) and subsequent social interaction around it would suggest that its collection by others for disposal offers the collector some apparent value (indeed, this might be usefully compared with Thompson’s [1979] cycle of value creation). On the face of it, this appears an extremely odd idea: something of no value gaining value (albeit, not for its originator) without any transformation in its physical state, before returning to a condition of no value (once in the bin). Similarly,

the physical properties of packaging material and the form of the apertures on dustbins can have an observable impact on the ways in which people act and are able to act, and transform the cleanliness and sociability of public spaces in a way that could not be easily anticipated without a close examination of the mechanics of interactions within these settings.

Through a detailed examination of public trashing behaviors, we have observed a very mundane and everyday set of activities in and of themselves; yet these have allowed a rich set of social activities to take place, that were largely conducted in an apparently unproblematic way by the people involved, and with very little need for verbal mediation. What has been surprising to us is the complexity and richness of what we had initially thought to be a relatively simple set of activities, those of the disposal of waste. We certainly had a suspicion that trashing behavior was more complex than its surface characterization but had not expected to see anything like as rich as the behaviors that we observed. What we clearly see is that trashing occurs not just at *the* bin, but *around* the bin. Similarly, rubbish can become part of the bin (e.g., by patting it down so that it doesn't fall out or compressing it), so it is not just the rubbish that forms a unit of analytical interest, but broadening this to look at the place/bin/rubbish unit can offer an insightful perspective on the nature of trashing behavior and of the trash itself.

A simple question arises from thinking about the generation of rubbish within its broader social context: When does an object become trash? Taking the sociological analogy of the raw and the cooked, when does the object lose its "natural" state (from whatever the trash was before, such as packaging, edible foodstuffs, reading matter, etc.) to become an object (labeled generically as "trash" or "waste") that is imbued with negative cultural values (as it becomes "dirty," embarrassing, or economically valueless)? As Strasser (2000) notes, "Trash is a dynamic category," and it is hard to pin this down in absolute terms. There is a functional (and perhaps simplistic) answer to this question that states that trash is an object that no longer has a use or value, and that we no longer wish to retain. However, probing this question deeper and looking at the data, we have come to understand this a little differently—it is more complex than this functional definition. For example, what constitutes the ownership of trash? When does it lose ownership and when do we still carry responsibility for it? This article has gone some way toward answering these questions, although this is evidently a far more complex question than it might have initially appeared.

Clearly, rubbish is as much produced through social interaction, as it is through the creation of things that we have no practical use for. Perhaps the important question that we need to ask here is not so much "what is trash?" but "how is trash made?" and for this there is no simple answer in black and white. As actors, we come to agree, in concert with others, that something is trash (not a radical, or particularly interesting finding), but how this translates into action around objects that are subsequently trashed is an interesting and complex social phenomenon that deserves some consideration, both as a practical social concern for those involved, but also because it may have implications outside this fieldwork context. Indeed, the analysis of our data raises an interesting set of questions about our socially established responsibilities over the ownership of, and concomitant responsibilities for, our own waste, as well as for the other social objects that we engage with in public spaces.

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References

- Brown, B., & Perry, M. (2000). Why don't telephones have off-switches? Understanding the use of everyday technologies. *Interacting With Computers, 12*, 623-634.
- Chapman, C., & Riskey, T. R. (1974). Anti-litter procedures in an urban high-density area. *Journal of Applied Behavior Analysis, 7*, 377-383.
- Chappells, E., & Shove, E. (1999). The dustbin: A study of domestic waste, household practices and utility services. *International Planning Studies, 4*, 267-280.
- Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology, 58*, 1015-1026.
- de Coverly, E., McDonagh, P., O'Malley, L., & Patterson, M. (2008). Hidden mountain: The social avoidance of waste. *Journal of Macromarketing, 28*, 289-303.
- de Kort, Y. A. W., McCalley, L. T., & Midden, C. J. H. (2008). Persuasive trash cans: Activation of littering norms by design. *Environment and Behavior, 40*(6), 870-891.
- Douglas, M. (1975). *Implicit meanings: Selected essays in anthropology*. London: Routledge & Kegan Paul.
- Fagan, H. (2002). *Grounding waste: Towards a sociology of waste networks* (National Institute for Regional and Spatial Analysis Working Paper Series, No. 18). Retrieved November 26, 2008, from <http://www.nuim.ie/nirsa/publications/WPS18.pdf>
- Fagan, H., & Murray, M. (2006). Green Ireland? Waste in its social context. In B. Bartley & R. Kitchin (Eds.), *Understanding contemporary Ireland* (pp. 208-220). London: Pluto Press.
- Garfinkel, H. (1967). *Studies in ethnomethodology*. Englewood Cliffs, NJ: Prentice Hall.
- Garfinkel, H., & Livingston, E. (2003). Phenomenal field properties of order in formatted queues and their neglected standing in the current situation of inquiry. *Visual Studies, 18*, 21-28.
- Geller, E. S., Witmer, J. F., & Tuso, M. A. (1977). Environmental interventions for litter control. *Journal of Applied Psychology, 62*, 344-351.
- Goodwin, C. (2000). Action and embodiment within situated human interaction. *Journal of Pragmatics, 32*, 1489-1522.
- Grasmick, H. G., Bursik, R. J., & Kinsey, K. A. (1991). Shame and embarrassment as deterrents to noncompliance with the law: The case of an antilittering campaign. *Environment and Behavior, 23*, 233-251.
- Heritage, J. (1984). *Garfinkel and ethnomethodology*. Cambridge, UK: Polity Press.
- Jacobs, J. (1961). *The Death and Life of Great American Cities*. New York: Random House.
- Jefferson, G. (1972). Side sequences. In D. N. Sudnow (Ed.), *Studies in social interaction* (pp. 294-333). New York: Free Press.
- Krogman, N. (2005). Bringing sociological theory into our understanding of the social context of waste. In *Waste—The social context conference* (pp. 265-271). Canada: University of Alberta Publications.
- Laurier, E. (2004, December 9-11). "Please continue your usual business": *The production of natural life in cafes during ethnographic filming*. Paper presented at the Conference on Video Analysis: Methodology and Methods, Technical University, Berlin.
- Lee, J. D. R., & Watson, D. R. (Eds.). (1993). *Interaction in urban public space, Final Report, Plan Urbain*. Manchester, UK: Department of Sociology, University of Manchester.
- Livingston, E. (1987). *Making sense of ethnomethodology*. London: Routledge & Kegan Paul.
- Love, S., & Perry, M. (2004). Dealing with mobile conversations in public places: Some implications for the design of socially intrusive technologies. In E. Dykstra-Erickson & M. Tscheligi (Eds.), *Extended abstracts of ACM CHI 2004* (pp. 1195-1198). New York: ACM Press.
- Manzo, J. (2005). Social control and the management of "personal" space in shopping malls. *Space and Culture, 8*, 83-97.
- Mauss, M. (2002). *The gift: The form and reason for exchange in archaic societies*. London: Routledge. (Original work published 1925)
- Norman, D. A. (1988). *The psychology of everyday things*. New York: Basic Books.

- O'Brien, M. (1999). Rubbish-power: Towards a sociology of the rubbish society. In J. Hearn & S. Roseneil (Eds.), *Consuming cultures: Power and resistance* (pp. 262-277). New York: St Martin's Press.
- O'Brien, M. (2007). *A crisis of waste? Understanding the rubbish society*. London: Routledge.
- Paperman, P. (2003). Surveillance underground: The uniform as an interaction device. *Ethnography*, 4, 397-419.
- Paulos, E., & Jenkins, P. (2005, April 2-7). Urban probes: Encountering our emerging urban atmospheres. In: W. Kellogg & S. Zhai (Eds.), *ACM CHI 2005* (pp. 341-350). Proceedings of ACM conference on Human Factors in Computing Systems, Portland, Oregon. New York: ACM Press.
- Rathje, W., & Murphy, C. (1992). *Rubbish! The archaeology of garbage*. New York: HarperCollins.
- Rathje, W. L., & Ritenbaugh, C. K. (1984). Household refuse analysis: Theory, method, and applications in social science. *American Behavioral Scientist*, 1(28), 9-29.
- Schegloff, E. A., & Sacks, H. (1973). Opening up closings. *Semiotica*, 8, 289-327.
- Schmidt, K. (1997). Of maps and scripts: The status of formal constructs in cooperative work. In: S. C. Hayne & W. Prinz (Eds.), *Proceedings of the ACM conference* (pp. 138-147). New York: ACM Press.
- Sibley, C.G. and Liu, J.H. (2003). Differentiating active and passive littering: A two-stage process model of littering behavior in public spaces. *Environment and Behavior*, 35(3), 415-433.
- Smith, G. (1997). Incivil attention and everyday intolerance: vicissitudes of exercising in public places. *Perspectives on Social Problems*, 9, 59-79.
- Steiner, F. B. (1967). *Taboo* (2nd ed.). London: Penguin.
- Strasser, S. (2000). *Waste and want: A social history of trash*. New York: Henry Holt.
- Strauss, A. (1985). Work and the division of labour. *Sociological Quarterly*, 26(1), 1-19.
- Straw, W. (1999). The thingishness of things. *Invisible Culture*, 2. Retrieved June 29, 2007, from http://www.rochester.edu/in_visible_culture/issue2/straw.htm
- Suchman, L. (1987). *Plans and situated actions*. Cambridge, UK: Cambridge University Press.
- Suchman, L. A., & Trigg, R. H. (1991). Understanding practice: Video as a medium for reflection and design. In J. Greenbaum & M. Kyng (Eds.), *Design at work: Cooperative design of computer systems* (pp. 65-89). Hillsdale, NJ: Lawrence Erlbaum.
- Thompson, M. (1979). *Rubbish theory: The creation and destruction of value*. Oxford, UK: Oxford University Press.
- Whyte, W. H. (1980). *The social life of small urban spaces*. Washington, DC: Conservation Foundation.
- Williams, P. T. (2005). *Waste treatment and disposal* (2nd ed.). London: Wiley.

Bios

Mark Perry's interests span cognitive science, computing and social science. His recent research revolves around the use of mobile information and communications technology, and the use and design of ubiquitous/pervasive computing, working in areas as diverse as ethnographic studies of nomadic work, communication in the home and ubiquitous multi-modal interaction. Mark is currently a senior lecturer at Brunel University.

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Daniel Normark focuses on 'sites of negotiation' – from everyday road-use and ubiquitous computing to the organization of biomedical research. He studies the performative aspects of representation by looking at situated interpretative practice as well as associations of interpretation. Daniel is currently working at the Archive for the History of Medicine project at Karolinska Institutet, Stockholm. He is also a member of Nordic Network on Visual Studies.

Erratum

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In the article “Laying Waste Together: The Shared Creation and Disposal of Refuse in a Social Context” (DOI: 10.1177/1206331209353685), by Mark Perry, Oskar Juhlin, and Daniel Nor-mark, published in February 2010 issue (Volume 13, Number 1) of *Space and Culture*, the figures 3-15 and their description corresponding to “Data and Analysis: Availability and action sequencing” and “Data and Analysis: Social control, accountability and responsibility” respectively were not placed in its online version.

[Click here](#) in order to access the aforementioned figures.