

Dealing with dirt: servicing and repairing cars

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Abstract

This paper explores the significance of dirt in the work of technicians who service and repair private cars. Rather than being useful in understanding how dirt is dealt with, the historical and anthropological analyses of dirt are shown to be overly concerned with cultural significance and the idea that dirt is no more than 'matter out of place'. Such accounts suppress the more common sense approach that dirt is unpleasant to human beings and is to be avoided if possible. In work such as garage servicing and repairs, dirt has to be confronted and dealt with pragmatically, according to the consequences of its presence, rather than symbolically according to its cultural meaning. The writing of Sartre on slime provides a more persuasive explanation both for the ambivalence towards ambiguous materials of slime and dirt and for the moral connotations that attach to them. Everett Hughes's account of a 'moral division of labour' in which distinctions are made concerning dirty work fits with some of the visible hierarchical distinctions in the garage setting. But it is the variability of practices, both between garages and between technicians in a similar setting, that suggests dealing with dirt is a practical matter that is not prescribed by ritual or cultural significance.

Introduction

In a study of the material interaction between garage technicians and the cars that they service, repair and maintain mechanically, we noticed early in the fieldwork that the work was characteristically 'dirty'.¹ There has been little sociological discussion of the impact of material interaction with dirt in modern culture; most of the literature is anthropological or historical and will be discussed below. There are a number of distinctive features of garage work: the technicians undertake and complete a 'job' or set of tasks on a car despite a number of interruptions; they work autonomously and usually alone; their work is varied and the type and progress of tasks is often unpredictable; their work requires an acquired manual skill and the technicians use their own hand tools in most tasks. These features mark the type of work they do out as concerned with the re-production of material artefacts, in contrast to work that is original production of new material objects and which is likely to involve pre-planned sequences of work around tasks undertaken by machines (Friedmann 1961). A further distinctive feature of garages is that the technicians deal with dirt as part of their routine everyday work. Unlike the modern clean factory in which new components are being assembled, the technicians in garages get dirty as they work and the environment in which

they work is continually being contaminated by dirt and needs to be cleaned. They work with material objects – the cars – that have gathered dirt from the roads they have been used on, and much of their work involves using materials such as grease and oil that are contaminating and appear as dirt outside the mechanical contexts in which they function.

As we entered the fieldwork sites we were aware that there was a routine demarcation between the technicians who work on the cars and those, including customers, managers and sociologists, who keep some distance from the dirt even when in the working environment. The field researcher (DB) had to wear overalls and appropriate shoes to remain close enough to observe the work of the technicians. Some of the work tasks they undertake specifically involves cleaning objects, such as brake assemblies, and removing contaminated materials, such as grease and oil that has become dirty. However, the focus of their work is on servicing and maintaining the car's mechanical components which are often dirty so that an aspect of their work is the various regimes to protect themselves, the cars and their customers from contamination and its effects. They usually wear protective clothing (overalls, heavy shoes, sometimes rubber or plastic gloves) and attempt to protect the car (and so its user) from dirt with temporary plastic covers on seats and bodywork. Within the activity of work the technicians clean parts of the car, their workspace, their equipment and themselves to remove dirt. The garages have industrial practices of cleanliness that are particularly directed to protecting workers from the health hazards of some of the materials they work with (dermatitis, skin cancer, slipping, damage to eyes etc.).

In this paper we will explore the cultural significance of 'dirt' and dirty work, the distinctive characteristics of dirt in the car repair and maintenance industry and some of the strategies used to deal with dirt. We found that within the organisational context of garages and technicians' individual ways of working, dirt is dealt with as a practical problem that has mechanical and health consequences. Despite the tendency of historians and anthropologists to treat dirt as relative and culturally defined with ideological or ritualistic consequences, we found that the cultural rules surrounding dirt in repair garages are flexibly pragmatic and vary with institutional, organisational and personal practices. While the culture at large may maintain a distance from dirt and dirty work that produces a 'moral division of labour' by which those, like the garage technician, whose work involves dealing with dirt have a degraded social status, the organisation and practice of the work is characterised by practical and rational considerations rather than rituals or moral codes.

Dirt as cultural product

It is often the moral connotations of the global movements of workers willing to do physically dirty work such as domestic labour and cleaning that attracts the attention of social scientists (e.g. Anderson 2000; Economist 2002; Salzinger 1991). The background to this moral association of dirt with cultural practices is to be found in the work of historians and anthropologists. According to some historians, in pre-industrial rural communities dirt was commonplace and seen as positive and fertile, a sign of 'plain living' and 'honest toil' (Hoy 1995: 22) but this perception of dirt could not be sustained during the rapid industrialisation and urbanisation of the industrial revolution. The unprecedented concentration of the population, with industrial towns and cities growing two, three and even fourfold over a period of fifty years or so, meant that outbreaks of 'filth diseases' became much more common and their consequences far more severe. During the first part of the 19th century Enlightenment humanitarian concern to relieve individual suffering combined with utilitarian political economy to produce public health reforms that were designed to prevent premature mortality and so maintain the workforce (Porter 1994: 8). In Britain the sanitation movement, led by Edwin Chadwick, sought to reduce the financial burdens of destitution and infectious diseases and 'reform the "ragged" classes by educating them into the role of civically hygienic citizens' to eliminate both environmental filth and moral depravity (Porter 1994: 9). The provision of sound sewers and clean water took precedence over wages and food in what Hamlin argues was the 'greatest "technical fix" in history' (1998: 13); he argues that underlying Chadwick's scientific empiricism was a moral agenda in which dirt was associated not only with disease but also with depravity and both could be tackled by legislation, public works and education (1998: 160-2). Scientific advances linked diseases to specific micro-organisms to be found in dirt that led to a 'rational' reforming alliance between the sanitarian's ideas of Public Health and the scientist's Germ Theory (Tomes, 1998: 38-47). While there was a scientific and rational basis for the response to dirt, the historians are keen to point out that reformers like Chadwick went further to stress the ideological or moral importance of cleanliness beyond the merely practical effects. It is indeed difficult to disconnect the social and political strategies instituted to combat dirt from attempts to regulate the cultural practices of citizens and workers. For example, Suellen Hoy (1995) charts the history of cleanliness in the United States as a series of invocations to take up a particular cultural pattern, the 'American way', in which the ordered, regulated and clean practices of the middle classes were imparted to children, the masses and, especially, immigrants. Much of this education and training, while backed by state laws, was undertaken by 'hygiene commissions', the church, schools and institutes and voluntary or charitable groups. Most of the reforming zeal was directed at domestic practices, but large employers,

including for example, the Ford Motor Company, also participated. Dealing with dirt was part of a package of practices that went with 'right living' and standards of citizenship; Ford apparently believed that 'the most advanced people are the cleanest' and demanded that his workers live 'in clean, well conducted homes' and use 'plenty of soap and water' on themselves and their children (quoted in Hoy 1995: 137).

What seems to be suppressed in these historical accounts is the practical impact of dirt on ordinary life in modern societies. It is reasonable to point to the cultural values that were overlaid on the theme of dealing with dirt, but we should be cautious of any reduction to culture that overlooks prior bodily and material concerns. Such a cultural reductionism is even more characteristic of anthropological accounts of dirt and pollution than those of historians – what is implied is that any routine responses to dirt, especially those that have moral overtones, are a social product and have no basis other than relative cultural values.

In Purity and Danger (1984) Mary Douglas argues that 'dirt is essentially disorder' so that there is 'no such thing as absolute dirt: it exists in the eye of the beholder' (1984: 2).

Ambiguities or confusions in the classification boundaries of objects and activities produce anomalies that are regarded as potentially dangerous and polluting. Rituals of cleansing are used to recover purity and ward off the dangers of dirt and other pollutants. For Douglas there is a continuity between the primitive and modern worlds in the cultural response to anomalies identified as polluting or unclean. In our modern attempts to eliminate dirt we 'are positively reordering our environment, making it conform to an idea' in 'an attempt to relate form to function, to make unity of experience' (Douglas 1984: 2). Rituals of purity unify a culture so that 'disparate elements are related and disparate experience is given meaning' (Douglas 1984: 3). In the modern world of scientific and technological rationality such rituals are not determined by religious principles but by a system of knowledge and action based on evidence of the workings of the material world. But Douglas argues that 'the laws of nature are dragged in to sanction the moral code' and the 'whole universe is harnessed to men's attempts to force one another into good citizenship' (1984: 3). Even in modern societies, where knowledge and action are no longer dominated by religion, practices of classification, not least those concerning dirt, continue to carry moral connotations.

Douglas's principle concern is to make sense of a range of primitive ritual practices whose purpose is not so much to change material events in the world as to establish and maintain social categories and distinctions such those governing marriage and sexuality. She argues that primitive ritual is not only concerned with religion and distinguishing the sacred from the profane but is used to purify and reinforce social roles and distinctions (Douglas 1984: 67).

Douglas suggests that the modern world continues the primitive concern with dirt through rituals are that about meaning rather than an empirically grounded response:

The difference between us is not that our behaviour is grounded on science and theirs on symbolism. Our behaviour also carries symbolic meaning. The real difference is that we do not bring forward from one context to the next the same set of ever more powerful symbols: our experience is fragmented. Our rituals create a lot of little sub-worlds, unrelated. Their rituals create one single, symbolically consistent universe.

(Douglas 1984: 70)

Douglas seems to be denying the category of 'dirt' as having any basis prior to culture; it is always a ritualised expression of a 'symbolic system' (Douglas 1984: 36). While this might be a reasonable theoretical position it is not grounded in any empirical account of the practices of dealing with dirt in modern societies. It is moreover, unclear how meaning can be sustained within 'little sub-worlds' – there may be codes of practice within the sub-world of garage repair work to do with dirt, but it is an empirical question whether they are rituals based on generalised mystical beliefs or whether they are grounded in practical experience shared within that sub-world.

Pearl Katz (1981) confronts this question with an anthropological study of the rituals used to manage dirt and pollution in the modern operating theatre. The distinctions between what is sterile and what is non-sterile are prescribed in a set of practices that are ritualistic in their rigidity; they are applied on each occasion without question. These 'ritual' practices generate classificatory anomalies so, for example, the patient's blood is considered sterile once the operation has begun but nonsterile and capable of 'dirtying' a sterile environment before the operation (Katz 1981: 341). Katz's account treats the strict procedures in the operating room as 'rituals' which suggests that their meaning is cultural rather than based on pragmatic or empirical reasoning. Her warrant for this is the fact that anthropologists had begun in the 1970s to acknowledge 'that secular ceremonies may be examined as rituals because they share the symbolic and communicative functions of ritual' (Katz 1981: 335). She argues that following ritual practices to do with sterility and cleanliness serves the symbolic purpose of enabling the operating team to enjoy an 'autonomy' that they could not otherwise. Because the categories of contamination are tightly managed by routinised practices the team can relax and even joke about what is going on. But when someone breaches the routine, autonomy is lost and routines of re-cleansing have to be initiated to get the operation back within its stable categories of clean/dirty before the team can relax again.

However, in the operating theatre the tightly prescribed routines are based on biological principles of hygiene and physical principles of contamination; they have developed from scientifically grounded attempts to understand how post-operative infections originate. The rules and routines may provide an habitual pattern for what is a set of complex actions and interactions (the operation) but it is unclear whether they are serving any cultural purpose beyond the practical function. Surgeons joke when safely within their skilled routines just as do all skilled practitioners but this is not sufficient reason to describe their practice as ritualistic. Their routines are pragmatic in their effects; scrubbing and maintaining sterility of surfaces in the operating theatre and demarcating between 'clean' and 'dirty' are based on beliefs grounded in experience that is both personal (all personnel will have seen the effects of post-operative infection) and scientific (studies that generalise experience can demonstrate that cleanliness reduces the incidence of post-operative infection).

The anthropological concern with dirt as a symbolic problem of order is combined with the historical perspective in Julia Lawton's (1998) detailed and theoretically sophisticated analysis of 'dirty dying' in a hospice. The patients that Lawton describes have experienced a breakdown in bodily surfaces so that the boundaries between organs or between flesh and the outer world have been breached. Their bodies, disintegrating and decaying while still alive, produce a revulsion and eventually intolerance amongst other patients, relatives and even the sufferer themselves; the breakdown of the material boundaries of the body produces 'dirt' in the form of smelly and ambiguous materials that ooze and merge. However, Lawton argues that this lack of tolerance to 'dirty dying' is an historically emergent cultural response. Citing Corbin (1986) and Elias (1994) Lawton argues that it was moral reasons to do with cultural development towards the spatiality of the modern individual that led to the privatising and deodorising of the human body and its emissions and odours. These cultural values predated Pasteur's germ theory and any material grounds for hygienic sensibilities; 'we should understand these sensibilities as being essentially symbolic in nature, stemming, in the first instance, from the construction of the person, and the body, as self-contained, bounded entities' (Lawton 1998: 137). This argument combines the historians' and the anthropologists' predilection to point out the cultural and relative origins of social practices and to downplay the instinctual bodily response and instrumental, pragmatically oriented routine practices that deal with anomalous materials.

Cars and dirt

The extremes of managing dirt in operating theatres and of dealing with ambiguity in dying bodies are not characteristic of the ordinary, routine mechanical work in a garage. There

were no signs in our study of rigidly applied rules for distinguishing between the dirt and cleanliness of surfaces – there were practices for managing dirt, some of which we will describe below, but they were not applied inflexibly.² Although garage spaces do take on their own ‘ambience’ of sounds and smells, there was no evidence that the technicians found any of the materials they dealt with – including different types of dirt – offensive or disgusting. However, the dirt that they dealt with did have a particular quality as material; it was often sticky, tacky or slimy and on the skin would produce streaks as well as a general film or occluding texture. Although the technicians did not routinely get blackened by dirt, it often affected their appearance and particularly the appearance of their hands and clothes. Before turning to consider the practices for dealing with dirt, let us introduce the dirt of cars. Modern cars are designed so that the ‘bodywork’ is made up of hard, smooth, metallic and glass surfaces on the outside that are exposed to view. It is these surfaces that get washed when the weekend job of car cleaning is done by the owner – Figure 1 shows the clean, shiny visible outside surface of the car. [insert Figure 1 here] But about a fifth of the car’s outer surface is ‘underneath’, not usually visible to the eye of anyone looking at the vehicle as it stands on the road. This underneath is not a smooth, rounded, continuous surface but a flat plane with a series of indentations and folds, with pieces of equipment attached. Four large recesses house the wheels with their brakes, suspension and steering mechanism and there is a recess at the base of the engine, often partially covered-in by a removable plastic panel. The underneath of modern cars is largely covered with a grey or black plasticised under-seal to protect the metal structure and components – it has a surface that is bumpy and textured and usually covered in the grime that is splattered up from the road. Some of this dirt is deposited in the floor of the garage while the car is worked on and is left as a dirty ‘footprint’ once the car is moved – see Figure 2. [insert Figure 2 here]

This ‘underneath’ of the car is seldom cleaned by the owner but it is where the dirty work that is routinely delegate to technicians has to be done: amongst the cold, hard, unpainted metal surfaces of the mechanical components and the functional greys of the rubber and plastic tubes and protective coverings – see Figure 3. [insert Figure 3 here] Unless the car is very new, these surfaces are almost always dirty, covered in a mixture of unspecific dirt from the road (usually carried as a muddy liquid to where it lodges before it dries in place), oil and grease, (blackened and impregnated), rust in its various stages and metal dust shed as parts work against each other – see Figure 4. [insert Figure 4 here] Nobody cares much what the mechanical components underneath look like; they are designed and made for function – so that the car can move, stop, turn and provide a comfortable ride. However, the smooth working of the vehicle depends not only on the presence and functionality of the solid

components but also the cleanliness of a series of interstitial layers between moving components – greases, oils, silicones. Although a golden or colour-tinted translucent, almost transparent, viscous substance when advertised or sold, as soon as the oil enters an engine it is transformed into a black, opaque liquid. Removal of the old engine oil is a routine part of any service; difficult to do while the vehicle sits on the ground. The modern lift or ramp raises the car above the technician so that he can see and easily get at the drain plug that is at the lowest point of the engine, underneath and in the centre of the vehicle. A special removal tank with an adjustable draining funnel is brought underneath to catch the soiled fluid from the sump while other inspection work goes ahead. The technician has to take care when removing the drain plug, since the second it's released the oil will flow with the pressure of gravity – and onto his hands and up his sleeve if he isn't careful (Figure 5).

Like engine oil, grease becomes black and opaque as soon as it is used and some graphite-based greases are black and sticky to start with. Grease and oil lubricate hard, usually metal surfaces, that run against each other and are fundamental to most mechanical operations in a car (Figure 6). Unlike the rear hub bearings, the constant velocity (CV) joint carrying the drive to the front steering wheels is not protectively enclosed within metal parts because of its complex range of movement. Instead, a synthetic rubber 'boot' with a bellows design encases the joint while allowing it to move in two planes. The boot keeps out granular dirt that would contaminate and wear out the metal bearings and keeps in the slimy black grease that lubricates the bearing. The boots split and so need to be checked and replaced during routine servicing – it is virtually impossible for the technician not to get dirty during this operation.

The fluid and viscous materials of oil and grease take a form that the owner or user of a car may think of as 'dirt' even when new – the lived-with surfaces of skin, cloth, vinyl, hard plastic and painted metal are easily soiled by them. All the solid materials of the mechanical parts of a car – metal, rubbers, plastics – give up fragments that transform the colour and texture of the more or less fluid materials, which in turn attach to any surface they touch and then hold any airborne particles of dry and hard materials. The result is a range of different types of dirt from slime to grime, from more or less viscous to more or less solid. For example, the brakes are a mixture of finely engineered and lubricated pistons that expand to translate pressure to the dry, abrasive pads and shoes that provide the friction on metal surfaces to slow and stop the roadwheels. The pistons of slave cylinders, and the inside of pipes carrying brake fluid must be clean and shiny to move smoothly and ensure a steady translation of pressure. But the abrasion of pads on exposed metal produces dust and dirt from the compound on the pads which mixes with the rust from the unpainted, unlubricated

metal. Inside rear brake drums the detritus accumulates and as the springs and clips rust and their movement becomes restricted with dust. Extracting the debris requires the removal of components and provides an opportunity to check the integrity of the pipes, cylinders and rubber dust covers. Sometimes dust is blown off the brake assembly with expelled breath (see Figure 7).

Responding to dirt

What the historians and anthropologists emphasise is that morality and hygiene are intertwined in ritualised practices that are regulated from outside the individual in institutional, religious and legal arrangements. Dealing with dirt cannot, they suggest, be reduced to pragmatic matters decided on the basis of knowing the consequences of dirt. It is interesting that Douglas, when referring to the rituals of dealing with dirt in modern western societies, refers to matters of bodily and domestic hygiene rather than the more complex symbolic arenas of war, food gathering, weather control, sexuality, marriage and genealogy that characterise her account of primitive rituals of purification. Like the historians, she is careful to recognise that there might be a 'marvellous correspondence between the avoidance of contagious diseases and ritual avoidance' (Douglas 1984: 30). But this correspondence she treats as a 'by-product' of ritual actions and not a 'sufficient explanation' (Douglas 1984: 30) for dirt is a 'relative idea' no more than the 'by-product of a systematic ordering and classification of matter, in so far as ordering involves rejecting inappropriate elements' (1984: 36).

What seems to be written out of the anthropological and historical accounts of dirt is the importance firstly of a bodily reaction to dirt and secondly the compelling significance of the technical consequences of dirt. It does not seem so surprising that humans, like other animals, develop strategies for keeping their bodies, and the physical spaces in which they spend time, clean. More than this, we can recognise that as we become human 'beings-in-the-world' we orient ourselves in relation to the world around us and the other beings that make it up. Douglas cites Sartre who does argue forcefully that there is a repulsion brought about by viscosity, or stickiness because of its material ambiguity, but she argues that we do not live as individuals and our classification schemes are 'partly received from others' (Douglas 1984: 39). But what Jean-Paul Sartre's existential ontology offers, and Douglas resists, is an account of the inherent ambiguity of certain types of anomalous materials that confront us with the ambiguity of our own beings by challenging the boundaries between our bodies and the world in which we live. Rather than counter 'common sense' with the assertion of the priority of cultural meaning as Douglas does, Sartre argues that the qualities

of things are revealed in the 'there is' of being; the qualities of a being, including material stuff, cannot be separated off from other beings or from the thing itself (Sartre 1984: 770). Sartre confronts the materiality of stickiness in relation to the phenomenal body rather than argue the primacy of the cultural. What is more, he understands the material relationship as coterminous with a moral value; neither is prior to the other, transferring value or meaning:

In a word, if we are to establish consciously and clearly a symbolic relation between sliminess and the sticky baseness of certain individuals, we must apprehend baseness already in sliminess and sliminess in certain baseness.

(Sartre 1984: 771)

However he argues that this is not simply a culturally transmitted system of values because children are repulsed by the slimy as if it were already combined with the psychic qualities of disgust that are part of its moral connotation. Things that are 'slimy' are neither liquids nor solids, they flow slowly, or melt into themselves and as such 'do not fit in' with our main classifications:

... immediately the slimy reveals itself as essentially ambiguous because its fluidity exists in slow motion; there is a sticky thickness in its liquidity; it represents in itself a dawning triumph of the solid over the liquid – that is, a tendency of the indifferent in-itself, which is represented by the pure solid, to fix the liquidity, to absorb the for-itself which ought to dissolve it.

(Sartre 1984: 774)

For Sartre the human body attempts to 'appropriate' the slimy material which responds by blurring the boundaries of the being of the human self. The ambiguity of slime means that it is soft, yielding, falling in on itself, apparently 'docile' – but its softness is sticky, leech-like, possessing the attempt to possess it:

I open my hands, I want to let go of the slimy and it sticks to me, it draws me, it sucks at me. Its mode of being is neither the reassuring inertia of the solid or a dynamism like that in water which is exhausted in fleeing from me... There is something like a tactile fascination in the slimy. I am no longer the master in arresting the process of appropriation.

(Sartre 1984: 776)

Slime 'offers a horrible image; it is horrible in itself for a consciousness to become slimy' because such a consciousness would be perpetually held back from projecting into the future (Sartre 1984: 778). Sartre describes slime as the symbol of an 'anti-value', a form of being not yet realised, but always threatening to be realised.

What Sartre argues is that our response to slime is not simply cultural and relative but based on the material experience of a relation between a conscious but embodied being and

ambiguous materials. It is not difficult to extrapolate from his account of the slimy to other forms of dirt in which ambiguous materials cling to surfaces, particularly skin, thereby compromising the material integrity of that surface. Something which we notice as 'dirty' has material adhering to its surfaces which obscures our apprehension through sight and touch of that thing. Now while this provides something like a phenomenological underpinning for the definition of dirt as 'matter out of place', it also suggests that dirt has a fundamental relation to our apprehension of our own being and to that of other beings in the world. What is more, Sartre is suggesting that the moral character of dirt and activities related to dirt, originates prior to cultural processes of attributing value. This phenomenological response to dirt – one that is there prior to consciousness or the inculcation of cultural values – is of course available to be overlaid with cultural practices that may at times be ritualistic and that emphasise or even revalue what is dirty and what its significance is.

The dirt that is dealt with in garages is usually sticky or slimy; the presence of oil and grease on or near the mechanical components of cars means that the dirt the technician encounters usually has a viscosity that renders it ambiguous. Even the particles and dusts shed by solid components adhere to surfaces and easily become semi-liquid on contact with sweaty or greasy skin, or tools or equipment that are somewhat greasy. Indeed, fluid materials such as de-greasing agents are used not only to transform the viscosity of grease into a more easily removable liquid form but are also used on dust particles such those found in brake assemblies. The world of the car technician is not dominated by a system of symbols and their meanings that lead to ritualistic responses but by a set of very pragmatic concerns, the details of which are in principle available to every technician. Their own experience of work on cars has meant that they have seen the damage caused by dirt to mechanical components and they will have seen minor injuries resulting from people slipping or tripping. They know that their work frequently cannot proceed until sufficient dirt has been removed to allow components to be inspected or replaced. They also know through their training and the advice from government agencies, their employers and their colleagues that used engine oils and other materials that they work with can cause dermatitis and skin cancer. They are told:

Limit exposure to engine oils by avoiding contact, using safe systems of work and wearing protective clothing which should be cleaned or replaced regularly. High standards of personal hygiene and cleanliness should be maintained.

(HSE 1997: 20 - Para. 71)

All work in garages is covered by the Health and Safety at Work Act 1974 which places a duty on employers to follow codes of practice that concern the safety of workers and their health. Hazardous materials are used – especially in body repair and paint shops – although

many risks are of bodily injury through the use of equipment like lifts, welding equipment and flammable materials. Inhaling, spilling, or slipping on a variety of materials that are ambiguous and 'out of place' provide significant risks and the Health and Safety Executive's (HSE) advice sets out general checklists on 'Hygiene and Welfare' and 'Cleanliness' that encourage workers, managers and employers to keep the workplace clean (HAS 1997: 48). These could lead to ritualised practices in which the concern of employers and technicians in following the checklists was primarily symbolic; that is, being seen to comply with the code. In fact we saw considerable variation both between garage settings and within garages which suggests considerable interpretation of the rules to suit local situations and personal preferences.

Dealing with dirt

Without recourse to the relativising strategies of anthropologists and historians, Everett Hughes spells out the connection between dirt as a physical and as a moral category: 'It may be simply physically disgusting. It may be a symbol of degradation, something that wounds one's dignity' (1958: 49). Hughes's example is of the janitor who has to deal with other people's rubbish that is sometimes 'sloppy and smelly' and having to clean up the mess in front of the incinerator left by careless tenants. For Hughes the physically disgusting component of the work impinges on the interactional relations between the janitor and the tenants; those who expose the janitor to their disgusting rubbish give him a 'kind of magical power' over them so they may get poorer treatment when it comes to requests for his services (1958: 51). As Hughes points out, most jobs involve some degree of 'dirty work' even when physical disgust is not present – getting someone else to do one's dirty work is common amongst humans. Dealing with the dirt of cars is seldom physically disgusting but car owners take their cars to be serviced by someone else because they wish to avoid the dirty work that is involved.³ In taking their car to a garage they set up the roles of customer and technician that are at least in part defined by the dirty work that the technician does on behalf of the customer. Hughes suggests that there is a 'moral division of labour' in that some workers are available to undertake dirty work on others' behalf (1958: 71). Some jobs – he mentions the physician – attract charisma through their capacity to undertake dirty work that cannot be delegated to someone lower in the moral hierarchy of a division of labour. But janitors and car technicians are amongst the majority of workers who lose rather than gain prestige status through the dirt they deal with in their work.⁴ As Hughes powerfully argues, a moral division of labour always separates those willing to undertake society's dirty work from the 'good people' who would rather not get their hands dirty – it is this capacity of the

interaction between in-groups and out-groups that enabled members of the S.S. to undertake the 'dirty work' of the Nazi regime (Hughes 1984: 87-97).

In the garage a rather more mundane moral division of labour distinguishes a hierarchy that it is reflected in their proximity to dirty work; customer, manager, foreman, senior technician, technician, trainee and cleaner. Promotion involves moving away from the dirty work of routine contact with the mechanical components of cars and those who owned or managed garages or service centres were usually dressed in collars and ties while those who worked on cars wore overalls over more casual clothes. In between, in the larger garages, were those who received customers and dealt with ordering, phone inquiries and accounts who were dressed 'clean' (though with some type of corporate identity uniform). Workshop foremen who managed the work rather than undertaking it themselves, usually wore coats that carried similar colours and labels to the technicians' overalls. This lesser degree of protection symbolically represented their greater distance from the dirty work and greater proximity to the relatively clean work of desks. The workcoat is of course much easier to remove and its reversed lapels went with a white shirt and tie. In all the settings visited the technicians wore 'overalls' and boots that protected their 'ordinary' clothes from dirt, oil and grease. The larger garages arranged for overalls to be cleaned so that staff members were always able to look clean and present the brand name and colours of the master organisation (sometimes the car manufacturer, sometimes the brand of garage or chain).

However, these boundaries were neither rigid nor rigidly managed. Customers were allowed into service areas (provided they were accompanied by a member of staff) in all garages and spoke directly to technicians. Sometimes, especially in warm weather, technicians would roll down the top half of their overalls – though this was not a practical form of dress to actually work on cars. Owner and managers, despite their 'clean' dress code, would work on cars with or without overalls. One owner however was also the only mechanic and was never seen at work in anything but overalls. Another owner/manager, who was never seen in overalls, was occasionally seen working on vehicles. While clothing was linked both to the division of labour and regimes for dealing with dirt and maintaining cleanliness it was not characterised by strict adherence to ritualised systems of rules. An exception was the use of logos, brand names and colours for overalls; these are signs that clearly have symbolic cultural meanings and cannot be construed as directly material in their effects.

What our study of dealing with dirt in garages showed was that rather than following a ritualistic observance, practices were oriented to their instrumental consequences. There were a number of strategies for dealing with dirt but these were not consistent across garages or even within garages. For example, different types of plastic gloves were made

available by employers in all the garages we studied and employees made use of these when they felt it was appropriate. The oils and other materials that the technicians work with are potentially harmful to the skin and will inhibit the healing of the cuts and calluses that seem to be entailed in the work. Certain types of grease that are particularly slimy (such as that used when reassembling the rubber boot on a constant velocity joint) are regarded as more unpleasant than others and were more likely to lead to the use of gloves. However, just as physicians accept that ambiguous materials and 'dirt' are part of their work that is undertaken without comment, so the technicians we studied did not generally remark on the dirt they dealt with or their feelings about it. It appears to be a part of the fascination of their work; dealing with ambiguous materials and controlling them to create an assemblage in which dirt is minimised, slime is enclosed in the appropriate areas and the interfaces between mechanical parts is properly managed.

Sometimes a barrier cream would be applied before work, and then the gloves would provide a very high degree of protection that would make hand cleaning easier on completion of the task or shift. Of course both barrier creams and rubber or plastic gloves constitute ambiguous materials of a more or less slimy consistency that were not necessarily any more attractive than direct contact with the dirt. Some gloves are very similar to the tight fitting latex gloves worn by medical personnel – see Figure 8. Some technicians would seldom wear gloves, others used them routinely, some would wear gloves for a particular type of job when others would prefer not to wear gloves for that task. Wearing gloves for a long time could produce skin problems and some people reacted to the material they were made from. Gloves could become very greasy and difficult to use so they were not always practical; technicians chose the type of gloves to use and whether or not to use them according to the particular task and their own concerns about the effect of the work on their skin. It was not unusual to see a technician take gloves off in order to get a more direct tactile contact with a particular component. Loose plastic gloves that were easy to remove seemed to be popular for greasy or slimy tasks (e.g. see Figure 11). But some chose not to use them for even the most messy jobs (e.g. Figures 6 and 7). One technician usually only wore protective gloves to avoid contaminating the clean inside of the car, another avoided wearing them because they gave him dermatitis. Even though we might argue that previous generations of automotive engineers and mechanics did not maintain the same standards of cleanliness in their work environment, it is difficult to suggest that the current practices are determined other than by a desire to limit accidents and the threats to health posed by a dirty environment and that the strategy used varies according to the material context.

The control of the build-up of dirt on the floor of the garage is a more or less continuous process, linked to safe working practices, but also linked to an aesthetics of organisational space. Often the work bay is cleaned after the work on one vehicle is finished and before the arrival of the next, as if cross contamination were a risk. The build up of dirt on the floor reflects both the parts of the car that have been worked on and the underneath spaces that accumulate dirt (see Figure 2). The moral order of dirty work means that it is often divided organisationally so that technicians remove dirt from cars and their components but create dirt on the workshop floor that someone else (cleaner or trainee) then has to remove. The physical control of dirt varies according to organisational setting. One large dealership had a steam cleaner (Figure 9) that was regularly passed over the hard, white tiles while a service chain garage had a dedicated cleaner who worked with a mop and bucket (Figure 10). A smaller independent garage that had a damaged floor surface used sawdust to sprinkle on the floor so that oil and grease could then be swept up and put in a bin.

One of the routine servicing procedures that varied according to the setting was the cleaning of brake assemblies. Variation was linked to what equipment was available and what managers and senior technicians had established as local practice. One garage used a special tool with a water-based degreaser that was collected into a 'bath' to be recycled (see Figure 11) but in other garages the practice was to use an aerosol to spray degreaser onto the assembly which was then allowed to drip either directly onto the floor to be removed later, or, in one case into a bin already full of rubbish that was placed under the dripping assembly. We observed a number of technicians changing the protective boot on constant velocity bearings; not only did the procedure for the work vary but so did the way dirt and grease were managed. However, how surfaces were cleaned and how grease was applied followed the principles of keeping dirt and grease apart rather than any set or ritualised procedure.

The variations we find in these practices for dealing with dirt – clothes, gloves, floor cleaning, brake cleaning, repairing CV joints – make it very difficult to describe them as ritualistic. These are practical arrangements that vary according to the material and organisational context but within each setting there was considerable flexibility according to the volition of the individual technician. The aesthetics of dirt – whether overalls or workspaces looked clean – did seem to be more important in the larger organisations who were concerned to present an ordered environment to their customers. Here there is considerable overlap between the symbolic significance of cleanliness and dirt and the practical considerations. What was apparent however was that the larger garages were better equipped with protective and safety equipment and there was greater awareness of the significance of

health and safety practices. Larger garages laundered the technicians' overalls and were able to maintain very clean work areas through rigorously maintaining buildings, equipment and through employing staff whose principal job was to clean. Where the classification system has to be shared throughout a hierarchical organisation with many employees ambiguity about categories is more difficult to tolerate. It is the larger organisations that have applied principles of rationality not simply to the work on mechanical objects but to the organisation of the work and the workspace. In these large workshops cars were worked on in bays side by side, there was a uniformity in the way each space was controlled and kept clean and the technicians' tools were kept ordered and organised in the large red toolchests that distinguishes their equipment from that owned by the garage (see Figure 9). Each bay will have its own bin and it is the responsibility of someone low in the organisation to keep the bins empty. The larger garages demonstrated more consistency in practice at least partly because where there are more than five employees, the employer must prepare a safety policy which is a key feature of inspection by the HSE or a local authority. Smaller businesses were covered by the same legal requirements but were not expected to have developed an internal set of practices to the same degree. The result is that while there may be a certain degree of 'ritual observance' of health and safety standards, both employers and employees recognised that the practices they adopted were for the direct personal gain of the employees in terms of health and safety.

Conclusions

We have argued that because of the design of the car and the way it is used, the repair and maintenance of cars is dirty work. The work on machines like cars that have been used is a form of re-production which can be distinguished from the comparatively clean process of the production of a new car. It is also true that working on newer cars, which are more likely to be found in the large dealerships (often on service agreements linked to sales) is cleaner than working on older cars that are more likely to be found in the smaller, local, independent garage. Nonetheless all garages and all technicians are faced with broadly similar problems of dealing with dirt in the course of their work.

We have argued that contrary to the anthropological and historical literature on dealing with dirt it is unhelpful to treat dirt as a culturally relative concept and the responses to it as ritualistic or primarily ideological in form. Instead we have argued that the general cultural response to dirt is characteristic of human being's apprehension of ambiguous materials, such as those described by Sartre as slimy. The reaction of ambivalence that this produces explains both the desire to avoid and manage dirt that creates the 'moral division of labour'

that Hughes describes and which distinguishes those who can get someone else to do their dirty work from those who have to do someone else's dirty work. The moral order of dirt creates a hierarchy with the customer at the top with owners, managers, foremen, senior technicians, technicians, trainees and cleaners following on. It may be the case that some who work with dirt such as surgeons have a high status, but most, including janitors, those caring for the dying and car technicians, attract some of the moral ambiguity of the materials they have to deal with in a 'moral division of labour'.

If the approach to dirt amongst car technicians is largely pragmatic, the variation in their practices with dirt requires some explanation. From the viewpoint of technical rationality, dirt cannot be allowed to interfere in the precision-engineered machinery, which keeps our cars operating efficiently and safely. From the viewpoint of a bio-medical rationality, dirt can harm the technicians who work on cars. Within these modern modes of rationality there seems to be considerable variation in the interpretation of their significance in particular contexts. This is why practices will vary according to organisations – particularly according to their size and the resources they have available. We have suggested that larger organisations will be more concerned about the aesthetic effects of dirt, especially on their customers perception of their way of doing business. We have also suggested that particular procedures will vary according to the equipment available to deal with dirt. But it will also vary according to different managerial styles and the perceived imperatives of legislation and current standards of good practice.

Perhaps the most significant variation was in the practice of individual technicians who it seemed made their own judgement about when and whether to use barrier creams, protective gloves, goggles and so on. These decisions were based on the particular job and the technician's judgement of the risk to himself that is clearly informed and affected by training and advice from government agencies and from his own employer.⁵ The individual technician will also be affected by the current style of practice around him and what is practicable in that particular setting. But what was noticeable in our corpus of data was that the individual technician was able to make their own pragmatic decision about how to act in relation to dirt and did not feel obliged to follow rituals for primarily symbolic reasons.

We hope to have shown how car users' response to dirt may interfere with recognising the complex nature of the work that is actually undertaken beneath cars. The work may be dirty but is not mechanical; it requires a form of knowledge of the interaction of the parts of cars and tools that depends on a particular relation between mind and body that must be learnt and which cannot be built into machines or robots. Whatever they know about the mechanical principles of how cars work, most car users will avoid the risky work involved in

dealing with the underneath of their cars in which dirt, slime and ambiguity await them. Most of us are pleased to ask someone else to do the dirty work of fixing the car.

29.11.02

References

- Anderson, B. (2000) Doing the dirty work? The global politics of domestic labour, New York: Zed Books.
- Corbin, A. (1986) The Foul and the Fragrant: Odor and the French Social Imagination, New York: Berg.
- Douglas, M. (1984) Purity and Danger: An Analysis of the concepts of pollution and taboo, London: Routledge.
- Economist, The (2002) 'But who will do the dirty work?', Economist, February 2002. Vol. 362 (8260): 39.
- Elias, N. (1994) The Civilising Process: the History of Manners and State Formation and Civilisation, Oxford: Blackwell.
- Friedmann, Georges (1961) The Anatomy of Work: The Implications of Specialization, London: Heinemann.
- Hamlin, C. (1998) Public Health and Social Justice in the Age of Chadwick: Britain, 1800-1854, Cambridge: Cambridge University Press.
- Hoy, S. (1995) Chasing Dirt: The American Pursuit of Cleanliness, New York: Oxford University Press.
- Hughes, E. C. (1958) Men and Their Work, Toronto, Canada: Collier-Macmillan.
- Hughes, E. C. (1984) The Sociological Eye: Selected Papers, New Brunswick, USA: Transaction Books.
- HSE (1997) Health and Safety in Motor Vehicle Repair, Health and Safety Executive, HS (G) 67, Sudbury, Suffolk: HSE.
- Katz, P. (1981) 'Ritual in the operating room', Ethnology, Vol. 20 (3): 335-50.
- Lawson, J. (1998) 'Contemporary hospice care: the sequestration of the unbounded body and "dirty dying"', Sociology of Health and Illness, Vol. 20 (2): 121-143.
- Mintel (2002) Car Servicing/MOT, February 2002, Mintel International Group Limited.
- Porter, D. (ed.) (1994) The History of Public Health and the Modern State, Amsterdam: Rodopi.
- Salzinger, L. (1991) 'A maid by an other name – the transformation of "dirty work" by Central American immigrants', in L. Salzinger et al. Ethnography unbounded: power and resistance in the modern metropolis, Berkely, California: University of California Press.
- Sartre, J-P. (1984) Being and Nothingness, New York: Washington Square Books.
- Tomes, N. (1998) The Gospel of Germs: Men, Women, and the Microbe in American Life, London: Harvard University Press.

Figure 1: The clean surfaces of the car



Figure 2: The dirty 'footprint' left after the apparently clean car has moved away



Figure 3: Detaching track-rod end under front wheel arch



Figure 4: Removing rust during an MOT check



Figure 5: Draining the oil



Figure 6: Applying grease to a constant-velocity joint



Figure 7: Blowing dust from a brake assembly



Figure 8: Medical style gloves



Figure 9: Steam cleaner for floors



Figure 10: Mopping the floor



Figure 11: Special brake cleaning system with water-based, recycled degreaser



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² We studied five different garage settings that reflected different organisational size and structure: a car-brand dealership (DS); a high street service chain (SC); a medium sized independent garage (MI); a small independent garage (SI); and a single operator owner/mechanic (SO). For more details see the Car Care Summary Final Report.

³ Most car owners do not undertake DIY servicing; only 3% of those with cars under 5 years old service them themselves and the figure only rises to 11% for cars six years or older (Mintel 2002).

⁴ As one of the technicians in our study said when asked if his son, who helped him during school holidays, would join the business 'No, he wants a job where he can keep his hands clean'.

⁵ All the technicians we observed were men.